Self –Study Report

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National Assessment and Accreditation Council
(NAAC)

Acharya Narendra Dev College

(University of Delhi)
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Preface

Acharya Narendra Dev College is a constituent college of University of Delhi that envisions being recognized as an academic institution of excellence. It tirelessly works to attain a dynamic equilibrium between its social, ecological and economic commitments. In the milieu of varying priorities, it offers focused guidance and an invigorating environment to its students so as to help them attain excellence in education and research while rendering technological service to the nation.

The college has addressed its core commitment towards building institutional capacity and educational effectiveness by ingraining certain mission goals as part of its bulwark including:

a. Building national capabilities in science, commerce, technology, open education and research
b. Creating and sustaining community based learning wherein students acquire knowledge with due consideration for ethical, ecological, and economic issues.
c. Pursuing research in frontier areas of science with relevance to needs of the society and disseminating research findings.
d. Providing opportunities for the overall development of the faculty and students while recognizing that not all students and faculty get enough such facilities prior to entering college.

In our relentless pursuance of core values we have engaged in development of human resources to serve the nation; recognized learning as a unifying activity; nurtured integrity, creativity and academic freedom while retaining a willingness to experiment with new paradigms.

Culmination of years of active exploration and experimentation has made us feel the need for a robust quality policy that includes processes of self-evaluation and continuous improvement andthat can guide us to pursue global standards of excellence in all our endeavors including teaching, research, open education and to remain accountable in our core and support functions.

Worldwide assessment and accreditation is broadly understood to be the "Quality Status" of an institution and in the context of Higher Education, the accreditation status indicates the quality in terms of its performance, related to the educational processes and outcomes, covering the curriculum, teaching-learning, evaluation, faculty, research, infrastructure, learning resources, organization, governance, financial well-being and student services.

We at Acharya Narendra Dev College intend to ensure implementation of the best practices and revise the standards as needed, consistent with the efforts of NAAC to focus on the goals established for the accreditation process.

(Savithri Singh)

Principal

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About the College

Established in 1991 and named after *Acharya Narendra Deva*, a visionary educationist, socialist and reformist of modern India, Acharya Narendra Dev College is a constituent college of the University of Delhi, fully funded by Govt. of NCT of Delhi.

It is distinctive in being an institution dedicated primarily to Science providing undergraduate programmes in all the basic Sciences, Commerce being the only other stream taught in the college. The broad span of scientific disciplines creates a fertile ground for the nurturing of scientific temperament and inquisitive spirit among the students. Students get unparalleled access to cross disciplinary boundaries and explore the vast expanse of knowledge that lies beyond their textbooks. The college constantly endeavours to make the teaching-learning process interesting by creating an environment of proactive collaboration. Exploration forms an important element of the learning process and special effort is made to allow the students to imbibe various concepts through a balanced blend of interactive lectures and hands-on experimentation. All this is sought to be achieved within the broad parameters of transparency, equity and coexistence.

Some of the best practices of the college are enumerated briefly:

1. Research in College

One of the greatest strengths of ANDC is the volume and scale of genuine and exciting research activities carried out by its faculty members since last one decade. The enthusiasm and hard work of the faculty with the exemplary support of the College administration has created a culture that displays seam-less integration of teaching and research. Faculty have received funding from various governmental organisations in the form of projects that run from 3-5 years. The quality of research work done by the faculty is authenticated by a large number of publications in peer reviewed national and international journals.

Bringing research into the classroom was always one of the visions of the College. We promote active participation of students in research projects as a major co-curricular activity. Students and the faculty share an adventure of discovery and the laboratories are abuzz with research programs through the year. Since undergraduate students also are allowed to do research in these laboratories, nay, it is a condition under which the faculty is allotted a research laboratory, a number of research papers have been co-authored by the undergraduate students as well. In the last five years around 350 undergraduate students have participated in research projects.

2. Skill development and entrepreneurship

Promotion of skill development and entrepreneurship among the youth of India is not only key for rapid economic growth but also an opportunity to reap the demographic dividend. Now a national policy, ANDC had taken steps in this direction by setting up **IEDC (Innovation & Entrepreneurship Development Centre)** sponsored by DST in 2010. The IEDC organizes very comprehensive Entrepreneurship Development Programmes (EDP) and Women EDPs (WEDPs) for the unemployed youth wherein various avenues and facets of entrepreneurship are explored through 4-6-week long workshops. IEDC has is also required to organise Entrepreneurship Awareness Camps (EAC) of 3-day duration and over the years has conducted 13 EAC's both within and outside college. Through the IEDC 21 students' innovative projects worth Rs. 19 lakhs have also been supported.

The primary aim of the IEDC is to convert a job seeker into a job giver. ANDC has taken a unique step in this direction by setting up of an **Entrepreneurship Laboratory (EL)**. This lab provides students a platform to experiment with setting-up of any enterprise, learn how to guage client

needs, procure, package, collaborate, advertise, sell, maintain accounts – all important components of entrepreneurship. It also allows them to explore various concepts/innovations for possible commercialization. The activities in the EL has enthused the students into establishing **ANDY** (Acharya Narendra Dev Youth) – an **in-campus company.** The first products that they are making and marketing are herbal personal care products. ANDY also supplied besides University of Delhi souvenirs to the DUWA (Delhi University Womens' Association) Souvenir Shop.

The skills acquired by trainees at workshops at IEDC, has resulted in the establishmentof more than 15 independent enterprises. ANDC became the first college in DU to be awarded the BI (Business Incubator) by the Ministry of Micro, Small & Medium Enterprise (MSME) in 2014. The BI activities systematically allow empowerment of the student community by equipping them with the necessary ingredients for a successful business project.

3. Open Paradigms in Education

It refers to prophecy and adoption of educational resources having unrestricted access across the boundaries of society, nation, policies and economies. Besides the conventional educational content, this praxis includes software/software technology as a necessary component of educational resources. The availability of source code is critical to the open paradigm in software and forms the backbone of Free Open Source Software (FOSS). It promotes more learning, spirit of sharing, collaboration and equitable access to software as a learning resource. Needless to say it allows a huge saving and prevents the institution from the perils of proprietary software such as license fees, expensive upgrades, vendor lock-ins, cartelization etc. Another element of this paradigm is freedom to access educational content, which may be available in myriads of forms. We believe this is one of the powerful tools of universalisation of education. The college adheres to the practice of creating and sharing software and educational content. It is believed, this process invites feedback and participation from developers, educators and students and empowers them to exchange ideas, improve best practices and create world-class educational content.

Since 2007 the college migrated to the use of FOSS, not only in its teaching-learning process but also in administration. The College has ensured that all computer laboratories are loaded with Linux-OS and all propriety software are replaced by their equivalent OSS (Open Source Software) wherever available. All desktop computers used in administration also underwent migration to Linux OS and use of OSS. All laptops provided to students and faculty exclusively runs with FOSS. The college website too is based on DRUPAL- an open source content management system, which is collaboratively developed and managed by students. While adopting FOSS in a big way, efforts to evangelize this best practice have been taken up not only within the college community but also beyond its boundaries to different parts of the university and society. Till now 40 workshops/training programmes on FOSS and Linux have been organized within the college and outside. The freshers are provided training in the use of FOSS and Linux platforms at the beginning of academic year so that they may utilize IT more effectively and creatively as a learning-resource. These efforts have enabled establishment of a secure and robust IT infrastructure in the college, and above all it has promoted the spirit of creation, innovation and sharing, which we believe should be the mainstay of any educational institution.

The College believes in the availability of Open Education Resources (OERs) for equitable and universal access to education sans boundaries. To promote as well as imbibe this concept, the college has organized 25 intensive workshops on Wiki & OERs, 8 training schools on EasyNow (a multi-media package for content creation), 4 Seminars on Copyright/left issues and 2 Webinars on

Spoken Tutorials for students and faculty. This has resulted into content creation on the Wiki and Moodle platforms which have unrestricted access across the globe.

The organization of 'OPEN 2011-An international conference on Open Paradigms in Education' has been a part of the evangelical efforts and an affirmation of the belief in the concept of open paradigms in education. This conference was supported by Commonwealth of Learning, Vancouver, UGC, DBT, CSIR and IIC (UDSC).

The crowning glory of these efforts has been the international recognition in the form of the prestigious OPAL Award (2011) for Institutions for 'Quality and Innovation through Educational Practices' by the international consortium which included UNESCO, ICDE, EFQUEL and several European Universities working in promotion of OER in higher education. This Award recognizes institutions with a policy of encouraging open educational practices through the provision of resources and support for the development of OER, participation in research and development, and a clear strategy for motivating its staff.

The commitment to OER resulted in the College being recognized as Affiliate of Creative Commons in India in May, 2013.

4.   Personality Development of Students

While academics remain fundamental to us, the college also believes in the all-round development of the students. The College's commitment to personality development as a necessary input to holistic education is stronger than ever before and this is reflected in the wide range of services, policies and programmes like **Effective Communication and personality Development through Theatre (ECPDT)**which use theatre as a means of confidence-building and **English Language Proficiency Course (ELPC)** that improves communication in English. The students are encouraged to participate in sports, theatre, various forms of art, social work, and work on environment and social issues – all of which serves to enrich and augment their personality.

5.   Social Responsibility

We believe that public institutions such as ours need to revisit their roles, assume social responsibility and foster sustainable development. ANDC believes in supporting the growing responsibilities in the domain of socio-economic development with its wide spectrum of societies, policies and philosophies.

The NSS unit of the College strives to sensitize students about their social responsibilities and inculcate the spirit of voluntary service. It attempts to rouse awareness about the realities of life and foster a better understanding and appreciation of the problems of the people. The students working in this unit gain valuable work experience which stands them in good stead for future employment. NSS is involved in various activities like organizing blood donation, free health check-up and Thalassemia-screening camps. A notable contribution of the NSS unit in the current year has been its commitment, to 10 Thalassemic girls from economically weaker background, to provide for their blood transfusion needs throughout the year.

*Paritantra***:** The Environment Society has taken up the task of creating awareness amongst the youth about the growing environmental concerns. Slowly but surely, the society is evolving a mechanism for active, effective and target-oriented activities which strive to change the mindset of the people and make them more eco-friendly. The college has made concerted efforts to reduce paper use and has over the years reduced paper consumption to a significant extent. Anti-tobacco and anti-littering awareness campaigns in adjoining residential areas are some of the major initiatives undertaken by the Society.

***Sashakt*:** The society for the welfare of the girl students of our College, works towards gender-sensitization and empowerment of women. *Sashakt* creates awareness about the prevention of sexual harassment and educates the College community about the legal provisions available against sexual harassment at the workplace by arranging talks, documentaries and putting up posters in the College.

EXECUTIVE SUMMARY

Criterion I : Curricular Aspects

Acharya Narendra Dev College is a constitute college of University of Delhi. The College currently offers:

- 09 Undergraduate Honours Courses and 04 Undergraduate interdisciplinary Courses
- 02 postgraduate courses in Chemistry and Mathematics,
- Ph.D. in Chemistry, Zoology, Biomedical Sciences ,Electronics,
- 4 certificate and 3 diploma courses in foreign languages – French, German, Spanish and Russian.
- 3 certificate courses in Bioinformatics and '**Bioinformatics and *in Silico* Drug Discovery'**, '**Effective Communication and Personality Development Through Theatre**' and '**English Language Proficiency Course'**.

Curriculum Development, planning and implementation:

The curriculum for undergraduate courses is designed at the University of Delhi with the inputs and support of the teachers from the constituent colleges. Our college teachers across all the departments get involved in curriculum development committees of different courses. At the college the academic programmes are implemented as prescribed by the University, however the college continuously makes efforts for value addition to these programs in a variety of novel ways so as to provide a holistic education which can meet the challenges of an individual as well as the society.

The college started a new add-on course in Bioinformatics and in-silico Drug Discovery for undergraduate and post-graduate students in 2012 to suit the fast track needs of bioinformatics and in-silico drug discovery divisions of pharmaceutical companies and research organizations. Keeping this in view, the course structure is formulated in consultation with the members of the course advisory committee consisting of eminent scientists from academia as well as industry. The coordinator Dr. Gagan Dhawan has been trained in bioinformatics and in-silico drug discovery from the University of Edinburgh, UK under University of Delhi Faculty Training Program. The course 'Effective Communication and Personality Development through Theatre' seeks to hone skills such as communication, dynamic leadership through problem solving, critical thinking and decision-making, ability to think creatively.. The course is inspired by a vision of life-skills-based education of UNICEF and WHO and conducted by dedicated resource persons associated with National School of Drama act as mentors. The add-on course in English Language Proficiency Course helps the students improve fluency, diction, pronunciation, public speaking capabilities and expression that are expected to pay dividends when they appear for job interviews and in functioning during the course of their career.

The college ensures that the curriculum is implemented efficiently. Analysis of internal assessment and semester exams results, regular meetings of the students with the mentors and the Principal are the modes used as a measure successive implementation.

The University's curriculum is supplemented through co-curricular and extra-curricular activities which involve both and cultural activities and academic projects. The college conducts two flagship projects with funds generated within the college. The first is ELITE - Education in a Lively and Innovative Training Environment -that gives an opportunity to undergraduate students carry out research projects during summer with a fellowship of Rs.1000/-per month. The other self-funded scheme of the college is EXPLORE – Excursions for Peer Learning in an Open and Rejuvenating Environment– that gives an opportunity to all second year students to undertake excursions, educational tours or field trips accompanied by their classmates and faculty. The basic moto for both these schemes is to give equal opportunities for students to explore and learn.

Criterion II: Teaching, Learning and Evaluation

The college admission process begins with the **Open Day** wherein introductory sessions for prospective students (along with their guardians) are held throughout the day. We inform them about the Admission procedures and the various Courses available in the college. We also allow parents and students to interact with subject teachers and see the facilities in the College. A brief profile of the college is also published in leading newspapers during admissions. The college prints the College Prospectus every year. The Prospectus gives complete information regarding admission criteria, courses available, fee structure, college infrastructure, departments, teachers, societies, facilities available, college disciplinary rules and relevant acts and statutes of the University.

Admission to the College is strictly on the basis of merit of class XII marks in all the courses as prescribed by the university. The college admission committee formed in staff-council comprises of the Principal, the Vice principal, Admission Convenors, Teacher-in-charges of each Department and representatives of Sports and Cultural Committees. The Admission Committee reviews the results of the education boards like Central Board of Secondary Education, Haryana Board of Secondary Education, Bihar Board of Secondary Education and few other States from where large numbers of students apply for admissions. The review of the result helps in deciding the cut off percentages to match the number of admissions required in each course keeping in view the sanctioned strength in each course. Seats are reserved under various categories like SC (15 %), ST (7.5 %), OBC (27%). Besides, supernumerary seats are available for Children/Widows of Personnel of Armed Forces who died in action or on duty and Gallantry awardees, Person with Disabilities (PWD), Wards of Kashmiri Migrants, Foreign students, and under ECA (extra-curricular activities) and Sports categories, as per University norms. The College offers 50% rebate in tuition fees for SC/ST students. Cut-off percentages of each course and each category are displayed on college website, University of Delhi's website and college notice board during entire admission period. Cut-offs are also published in leading daily newspapers.

The college organizes the Orientation Day for freshers, one or two days before the new academic session begins. The students are familiarized with the college through a 15-20 minutes presentation. They are also told about the 'Beyond the Class room…' and 'Preparing for the future' – the twin philosophy that influences all spheres of the College. Academic culture within the campus - Attendance rules, Internal assessment criterion, Information sharing, Add-on Courses, Social involvement, Personality development, co-curricular and extracurricular activities, Grievance cell, Students council, and much more are also shared. 'Students Handbook' containing information deemed necessary for the students is distributed to all students of the first year. Students are also asked to enrol themselves in at least two societies/activities according to their preference/skill on the day.

The college admits a lot of students from sub-urban and rural backgrounds and many of them are educated in Hindi medium. To improve their English language skills a course called **English Language Proficiency Course (ELPC)** is conducted by the College**.** In order to empower students with skill-set of self-confidence and effective communication, the college uses theatre as an enabling medium and has an add-on course **ECPDT – Effective Communication and Personality Development through Theatre.** The Computer Science Department of the college holds workshops for the first year students of each course to give **basic computer skills** and exposure to FOSS, LINUX since all the machines in the college are LINUX based. The college campus is the interactive learning platform where teachers are able to identify advanced learners in the normal class room teaching which includes discussions, assignments, tests, quizzes and project works. The college promotes their achievements in a

positive way. The various schemes/centres/clubs viz., **ELITE** – 'Education in a Lively, Innovative Training Environment' Summer Fellowship**, SPIE** (Society of Photo-optical Instrumentation Engineers) Student Chapter**, FOSS** (Free Open Source Software) Club**,** Certificate course in Bioinformatics and *in Silico* Drug Discovery (**BDD**), Open Source Drug Design (**OSDD**) and students' projects through Innovation and Entrepreneurship Development Centre **(IEDC)** offer many opportunities to students to enhance their learning and thought process. Moreover, two independent initiatives are run by self-motivated students in the form of **CUBE** (Collaborative Undergraduate Biology Education) and **TH!NK LAB .** These laboratories are run by the students and for the students – it's a space for them to discuss and implement their ideas.

The college also ensures effective implementation of policies and programmes meant specifically for the persons with disabilities (**PwD**).The Equal opportunity Cell **(EOC)** of the College works at providing guidance and counselling with respect to academic, social and other matters to such students. The college supports students from the disadvantaged sections of society, physically challenged, slow learners, economically weaker sections etc. in the form of **Remedial Coaching,** Student Aid for Knowledge, Success Hounour and Motivation**(SAKSHAM) and** Earn-while-you-Learn Programme **(ELP).** One of the unique programmes**EXPLORE** initiated for second year students in college allows students to undertake excursions, educational tours or field trips accompanied by their classmates and faculty. This provides an inclusive atmosphere to all the sections of society.

Course-wise and Teacher-wise timetables are prepared by the Workload and Time Table Committee before the commencement of semester and they are displayed on the college and University website. The learning is made student centric by Discussion sessions, Presentations, Projects, Class tests/Open book test, Group Discussions, Lectures / Interaction with eminent experts and Academic tours. Students use this platform for clarifications, discussions, sharing of ideas/opinions and this practice is being followed at ANDC since long. Besides the usual chalk and talk mode of teaching, the college adopts various other methods which includes use virtual laboratories, e-learning, open educational resources, mobile education, etc. to facilitate effective teaching. In a recent initiative, the students are provided laptops for use in the classrooms. Since the campus is **Wi-fi** enabled, the students are encouraged to explore and process information from web in the class room during group activities or under instruction from the teacher. The college provides a conducive environment and openings for newer academic opportunities, in the form of a large number of research projects. Students even get opportunities to showcase their talent in International and National level conferences.

The faculty takes full care to keep up with the new trends/ emerging fields. The college has a Professional and Academic Development Committee that screens and recommends faculty members for attending Orientation &Refresher Courses, Seminars, workshops and Conferences. All teachers participate in 4-week orientation courses and 3-week refresher courses conducted by academic staff colleges of the UGC. The college also organizes various workshops to familiarize the faculty with the new, emerging areas of study. The college faculty participates in all the orientation programmes organized by the University whenever new curriculum/syllabus is introduced. Many teachers have been enabled to create e-content specially using multimedia components due to the various Easy Now workshops conducted by the college in association with Commonwealth Educational Media Centre for Asia (**CEMCA**) an office of the Commonwealth of Learning, Vancouver. The faculty members are involved in developing e content for organizations such as NISCAIR, NMEICT and DU-ILLL cell. The College cultivates a healthy competitive environment among the faculty to achieve recognition at the state, national and international level for excellence in teaching. They are affirmed success by the awards received so far. The teachers of the College have been consistently

recognized for their work by various funding agencies. Since 2011 when the Govt. of N.C.T. Delhi initiated the Best Teacher Awards to one teacher annually for its institutions, five teachers, have been selected for this award. Besides, three teachers received the Best Teacher Award from the then President, Dr. A. P. J Abdul Kalam, in a one-time felicitation ceremony held by the University of Delhi in 2009. The University recognized six faculty members of the College this year (2015) for their Excellence in Innovation.

The Physical Education teacher of the college received one of the most prestigious awards in the field of sports - the *Dronacharya* Award in 2012, given by the Government of India.

The evaluation process set up by the University is displayed on the University and the college website and is updated time to time. The College has adopted all the evaluation reforms of the university like introduction of 25% as internal assessment of the students comprising of attendance (5%), Assignments/Projects (10%), Test/Presentation (10%)**.** Any internal assessment exercise is designed to identify, common and reoccurring mistakes/weakness of students. Corrective measures are adopted in the pedagogy to overcome common mistakes/weaknesses. There are the departmental moderation committees comprising of Teacher-in-Charge, previous Teacher-in-Charge and a senior teacher which monitor the internal assessment of the department to ensure fairness and uniformity and subsequently their reports are accessed by the college internal assessment committee which ensures the implementation of the evaluation reforms.

The learning outcomes of the college are interwoven around the twin philosophies viz., **learning beyond the classroom...** and '**preparing for the future @ ANDC.**mailto:future@ANDC'.All. The identification of learning barriers is continuously monitored through evaluation, mentoring and counseling. The results of the students who perform below average are also discussed to gauge whether the problem lies with the language or in basic understanding of the subject. Such students are given additional time beyond their regular classroom learning. Possible measures to overcome these barriers are discussed in departmental staff meetings and staff-council meetings. These measures are implemented and reviewed from time to time.

The measures have resulted in the College being crowned with astounding achievements. It has been listed among the top 10 Science colleges in Delhi by the India Today Survey since 2010. The University of Delhi, at its Annual Mega – Academic and Cultural Festival – Antardhvani, requests all colleges and Departments to showcase its 'Best practices' and selects the best for awards. Acharya Narendra Dev College's effort to make a difference has been applauded in the form of the third prize (Rs 5 Lakhs) in the **Award for Good Practices amongst Colleges** in 2013, 2014 and this year (2015) it was bestowed with the **First Prize** (Rs 10 Lakhs) for the same. ANDC is the only college in the University to be recognized three years running!!

Criterion III: Research, Consultancy and Extension

One of the greatest strengths of ANDC is the volume and scale of genuine and exciting research activities carried out by its faculty. The enthusiasm and hard work of the faculty and the exemplary support of the College administration has created a culture that displays seam-less integration of teaching and research. The quality of research work done by the faculty is authenticated by a large number of publications in peer reviewed national and international journals and a patent. The faculty and students have a long list of oral and poster presentations and have bagged many accolades.

Bringing research in to the classroom is one of the visions of the College. We promote active participation of students in research projects as a major co-curricular activity. Students and the faculty share an adventure of discovery and the laboratories are abuzz with research programs through the year. Since undergraduate students also are allowed to do research in these

laboratories, a number of research papers have been co-authored by the undergraduate students as well.

Research projects not only keep the faculty members updated with the advancements being made in the world of science, the research grants help in improvising the infrastructure and in the development of state-of-the-art laboratories. The College has a total of 14 research laboratories and a total of 27laboratories for UG curriculum teaching. The products from these research labs have turned out into useful products.

In recognition of the potential of the faculty at ANDC to conduct independent research, five teachers have been recognized as Ph.D. supervisors by the University of Delhi.

The research projects in the College are funded by the grants received by teachers from external funding agencies such as DBT, DST, CSIR, MOEF, ICMR, etc. 21 projects have been completed and 10 projects are under progress.

To promote undergraduate research the college has institutionalized an **ELITE** (Education in a Lively Innovative Training Environment) summer research fellowship. In this scheme there is provision of a monthly scholarship of Rs. 1000 for up to two months for each student and a grant of Rs. 10,000 to each Department for consumables.

Students also get opportunities to conduct research under other schemes like 'DU Innovation Projects', IEDC and OSDD. The DU innovation projects are granted to a group of ten students under three mentors from at least two different disciplines. We were awarded six such projects with funding of 10 Lakhs each in 2013 and four with funding ranging from 4.5-6 lakhs each, in 2014 . The IEDC allows for 5 projects per year with funding of 1 lakh each – each project with three students working with a mentor/s. These projects provide monthly stipends to students @ Rs 1000/-. The Open Source Drug Project provides space for students to work in a huge CSIR-led collaborative project wherein each person contributes their might to tackle huge problems. Students get good experience of working in and tackling national challenges in such a project.

The faculty of the College is young, dynamic and progressive. As of now 15 faculty members have been granted study leave to do their Ph.D. Three faculty members have been awarded travel grants to attend various study programmes in Universities outside India. The faculty also visits other institutions and Universities as Guest faculty.

The college faculty shares its expertise with other institutions and the industry in the form of consultancy. The college has devised policy to encourage such endeavors wherein the institution gains from the interface and there is also a sharing of consultancy remunerations up to 25 percent. Till now the faculty has successfully completed 12 consultancy assignments involving expertise in OERs and scientific arena.

The College believes that the educational institutions should serve not only their own students but the society as well. The college works with many NGOs for the development of unprivileged and weaker sections of society through its NSS unit. The college organizes blood donations camp and health check-up camps annually. The college also organizes self-defense training programmes for girl students.

All these activities are aimed at creating responsible and humane citizens.

Criterion IV: Infrastructure and Learning Resources

The campus, which is basically designed for a school has been expanded to keep pace with the ever-growing needs by creative increase of space leading to well-equipped laboratories and an enviable air-conditioned library. The policy for all infrastructure development necessarily feature concerns of energy conservation, environment protection, and accessibility for differently able and value for money. The college has created a good infrastructure not only for academics but also to promote extra-curricular and extension activities.

All classrooms and laboratories have provision for multi-media equipments to supplement chalk and talk teaching. The labs are equipped with the latest scientific equipment to meet all teaching requirements and beyond. The college has developed 20 research labs to carry out research activities by utilizing resources from various funding agencies through award of projects.

We have perhaps the best science and IT laboratories for teaching and research amongst the University colleges. The College has excellent campus-wide Wi-Fi that is available 24 Hours at the speed of 100Mbps.

In the last academic year the college supplemented its infrastructure by adding four new classrooms, a new Seminar Hall, a new Block for Zoology Department with huge labs and a new computer laboratory. This is besides the addition of new rooms for administrative purposes.

College has an air-conditioned conference room that can accommodate over 100 people. We are in the process of equipping a Seminar Room, the construction of which is complete.

The fully-computerized library houses a comprehensive collection of over 26,000 volumes covering all the discipline courses offered by the college, besides also providing for good general reading. The college subscribes to several reputed journals and periodicals. The services provided by INFLIB-NET and DU library system help provide on-line access to hundreds of journals. The administration of Library is fully computerized and has the services of all latest ICT tools. These are constantly upgraded under the guidance of a Library Committee duly constituted in the staff council. The Book exhibition is an annual feature of the College wherein all leading publishing houses display their new publications in the library. It provides an opportunity to procure books for library as well as personal use. The library timing is kept to the maximum so that access to it may be increased. The air-conditioned Reading Room on the first floor where students are allowed bags is also a big attraction, more so because most students are from the 'Science' stream and require keeping their lab records up-to-date.

The IT infrastructure has seen a massive expansion with addition of large number of Desktops, laptops and servers in the last five years. The college has a very healthy Computer-Student ratio. Besides 5 computer labs with 30 computers each exclusively devoted to teaching, a centralized web-centre having 75 terminals with wired internet community is available. All computer labs are air-conditioned, have un-interrupted power supply and have all the ancillary services. The college avails of the NKN connectivity. It serves as a backbone to support about 6 other networks that allows access to a huge basket of educational e-resources. The college promotes use of ICT to the maximum in its teaching learning programmes. The use of Wi-Fi is very democratic with equal access to staff and students. A special feature of the use of ICT in AND College is the use of Free and Open Source Software wherever feasible. This leads to more learning in an open paradigm and of course lot of saving in procurement and upgradation of software.

A hygienic canteen offering food at subsidized rates, a shop that stores all kinds of stationary for students, the Girls' Common Room, a mini-gym, the space for indoor and outdoor games are among spaces having huge foot falls.

Criterion V: Student Support and Progression

The college reaches out to its students by providing the latest information about the facilities opportunities and welfare schemes through variety of channels. To begin with the college publishes a comprehensive prospectus every year which contains all student specific information. The college sensitivity to students' economic underpinning is reflected in the provisions of large number of institutional scholarship and freeships. The college has created a

Student Aid Fund (under the scheme *Saksham*) to provide various kind of economic aid to the needy and meritorious students. The due process for disbursements of all aids is strictly adhered to at a pre-decided schedule. Student aids of various kinds are also sourced from University and various government and non-governmental agencies. In particular specific support and facilities have been made available to SC/ST, OBC and Economically weaker sections. The financial assistance is supplemented by organization of remedial and help classes, assistance for buying books and stationary and fee waivers. In the 'Earn while you learn scheme' students are engaged in short term jobs in the college for a small honorarium too. The college has put in place a large number of welfare schemes – financial as well as non-financial for special categories of students like students with physical disabilities, slow learners and overseas students. Assistance is also available to students for participations in various national and international competitions and conferences, medical check-ups, coaching for competitive exams etc.

The college lays special emphasis on skill development and personality development through its students' specific schemes like ECPDT and EXPLORE. Its effort in promoting entrepreneurship skills among students has received lot of support, success and recognition. The students get full support of the institution in promotion of extra-curricular and co-curricular activities at many levels. The Career Counseling and Placement centre of the college with the provision of a full time placement officer coordinates efforts for appropriate placement and career guidance of students. Reasonable success has been achieved in placements with the support of Central Placement Cell of the university.

The college puts all its resources at its disposal to mitigate any grievances of students effectively and timely. Special statutory mechanism is in place to tackle issues pertaining to sexual harassment and ragging. An alumni association is in place to reach out to former students for institutional and academic development of the college. The student specific welfare schemes have reaped rich dividends in the form of excellent academic performance, improvement in sports at competitive levels and student progression to higher education and employment. In fact the college has become hotbed of students' participation in sports, cultural and extra-curricular activities at university, state, national and even at international level. 43 students have brought laurels in co-curricular, extracurricular and cultural activities at different levels: University / State / Zonal / National / International, etc. for the previous four years.

The college seeks feedback from students as well as alumni to fine tune its efforts for the welfare of its students. In this regard it works in tandem with an elected Student Council. The Student Council indulges in various student related activities and promotes democratic functioning of the institution. It represents students' interest and viewpoints at various forums.

Criterion VI: Governance. Leadership and Management

The college vision and mission incorporates tenants of academic excellence with personality development. This is sought to be achieved within the realms of sensitivity towards society, environment and nation's goals within the parameters of holistic education.

The college works towards this vision under a leadership of the Principal who works in association with the Staff Council and its Committees. The top management body is a Governing body appointed by the University and the Delhi government. This forms a collective democratic leadership which formulates policies, programmes and strategizes for the furtherance of its stated objectives and welfare of students and staff. The staff council is a body which includes all the faculty presided by the Principal. The committees constituted in the staff council carries out the mandate of the collective in carrying out key functions of the college like admissions, maintenance of discipline, examinations, college development, welfare of students and staff and organization of various events. There is ample opportunity to groom leadership

among faculty as well as students through the activities of these committees. The members of student council and class representatives assume leadership role while working in this set-up. This is possible because the college provides operational autonomy to various units like departments and committees to decentralize governance within the parameters laid down by the leadership and top management.

The college has a perspective plan for development which includes ambitious plans for the development of the institution, students' welfare and its staff. The institution's policies and programmes are aimed accordingly. The college has a well-structured internal organization which functions at various level of decision making process. At present the quality improvement strategies include various innovations in teaching-learning process and promotion of research. The social outreach programme of the college is targeted towards community engagement and development of sensitivity among its students and staff. A continuous review is in place for its various policies and programmes by the leadership by taking into account the views and experiences of various stakeholders. Recent resolutions of the GB have greatly facilitated the entrepreneurship and skill development programmes in the college.

The college promotes professional development of its teaching and non-teaching staff to the greatest extent as an instrument of empowerment. This is done by providing opportunity for training, support for attending conferences and provisions of study leave. The staff is entitled to avail all welfare schemes provided by the government and the college ensures they are available accordingly. Promotion of research and skill development through adequate blend of technology is encouraged in the college

The college is 100% funded by the Govt. of NCT of Delhi. It adheres to rules of financial management strictly as provided by laws and regulations formulated from time to time. It funds its research activities through grants from various Governmental agencies. The college has recently constituted the Internal Quality Assurance Cell (IQAC). It is envisaged to aid the college in its pursuit to maintain high standards in academics and in furtherance of its stated vision of providing holistic education.

Criterion VII: Innovation and Best Practices

The college is sensitive to the environment concerns in its campus and its surroundings. It carries out its activities in harmony with the Nature and tries to mitigate the perils of urbanization and different kinds of pollutions. Its activities aim not only to maintain a clean environment in the college but also to sensitize its community about conservation and sustainability of the biotic as well as abiotic components of the environment. These efforts are spearheaded by the eco-club of the college (*Paritantra*) which organizes many programmes which aim at conservation of air, water, biodiversity, energy and adoption of such practices which promote good health and sustainable development. The college administration too has institutionalized healthy practices which promote less usage of paper, electricity, water and an eco-friendly infrastructure.

The college has adopted various innovative mechanisms for the welfare of its students in acknowledgement of their special requirements. This includes measures for their personality development, skill development, and technological know-how to make them ready for a successful public and professional life. The college makes all effort to provide financial assistance to the needy students by its own resources as well as from different philanthropic ways. A special emphasis is to provide the differently-able students an enabling environment.

The college is now known for adoption of various best practices in its scholastic pursuits as evidenced from winning awards for the same in the last three academic sessions at the university level. Two of these needs special mention: ANDC as research hub and Entrepreneurship development.

The college believes that research is a necessary component of the academic life of an institution. Thus all efforts are made to promote research among its faculty and students. Many research labs have been established by generous financial assistance from various government organizations   like CSIR, UGC, DBT, ICMR, DU, etc. They host various research projects carried out by the faculty in the frontier areas of science. The undergraduate students are encouraged to participate in theses research programme and are also provided assistance for the same. This is unique for an undergraduate institution in the country. The success from its research programme is evidenced from the huge basket of research publications these activities have resulted from its faculty as well as students. The students are made aware of the novel research techniques through various workshops and training programmes organized in the college.

Creation of self-employment opportunities and acquiring entrepreneurship skills has assumed importance to harness the economic potential of the country and its young people. To encourage students to explore the possibility of becoming job-creators instead of job seekers, the college has established an Innovation & Entrepreneurship Development Centre (IEDC) in February 2009 under the auspices of National Science and Technology Entrepreneurship Development Board (NSTEDB), Department of Science and Technology (DST), Govt. of India. The centre envisions motivating students to take up entrepreneurship in a proactive manner by providing them with the pre-requisite information about establishing a start-up, and create self-employment opportunities. The excellence of the IEDC centre, led the Ministry of Micro, Small and Medium Enterprise (MSME), Govt. of India to recognize ANDC, the first college in University of Delhi for the award of prestigious Business Incubator (BI) – to support commercialization of innovative ideas. ANDC has pioneered a new idea by establishing Entrepreneurship Laboratory (EL) in 2013. EL seeks to foster an entrepreneurial mindset amongst students and provides an enabling environment that promotes their innovations, initiatives and commitment. The success of efforts in this direction has led to the establishment of an in-campus company, called *ANDY. ANDY* develops cost-effective and eco-friendly (herbal) products including soaps, shampoos, hand-wash and sanitizers. It is a technology demonstrator whose main idea is not to earn profit but empower students with enough confidence for a start-up.

Part I: Profile of the College

1. Profile of the Constituent College

1. Name and Address of the College:

Name:	**Acharya Narendra Dev College (University Of Delhi)**
Address:	**Govindpuri, Kalkaji**
City: **New Delhi**	Pin: **110019** State: **Delhi**
Website:	**http://andcollege.du.ac.in**

2. For Communication:

Designation	Name	Telephone With STD code	Mobile	Fax	Email
Principal	Dr. Savithri Singh	011-26294542	9873499500	011-26294540	principal@andc.du.ac.in
Vice Principal	Dr. Sarita Kumar	011-26294542	9810309912	011-26294540	viceprincipal@andc.du.ac.in
Steering Committee Coordinator	Dr. Seema Gupta	011-26294542	9811357733	011-26294540	seemagupta@andc.du.ac.in

3. Status of the Institution:

i	Affiliated College	☐
ii	Constituent College	√
iii	Any other(specify)	☐

4. Type of Institution:

a. By Gender

i.	For Men	☐
ii.	For Women	☐
iii.	For Co-education	√

b. By Shift

i	**Regular**	√
ii	Day	☐
iii	Evening	☐

5. It is a recognized minority institution?

Yes

No   √

If yes specify the minority status (Religious/linguistic/any other) and provide documentary evidence.

6. Sources of funding:

Government	☐
Grant-in-aid	√
Self-financing	☐

7. a. Date of establishment of the college: October, 1991   (dd/mm/yyyy)

b. University which governs the college (If it is a constituent college)

> **University of Delhi**

c. Details of UGC recognition:

Under Section	Date, Month &Year (dd-mm-yyyy)	Remarks (If any)
i.2(f)	December 1994	
ii.12(B)	December 1994	

(Enclosed the Certificate of recognition u/s2 (f) and 12(B)of the UGC Act)

d. Details of recognition/approval by statutory/regulatory bodies other than UGC (AICTE, NCTE, MCI, DCI, PCI, RCI etc.)**.**

Under Section/ clause	Recognition/Approval details Institution/Department Programme	Day, Month and Year (dd-mm-yyyy)	Validity	Remarks
Clause 20 (I), Chapter 4 of AICTE act, 1987	AICTE approval for B. Tech. Electronics and B. Tech Computer Science only for the batch admitted in 2013	16-02-2015	For students admitted in 2013-14.	

(Enclosed the recognition/approval letter)

8.   Does the affiliating university Act provide for conferment of autonomy (as recognized by the UGC), on its affiliated colleges?

Yes ☐   **No** ☑

If yes, has the College applied for availing the autonomous status?

Yes ☐   **No** ☑

9.   Is the college recognized

a. by UGC as a College with Potential for Excellence(CPE)?

Yes ☐   **No** ☑

If yes, date of recognition:……………………(dd/mm/yyyy)

b. for its performance by any other governmental agency?

Yes ☐   **No** ☑

If yes, Name of the agency: Not Applicable

10. Location of the campus and area in sq. mts:

Location*	Urban
Campus area in sq. mts.	**32375m²**
Built up area in sq. mts.	**7725.96**

(*Urban, Semi-urban, Rural, Tribal, Hilly Area, Any others specify)

11. Facilities available on the campus (Tick the available facility and provide numbers or other details at appropriate places) or incase the institute has an agreement with other agencies in using any of the listed facilities provide information on the facilities covered under the agreement.

Auditorium:

A S**eminar Hall of capacity 200 and a Conference Hall of capacity 120 is available**

Sports facilities

* **play ground**
* Swimming pool   Not available
* Gymnasium   Available
* **Mini gymnasium** with basic fitness equipment is available.

Hostel: **NOT AVAILABLE** but College has taken an initiative to provide mess facilities to outstation students at a nominal price from the college canteen.

* Boys' hostel
i. Number of hostel
ii. Number of inmates
iii. Facilities (mention available facilities)
* Girls' hostel
i. Number of hostels
ii. Number of inmates
iii. Facilities (mention available facilities)
* working women's hostel
i. Number of inmates
ii. Facilities (mention available facilities)

Residential facilities for teaching and non-teaching staff (give numbers available cadre wise): **Not available**

Cafeteria: **Available in eco-friendly Bamboo canteen with two seating structures and a central kitchen. One of them being air-conditioned.**

Health centre:

i. **WUS facility available at North and South Campus of the University,**
ii. **Doctor from local area is available on call and**
iii. **First aid facility available**

Health centre staff: **Available at WUS of the University**

Facilities like banking, post office, book shops:

i. **Fee collection and other facilities provided by PNB, Kalkaji branch**
ii. **Photostat Shop available within the campus in the students' plaza**
iii. **Stationery Shop available within the campus in the students' plaza**

Transport facilities to cater to the needs of students and staff: Yes

i. **Staff Car is available**
ii. **College Van is available**
iii. **Transport facility is provided to the Differently Abled Students during examination days.**

Animal house: **Not available**. After ban on animal dissections, there is no requirement of animal house.

Biological waste disposal **Not available**

Generator or other facility for management/regulation of electricity and voltage:

i. **College has a HT sub-station within the college premises**
ii. **Power backup through two Gen sets of 125 KVA each**
iii. **All departments have UPS facilities**

iv. **Inverter facility is also available**

v. **Servos/UPS are installed in some laboratories**

Solid waste management facility	**NOT Available** (A small experimental compost making pit is available)
Waste water management	**Available** (RO waste water is used for gardening/ sanitary purposes)
Water harvesting	**Available** (Rain Water Harvesting facility functional)

12.   Details of programmes offered by the college (Give data for current academic year; 2014-15)

S. No.	Programme Level	Name of the Programme/ Course	Duration	Entry Qualification	Medium of instruction	Sanctioned/ approved Student strength	No. of students admitted
1.	Under-Graduate	B.Sc.(H) Biomedical Sciences	3 Year	XII	English	46	53
2.		B.Sc.(H) Botany	3 Year	XII	English	41	50
3.		B.Sc.(H) Chemistry	3 Year	XII	English	31	57
4.		B.Sc.(H) Computer Sciences	3 Year	XII	English	46	50
5.		B.Com.(H)	3 Year	XII	English	100	107
6.		B.Sc.(H) Electronics	3 Year	XII	English	31	45
7.		B.Sc.(H) Mathematics	3 Year	XII	English	31	141
8.		B.Sc.(H) Physics	3 Year	XII	English	31	52
9.		B.Sc.(H) Zoology	3 Year	XII	English	41	46
10.		B.Sc. Life Sciences	3 Year	XII	English	42	76
11.		B.Sc. Physical Sciences With Chemistry	3 Year	XII	English	41	67
12.		B.Sc. Physical Sciences With Computer Sciences	3 Year	XII	English	31	41
13.		B.Sc. Physical Sciences With Electronics	3 Year	XII	English	41	59

1.	Post-Graduate[#]	M.Sc. Chemistry	2 Year	Graduation	English	31	09
2.		M.Sc. Maths	2 Year	Graduation	English	31	05

[#]Classes are held at respective departments of University of Delhi.

Integrated Programme PG	Not Offered by Delhi University					
Ph.D.	Zoology, Chemistry, Bio Medical Sciences, Electronics	Minimum 3 Years	Postgraduate	-	-	07 pursuing and 2 completed
M. Phil.	Not Offered at the college level					
Certificate Courses	Russian	1Yr.	XII	English	20	18
	German	1Yr.	XII	English	63	31
	French	1Yr.	XII	English	63	48
	Spanish	1Yr.	XII	English	63	34
UG Diploma	French -	1 Yr.	XII and Certificate course in French	English	32	-
	German	1Yr.	XII and Certificate course in German	English	32	12
	Spanish	1Yr.	XII and Certificate course in Spanish	English	32	-
PG Diploma	-	-	-	-	-	-
Any Other (specify and provide details)	Short Term Course On Effective Communication And Personality Development Through Theatre	100 hrs.	XII	English And Hindi	32 in two batches	35

		Short Term Course On English Language Proficiency Course	80hrs.	XII	English	-	25
		Certificate Course In Bioinformatics And *In Silico* Drug Discovery	128 hrs.	XII Pursuing Graduation	English	50	42

13.   Does the college offer self-financed Programmes?

Yes   ☑   No ☐

If yes, how many? | 12 |
        Undergraduate Courses
1. B.Sc. (H) Biomedical Sciences
2. B.Sc. (H) Computer Sciences
ADD ON COURSES
3. Certificate Course In French
4. Certificate Course In German
5. Certificate Course In Spanish
6. Certificate Course In Russian
7. Diploma Course In French
8. Diploma Course In German
9. Diploma Course In Spanish
10. Certificate Course in Bioinformatics And *In Silico* Drug Discovery
11. Short Term Course on Effective Communication And Personality Development Through Theatre
12. Short Term Course on English Language Proficiency Course

14. New programmes introduced in the college during the last five years if any?

Yes	√	No		Number	13 Undergraduate + 01Certificate Course

In 2010-11, 09 Undergraduate Honours Courses and 04 Undergraduate interdisciplinary Courses in Semester mode were introduced. (Replacing Annual mode Honours Courses and annual mode Programs Courses)
1.   B.Sc.(H) Biomedical Sciences
2.   B.Sc.(H) Botany
3.   B.Sc.(H) Chemistry
4.   B.Sc.(H) Computer Sciences
5.   B.Sc.(H) Electronics
6.   B.Sc.(H) Mathematics
7.   B.Sc.(H) Physics
8.   B.Sc.(H) Zoology
9.   B.Com.(H)
10. B.Sc. Life Sciences

11. B.Sc. Physical Sciences With Chemistry
12. B.Sc. Physical Sciences With Computer Sciences
13. B.Sc. Physical Sciences With Electronics

In 2013-14, 09 Undergraduate FYUP Courses were introduced and reverted back to earlier run courses as in 2012-13 other than B.Tech. programmes in 2014-15 by University of Delhi.

The Four Year Undergraduate Programme
1. Bachelor with Honours Biomedical Science
2. Bachelor with Honours Botany
3. Bachelor with Honours Chemistry
4. B. Tech. Computer Science
5. B. Tech Electronics
6. Bachelor with Honours Physics
7. Bachelor with Honours Zoology
8. Bachelor with Honours Mathematics
9. Bachelor with Honours Commerce

Only the following two courses are running in their second years, with no new admissions in 2014-15.
1. B. Tech. Computer Science
2. B. Tech. Electronics

In 2012-13, Certificate Course in Bioinformatics and in *Silico* Drug Discovery was introduced by Department of Biomedical Sciences.

15. List the departments :(respond if applicable only and do not list facilities like Library, Physical Education as departments, unless they are also offering academic degree awarding programmes. Similarly, do not list the departments offering common compulsory subjects for all the programmes like English, regional languages etc.)

Faculty	Departments (e.g. Physics, Botany, History etc.)	UG	PG	Research
Science	1. Botany 2. Bio Medical Sciences 3. Chemistry 4. Computer Sciences 5. Electronics 6. Mathematics 7. Physics 8. Zoology	1. Botany 2. Bio Medical Sciences 3. Chemistry 4. Computer Sciences 5. Electronics 6. Mathematics 7. Physics 8. Zoology	1.Chemistry 2. Mathematics	1.Bio Medical Sciences 2.Chemistry 3.Zoology 4. Electronics
Arts	-	-	-	-
Commerce	Commerce	Commerce	-	-
AnyOther (Specify)	-	-	-	-

16. Number of Programmes offered under (Programme means a degree course like BA, B.Sc., MA, M.Com)
    a. Annual system
    b. **Semester system** | 13UG+02PG |
    c. trimester system
17. Number of Programmes with
    a. Choice Based Credit System | None |
    b. Inter/Multi disciplinary Approach | 4 |
        1. B.Sc. Life Sciences
        2. B.Sc. Physical Sciences With Chemistry
        3. B.Sc. Physical Sciences With Computer Sciences
        4. B.Sc. Physical Sciences With Electronics
    c. Any other (specify and provide details) | |

18. Does the college offer UG and/or PG programmes in Teacher Education?

    Yes [ ]   **No** [√]

19. Does the college offer UG or PG programme in Physical Education?

    Yes [ ]   **No** [√]

20. Number of teaching and non-teaching positions in the Institution (2014-15)

Positions	Teaching faculty						Non-teaching staff		Technical staff	
	Professor		Associate Professor		Assistant Professor					
	*M	*F	*M	*F	*M	*F	*M	*F	*M	*F
Sanctioned by the UGC/University/ State Government			115				38		72	
Recruited			7#	42#	17	08	33	03	46	06
Yet to recruit			41^				02^		20^	
Sanctioned by the Management/ society or other authorized bodies	-	-	-	-	-	-	-	-	-	-
Recruited										
Yet to recruit										

*M-Male*F-Female
Promotion under CAS/MPS
^ Adhoc/Temporary/Contractual Staff

21. Qualifications of the teaching staff:

Highest qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent teachers 74							
D.Sc./D.Litt.	-	-	-	-	-	-	-
Ph.D.	-	-	06	34	12	05	57
M.Phil./M.Tech.			01	07	02	01	11
PG			00	01	03	02	06
Temporary teachers 41(Temporary+ Adhoc)							
Ph.D.	-	-	-	-	07	13	20
M.Phil./M.Tech.	-	-	-	-	09	04	13
PG	-	-	-	-	17	24	41
Part-time teachers							
Ph.D.	-	-	-	-	-	-	-
M.Phil.	-	-	-	-	-	-	-
PG	-	-	-	-	-	-	-

22. Number of Visiting Faculty/Guest Faculty engaged with the College. 09(UG)+05(Foreign Language)+02(ELPC)+09(ECPDT)+14(BSDD)

39

23. Furnishthenumberofthestudentsadmittedtothecollegeduringthelastfour academic years. (Data is given for all three years including all courses (UG, PG, Ph.D, FL courses, other add on courses)

Categories	2011-12 I+II+III		2012-13 I+II+III		2013-14 I+II+III		2014-15 I+II+III	
	Male	Female	Male	Female	Male	Female	Male	Female
SC	97	50	123	61	147	62	191	83
ST	17	10	19	13	44	10	45	21
OBC	182	85	293	97	318	102	435	116
General	796	604	722	621	728	567	829	530

24. Details on students enrollment in the college during the current academic year (2014-15)*

Type of students	UG	PG	M. Phil.	Ph.D.	Total
Students from the same State where the college is located	733	15		03	751
Students from other states of India	1237	14		02	1253
NRI students	00	00		-	00
Foreign students	03	00		-	03
Total	1973	29		05	2007

25. Drop out rate in UG and PG(average of the last two batches)

UG	7.31%		PG	0%

26. Unit Cost of Education
(Unit cost=total annual recurring expenditure (actual) divided by total number of students enrolled)

(a)including the salary component   **Rs.** 96,566.81

(b) excluding the salary component   **Rs.** 4,010.94

27. Does the college offer any programme/s in distance education mode (DEP)?

Yes ☐   **No** ☑

28. Provide Teacher-student ratio for each of the programme/course offered
     17:1

29. Is the college applying for

Accreditation: Cycle1 ☑ Cycle2 ☐ Cycle3 ☐ Cycle4 ☐
Re-Assessment: ☐

30. Date of accreditation*(applicable for Cycle2, Cycle3, Cycle4 and re-assessment only)
Not Applicable as Accreditation is being sought for cycle 1.

31. Number of working days during the last academic year.   242

32. Number of teaching days during the last academic year   180
(Teaching days means days on which lectures were engaged excluding the examination days)

33. Date of establishment of Internal Quality Assurance Cell (IQAC)
IQAC   31/10/2014
34. Details regarding submission of Annual Quality Assurance Reports (AQAR) to NAAC
Not Applicable as Accreditation is being sought for the first time.
35. Any other relevant data (not covered above) the college would like to include. (Do not include explanatory/descriptive information)   **None**

Part II: Criteria-wise input

Criterion I: Curricular Aspects

Curriculum Design and Development

1.1 Curriculum Planning and Implementation

1.1.1 State the vision, Mission and objective of the institution and describe how these are communicated to the student, teachers, staff and other stake holders.

We at Acharya Narendra Dev College have a vision for our college to be recognized as a 'Centre of excellence in educational and professional development', to contribute to India and the world through excellence in scientific and technical education and research, to serve as a valuable resource for industry and society and remain a source of pride for all students and Faculty.

The college adopted the by-line *'beyond the classroom'* a few years back. Today it's not merely rhetoric or an ornate line but a mission. The mission of the college is to develop a new breed of creative graduates, experts in their discipline with a thorough understanding as to how innovation can rapidly convert knowledge, ideas and inventions into products, services and policies for economic and social benefit. To generate new knowledge by engaging in cutting-edge research and to promote academic growth by offering state-of-the-art undergraduate programmes and add on courses.

The policies and the programs of the college are designed to equip the students for all futuristic needs of an individual, society and the country as per the College's newly adopted byline philosophy ***Preparing for the future @ ANDC.***mailto:future@ANDC'.All

We strive to create a shared learning environment and offer our students high quality education. The college provides innovative learning and teaching relevant to the present context. The college is proud of its learned faculty that excels in both academics and research activities. Our objective is to develop human potential to its fullest extent so that intellectually and imaginatively gifted leaders can emerge in diverse professions.

The college prospectus and the web site emphasizes on all of the above in the introductory note of 'About us…'.The Orientation day arranged for the first year batch introduces them to the philosophy, facilities and faculty of the College. The society functions are planned with focus on the broader objectives of the College. Students are given hands-on experience through their stay in the College in keeping with the college mission. The Staff Council of the College where all faculty are members also takes into cognizance the vision of the college while taking any decisions. The Governing Body is also well informed about all the activities of the College and all decisions are recorded in the minutes.

1.1.2 How does the institution develop and deploy action plans for effective implementation of the curriculum? Give details of the process and substantiate through specific examples

A lot of planning is essential for effective implementation of the curriculum. Implementation needs to be planned on short- and long-term basis and delivered in stages to suit the individual needs of each institution. As a result of these strategies, staff members are involved in review and design processes which respond more meaningfully to the needs and aspirations of the students and community.

Non-recurring requirements for the laboratories are planned and processed well in advance to support the implementation. Contingency is readily available for buying the chemicals, glassware and other such items that are required on a daily basis.

Teachers work collaboratively to develop and implement common authentic assessments that provide value added perspectives to the students' progress towards learning objectives.

ERP Solution is available in college to automate the life cycle of the college, where even periods with attendance can be uploaded.

For effective implementation of the curriculum, the college formulates such policies that are conducive to the implementation of teaching programmes in accordance with the norms stated by the University of Delhi. Various committees constituted in the Staff Council work for the betterment of the students, teachers and college as a whole.

The college has a Time-table Committee that include Teachers-in-charge of all the Departments of the College. The Committee ensures proper preparation and implementation of time table. Tutorials and practical's are included in timetable as per university norms. The timetable is displayed on the notice board and college website.

In each paper, 25% weightage is given to internal assessment and practical(s) separately. This includes 5% weightage to the attendance of the students in most of the courses.

A Moderation Committee is set up by the college for each department to monitor the internal assessment of each student to maintain uniformity in the marking scheme. This way we ensure assessment and continuous improvement in the learning process of the students.

1.1.3 What type of support (procedural and practical) do the teachers receive (from the university and/or institution) for effectively translating the curriculum and improving teaching practices?

The University has laid down all the rules, regulations and procedures in the university acts, statutes and ordinances of the University Calendar to be adopted by the institutions for monitoring and evaluating the policies and the plans. University regularly sends out all information on all policy decisions. The University works through Faculties, Committees, Academic Council, Executive Council in which faculty of the Colleges are members statutorily and through election. The Principal of the college is also on several University Committees and a member of the Academic Council.

At the time of implementation of Semester mode and the new curriculum at undergraduate level, the University anticipating the problems faced by the colleges, centrallypurchased computers and , laboratory equipment for distribution to the colleges ensuring smooth execution of semester scheme. The Principal and the several faculty members were part of Committees of the University taking decision on the kind and # of equipment and Computers required in various laboratories in the colleges.

As the new curriculum requires new methods of technology-enabled teaching-learning there was requirement for easy access to laptops, projectors and internet connectivity, the University also provided LCD projectors in each classroom and 25 laptops for teachers. Earlier, college had provided K-Yans – instruments with integrated LCD projectors and PC. The college has a Web facilitation Centre with 76 computers having high-speed internet connectivity. The college is Wi-Fi enabled through the campus. All teaching, non-teaching staff, and students are given unique login ids and passwords for internet access from anywhere in the college.

With the increasing strength of students, the demand for laboratories, additional class-rooms, and space for research work has also gone up. In spite of these limitations we have metamorphosed this small school campus into a campus appropriate for higher education. Many semi-permanent lecture theatres, laboratories, student plazas, bamboo canteen have been constructed to meet the

requirement of the College. The College has been grateful for good support from the University as well as the funding agency – the Government of the NCT of Delhi in all respects.

The College conducts workshops on a regular basis for faculty as well as for students in response to expressed need. Faculty is encouraged to attend the various workshops whenever possible to update themselves regularly.

The dynamic and research oriented faculty has been receiving research grants for several government funding agencies like DU, UGC, DST, DBT, MoEF, ICMR etc. The college provides the basic requirements for setting up a laboratory after sanction of projects by the funders. Active research helps the faculty to keep pace with the latest in their fields.

1.1.4 Specify the initiative taken up or contribution made by the institution for effective curriculum delivery and transaction on the curriculum provided by the affiliating University or other statutory agency.

The College campus brims with vibrant energy as the entire community comes together to develop a climate of interactive teaching-learning and introduce new pedagogic traditions. The college follows a meticulous plan for effective curriculum delivery. It prepares an academic calendar showing the details of the entire year's schedule. Common methodologies for assessment and monitoring of progress across the curriculum are taken care off.

Faculty members of the College are members of various Syllabi Committees of the University across subjects hence they have a say in how the syllabi is developed and in process of developing strategies for their implementation. Faculty and the students can make a comparison of the syllabi and the curriculum from different Indian and Global universities so that new innovated ideas can further be incorporated if needed. The design of the experiments/practicals is often done through committees in which faculty from our College are members. The institution ensures that the syllabi and the curriculum designed are implemented in the required manner to make it most efficient and rewarding. For maximum deliverance, the institute ensures that soft copies of all the syllabus of each source are available on the college website, to make it easily accessible for both the teachers and the students.

The college website is updated regularly. Faculty also use the wiki and the Moodle platform as well as Google-groups to share assignments, question papers, projects, presentations etc. for easy accessible to the students. The teachers were provided training and expertise to use web resources in the teaching-learning process. The college teachers have uploaded a lot of study material on University site (vle.du.ac.in).

To support the ever-increasing needs of the College, regular appointment of well-qualified teaching and non-teaching staff has been made since the inception of the College.

The college encourages the faculty members to attend Orientation/Refresher/Seminars/ Workshops/Conferences.

1.1.5 How does the institution network and interact with beneficiaries such as industry, research bodies and university in effective operationalization of the curriculum?

Our Institute has specialized programs that help in networking with the beneficiaries such as industry, research bodies and the University, for effective operationalization of the curriculum. The course structure of add-on courses like 'Bioinformatics and *in-silico* Drug Discovery' is formulated in consultation with the members of the course advisory committee consisting of eminent scientists from academia as well as industry.

The University with the support of all the colleges' regularly update and bring changes in the curriculum. Workshops are held where faculty from other colleges are invited to discuss, remove the hurdles for smooth operationalization of the curriculum. The college departments regularly interact with the University departments through whom the main policy is built.

The research center Collaborative Undergraduate Biology Education (CUBE) is a community initiative to promote collaborative education, research and outreach in biology in collaboration with Homi Bhabha Centre for Science Education (HBCSE), Tata Institute of Fundamental Research (TIFR). Its objective is to establish functional linkages across all spans (primary school to colleges to research centers).The Botany and Zoology departments of the college organize **CUBE workshops**, wherein students&/or teachers from other colleges of University of Delhi besides ANDC also participate.

The students of Science departments interact with scientists at various research institutions (such as TIFR, IUAC (New Delhi), NPL, IGIB, IITs, AIIMS, Talwar Research Institute, Hospitals, etc.) and University departments for completing their projects. These projects may be part of the Innovative projects of the University or those that are prescribed in the syllabi.

1.1.6 What are the contributions of the institution and/or its staff members to the development of the curriculum by the university? (Number of staff members/departments represented on the Board of studies, student feedback, teacher feedback, stakeholder feedback provided specific suggestions etc.)

In 1999, ANDC was the first college in University of Delhi to introduce the Honours course in Biomedical Sciences. The course was designed by faculty in the college in collaboration with the parent Department.

ANDC was the only college in Delhi University to offer B.Sc. (General) Sericulture (1995–2009) and one of the first few colleges to impart instruction in all computer based courses of the University, namely, B.Sc. (H) Computer Science, Bachelor of Computer Applications, PGDCA, B.Sc. (G) Computer Science. The major contribution in the curriculum development and later up-gradation was done by the teachers of the college.

The University of Delhi reviews and revises the curriculum and invites the college teachers for their suggestions. The teachers of all the departments were involved in curriculum development committees at the University level for different courses. Since last 5 years, 25 teachers (34%) have worked as members of curriculum development committees. There is representation of college teachers of each subject in the committee of Courses by seniority. Teachers are also members of the various faculties of the University by rotation.

One of the teachers had been the elected member of the Academic Council till 2014 for two terms (4 years) and the Principal is currently a member of the Academic Council.

The Principal regularly discusses with class representatives as well as Departments about the problems faced which are suitably addressed.

1.1.7 Does the institution develop curriculum for any of the courses offered (other than those under the purview of the affiliating university) by it. If yes, give details on the process (Needs Assessment, design, development and planning) and the courses for which the curriculum has been developed.

The Department of Biomedical Science of the college and Bhaskacharya College of Applied Sciences, University of Delhi jointly started a new add-on course in *Bioinformatics and in-silico Drug Discovery* for undergraduate and post-graduate students in 2012.

The primary aim of this course is to suit the fast track needs of bioinformatics and in-silico drug discovery divisions of pharmaceutical companies and research organizations. Keeping this in view, the course structure is formulated in consultation with the members of the course advisory committee consisting of eminent scientists from academia as well as industry. The coordinator for this add-on course (Dr. Gagan Dhawan, ANDC) has been trained in bioinformatics and in-silico drug discovery from the University of Edinburgh, UK under University of Delhi Faculty Training Program (Sept. 2010- Sept. 2011). Additionally, speakers from various institutes along with other faculty members of the two colleges are involved.

The College has been successfully running a 100-hour course 'Effective Communication and Personality Development through Theatre (ECPDT)' since 2008. The college engages experienced faculty from theatre for the course and designs the curriculum in consultations with experts of the field to develop the skills of communication, personality development and self-confidence in students. The college has been regularly updating the curriculum as per the needs of the students. The students are given certificates on successful completion of course based on evaluation by experts.

1.1.8 How does institution analyze/ensure that the stated objectives and curriculum are achieved in the source of implementations?

Curriculum Evaluation –Evaluation is the process of collecting Data on a programme or Curriculum to determine its value or worth with the aim of deciding whether to adopt, reject or revise the curriculum. The Institute wants to know whether the curriculum implemented has achieved its aims and objectives, teachers also want to know whether their classroom teaching is effective and also the curriculum developing team wants to know how to improve the curriculum. For the complete analysis the college has various Staff council committees for the proper functioning of the college. Each committee is responsible for the work assigned to it and the achievements of all the committees are reported in the annual report of the college. The Principal keeps regular check through the meetings with class representative and faculty. Result analysis of all the courses on regular basis is another efficient way of testing the success of curriculum implementation.

Another very effective method of collecting data is the regular feedbacks from the stakeholders. If any dissatisfaction is observed at any level the institution in collaboration with the university tries to amend the Curriculum.

All the departments of the college prepare their requirements for effective and efficient teaching and practical classes well in advance. The faculty is required to submit marks for assignments and class tests for all the subjects they teach two times every semester, ensuring that they are completing the syllabi in time. The feedback from students at various levels also ensures effective teaching and timely completion of curriculum.

1.2 ACADEMIC FLEXIBILITY

1.2.1 Specifying the goals and objectives give details of the certificate/diploma/skill development courses etc. offered by the institution.

Number of certificate/diploma/skill development courses has been started in our college in last few years. Each course started has some specific goals and brings about added value to the skills of our students. Along with these many **optional papers** are floated to be picked by the students to suit their career aspirations.

Add On Courses:

1.   CERTIFICATE COURSE IN BIOINFORMATICS AND IN–SILICO DRUG DISCOVERY (BIDD)

This self –finance course is of 128 hours. The first batch of this course commenced from July 2012.

Objective: This course is designed to suit the fast-track needs of global bio-informatics and in-*silico* drug discovery divisions of pharmaceutical companies.

The Course includes both lectures and hands-on sessions on biological databases, sequence and microarray analyses, phylogenetic analysis, importance of Bayesian statistics, molecular modeling and protein-drug docking.

2.   EFFECTIVE COMMUNICATION AND PERSONALITY DEVELOPMENT THROUGH THEATRE (ECPDT)

ECPDT is a 100-hour add-on course for the students of the college that has been conducted in College since 2008.

Objective: The course seeks to hone in students skills such as effective communication, dynamic leadership through problem solving, critical thinking and decision-making, ability to think creatively. The course is inspired by vision of life-skills-based education of UNICEF and WHO and dedicated resource persons associated with National School of Drama act as mentors.

The course is self-financed and discount in fee is given to economically weaker students.

3. FOREIGN LANGUAGE CENTRE (FLC)

The college runs a FLC and has been offering the following foreign language courses (in a self-financed mode) approved by the University of Delhi, since 2003-04:

1) Certificate Course in French
2) Certificate Course in German
3) Certificate Course in Spanish
4) Certificate Course in Russian
5) Diploma Course in French
6) Diploma Course in German
7) Diploma Course in Spanish

The classes are scheduled in the late afternoons so as to suit working people. The Foreign Language Centre of the college is highly successful. The college has hired the services of guest faculties appointed by the University of Delhi to teach these courses.

4. ENGLISH LANGUAGE PROFECIENCY COURSE (ELPC)

It was started in 2011 as a flagship programme of Institute of Lifelong Learning (ILLL), University of Delhi. It has an 80-hour course-module and is taught by the English faculty in the College.

English that is the universal language in the cities is often perceived to be a barrier for those students who come from far-flung parts of the country or for those students who did not study in an English medium school. Looking at the pressing need to bridge the great social divide the College took the onus of joining the initiative taken up by the Institute of Life Long Learning, University of Delhi by conducting an English skills and personality development course called 'English Language Proficiency Course'. This course helped the students improve fluency, diction, pronunciation, public speaking capabilities and expression that are expected to pay dividends

when they appear in interviews or go for public speaking in the course of their career. Over the years, several students have successfully completed the course and received certificates for the same. The course content and innovative methods adopted to teach them the intricacies of the language are much appreciated.

5. **Skill Development courses in collaboration with National Skill Development Council (NSDC)**

The academic degrees obtained by students are not sufficient for the industry for their tasks. They look for candidates who come with some special skills but usually they end up having to train candidates again as per their Company's needs. To increase the employability of educated youth the National Skill Development Council (NSDC) ran various skill development programmes across the country. In 2014 the University of Delhi and NSDC signed a MoU to start a pilot project of skill development courses for students of DU. As part of this pilot project, our college offered a course on 'Equity Dealing' for students of various colleges of DU. The course was conducted in collaboration with IL&FS Pvt. Ltd. The course was designed by skill sector council and adheres to level 4 of skill sector council.

Next year the college plans to offer many other courses in collaboration with NSDC.

1.2.2 Does the Institution offer Programmes that facilitate dual degrees? If yes give details.

No such provision exists in the ordinances of University of Delhi.

1.2.3 Give details on the various institutional provisions with reference to academic flexibility and how it has been helpful to students in terms of skill development. Academic mobility, progression to higher studies and improved potential for employability. Issues may cover the following and beyond:

Since the curriculum and syllabi are prepared at the University level, flexibility depends on the approved structure. The College encourages Departments to float maximum options for students o choose, but actual numbers often reflect the number of teachers available to teach them.

The B.Sc. Physical Science Course in College is offered with the choice of three concurrent courses – students have to choose one amongst the following in their final year (Sem V): Electronics, Computer Science or Chemistry. The college has made provisions to allow a free choice among these courses for its students.

Similarly, in following Honours courses, the college provides the choice of specialization as provided in the approved syllabi of the University.

S.No.	Course	Options offered in the syllabi of the University	Options offered by the College
1.	B.Sc.(H) Comp. Sc.VI semester Paper CSHT-616	1. Software Testing 2.Artificial Intelligence 3.Network Programming and Administration 4.Data Mining 5.Combinatorial Optimizations	1. Software Testing 2. Network Programming and Administration

2.	B.Com. (H)	CH 5.4 (a) Financial Markets, Institutions and Financial Services (b) Compensation Management (c) Corporate Tax Planning (d) Advertising and Personal Selling (e) Business Data Processing-1 CH 6.4 (a) Entrepreneurship and Small Business (b) Fundamental of Investments (c) Consumer Relations and Customer Care (d) Business Tax Procedure and Management (e) Business Data Processing-II CH 3.5 Interdisciplinary (English/Phil./Pol. Sci./History/ Maths) CH 2.5 Hindi/Punjabi/Urdu/Telgu/Tamil /Oriya/Manipuri/Sindhi/Gujarati /Kannada/Assamese/Bengali (MIL)	CH 5.4 (a) Financial Markets, Institutions and Financial Services (b) Compensation Management (c) Corporate Tax Planning (d) Advertising and Personal Selling CH 6.4 (a) Entrepreneurship and Small Business (b) Fundamental of Investments (c) Consumer Relations and Customer Care (d) Business Tax Procedure and Management CH3.5 English CH 2.5 Hindi However those students who have not studied for Hindi up to class VIII are offered Readings in Gandhi Paper.
3.	B.Sc.(H) Zoology ZOHT 612	1. Applied Zoology 2. Bioinformatics 3. Environmental Management	1. Applied Zoology 2. Environmental management
4.	B. Sc.(H) Mathematics Semester VI	1.Discrete Mathematics 2.Mathematical Finance 3.Mechanics 4.Number Theory	1. Discrete Mathematics 2. Number Theory
5.	B.Sc.(H) Botany BTHT509 / LSPT 409	1. Environmental Management 2. Bioinformatics	1. Environmental Management 2. Bioinformatics
6.	B. Sc. (H) Biomedical Science BOHT 612 a/b/c/d	1. Bioinformatics (BOHT 612a) 2. Human Genetics (BOHT 612b) 3. Medical Biotechnology (BOHT 612c) 4. Social and Preventive Medicine (BOHT-612d)	1. Bioinformatics (BOHT 612a) 2. Human Genetics (BOHT 612b) 3. Medical Biotechnology (BOHT 612c)

- **Choice based credit system and range of subject options:** Not yet available.
- **Courses offered in modular form:** Not yet available.
- **Credit transfer and accumulation facility:** Not yet available.
- **Lateral and vertical mobility within and across programmes and courses:** Not yet available.
- **Enrichment courses**

The college offers following enrichment courses:
1. ECPDT
2. BIDD
3. ELPC
4. Foreign Language courses
5. Skill development courses (NSDC)

Details of these are provided in section 1.2.1.

The courses are designed at the main departments of University of Delhi with the inputs and support of the teachers from constituent colleges and the curriculum offers a lot of academic flexibility. When the Four Year Undergraduate Program (FYUP) was introduced by the University of Delhi in the Academic session 2013-14, the University had brought in Discipline courses of Honours level (referred to as Discipline 1) in 40 subjects. Our college offered 11 subjects. Students could take admission to any one of them as per their choice and merit. They had an option in the second year to choose one or two more subjects as DC of the 11 subjects which the college was offering. They also had an option to choose four applied courses from about a total of about 18. One noncredit course was also taught in each semester.

It allowed lateral and vertical mobility by giving an option of choosing subjects from any streams as DC 11 subjects. So a science student could pick up subjects from Commerce, humanities and vice versa.

1.2.4 Does the Institution offer self-financed programmes. If yes, list them and indicate how they differ from other programmes, with reference to admission, curriculum, fee structure, teacher qualifications, salary etc.

The college offers 12 self-financed courses:

1. B.Sc. (H) BIOMEDICAL SCIENCES
2. B.Sc. (H) COMPUTER SCIENCES
3. CERTIFICATE COURSE IN FRENCH
4. CERTIFICATE COURSE IN GERMAN
5. CERTIFICATE COURSE IN SPANISH
6. CERTIFICATE COURSE IN RUSSIAN
7. DIPLOMA COURSE IN FRENCH
8. DIPLOMA COURSE IN GERMAN
9. DIPLOMA COURSE IN SPANISH
10. ENGISH LANGUAGE PROFICIENCY COURSE (ELPC)
11. BIOINFORMATICS AND IN SILICO DRUG DISCOVERY (BIDD) (Certificate Course)
12. EFFECTIVE COMMUNICATION AND PERSONALITY DEVELOPMENT THROUGH THEATRE (ECPDT)

The courses in S. No. 1 to 10 are approved and designed by the University of Delhi and all details are as per other regular courses. The course in S. No. 11 and 12 have been exclusively designed by the college and details are mentioned below.

Programme	ADD ON COURSE: CERTIFICATE COURSE
Name of the Course	BIOINFORMATICS AND IN SILICO DRUG DISCOVERY(BIDD)
Duration of the Course	128 Hrs.
Admission process	The students are admitted by the college through college admission committee as per the sanctioned strength in order of merit based on the degree/certificate.
Curriculum	The course structure is formulated in consultation with the members of the course advisory committee consisting of eminent scientists from academia as well as industry.
Fee Structure	The fee structure is decided by the college duly approved by the College Governing Body. It was Rs. 5000/- for the college students and Rs. 6000/- for others.
Teacher Qualifications and Salary	Qualifications as per requirements of the course and remuneration as per the rules of University of Delhi for Guest Teachers.
Programme	ADD ON COURSE: CERTIFICATE COURSE
Name of the Course	EFFECTIVE COMMUNICATION AND PERSONALITY DEVELOPMENT THROUGH THEATRE(ECPDT)
Duration of the Course	100 Hrs.
Admission process	Open to the students of the college as well as students from other colleges when slots are available. The students are selected by the college from among those registered for the course. Auditions are carried out for selection.
Curriculum	The course is inspired by, and seeks to implement UNICEF and WHO's internationally recognized vision of life skills based education. The course seeks to hone in students skills such as effective communication, dynamic leadership through problem solving, critical thinking and decision-making, ability to think creatively and act confidently through acting, improvisations, performances and scripting, teamwork and interpersonal relationships skills focusing on relationships with the self, friends and family, and society, and self-management and self-awareness building skills through effective conflict management, negotiations and the ability to cope with stress and manage time effectively.
Fee Structure	The fee structure is decided by the college. It was Rs. 5,000/- per student. Student concessions are available for students from lower economic background.

Teacher Qualifications and Salary	Faculty/Senior Experts including National School of Drama. Rs. 2000/- per session for 3 hour session.

1.2.5 Does the college provide additional skill oriented programmes, relevant to regional and global employment markets? If yes provide details of such programmes and the beneficiaries.

Programmes mentioned above in details section 1.2.4; BIDD. ELPC, ECPDT, Foreign language courses are specially designed to help students in global employment market. Students having these special skills after undergoing training under these specialized courses are fully equipped to apply to organizations like pharmaceutical companies, Tourism, Medical tourism, Call Centre catering to global markets, BPOs, KPOs etc. All these need skills of languages.

To ensure the employability of students the college runs skill development courses in collaboration with NSDC, as part of NSDC-DU MoU. These courses provide students with additional skill required by the market. The college in 2014 offered a course in Equity Dealing for students of various colleges of DU. The course allows them to become self-reliant and earn on their own. The college plans on offering more courses from next year.

1.2.6 Does the university provide for the flexibility of combining the conventional face to face and distance mode of education for students to choose the courses/combination of their choice? If yes, how does the institution take advantage of such provisions for the benefit of the students?

No, the University of Delhi does not provide such flexibility.

1.3   CURRICULUM ENRICHMENT

1.3.1 Describe the efforts made by the institution to supplement the university's curriculum to ensure that the academic programmes and Institutions goals and objectives are integrated?

The University's curriculum is supplemented through co-curricular and extra-curricular activities which involves both and cultural and Academic projects like

- ELITE-(Education in a Lively and Innovative Training Environment)(Sec.3.1.4)
- ELPC sec 1.2.1
- ECPDT sec 1.2.1
- Foreign language courses sec 1.2.1
- IEDC-Innovation and Entrepreneurship development Centre; sec. 1.3.2
- Innovation projects sanctioned by Delhi University.
- Workshops on various topics.
- Six teachers recognized as Ph.D. guide
- Two Students have completed Ph.D. under supervision of teacher from our College.
- 452 Research Publications by both faculty and students.(Departmental evaluation reports)
- Books written by teachers(List-3.4.3)
- Contribution in form of e-Chapters at ILLL(Institute of Life Long Learning

- SPIE(Society of Photo-Optical Instrumentation Engineers) Chapter of University of Delhi at ANDC Chapter –An endeavor of our college(Sec.-7.3)
- Participation of students in research project and presentation of research papers in National and international conferences. .(Departmental evaluation reports)
- 45 completed and on-going projects in last four years sanctioned by CSIR, UGC, OSDD, DST, DBT, MoEF(Sec.3.2.7)
- Various scholarship and awards awarded to our meritorious students.(Departmental evaluation reports)
- Help needy students via **SAKSHAM**(Student Aid for Knowledge, Success, Honour and Motivation)(Departmental evaluation reports)
- **EXPLORE** (Section 5.1.4)
- Teachers enriching school education (NCERT books, teachers training for practicals) . (Departmental evaluation reports)
- Awards/Honours for teachers like best teachers award by different organizations(Sec.2.4.3)
- Teachers are recognized/invited as visiting professor/faculty in foreign universities.(Sec.-3.4.4)

1.3.2 What are the efforts made by the Institution to enrich and organize the curriculum to enhance the experiences of the students so as to cope with the needs of the dynamic employment market?

In order to further enrich the curriculum keeping in mind the employment market, the college has taken following steps.

Innovation and Entrepreneurship development Centre (IEDC)

IEDC is one of the successful programs established at the College in July 2010 to motivate students towards Entrepreneurship. The project is sponsored by the National Science and Technology Entrepreneurship Development Board (NSTEDB), Department of Science and Technology (DST), Govt. of India. IEDC facilitates students with the pre-requisite information for setting up an enterprise and encourage them to become successful entrepreneur. It helps in promoting self-employment and develops high quality entrepreneurship amongst students. The main focus to establish this cell is to set up an institutional mechanism to help promote knowledge based and technology driven enterprises and aim is to convert "job-seekers" into "job-generators".

The following students of the College started their own companies, after graduation.

S.No.	Name of Company	Name of Promoter	Product
1.	People Media Networking	Mr. Sanjeev Kumar	PandeyMedia & Entertainment
2.	Fear Bids Services	Mr. Vishal Bhushan Mr. Mohit Baluni	IT Marketing Co.
3.	3 Strings	Mr. Vishal Bhushan Mr. Mohit Baluni	Marketing Solutions Co.
4.	Mile Stone One	Mr. Deepak Verma	Herbal Shampoo & Cosmetics
5.	Organicus	Mr. Aakil Jamil	Herbal Shampoo & Cosmetics
6.	Plutus Enterprises	Mr. Akshat Chada	Trading

7.	Maverick Sercvices	Mr. Rahul Rai	IT Services
		Mr. Harsh	
8.	Ariano Overseas	Mr. Arun Kr. Gaur	Garments Manufacturing
9.	Panjabi Beats Event	Mr. Harpreet	Event Management

The creation of the Entreprenuership Laboratory encouraged the undergraduate students of the college to establish an in-campus company, called ANDY that depicts the spirit of AND Youth. Even rudimentary exposure has empowered the undergraduate students to shoulder responsibilities regarding management of ANDY's day-today affairs including administrative, marketing and financial. The yeoman efforts put in by motivated students has resulted in the development of cost-effective and eco-friendly (herbal) products including soaps, shampoos, hand-wash and sanitizers in the first instance. ANDY is one of the nascent initiatives and the first in any undergraduate college under University of Delhi.

Yuvodaya: ANDC – METLIFE initiative

The Department of Commerce of the college started an add-on course on insurance in collaboration with Met life in the year 2009 for preparing students for the corporate world. The courseware designed around nine weeks of extensive classroom teaching by certified MetLife faculty was followed by four weeks of on-job-training. After completion of course, successful candidates were offered positions by MetLife.

ICICI Study Centre

ICICI bank in collaboration with Delhi University started short term job oriented course in foundation of banking and finance at ANDC in 2008 for which teachers from the college were trained by the bank to act as resource person for the course. For this purpose a study Centre was set up in the college by ICICI bank.

All 24 students of our study centre successfully completed the course and were placed in various branches of ICICI Bank in NCR.

Career Counseling & Placement Cell (CCPC)

The Placement Cell at Acharya Narendra Dev College has emerged as a facilitator for students, aspiring not only to get jobs but also to improve their skills to meet the current requirements in the corporate world. Focusing on the grooming of students to enable them achieve their objective, several career counseling seminars and skill development sessions are offered to students. CCPC organizes workshops to equip the students with additional skills to enlist them in the list of preferred candidates. It organizes self-grooming workshop by professionals involving series of sessions on preparation for personal interview, group discussion, CV writing.(Sec.5.1.9)

A series of such sessions were organized which included personal skills development by Hero Mindmine, GD, Interview & CV preparation by Roots Education and PT Education, Opportunities in Aviation industry by TransAsia Aviation, World of Animation by Animaster.

The college regularly invites renowned speakers, industrialists, young entrepreneurs, scientists from research labs, pharmaceuticals, multinational organizations, etc. for brain storming sessions of the students and the faculty. They come and give new ideas and avenues for the graduating students. Academicians from topics related to the curriculum are specially invited from the universities to enrich students and faculty with the latest research work.

- ELPC and ECPDT further give our students confidence to face the employment market. Refer section 1.2.1.
- **Skill Development courses in collaboration with National Skill Development Council (NSDC)** Refer section 1.2.1.

1.3.3 Enumerate the efforts made by the Institution to integrate the cross-cutting issues such as gender, climate change, Environmental Education, Human Rights, ICT etc. in to the curriculum.

Our college gives special importance to issues which are now considered as social and Global issues.

Gender

Gender cuts across all disciplines and has wide ranging implications for human relations in general and education in particular. Most curriculum areas are associated with one gender or other. Our institute believes in gender-sensitive approach where we give girl students equal opportunity to participate and enjoy the college education.

Our special enriched programme like Sashakt is designed specially to cater to sensitive issues like gender equality. Our students are sensitized regularly by holding expert talks on such gender based issues. Sashakt – A Society for Women Empowerment. Sashakt is a college society that is geared towards alleviating gender based discrimination and trying to eliminate deep-rooted social malice towards women. The college believes in empowerment of women and therefore makes augmented efforts towards ensuring not just physical or psychological well-being of women but complete personality development through medical counseling, sex education and explanations of laws on women' rights. Sashakt's activities include preventing harassment of any type, creating awareness on matters of health, addressing women-related issues and spreading awareness on gender-sensitization. It also organizes Self-defense training for women in association with Delhi Police besides acting as a support system to College Complaint Cell (CCC). The society along with CCC has been regularly conducting discussions on what constitutes sexual harassment and on the steps to take, in case faced with such a situation, with all constituents of the college community.

Climate Change

Our students are exposed to the concept of climate and sustainability and their connection to it. Global climate change and its impact on people and resources pose serious societal challenges. These environmental issues are dealt with them in the university curriculum in Chemistry and Botany. Invited talks are held in college to sensitize our students through our ECO club and environmental society. Poster making competitions, Painting competitions, debates and essays are regularly held in college dealing with important global issues like Climate change. We would like to specially mention one of our students

In 2009, Ms. Ruchika Pokhriyal B.Sc. (H) Biomedical Science Part II won the Prithvi Ratna Prize in the All India level essay competition organized by MoEF /WWF-India in the 19-21 years age group, English category. She was one of four students selected from all over the country to attend the United Nations Framework Convention for Climate Change at Copenhagen, Denmark from 7 –18 December 2009 as part of the official youth delegation.

Environmental Education

Our college believes in preparing our young minds for a sustainable future and global issues like environment is carefully embedded in their minds. Workshops, talks, important lectures by environmentalists are held regularly to sensitize our students. Eco and environment club motivate students to take part in good practices like tree plantations, cleanliness drive, help students to create pollution free environment. The objective of environmental education in our college is to increase public awareness about environmental issues, active participation of students in the protection of environment and the prudent and rational use of natural resources. All this is achieved by holding seminars, workshops, poster competitions etc. to keep the spirit of common heritage of mankind i.e. unpolluted environment**.**

The college offers a compulsory paper on Environmental Studies for all its courses since 2014. The course is as per UGC guidelines.

Information and Communication Technology (ICT)

Our college has been a pioneer college as far as ICT education is concerned. Students are given opportunity to develop their ICT capability through the use of ICT tools to support their learning in all subjects. This is achieved in our college by providing easy access to computers, laptops and Wi-Fi facility. The college issues laptops to all differently-abled and needy students. We have a fully equipped Web facilitation center that is easily accessible to each student. The students have been provided with individual access through 24 X 7 100MBPS Wi-Fi connectivity. This helps them in refining their knowledge and simplifies their work.

The college communicates to the students through Google groups made for each class. They have been provided with institutional email ids through which the college communicates with the students.

Regular workshops on Linux, FOSS and other computer based tools are held to assist them in using ICT skills.

Recently the college has installed ERP automation to facilitate an effective and transparent implementation of its academic programmes.

1.3.4 What are the various value added courses/enrichment programmes offered to ensure holistic development of students?

The college offers the following value-added courses/enrichment programmes to ensure holistic development of students:

A. Moral and ethical values
1. Effective Communication and Personality Development through Theatre (ECPDT)

The course is inspired by, and seeks to implement UNICEF and WHO's internationally recognized vision of life skills based education. The course seeks to hone in students skills such as, teamwork and interpersonal relationships skills focusing on relationships with the self, friends and family, and society, and self-management and self-awareness building skills through effective conflict management, negotiations and the ability to cope with stress and manage time effectively.

2. Programme for women empowerment – *Sashakt*

Sashakt is a college society that is geared towards alleviating gender based discrimination and trying to eliminate deep-rooted social malice towards women. The college believes in empowerment of women and therefore makes augmented efforts towards ensuring not just physical or psychological well-being of women but complete personality development through medical

counseling, sex education and explanations of laws on woman's rights. Sashakt's activities include preventing harassment of any type, creating awareness on matters of health, addressing women-related issues and spreading awareness on gender-sensitization. It also organizes Self-Defence training for women in association with Delhi Police besides acting as a support system to College Complaint Cell (CCC). The society along with CCC has been regularly conducting discussions on what constitutes sexual harassment and on the steps to take, in case faced with such a situation, with all constituents of the college community.

B. Employable and life skills

1. The Innovation & Entrepreneurship Development Centre (IEDC) of the college conducts regular Entrepreneurship Awareness Camp (EAC) and Entrepreneurship Development Programme (EDP).

EAC creates awareness among faculty and students about various facets of entrepreneurship as an alternative career option to highlight the merits of pursuing this opportunity in the colleges of University of Delhi.

EDP fosters better linkages between the college, industries and R&D institutions and other related organizations engaged in promoting Small and Medium Enterprises (SMEs) including NGOs and other voluntary organizations. Keeping this in view, two staff members of Acharya Narendra Dev College have been trained to act as resource persons in guiding and motivating young students to take up entrepreneurship as a career.

The EDC of the college arranges Entrepreneurship Awareness Camp where the main resource person is invited from the National Science and Technology Entrepreneurship Development Board (NSTEDB). Innovation in Entrepreneurship and importance of being open to new ideas is emphasized in our college where economic, social, scientific realities and the capacity to understand evolutionary processes in the future is imbibed among our students.

2. ELPC (refer section 1.2.1)
3. EXPLORE (refer section 5.1.4)

C. Better career options

1. College Placement Cell:

The college has an active placement cell with a dedicated regular placement officer which organizes pre-Placement seminars in the college to give students fair idea of the type of skills required from them. This cell also organizes many placement camps by various organizations for campus placements and works in coordination with central placement cell of DU.

2. SPIE chapter of University of Delhi at ANDC:

Its activities are specially designed to provide students with hands-on experience in the field of optics and photonics, which helps students to get placed in higher education and industry.

3. ELITE (refer section 3.1.4)

D. Community orientation

1. National Service Scheme (NSS)

The **NSS** unit of the college has been striving hard to inculcate the spirit of voluntarism amongst the students and staff and to convince them to contribute their service for the improvement of society The NSS unit of the college is one of the most important pillars of its social outreach programme. This year the society had as many as six hundred enrolments. Major activities of NSS involve:

• 'Free Health Check-up Camp', in association with Cipla and Janki Healthcare Centre is organized for the students, staff, teachers and the nearby residents

• A self-defense training session for the girl students is organized in association with Delhi Police.

• A cleanliness drive with Eco-Club is organized on the NSS day.

• The Diwali Mela "SAHYOG" is organized to support various NGOs working for differently abled people. They sold self-made products such as candles, decorative materials, handmade products, diyas and various stationery items

• Blood donation camp

• An awareness talk on HIV/AIDS by Delhi AIDS Control Society

• Mock drills are conducted with the help of District Disaster Management Authority.

• The NSS unit of college organizes awareness camps for Thalassemia. It has adopted 10 thalassemic girls from economically weaker section for their blood transfusion needs.

2. **Equal Opportunity Cell (EOC)**

EOC of the College working in collaboration with EOC of the University of Delhi aims at ensuring a level playing field for all stakeholders of the college. It strives hard to ensure equity and equal opportunity for persons with disabilities (PWDs) and those belonging to marginalized and deprived sections of the society. Specifically, ground floor classrooms, accessible ramps, examination writers are some of the responsibilities that EOC ensures unfailingly. It also tries to create a congenial atmosphere for academic interaction and growth of healthy interpersonal relations amongst students. Working in tandem with the NSS unit, it works at providing guidance and counseling with respect to academic, financial, social and other matters that enhance diversity within the college. It is heartening to note that indoctrination by college EOC has resulted in inspiring a number of differently-abled students to come forward for para-sports, a field that the sports teacher in college specializes in!

3. **Student Aid for Knowledge, Success, Honour And Motivation (SAKSHAM)**

The college has a benevolent scheme SAKSHAM in place, with a sole objective to empower inclusive education for the needy and deserving students. Erstwhile known as Student Aid Fund, SAKSHAM today is an instrument that envisages ensuring holistic education for a needy student for the entire duration of his/her study. After a rigorous evaluation of the needs, selected students are supported in the form of full fee waiver, book bank facility, monthly stipend and reimbursement of stationery. SAKSHAM also supports students who may need financial help for any add-on course, excursions – in effect it helps the needy in any-which way. Another recognized initiative under SAKSHAM is the 'earn-while-you-learn' programme wherein students are deputed for hands-on work in library, administration and accounts. SAKSHAM has spawned many poignant-to-success stories.

1.3.5 Citing a few examples enumerate on the extent of use of the feedback from stakeholders in enriching the curriculum?

Our college pays special attention to our Stakeholders i.e. both the Students and the faculty. They are free to express their expressions and views about anything they feel strongly about, not only are they allowed to give their feedbacks on various matters they are heard of and full cooperation is extended towards them so that their requests, complaints, grievance etc. are catered to. To cite few examples

*Remedial classes are held to help the weak students based on the feedback taken from the students.

*If Majority of the students are facing problem in a particular subject or a paper ,specialized classes are arranged from either in house or even subject experts are invited from outside to assist the students.

*If students request for some special course or a workshop which assist them in their curriculum we ensure that those value added workshops are conducted for them.

*Linux workshops are specially conducted for students to assist them in their curriculum enrichment as students are supposed to work on Linux based laptops provided to them by the university.

*Special English classes are sometimes held to assist the students facing problem in the language so as to assist them understanding the curriculum better.

*If there is financial problem faced by some students and on getting feedback from them our student aid fund assist them in continuing the education to avoid college dropout rate.

*If counseling is needed by students we provide them Mentors to assist them in their problems.

1.3.6 How does the institution Monitor and evaluate the quality of its enrichment programmes?

All types of enrichment programmes mentioned so far are regularly monitored by our monitoring committees of the college. The class tests, assignments, tutorials, viva voce etc. all compiled together for different classes and courses regularly keeps a check on the quality of our enrichment programmes.

1.4 FEED BACK SYSTEM

1.4.1 What are the contribution of the institution in the design and development of the curriculum prepared by the university?

Teachers of our college have been regularly contributing in the Design and development of the curriculum at various levels. Many teachers have been the members of curriculum development committees of the university and have also contributing to the committees of the courses.

The University of Delhi reviews and revises the curriculum and invites the college teachers for their suggestions. The teachers of all the departments get involved in curriculum development committees at the University level for different courses. Since last 5 years, 25 teachers (34%) have worked as members of curriculum development committees. There is representation of college teachers of each subject in the committee of Courses by seniority.

1.4.2 Is there a formal mechanism to obtain feedback from students and stakeholders on curriculum? If yes how is it communicated to the university and made use internally for curriculum enrichment and introducing changes/new programmes?

There is no formal method of conducting feedbacks from the students on curriculum. The students either convey their problems to the mentors assigned to them or the teacher in-charge of their department. The principal has regular meetings with class representative to get their feed backs and if need be it is further communicated to the university authorities. The teachers also collect some feedback from the class representatives and forwards them to the principal. Normally all this exercise is conducted at the end of each session or semester. If the university is convinced about it,

it is discussed for further modification in the curriculum design committees called as committee of courses.

1.4.3 How many new programmes /courses were introduced by the institution during the last four years? What was the rationale for introducing new courses/programs? Any other relevant information regarding curricular aspects which the college would like to include.

The college is a constituent unit of University of Delhi and runs only those programmes which are approved by the University and implement changes as suggested by the University from time to time. The following changes have been implemented in the last few years.

In 2010-11, 09 Undergraduate Honours Courses and 04 Undergraduate interdisciplinary Courses in Semester mode were introduced.

The courses were introduced to replace the annual mode in Honours Courses and Programs Courses to semester system.

1. B.Sc. (H) Biomedical Science
2. B.Sc. (H) Botany
3. B.Sc. (H) Chemistry
4. B.Sc. (H) Computer Science
5. B.Sc. (H) Electronics
6. B.Sc. (H) Mathematics
7. B.Sc. (H) Physics
8. B.Sc. (H) Zoology
9. B.Com. (H)
10. B.Sc. Life Sciences
11. B.Sc. Physical Science with Chemistry
12. B.Sc. Physical Science with Computer Science
13. B.Sc. Physical Science with Electronics

In 2013-14, the following nine Undergraduate FYUP Courses were introduced and withdrawn in 2014-15 as per University of Delhi decision.

The Four Year Undergraduate Programme.

1. Bachelor with Honours Biomedical Science
2. Bachelor with Honours Botany
3. Bachelor with Honours Chemistry
4. B. Tech. Computer Science
5. B. Tech Electronics
6. Bachelor with Honours Physics
7. Bachelor with Honours Zoology
8. Bachelor with Honours Mathematics
9. Bachelor with Honours Commerce

• Only the following two courses are running in their second years, without new admissions in 2014-15.

1. B. Tech. Computer Science

2. B. Tech. Electronics

• In 2012-13, Certificate Course in 'Bioinformatics and in silico Drug Discovery was introduced in the Department of Biomedical Sciences.

Our Teachers have contributed in a big way in enriching the curricular aspect directly or indirectly.

CRITERION II
TEACHING - LEARNING AND EVALUATION

2.1 Student Enrolment and Profile

2.1.1 How does the college ensure publicity and transparency in the admission process?

- The Principal is invited on the TV programmes and Community Radio to talk about the courses available in the college and the admission process.

- The Principal attends the Open Days organized by the University and speaks about the college.

- In addition to the Open Day organized by the university, the college also organizes its own **Open Day** every year. We hold introductory sessions for prospective students (alongwith their guardians) throughout the day. We tell them about the various options available, show them our facilities, and guide them towards their future career options.

- The college prospectus with latest information is printed every year both in hardform as well as on college website. This gives the complete information regarding admission criteria, courses available, fee structure, college infrastructure, departments, teachers, societies, facilities available, college disciplinary rules and relevant University acts and statutes.

- Cut-off percentages of each course is displayed on college website, University of Delhi's website and also published in leading daily newspaper. All updates are published on the college website.

- List of the cut-off percentage is displayed on college notice board during entire admission period.

- A brief profile of the college detailing the courses available, facilities and its history is also published in leading newspapers during admissions.

- The college also displays the status of admissions (No of seats filled/available in each of the courses and category) on a daily basis during the admission process. The information is also furnished parallelly to University of Delhi.

- The college interacts with the Press throught out the admission process.

- A dedicated helpline isoperated during admissions.

- The Principal personally monitors the emails on admissions@andc.du.ac.in

- Various Cells and Committees are formulated for students from different categories

i. Special Category Enabling Committee for SC/ST and OBC students

ii. Help Desk for Category for differently abled students

iii. General Help Desk to help, guide and council students from all categories

iv. Grievance Cell

2.1.2 Explain in detail the criteria adopted and process of admission (Ex. (i) merit (ii) common admission test conducted by state agencies and national agencies (iii) combination of merit and entrance test or merit, entrance test and interview (iv) any other) to various programmes of the Institution.

University norms are strictly complied with in admission procedure and criteria. The admission to various UG courses is done on the basis of merit. Reservation policy for SC, ST, OBC,

Children/Widows/Wife of Armed Forces Personnel, Person with Disabilities (PWD), Wards of Kashmiri Migrants, ECA, sports and staff quota candidates is strictly followed as per University of Delhi norms.

2.1.3 Give the minimum and maximum percentage of marks for admission at entry level for each of the programmes offered by the college and provide a comparison with other colleges of the affiliating university within the city/district.

Minimum and maximum percentage of marks for admission at entry level for each of the programmes offered by the college:

B.Com (H) in 2014

College	General		OBC		SC		ST		PWD	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
ANDC	94-99	90	90-95	76	85-90	71-76	70-75	58.75-63.75	80-85	45-50
ARSD	97-99.5	94.5-96.75	94-96.5	84-86	91.5-94	74-76	91.5-94	60-62	91-93.5	60-62
DBC	93	93	85	81	75	73	70	68.5	90	83
Gargi college	96	95	90	90	80	71	80	58	-	-
Maitreyei College	96-98	94.5-96.5	92-94	73-75	91-92.5	68-70	91-92.5	68-70	91-92.5	84.5-86.5
SAC	93	92	88	86	84	74	84	68	84	65
SVC	97.25-98	96.25-97.25	96.5-97	90.75	95.25-96	83.5	92.5-93	76	95-95.5	75
HRC	99.25-97.25	98.75-96.75	97-95	95.5-93.25	94.75-92.75	89.75-87.75	90.75-88.75	81.5-79.5	97-90	89-82

B.Sc. (H) Comp Sc. in 2014

College	General		OBC		SC		ST		Pwd	
	Max	Min	Max	Min	Max		Max	Min	Max	Min
ANDC	95-100	93-98	91-96	88-93	88-93	77.33-82.33	80-85	63-68	80-85	75-80
ARSD	98-100	91-96	97-99	85-92.67	93-95	64-69	92-94	70-73	96-98	78-81
Maitreyei College	87	85	84	82	80	78	80	78	85	78
HRC	98.33-99.33	96.66-97.66	97-98	95-96	95-96	91-92	94-95	79-80	94-95	79-80

B.Sc. (H) Physics in 2014

College	General		OBC		SC		ST		Pwd	
	Max	Min	Max	Min	Max		Max	Min	Max	Min
ANDC	86	86	80	79.66	74	67	68	40	All eligible	53
ARSD	88	87	86	84.33	83	72	83	58	86	55
DBC	86	83	80	79	75	72	65	58	-	-
Gargi college	90.33	90.33	85	85	75	75	75	75	75	74
Maitreyei College	92	89	87.5	80	87.5	58	87.5	55	92	68
SAC	85	82	80	72	75	68	75	66	72	68
SVC	96	93	95.67	91.33	95	75	87	63	95	60
HRC	97.33	96	96	95	95	92	94	69	93	74

B.Sc.(H) Electronics in 2014

College	General		OBC		SC		ST		Pwd	
	Max	Min	Max	Min	Max		Max	Min	Max	Min
ANDC	94	93	90	87	87	82	82	65	70	70
ARSD	97	93.33	96	87	94	85	90	77	90	75
DBC	96	93	90	89	90	80	75	70	89	50
SAC	96	92	91	87	86	82	86	81	83	81
SVC	97.33	95	96.33	92.67	95	86	91	68	96	78
HRC	98	94.66	97	91.33	96	82	94	70	96	75

B.Sc. (H) Chemistry in 2014

College	General		OBC		SC		ST		PwD	
	Max	Min	Max	Min	Max		Max	Min	Max	Min
ANDC	92	90	86	86	78	75	65	64	65	55
ARSD	96	90-95.67	94	73	92	73-77.67	88	58-58.67	88	56
DBC	88	88	82	82	72	72	72	71	85	73
Gargi college	93	93	88	88	83	83	83	73	-	-
Maitreyi	88-93	91.33	89	88.33	87	73	87	73	87	84
SVC	96	92.66	95.33	92	94.33	79	91.33	71	94.33	60
HRC	97	95	95	93	92	83	85	64	90	85

B.Sc. (H) Botany in 2014

College	General		OBC		SC		ST		PwD	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
ANDC	85	81.3	80	76	75	72	65	63	65	55
DBC	82	77.6	80	76	80	73	78	70	79	74
Gargi college	86	83	81	77	78	74	78	68	-	-
Maitreyi	80	80	75	75	74	73.66	74	73.66	78	78
SVC	89	85.66	87	84	86	72	82	71	81	45
HRC	92	88.66	88	86	86	75	84	73	85	70

B.Sc .(H) Zoology in 2014

College	General		OBC		SC		ST		PwD	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
ANDC	90	84.66	85	80	78	74.66	70	68	70	55
DBC	85	81	81	80	80	74	78	68	79	65
Gargi	87	87	82	82	79	77	79	73	59	58
Maitreyi	80-84	80	80	80	80	72	80	66	84	84
SVC	94	90	92	89	90	78	87	76	85	65
HRC	94	94	92	87	91	82	86	72	86	72

B.Sc. (H) Biomedical Sciences. in 2014

College	General		OBC		SC		ST		Pwd	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
ANDC	95	89	90	83	88	80.66	80	64	75	55
BCAS	95	90	94.67	81	94	74	92	68	92	52.25
SRCASW	94	88.6	90	80	88	79	80	78	86	83

B.Sc. (H) Mathematics in 2014

College	General		OBC		SC		ST		Pwd	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
ANDC	95	90	90	87	85	82.5	75	65	75	60
ARSD	96	92-96.75	94	90-93.75	87	76-77.75	87	56	90	54-55
DBC	85-90	85-90	82-85	82-85	75-80	74	74-78	68	82-88	77
Maitreyi	93	93	88	88	88	75	88	75	88	84.5
SVC	91-94	91-94	86-92	86-92	86-90	81.5-84	83-87	74-75	84-88	56
HRC	96.75	95.75	95	96	94	87	94	77	94	72

2.1.4   Is there a mechanism in the institution to review the admission process and student profiles annually? If 'yes' what is the outcome of such an effort and how has it contributed to the improvement of the process?

At the time of admissions the College machinery is all geared up to facilitate the prospective students and ensure smooth functioning through-out. The composition of the Admission Committee has changed and kept pace with the number of students admitted to the college directly. Earlier the admission committee comprised of Principal, one convener and Teacher-in-charge of each department. In 2008, with the introduction of OBC category reservations, there was increase in number of seats in the college. To handle this expansion, Vice Principal and an additional convener were also added to the admission committee. Since last year, the SC/ST admissions that earlier used to be done by the University, is now being handled by the College. To accommodate this and facilitate the process the College has added one more convener in the Admission Committee specifically for this purpose. The admission committee, at present, hence comprises of the Principal, the Vice Principal, three admission conveners, and teacher-in-charges of each department and of the interdisciplinary courses.   Additionally each Department has two teachers to help in the admissions. For each course, three non-teaching staff also aids the process by helping to check documents and deal with student rush. This minimizes the waiting time in the whole admission process.

Fees were for a long time collected by the College and deposited each day in the Bank. Since 2008, the Bank has been requested to set up a Fee Collection Centre in the college such that fees are

directly deposited in the College Account. This has helped ease out the work of the accounts Department.

The admission committee reviews the results of the education boards like Central Board of Secondary Education, Haryana Board of Secondary Education, Bihar Board of Secondary Education and few others from where large number of students applies for admissions.

The cut off percentage is decided by the admission committee based on the percentage result of these boards and cut off trend of previous years. The committee also reviews its admission policy and decides on any additional eligibility criteria.

The review of the result helps in deciding the suitable cut off percentage for the available number of seats in each course.

2.1.5 Reflecting on the strategies adopted to increase/improve access for following categories of students, enumerate on how the admission policy of the institution and its student profiles demonstrate/reflect the National commitment to diversity and inclusion

∗ **SC/ST**

∗ **OBC**

∗ **Women**

∗ **Differently abled**

∗ **Economically weaker sections**

∗ **Minority community**

∗ **Any other**

• The University sets guidelines as per the Central Educational Institutional Act of government rules regarding the admission of SC, ST, OBC, Kashmiri migrants, etc. The college strictly follows these guidelines.
• As per University directives, additional cut off lists are brought out to fill all the seats for the mentioned categories.
• The College offers 50% rebate in tution fees for SC/ST students.
• To provide equal opportunity to the above category students, the number of actual admissions in these categories also exceeds by the same ratio as it exceeds for the General category.

2.1.6 Provide the following details for various programmes offered by the institution during the last four years and comment on the trends. i.e. reasons for increase / decrease and actions initiated for improvement.

2012

Programmes	Number of Applications (Common application forms received by University of Delhi)	Number of students admitted	Demand Ratio
B.Sc.(Hons.) Physics	21895	71	308.38
B.Sc.(Hons) Chemistry	22241	62	358.73
B.Sc.(Hons)	24638	51	483.10

Mathematics			
B.Sc.(Hons) Botany	8524	48	177.58
B.Sc.(Hons) Zoology	9632	40	240.80
B.Com.(Hons)	27805	85	327.12
B.Sc.(Hons) Electronics	15796	37	426.92
B.Sc.(Hons) Computer Science	19089	48	397.69
B.Sc.(Hons) Biomedical Sciences	8039	48	167.48
B.Sc. Physical Sciences	12694	99	128.22
B.Sc. Life Sciences	10193	38	268.24

2013

Programmes	Number of applications (central application forms received by University of Delhi)	Number of students admitted	Demand Ratio
B.Sc.(Hons) Physics	51174	104	492.06
B.Sc.(Hons) Chemistry	75407	69	1092.86
B.Sc.(Hons) Mathematics	52289	91	574.60
B.Sc.(Hons) Botany	24419	50	488.38
B.Sc.(Hons) Zoology	59800	43	1390.70
B.Com.(Hons)	86612	87	995.54
B.Sc.(Hons)Electronics	43884	55	797.89
B.Sc.(Hons) Computer Science	68943	56	1231.13
B.Sc.(Hons)Biomedical Sciences	25723	46	559.20

2014

Programmes	Number of Applications(central application forms received by University of Delhi)	Number of students admitted	Demand Ratio
B.Sc.(Hons) Physics	82998	52	1596.12
B.Sc.(Hons) Chemistry	87804	57	1057.88
B.Sc.(Hons)	99895	141	708.48

Mathematics			
B.Sc.(Hons) Botany	30251	50	605.02
B.Sc.(Hons) Zoology	35656	46	775.13
B.Com.(Hons)	93891	107	877.49
B.Sc.(Hons) Electronics	70549	45	1567.76
B.Sc.(Hons) Computer Science	78134	49	1594.57
B.Sc.(Hons) Biomedical Sciences	30004	53	566.11

2.2   Catering to Student Diversity

2.2.1   How does the institution cater to the needs of differently-abled students and ensure adherence to government policies in this regard?

Equal opportunity Cell (EOC) of the College works in collaboration with the EOC of University of Delhi. It aims at ensuring equal opportunity for all the members of the college community.

Its objective is to ensure effective implementation of policies and programmes meant specifically for the persons with disabilities (PwD) .We try to sensitize our college community that differently abled need help and not sympathy. It works at providing guidance and counseling with respect to academic, social and other matters.

Continuous efforts are in place to make every space in the college accessible to differently abled by providing ramps.We try to ensure that all the classes of orthopedically challenged students are held in accessible areas. Periodic meetings are conducted to look into the grievances of the differently abled students and suggest amicable solutions to their problems. Further through these meetings, students are informed, encouraged, and motivated for participation in various events, programmes, quiz competition like para-sports, the PwD trip to UK/ SouthKorea, etc. Motivational workshops are also organized in association with LokBharti Education Society.

During admissions a dedicated help desk is made available for differently abled students. The student volunteers also help them to carry their documents and in filling their forms. The college ensures that all the seats for the category are completely filled.

Care is taken to ensure that these students do not face any hardship during the examinations and facilities like writer, extra time for writing the examination is provided to them. Recently, the college has provided to and fro transport facility from Govindpuri metro station to college to them. Student volunteers of NSS provide support to orthopaedically challenged in their day to day activities. The EOC gives all possible support so that PwD students are not made to run here and there for any problems.

2.2.2   Does the institution assess the students' needs in terms of knowledge and skills before the commencement of the programme? If 'yes', give details on the process.

The institution assesses the students' needs in terms of knowledge and skills before the commencement of the programme. College used to conduct BASE LINE EXAMINATIONS in various subjects-Physics, Chemistry and Biology earlier during annual mode scheme and plans to hold online examination again through college automation solution. Additional eligibility criteria in

the main subject was kept besides the cut off percentage for seeking admission to various honours courses earlier but the same was dropped after change in the admission policy guidelines by the University.

We hold an Orientation Day prior to the beginning of the academic session. During this we inform the students about the various societies, remedial classes/help classes and add-on courses running in the college. The students are asked to enrol themselves in at least two societies/activities according to their preference/skill.

2.2.3   What are the strategies adopted by the institution to bridge the knowledge gap of the enrolled students (Bridge/Remedial/ Add-on/Enrichment Courses, etc.) to enable them to cope with the programme of their choice?

The faculty of the college takes extra care to strengthen the basic conceptual understanding as required by the students. Remedial classes are held on the desirable topics.

College has designed following add-on courses to enhance the overall personality and strengthen their understanding potential:

1.   EFFECTIVE   COMMUNICATION   AND   PERSONALITY   DEVELOPMENT THROUGH THEATRE

(Mentioned in Criteria 1.2 SSR)The college is running a 100-hour short-term add-on course on 'Effective Communication and Personality Development through Theatre' (ECPDT) for the last five years. The course has several people associated with National School of Drama (NSD) as Resource Persons and guest faculty to train students.

The course inspired by vision of life-skills-based education of UNICEF and WHO seeks to hone skills such as effective communication, dynamic leadership through problem solving, critical thinking and decision-making. The ability to think creatively and act confidently amongst students through acting, improvisations, performances scripting, teamwork and interpersonal relationships skills is encouraged through this course.

2. ENGLISH LANGUAGE PROFICIENCY COURSE   (ELPC) (Mentioned in Criteria 1.2 SSR)

Many of the students from Delhi and many other states; come from varied backgrounds find themselves helpless because of their inability to speak, write and understand the English language well. To help such students the college offers **E**nglish **L**anguage **P**roficiency **C**ourse (ELPC) under the auspices of the **Institute of Life Long Learning (ILLL)**, University of Delhi.

The course gives students practice in using English in a wide variety of contexts relevant to work, study and social activities. It specifically helps students to:

- Understand and respond to spoken language
- Learn how to speak fluently and use appropriate expressions
- Read and comprehend different kinds of texts for different purposes
- Write coherently and effectively in formal and informal contexts.

3. BASIC SKIILS IN COMPUTERS

The Computer Science Department of the college holds workshops for the first year students of each course to give basic computer skills and exposure to FOSS, LINUX since all the machines in the college are LINUX based.Workshops to teach computer skills to the laboratory and other non-teaching Staff is also carried out – these are carried out by students under the mentorship of a teacher. The non-teaching staff was very happy and would like to do advanced courses. The office

and library and accounts staff is also sent for training in skills useful for their work.

2.2.4 How does the college sensitize its staff and students on issues such as gender, inclusion, environment etc.?

The college takes care to make the staff and students aware of the current issues of gender bias, environmental degradation and safety of the women. We have a Internal College Committee, College Grievance Cell, NSS, Sashakt (Women Development Cell) and Eco Club (Paritantra). Through these committees, lectures, workshops, blood donation camps, nukkadnatak, cleanliness drives, etc. are organized to involve the students with the society. This also makes them aware of the need of equal participation of all strata of society to improve the living conditions. The college maintains its campus as a tobacco Free zone. Notices are put up by the senior student to sensitize their juniors to switch off fans and lights when not in use in each class.

2.2.5 How does the institution identify and respond to special educational/learning needs of advanced learners?

The college campus is the interactive learning platform where teachers are able to identify such students in the nomalclass room teaching which includes discussions, assignments, tests, quizzes and project works. The college promotes their achievements in a positive way. The various schemes/centres/clubs offer many opportunities to such students which enhance their learning and thought process.

(Student Chapter OFSPIE (Society of Photo-optical Instrumentation Engineers)

The College joined the family of SPIE family by setting up the AcharyaNarendraDev College at University of DelhiSPIE Student Chapter in August 2010. With this the college joined the elite class of institutions like Stanford, MIT, IITs, NITs, DTU etc.

Our Student Chapter has been selected amongst 25 organizations worldwide for SPIE Education Outreach Grant of USD 5000 to promote optics and photonics related education outreach projects. Students get opportunities to showcase their talent in International and National level conferences. It also intends taking an excursion to research laboratories outside Delhi to provide a wider exposure to the students. It also provides for travel of one student-officer to attend the Annual SPIE conference at San Diego, USA, every year with full funding from SPIE.

FOSS (Free Open Source Software) Club

The College has taken pioneering steps to promote FOSS in education and creation and propagation of Open Educational Resources (OERs).The FOSS Club has organized number of workshops to regularly orient and initiate the undergraduate students and faculty to the concept of FOSS paradigm.

Certificate Course in Bioinformatics and *in silico* Drug Discovery

The primary aim of this course is to suit the fast track needs of bioinformatics and *in-silico* drug discovery divisions of pharmaceutical companies and research organizations.

Open Source Drug Design (OSDD)

It is a unique CSIR programme for collaborative research by faculty and students across the country wherein they work of development of novel drugs for TB and other diseases. ANDC was one of the eight institutions selected countrywide for the project. Around 40 ANDC students have contributed in this project and four students were specially recognized by CSIR for their contribution.

Course through video conferencing

The college gave the opportunity to the students to attend - a **course through video conferencing from Ohio State University** on recent developments in Genomics, Proteomics and Bioinformatics and concept of Bioethics where in the students from the following Universities/Colleges also participated:

• Ohio State University, Columbus, Ohio, USA

• Ohio State University/OARDC, Wooster, Ohio, USA

• Center for Biotechnology, Anna University, Chennai, INDIA

• Acharya Narendra Dev College, University of Delhi, New Delhi, INDIA

• M E S Abasaheb Garware College, University of Pune, Pune, INDIA.

Students appreciate (through discussions of specific examples) the inter-dependence of fundamental scientific discoveries and technological developments. They explore at least some instances of specific ethical dilemmas that individual scientists face in their research, and general ethical issues that both scientists and the public face in connection with scientific research and the possibilities it opens up to scientific communities.

CUBE AND TH!NK LAB

CUBE (Collaborative Undergraduate Biology Education) in collaboration with HBCSE, TIFR and Th!nk Lab: The Science Society are two independent initiatives for self-motivated students for implementation of their original ideas and discussions. These laboratories are run by the students and for the students. Both the initiatives receive support in college: for germination, cultivation and maturing of novel ideas of students.

YUVODAYA: ANDC – METLIFE INITIATIVE

Many initiatives are being run by the college in collaboration with business conglomerates for preparing students for the corporate world. One such initiative Yuvodaya is a University of Delhi certified course on insurance being conducted in alliance with MetLife, a behemoth in the insurance sector.

ICICI STUDY CENTRE

ICICI Bank in collaboration with Delhi University had started a short-term job orientedcourse in Foundation of Banking and Finance at College. A study centre was set up in college by ICICI Bank to run the course.

ELITE (Education in a Lively Innovative Training Environment)

The projects under ELITE cover diverse research methodologies – wet experiments in laboratories, field studies, surveys which involve preparing and questionnaire and learn to write reviews after reading published literature, research using bioinformatics tools, training in instrumentation techniques etc.

2.2.6   How does the institute collect, analyze and use the data and information on the academic performance (through the programme duration) of the students at risk of drop out (students from the disadvantaged sections of society, physically challenged, slow learners, economically weaker sections etc. who may discontinue their studies if some sort of support is not provided)?

The college reaches to these students through three modes-Data collected through internal assessment, semester examinations and individual mentoring. Students are given support in the

form of Remedial coaching,Student Aid Fund (SAKSHAM). The College has assigned teachers as mentors (1 teacher to 5 students) who look after them. The students are encouraged to come to their mentors (or any teacher) to share their problems.

The college has a policy where any student who is financially weak is assured financial help. For this we have a **SAKSHAM** (Student Aid for Knowledge, Success, Honour and Motivation) which gets donations from some teachers, non-teaching staff and well-wishers. Through SAKSHAM a large number of students are provided various types of scholarships/aids. The financial aid to the students has been grouped into following categories:

- Full Fee Waiver (Except Security Deposit)
- Rs. 800/- per month stipend for ten months (revised from Rs. 600/- paid last year)
- Book Bank Aid
- Course Fee for ECPDT course limited to Rs. 2,500/-
- Stationery + Photostat upto Rs.3000/- for the whole academic year.

All the students who have been recommended for SAKSHAM in any form are eligible to get book bank facility upto 05 books per semester.

Earn-while-you-Learn Programme (ELP)

Students coming from a humble background are given an opportunity to fund their education. This is a small step on the part of the college to take forward its vision of inclusive education. The college provides an opportunity to its students to earn when they can take time out from their classes and devote time to activities beyond studies. Students are encouraged to work in the Account section and the Library. Besides earning a valuable income, this helps the students to refresh their computer skills and learn basic etiquettes of work place besides developing a respect for labour. We also have some student volunteers helping with installation and maintenance of Linux on computers in the college.

Remedial Classes: Students who want extra coaching in course work are identified and the faculty from the college itself volunteers to hold the classes to help the students understand better.

2.3 Teaching-Learning Process

2.3.1   How does the college plan and organise the teaching, learning and evaluation schedules? (Academic calendar, teaching plan, evaluation blue print, etc.)

Course wise and Teacher wise time table is prepared by the Workload and Time Table Committee before the commencement of semester and it is displayed on the college and University web site.

Attendance is submitted by the individual teachers at the end of every month. This is duly notified to the students/Parents through notice boards and web site.

The teachers take periodic tests/quiz/presentation/assignments and these marks are essential component of the internal assessment (twice/periodically) in each semester. The evaluated sheets are made available to the students and are reviewed by the concerned teacher. The award of the internal assessment is carefully monitored by the College Moderation Committee. These marks are displayed on the notice board as well as on the college website twice in each semester.

The Semester-end exams are organized and evaluated as per the University academic calendar. This academic calendar is published in the college prospectus before the commencement of every academic year.

2.3.2   How does IQAC contribute to improve the teaching –learning process?

This is the first cycle of NAAC accreditation for the college. The IQAC has been formed as per the guidelines.

2.3.3   How learning is made more student-centric? Give details on the support structures and systems available for teachers to develop skills like interactive learning, collaborative learning and independent learning among the students?

Radical change in the method of learning has been brought to make learning more student-centric.

Discussion sessions: Interactive discussion sessions are conducted to inculcate the depth of understanding, knowledge and communication among the students. During the sessions, the inquisitive nature of the students is enriched by providing the extra and useful information.

Presentations: The habit of deep thinking is inculcated among the students by teaching them through presentations using LCD projectors. It arouses interest of the students in the subject and also gives a better grasp of the subject. The students are encouraged to prepare their own presentations and present in front of the teachers and their peer group. This helps to build up their self-confidence, broaden their horizon and prepares for future competitions. Alternatively, students are given **assignments** on various topics which they can even submit on-line.

Projects: The students are involved in various projects to enhance their scientific aptitude and practical knowledge by providing them hands-on experience of the theoretical concepts.

Class tests/Open book test: The class tests/Open book test and discussions are conducted after the completion of each topic for the clarity of concepts and better understanding of the next topic.

Academic tours (EXPLORE): Funded solely by the college EXPLORE, is one of the unique programme initiated for second year students in college. EXPLORE allows students to undertake excursions, educational tours or field trips accompanied by their classmates and faculty.

Group Discussions: Group Discussion are held regularly where students get opportunity to think from different angles and incorporate all these points while writing answers in the exam. It not only inculcates team spirit but also improves their communication skills while sharing opinions and exchanging views with others, enables to think in divergent directions to generate more points and a good presentation of the topic and enhances analytical ability.

Lectures and Interaction with eminent experts: Each Department society invites eminent speakers from diverse fields each semester. This enables the student to learn about the various advancements, career opportunities and interact directly with the experts.

Students use this platform for clarifications, discussions, sharing of ideas/opinions and this practice is being followed at ANDC since long.

2.3.4   How does the institution nurture critical thinking, creativity and scientific temper among the students to transform them into life-long learners and innovators?

In the last few years, the college has become a research hub encompassing all major academic disciplines. The students are inspired and motivated to explore science. The college provides a conducive environment and openings of newer academic opportunities, in the form of a large number of research projects undertaken by the faculty or arranging summer programmes and training workshops. Various research activities carried by the college are:

SPIE (Society of Photo-Optical Instrumentation Engineers) **student Chapter:** is an international society based in USA for promotion of an interdisciplinary approach towards science with

emphasis on application of light. The resources made available by this society provide rare R & D exposure to the students.

Students get opportunities to showcase their talent in International and National level conferences.

ELITE – 'Education in a Lively, Innovative Training Environment' Summer Fellowship:

College's self-funded fellowships of Rs.1000/- p.m per student which are offered to 200 students. These allow all interested students to take on summer projects under a Mentor teacher during vacations i.e. June and July. Provides first exposure to diverse research possibilities and helps them learn various laboratory techniques and skills, do data collection through field studies, conduct surveys, interact with various external field experts, exposure to current research, inculcate habit of reading research journals and get an opportunity to execute their innovative ideas into practice. The programme designed has been an experiential educational opportunity and add to the student's knowledge base in their major or career field of interest. So far 88 projects have been completed. And more than 275 students have been trained for research and development under ELITE in last three years.

Students Project through Innovation and Entrepreneurship Development Centre (IEDC)

The Innovation and Entrepreneurship Development Centre (IEDC) was established in the College in July 2010 to motivate students towards Entrepreneurship. Pioneering effort of National Science and Technology Development Board (NSTEDB) under Department of Science and Technology (DST), Government of India, in collaboration with Innovation and Entrepreneurship Development Centre (IEDC) established at the college has been involved in promoting innovative projects and imparting entrepreneurship skills amongst students. They have schemes under which students are encouraged to take up one year long innovative research projects under the guidance of a faculty popularly referred to as a mentor. These projects are fully funded by DST and include a stipend for the students.

IEDC conducts various training programmes like Entrepreneurship Awareness Camps (EACs), Entrepreneurship Development Programmes (EDPs) and Faculty Development Programmes (FDPs) etc.

Entrepreneurship Development Programme (EDP) fosters better linkages between the college, industries and R&D institutions and other related organizations engaged in promoting Small and Medium Enterprises (SMEs) including NGOs and other voluntary organizations. Keeping this in view, two staff members of College have been trained to act as resource persons in guiding and motivating young students to take up entrepreneurship as a career.

Undergraduate students of the college have established an in-campus company, called ANDY that depicts the spirit of AND Youth. ANDY is one of the nascent initiatives and the first in any undergraduate college under University of Delhi. It is a technology demonstrator whose main idea is not to earn profit but empower students with enough confidence for a start-up.

Innovation Projects

University of Delhi has taken an initiative to promote research by undergraduate students so that they can take informed decisions. The scheme is trans-disciplinary involving three faculty members, one expert and ten students. The scheme is for one year in which University grants up-to Rs.10 Lakhs and there is a provision of Rs. 1000 per month stipend for each student. Under this scheme six projects have been sanctioned to the college in 2012-2013 and 4 in 2013-2014.

CUBE AND THINK LAB

CUBE (Collaborative Undergraduate Biology Education) in collaboration with HBCSE, TIFR and **Th!nk Lab: The Science Society** are two independent initiatives undertaken by the students. These laboratories are run by the students and for the students. Both the initiatives receive support in college: for germination, cultivation and maturing of novel ideas of students.

2.3.5   What are the technologies and facilities available and used by the faculty for effective teaching? Eg: Virtual laboratories, e-learning - resources from National Programme on Technology Enhanced Learning (NPTEL) and National Mission on Education through Information and Communication Technology (NME-ICT), open educational resources, mobile education, etc.

Besides the usual chalk and talk mode of teaching, the college adopts various other methods which includes use **e-learning, open educational resources, mobile education etc.** to facilitate effective teaching.

The college also believes in open access to educational content. We conduct hands-on workshops on OER - Wikieducator to enable teachers to upload e content in open access formats. We have conducted twenty such workshops both in college, in Delhi University South Campus, in NCERT and some schools. We have been conducting these workshops in collaboration with Commonwealth of Learning, Vancouver.

The college in collaboration with CEMCA (Commonwealth Educational Media Centre for Asia) have developed e- learning content where experienced faculty members of the college demonstrate various experiments/laboratory techniques to large number of students.

The faculty of the college has also created videos using the CamTel software developed by experts. This App can be made available on the mobile phones and students can easily go through the live lectures of faculty members.

The faculty members are involved in effective teaching by developing e content for organizations such as NISCAIR, NME-ICT and ILLL.

2.3.6   How are the students and faculty exposed to advanced level of knowledge and skills (blended learning, expert lectures, seminars, workshops etc.)?

- The students and faculty are encouraged to attend the various workshops/seminars/Talks organized by the college or other Institutes in Delhi as well as outside to upgrade their knowledge and know about the coming trends.

- Faculty has also designed e-learning content for ILLL (DU) for exposing themselves and subsequently students .

- Experts of various fields are periodically invited under the aegis of Society functions organized by each department.

- Through the IEDC cell, the students are also encouraged to explore their entrepreneur skills.

- Skill enhancement is regularly carried out by organizing various workshops for the faculty eg. Wiki workshops for open softwares and EasyNow workshops for making interactive e-content.

- The College along with Bhaskaracharya College of Applied Science, University of Delhi, jointly started a new 128 hours long add-on course in **Bioinformatics and *in-silico* Drug Discovery** for undergraduate and postgraduate students from July 2012.

- A course on recent developments in Genomics, Proteomics and Bioinformatics and concept of Bioethics was being conducted by Ohio State University, USA, through video conferencing.

2.3.7 Detail (process and the number of students \benefitted) on the academic, personal and psycho-social support and guidance services (professional counseling/mentoring/academic advise) provided to students?

❖ **Academic:**

• At the beginning of the academic session, all the students are informed about the availability of an English Language Proficiency Course (ELPC) which is specifically designed to increase proficiency levels in English.

• Remedial classes are also conducted for students who need extra support in their curriculum. These classes are conducted by the faculty from the college as well from other colleges of DU.

• Coaching Classes are also organized to help students clear various competitive examinations for jobs and admission to PG courses.

• Workshops are conducted especially for the first Year Students to hone the Computer Skills and usage of web resources.

❖ **Personal/Psycho-social**

• The faculty is also available as mentors (1 Teacher: 5 Students) to the student who are made comfortable and are used of easy access to the mentor for anything regarding their personal problems (under confidentiality).However, they are also free to go to any other faculty member if they prefer.

• Under the aegis of the college society Sashakt the girl students are given Self Defence classes in collaboration with Delhi Police to make them secure self-reliant and increase their confidence.

• A special Forum has been created for the welfare of the North East Students taking special cognizance of their special needs and provides them necessary help in any situation of crisis.

❖ **Professional:**

• The college Career Counseling and Placement Centre (CCPC) provides counseling for careers in higher education and other specializes fields.(Sec.5.1.9)

• The Placement Cell has entered into an understanding with Okhla Industrial Association that provides them job as well as training.

• The companies from various fields like IT, Finance, Education, Media, Aviation, Media, Health care and Pharmacy come to campus for placement drive. List of companies who visited college for placement drive are given below:

IT Companies	Wipro WASE, IBM, HCL-BPO, TCS, Google, iGate, Tech-Mahindra, Micro Computers Conduct, Module one, Libsys Ltd., Addval solutions Pvt. Ltd.
Insurance, Financial & Banking	HDFC life ins. Co. Xchanging Insurance Services Fedral Bank Capital IQ ATS Securities ERNST AND YOUNG global shared services
BPO	WNS Global Services, GENPACT, CONVERGYS
Services Sector.	NDPL BVG India Ltd

Health Care/ Pharmacy	Advent Medical Technologie, Apex Lab, Ranbaxy
Education	Space Group, MIE Pvt. Ltd.
Publisher	Thomson Digital
Laboratory	Spectro Analytical Labs Limited
Media	Network18
Aviation	Indigo Airlines
Chemical Industry	MG Polyblends

- Professionals and entrepreneurs are invited by the college to inform the students about the possibilities open to them. Many students are involved in such projects. Our college is the first college to be granted a Business Incubator (BI) due to regular contribution towards entrepreneurship Development. The BI supports ten innovative ideas towards maturing into successful business entrepreneurs.

2.3.8 Provide details of innovative teaching approaches/methods adopted by the faculty during the last four years? What are the efforts made by the institution to encourage the faculty to adopt new and innovative approaches and the impact of such innovative practices on student learning?

Besides the classical teaching methods of Class room teaching which includes PPT presentation and projects, the college has also adopted the following innovative methods of teaching:

- In a recent initiative, the students are provided laptops for use in the classrooms. Since the campus is wi-fi enabled the students are encouraged to explore and process information from web in the class room in group activity or under instruction from the teacher.

- The college encourages the students to do summer projects through ELITE (**Education in a Lively, Innovative Training Environment).** College's self-funded fellowships of Rs.1000/- p.m per student which are offered to 200 students. These allow all interested students to take on summer projects under a Mentor teacher during vacations i.e. June and July. Provides first exposure to diverse research possibilities and helps them learn various laboratory techniques and skills, do data collection through field studies, conduct surveys, interact with various external field experts, exposure to current research, inculcate habit of reading research journals and get an opportunity to execute their innovative ideas into practice. The programme designed has been an experiential educational opportunity and add to the student's knowledge base in their major or career field of interest.

- Academic tours (EXPLORE): One of many unique programmes initiated for second year students in college EXPLORE, allows students to undertake excursions, educational tours or field trips accompanied by their classmates and faculty. This programme is funded solely by the college. In the past 4 years students have undertaken excursions, educational trips, field trips etc. to enhance their knowledge.

- Theatre in Education: The College introduced a 100-hour add-on course on Effective Communication and Personality Development through Theatre (ECPDT) in 2009. This course provides an enabling environment for students to develop confidence and overcome inhibitions.

- Conferences/Workshops

The college makes special efforts to encourage the faculty to adopt new and innovative approaches by organizing several conferences/workshops.

All these initiatives give exposure to a wide range of experiences, to enable them to understand and appreciate real-life situations and problems. Under ELITE programme students get some real experience of research while they are in college; this helps them take informed decisions later. EXPLORE programme instills a sense of maturity in the students and allows them to take responsibility for themselves and their actions. ECPDT trains students in life-skills for all-round development.

2.3.9 How are library resources used to augment the teaching- learning process?

The College Library is not merely a collection of books based on curriculum. It is also equipped with other treasures of knowledge in the form of various books and e-resources on literature, fiction, history, public policy, auto biographies, memoirs, travelogues etc. These supplement the teaching learning process for the student as well as faculty in their quest of lifelong learning.

2.3.10 Does the institution face any challenges in completing the curriculum within the planned time frame and calendar? If 'yes', elaborate on the challenges encountered and the institutional approaches to overcome these.

With the adoption of semester system, the organization of teaching with sensitivity towards extracurricular activities is indeed a challenge. However the college has devised the following practices to make sure that the curriculum is completed within the time frame.

- The classes start from the first day of the semester itself as the time table is prepared in the summer/winter breaks preceding the start of the semesters.
- The Orientation Day is held before the beginning of the academic year to prevent any loss of teaching.
- Classes are held on all 6 days in a week.
- Care is taken to ensure that meetings involving faculty and students are held at such times such that regular teaching is not disturbed.
- The schedule for Sports and extracurricular activities are carefully planned so that minimum or negligible teaching is affected.
- In case of a teacher going on a short leave, special arrangements are made to compensate the loss of classes by adjusting /fixing additional classes before and after the leave. If the faculty member takes a long leave a guest lecturer is appointed.
- The mid-semester break is utilized to hold the departmental events like Picnics, lectures etc. so that there is no loss of teaching days.

2.3.11 How does the institute monitor and evaluate the quality of teaching learning?

The results of each semester are carefully analyzed and appropriate corrective measures are taken. Students are encouraged to put their suggestions/complaints in drop box outside the principal room. College has assigned teachers as mentors (1 teacher to 5 students) who look after them. The students are encouraged to come to their mentors (or any teacher) to share their problems. The principal/TIC/mentors are always accessible to the students for any problem any time.

2.4 Teacher Quality

2.4.1 Provide the following details and elaborate on the strategies adopted by the college in planning and management (recruitment and retention) of its human resource (qualified and competent teachers) to meet the changing requirements of the curriculum.

The process of recruitment by the college is initiated by the Staff Council Committee for Academic Development – it works out the workload for each year and each Department. The workload is then checked by the Principal against workload norms. The Liaison Officer is then requested to make sure of the roster positions in the workload submitted. The vacancy position is then worked out. The request for advertisement of posts is then placed in the GB for approval after wich it is forwarded to the University. The University approves the advertisement after checking the roster positions. The College can advertise and recruit the required faculty after funding approval from the DHE.

Since recruitment is dependent on getting requisite clearance from the DU as well as the funding authority frequently it has been often delayed. In the last few years due to constant change in curriculum and syllabi, the workload of Departments have also not stabilized. While recruiting we do ensure the following:

• The notification for teachers' recruitment is published prominently in national dailies and the web for wider dissemination of information and attracting the best talent. For the selection of faculty in permanent position, the selection committee is formed as per University rules. Merit is the sole criterion for the selection.

• Any short term requirement of teachers is fulfilled by appointment of Ad-hoc teachers from the panel prepared for this purpose by the university through interviews. The Ad-hoc teachers have the same qualifications as required for permanent teachers. The Ad-hoc selection committee comprises of the Principal, the T.I.C, a senior faculty of the Department (by rotation) and a SC observer.

• The college takes care to select candidates from the required specialization, so that faculty from all the fields are available.

• The number of posts, requirement, date of interview etc. is all put up on the college website.

Qualifications of the Teaching Staff:

Highest qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanentteachers 74							
D.Sc./D.Litt.	-	-	-	-	-	-	-
Ph.D.	-	-	06	34	12	05	57
M.Phil./M.Tech.			01	07	02	01	11
PG			00	01	03	02	06
Temporaryteachers 41(Temporary+ Adhoc)							
Ph.D.	-	-	-	-	07	13	20
M.Phil./M.Tech.	-	-	-	-	09	04	13
PG	-	-	-	-	17	24	41
Part-timeteachers							
Ph.D.	-	-	-	-	-	-	-

M.Phil.	-	-	-	-	-	-	-
PG	-	-	-	-	-	-	-

2.4.2 How does the institution cope with the growing demand/ scarcity of qualified senior faculty to teach new programmes/ modern areas (emerging areas) of study being introduced (Biotechnology, IT, Bioinformatics etc.)? Provide details on the efforts made by the institution in this direction and the outcome during the last three years.

• The faculty takes full measures to keep up with the new trends/ emerging fields. All teachers participate in 4 week orientation courses and 3 week refresher courses conducted by academic staff colleges of the UGC.

• They are encouraged to attend all training programmes/ workshops/ seminars, organized by various Departments/ Institution.

• The college has introduced an add-on course in **Bioinformatics and in-*silico* Drug Discovery** for undergraduate and post-graduate students. The coordinator for this add-on course **(Dr. Gagan Dhawan, ANDC)** has been trained in bioinformatics and in-silico drug discovery from the University of Edinburgh, UK.

• Guest teachers /speakers from various eminent institutes are invited to interact with the students.

• The college has organizes various workshops to familiarize the faculty with the new, emerging areas of study, some of which are as follows:

S.No.	Details	Organizers	Date
1.	"Easy Now Techniques: A workshop on multimedia content development".	Dr. Savithri Singh and CEMCA	May 4-7, 2010.
2.	Workshop on Evolutionary Perspectives in Modern Biological Teaching and Research, held at ILLL, University of Delhi	Dr. Savithri Singh (Convener) Dr. Sarita Kumar	May 9-10, 2011
3.	Molecular Phylogenetics: Understanding Evolutionary Histories,	Dr. Manda Clair Jost (New Mexico) & Dr. Monisha Khanna (Resource Persons)	June 15-16, 2011
1.	Experimental Procedures of Cell and Molecular Biology for Botany Teachers	Dr. Monisha Khanna, Dr. Ravi Toteja, Dr. Seema Makhija (Co-ordinators & Resource Person)	September 9, 2011
2.	Workshop on theory and practical course "Biochemistry and Environmental Chemistry" for B.Sc (Hons) Chemistry (CHHT-514 and CHHP-514) organized by Department of Chemistry, University of Delhi	Dr. Gagan Dhawan (Resource Person)	July 2-7, 2012

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3.	Workshop on Research in UG Science and Mathematics Education	Dr. Savithri Singh (ANDC), Dr. G. Nagarjuna & Dr. M C Arunan (HBCSE)	May 14-18, 2012
4.	Creative Commons Workshop- A One Day Workshop on understanding creative commons licenses for content creation	ILLL and Dr. Savithri Singh (ANDC)	February 20,2013
5.	Workshop on Maxima and Mahematica Software for teachers	Department of Mathematics, ANDC	August 2012
6.	National Conference on Redefining Science: Future of Education at University of Delhi, South Campus, New Delhi.	Creative Commons (US), ANDC and IIC	7-9 March, 2013
7.	Workshop on Maxima and Mathematica Software for teachers	Department of Mathematics, ANDC	March 2013
8.	Workshop on FOSS & Linux for college faculty	Department of Computer Science	6-7, August, 2013.
9.	CamTel Workshop for teachers	Dr. Savithri Singh and Mr. V. Krishnamoorthy	Nov 21-23, 2013

2.4.3 Providing details on staff development programmes during the last four years elaborate on the strategies adopted by the institution in enhancing the teacher quality.

Nomination to Staff development programmes (2010-2015)

Academic Staff Development Programmes	No. of faculty nominated
Refresher courses	**31**
HRD programme	**-**
Orientation programmes	**05**
Staff training conducted by the university	**18**
Staff training conducted by other institutions	**22**
Summer/ winter schools, workshops, etc.	**61**

b) Faculty Training programmes organized by the institution to empower and enable the use of various tools and technology for improved teaching-learning

I. Teaching learning methods/approaches

i. **FOSS and Linux workshops:** Since the college believes in open-source software, we conduct workshops every year for students and teachers (even from other colleges) so that more and more students and teachers get introduced to FOSS. We also conduct several workshops with other FOSS bodies eg. NRCFOSS, ILUGD where we call in experts to deal with specific areas using FOSS.

ii. **Open Educational Resources:** In keeping with the commitment towards FOSS, the college also believes in open access to educational content. We conduct hands-on workshops on OER to enable teachers to upload econtent in open access formats. We have conducted twenty such workshops both in college, in Delhi University South Campus, in NCERT and some schools. We have been conducting these workshops in collaboration with Commonwealth of Learning, Vancouver.

iii. Easy Now workshops: Recognizing that teachers need to be enabled to create e-content specially using multimedia components, Commonwealth Educational Media Centre for Asia (CEMCA) helps implement an 'Easy Now' package that consists of easy to learn tools for e-content development. The college has benefitted from its association with CEMCA.

II. Handling new curriculum

i. The college faculty participates in all the orientation programmes organized by the University whenever new curriculum/syallabus is introduced.

ii. When the new B.Sc Programme in Life Science was introduced, teachers felt that hands-on workshops were essential for teachers. Acharya Narendra Dev College was called upon to conduct such a workshop in Biology for teachers across the University who teach Part III. Whenever new syllabi are implemented such workshops would be order of the day.

iii. Whenever there is change in the curriculum the teachers are always encouraged to attend the workshops and hands on training programme conducted by college and other institutions.

III. Content/knowledge management

The teachers of the college participate in the various meetings organized by the respective University departments in finalizing/modifying the guide lines of teaching and evaluation of various papers.The reading list of the prescribed course are periodically reviewed in these meetings in order to keep the course content updated.

IV. Selection, development and use of enrichment materials

i. The college in collaboration with CEMCA (Commonwealth Educational Media Centre for Asia) have developed e- learning content where experienced faculty members of the college demonstrate various experiments/laboratory techniques to large number of students.

ii. The faculty of the college has also created videos using the CamTel software developed by experts. This App can be made available on the mobile phones and students can easily go through the live lectures of faculty members. The faculty members are involved in effective teaching by developing e content for organizations such as NISCAIR , NME-ICT and ILLL.

V. Assessment

i. Various Govt. and non Govt. agencies recognize our teachers based on their assessment parameters with respect to teaching quality.Many teachers of the college have received the awards from DU and Delhi government. Some of the recent awardees are listed below.

Dr. Savithri Singh	K. S. Krishnan Teacher Fellow Award by HBCSE, TIFR, Mumbai, July 6,2014
Dr. Sunita Hooda	Meritorious Teacher Award By Directorate of Higher Education, N.C.T of Delhi, May 2012
Dr. Sarita Kumar	Meritorious Teacher' award By Directorate of Higher Education, N.C.T of Delhi, May 2011
	Shiksha Ratna Puruskar by India International Friendship Society 2011
	Honoured and presented with "DISTINGUISHED TEACHER AWARD" by University of Delhi (2009)
	K S Krishnan Teacher Fellow Award from HBCSE, TIFR, Mumbai,2014

Dr. M.S. Rajeswari	Honoured and presented with "DISTINGUISHED TEACHER AWARD" by University of Delhi (2009)
Dr. Seema Makhija	Honoured and presented with "DISTINGUISHED TEACHER AWARD" by University of Delhi (2009)
Dr. Saumya Saxena	Shiksha Ratna Puruskar by India International Friendship Society 2011
Dr. Amit Garg	Meritorious Teacher' award By Directorate of Higher Education, N.C.T of Delhi, May 2011 and INR 1 lakh as award.
Dr. Urmi Bajpai	Meritorious Teacher' award of the NCT of Delhi (2013-2014) Carries a citation and INR 1 lakh as award.
Dr. Gagan Dhawan	Meritorious Teacher' award of the NCT of Delhi (2014-2015) Carries a citation and INR 1 lakh as award.
Dr. Satyapal Singh	Dronacharya Award, Government of India, 2012
Dr. Amit Garg, Dr. Roopesh Tehri, Dr. Chadrakant Samal	Awarded the Teaching Excellence Award for Innovation on 93rd University Foundation Day held on May 1, 2015.
Dr. Arijit Chowdhuri, Dr. Charu Khosla Gupta and Dr. Sunita Narang	Awarded the Teaching Excellence Award for Innovation on 93rd University Foundation Day held on May 1, 2015.

ii. Promotions to higher grades are based upon Performance Based Assessment Scheme (PBAS) and Academic Point Index (API) as prescribed by University and UGC.

VI. Cross cutting issues

As students and teachers are drawn from all cultural background, the teaching –learning process is sensitive towards this diversity wherein equal opportunities are provided for coexistence of diverse opinions and beliefs in the realm of gender, economy and social-equity.

VII. Audio Visual Aids/multimedia

Many training programmes have been organized to train teachers for the use and creation of Audio Visual Aids/multimedia content as mentioned in Section 4.3(b)I.

VIII. OER's :

ANDC is the first college in the University of Delhi to actively pursue a philosophy of OPEN in education. In December 2007, we adopted LINUX as the preferred platform for all computers. The College also pionerred towards uploading course materials on web as 'OPEN EDUCATIONAL RESOURCES'.The various exhibits under this category included:

i. College website is developed in OPEN platform DRUPAL and maintained by the college students.

ii. Course material developed

iii.Manuals created for conducting workshops on Open Educational Resources, Creative Commons and Easy Now.

iv.College has also organized several workshops on OER s

v.The commitment to OER got the college recognized as Affiliate of Creative Commons in India in May, 2013.

The crowning glory of these efforts has been the international recognition in the form of the prestigious OPAL award (2011) by international consortium including UNESCO, ICDE, EFQUEL and several European Universities working in promotion of OER in higher education.

IX. Teaching learning material development, selection and use

The faculty has developed e-content on various platforms like wiki,vle.du.ac.in ,NISCAIR etc. They have also written many books.

c) Percentage of faculty

∗ **invited as resource persons in Workshops / Seminars / Conferences organized by external professional agencies:** > 20%

∗**participated in external Workshops / Seminars / Conferences recognized by national/ international professional bodies**

>50%

∗ **presented papers in Workshops / Seminars / Conferences conducted or recognized**

by professional agencies >50%

2.4.4   What policies/systems are in place to recharge teachers? (e.g.: providing research grants, study leave, support for research and academic publications teaching experience in other national institutions and specialized programmes industrial engagement etc.)

The college has always encouraged its faculty to undertake research and present their work. A monitoring committee is in place to screen the research proposals. Budgetary provisions along with the guidelines are in place to provide financial assistance for attending conferences. Provisions for study leave for the faculty (up to 10%) exist to pursue higher qualification.

The college has a Professional and Academic Development Committee which screens and recommends the faculty members to attend Orientation/Refresher/Seminars/ workshops/Conferences.

Faculty is also permitted to take up any assignments offered by the University and other institutions. During the last 4 years, three faculty members have gone on deputation to Institute of Life Long Learning (ILLL), DU, one member as Vice Chancellor fellow, DU and one member was OSD in School of Open Learning (SOL), DU.

2.4.5   Give the number of faculty who received awards / recognition at the state, national and international level for excellence in teaching during the last four years. Enunciate how the institutional culture and environment contributed to such performance/achievement of the faculty.

The College cultivates a healthy competitive environment among the faculty to achieve recognition at the state, national and international level for excellence in teaching. They are affirmed success

by the awards received so far.

2.4.6 Has the institution introduced evaluation of teachers by the students and external Peers? If yes, how is the evaluation used for improving the quality of the teaching-learning process?

Whenever a teacher applies for promotion to next higher grade, evaluation is done by a committee of the University which includes external experts. The college administration seeks feedback from the students whenever recommending names for any reward to the external agencies.

The analysis of semester end exams result is taken by each department. This serves as a mechanism for the evaluation and suggesting ways and means for improving the quality of the teaching-learning process.

2.5 Evaluation Process and Reforms

2.5.1 How does the institution ensure that the stakeholders of the institution especially students and faculty are aware of the evaluation processes?

The evaluation process set up by the University is displayed on the University website and is updated time to time.

The College prospectus gives the detailed information about the evaluation process. The students are also informed about the evaluation process i.e. distribution of marks for assignments, tests, projects etc on the Orientation Day of the College. The evaluation process is discussed from time to time in the class by the concerned teachers.

The marks of internal assessment are displayed on the notice board and college website twice in each semester.

To ensure transparency, the students are given opportunity screen their evaluated answer scripts in the case of internal assessment.

Circulars/notifications are regularly emailed to the faculty to keep track of various guidelines/processes.

2.5.2 What are the major evaluation reforms of the university that the institution has adopted and what are the reforms initiated by the institution on its own?

- The College has adopted all the evaluation reforms of the university like introduction of 25% as internal assessment of the students comprising of attendance (5%), Assignments/Projects(10%), Test/Presentation(10%)**.**
- Faculty is involved in the centralized evaluation of the semester end examinations**.**
- Project presentation by the students is done in front of a team of teachers of the department for evaluation.
- The college displays internal assessment marks on the notice boards for students verification and students are free to report any discrepancy in their marks to the office/teacher concerned within a week. Then the final internal assessment marks are submitted to the University.
- To ensure fairness and uniformity, a central moderation committee monitors the internal assessment.
- Appointment of external examiners for practical examinations is done in a fair and transparent manner by the departments.

2.5.3 How does the institution ensure effective implementation of the evaluation reforms of

the university and those initiated by the institution on its own?

The approved evaluation process of the University is duly implemented and in full spirit. The instructions received from the University for Evaluation are circulated among all the faculty members for their information and respective implementation.

The college has an attendance committee which collects attendance from the departments through Teacher-in-Charges. The attendance is compiled and displayed on notice boards and website for student information.

Departmental moderation committees comprising of Teacher-in-Charge, previous Teacher-in-Charge and a senior teacher monitor and moderate the internal assessment of the department.

College internal assessment committee oversees the final moderation of the moderated assessment submitted by each department to ensure the implementation of the evaluation reforms.

2.5.4   Provide details on the formative and summative assessment approaches adopted to measure student achievement. Cite a few examples which have positively impacted the system.

Students achievements of an undergraduate college are also gauged by the grades they achieve in their course. To ensure this objective, the College and Faculty make sure that each and every student is given full attention and monitored throughout the year.

Regular assessment to gauge their grasp of the subject is done with the help of various tools like tests, quizzes, assignments, projects etc. All of these are awarded marks as part of the Internal Assessment which adds to the final examination marks. (For detail distribution of marks refers to point No. 2.5.2). This gives the students added incentive to take up continuous and regular pattern of study.

This continuous evaluation helped the students in the following ways:

- Internal assessment exercises have been designed to identify, common and reoccurring mistakes/weakness of students.
- Corrective measures are adopted in the pedagogy to overcome the common mistakes/weaknesses.
- The assignments/tests are designed such that students are trained for other national/international competitive exams.

It has led into an overall improvement in their preparation for the semester end examinations as well their results.

2.5.5 Detail on the significant improvements made in ensuring rigor and transparency in the internal assessment during the last four years and weightages assigned for the overall development of students (weightage for behavioural aspects, independent learning, communication skills etc.

Before the stipulated four years, the University had an Annual system. Under this scheme there was one evaluation done at the end of the academic calendar as Final Examinations. House exams were held but the marks obtained were not added to the final tally.

However in the new Semester System, 25% of the total marks are awarded as Internal Assessment judged by the attendance (5%), Assignments/Projects (10%), Test/Presentation (10%).The rest of the marks i.e.75% were awarded by the final examinations. The Internal Assessment is generated at the end of the month, and displayed on the website and the notice boards. The students can see their marks and check for their knowledge, satisfaction and also opportunity for rectification. They

are given enough time for verification before the marks are submitted to the University. Every student signs the hard copy of the internal assessment before it is mailed to examination branch of University. Thus the system is completely transparent.

The University has supplemented to the extent of 25%, the term ending evaluation with a continual, comprehensive assessment. This allows one to achieve good grades not solely by their performance in a single 3 hour event.

2.5.6 What is the graduate attributes specified by the college/ affiliating university? How does the college ensure the attainment of these by the students?

The graduates are expected to have the knowledge and skills to deal with the unanticipated and to see opportunities with manifold perspectives. The education shall help them to find new applications for knowledge and offers solutions to complex problems.

The College ensures that our students should be lifelong learners after they graduate. The curriculum clearly defines the outcomes of the course and there is no gap and repetition of units in a discipline. Students demonstrate their achievement of graduate attributes through assessment marks in the form of class tests and projects. We ensure our science students have practical experience of disciplinary-specific laboratory techniques, apparatus and risk awareness. This facilitates understanding of formal scientific research methods which includes hypothesis design, testing, observation, problem solving and experimental skills. This enables them to take informed decisions about their career.

The college approach of ' Beyond the Classroom' which is amalgation of various programmes like promotion of undergraduate research, Entrepreneurship, Theatre in Education, OPEN paradigms, social outreach and other extra-curricular activities equips our students with essential life skills and skill-set.

The Principal and the teachers regularly receive mails and messages where students express their gratitude and appreciate the innovative approach of the college that has helped them farewell in higher studies and careers.

2.5.7 What are the mechanisms for redressal of grievances with reference to evaluation both at the college and University level?

The college administration has a well-developed system to timely address such grievances. The college ensures that the hard copy of internal assessment marks is signed by all the students before it is sent to the examination branch of University. In case of any grievance regarding attendance, assignment/project or test marks, the records are rechecked and the students are informed accordingly.

The University examination branch also addresses such grievances on receiving the application forms forwarded by the college. The University also provides re-evaluation facility for the semester end answer scripts at a modest fee.

2.6. Student performance and Learning Outcomes

2.6.1 Does the college have clearly stated learning outcomes? If 'yes' give details on how the students and staff are made aware of these?

The learning outcomes of the college are interwoven around the twin philosophies viz., **beyond the classroom...** and **preparing for the future @ ANDC.** mailto:future@ANDC'.All The philosophy is printed on all college prospectus, annual reports, college magazine, college website, banners of the

major events like Antardhvani and is built into as practice through the various activities undertaken by the college.

2.6.2 Enumerate on how the institution monitors and communicates the progress and performance of students through the duration of the course/programme? Provide an analysis of the students results/achievements (Programme/course wise for last four years) and explain the differences if any and patterns of achievement across the programmes/courses offered.

The internal assessment committee of the college comprising of Vice-Principal, Staff-Council secretary and two senior teachers by rotation makes sure that the progress and performance is given out to the students in an organized, periodic manner. The attendance is uploaded on the College website every month. The Internal assessment awarded in the middle and end of each semester is also uploaded. This allows the students to see and evaluate their performance.

Besides internal assessment committee, each department of the college has a monitoring committee comprising of present and previous Teacher-in-charge and the senior most teacher of the department.

S.No.	Course	Pass Out %	
		2010-11	**2011-12**
1	B.Com.(Hons)	97.7	100
2	B.Sc.(H)Mathematics	100	100
3	B.Sc.(H)Computer Science	100	95.6
4	B.Sc.(H) Botany	100	89.3
5	B.Sc.(H) Chemistry	91.7	94.6
6	B.Sc.(H) Physics	100	100
7	B.Sc.(H) Zoology	100	92.9
8	B.Sc. Prog. Physical Science	100	100
9	B.Sc. Life Science	100	100
10	B.Sc. Applied Physical Science	95.2	95.5
11	B.Sc. Applied Life Science	100	-
12	B.Sc.(H) Electronics	100	91.3
13	B.Sc.(H) Biomedical science	95.8	100

- In 2010-11, 09 Undergraduate Honours Courses and 04 Undergraduate interdisciplinary Courses in Semester mode were introduced.(Replacing Annual mode Honours Courses and annual mode Programs Courses)

S.No.	Course	2012-13	2013-14
1	B.Com.(Hons)	100	100
2	B.Sc.(H)Mathematics	100	100
3	B.Sc.(H)Computer Science	100	100
4	B.Sc.(H) Botany	100	100

5	B.Sc.(H) Chemistry	100	100
6	B.Sc.(H) Physics	100	100
7	B.Sc.(H) Zoology	96.4	100
8	B.Sc. Physical Science-Chemistry	100	100
9	B.Sc. Physical Science-Computer Sc	100	100
10	B.Sc. Physical Science-Electronics	100	100
11	B.Sc. Life Science	100	100
12	B.Sc.(H) Electronics	100	100
13	B.Sc.(H) Biomedical science	100	100

A simple pattern which can be deciphered from the above table is that the college is consistent in its good academic profile.

2.6.3 How are the teaching, learning and assessment strategies of the institution structured to facilitate the achievement of the intended learning outcomes?

The College and its faculty ensure that the syllabi are completed well within the stipulated time frame allowing the time for revisions/tests/discussions/ assignments/ question-answer sessions. Assignments and tests are conducted regularly to assess the progress of the students in different subjects. In general, all the co-curricular and extra-curricular activities are scheduled after the regular classes. These activites supplement the academic profile of a student with personality development, communication skills, life skills and our learning outcome '**preparing for the future @ ANDC'.**mailto:future@ANDC'.All These are essential in today's competitive environment and for contribution to the nation's developmental agenda.

2.6.4 What are the measures/initiatives taken up by the institution to enhance the social and economic relevance (student placements, entrepreneurship, innovation and research aptitude developed among students etc.) of the courses offered?

The college has taken several measures/initiatives to enhance the social and economic relevance of the courses. The knowledge gained while pursuing the courses is put into use when students engage themselves in various research projects, ELITE programme, Innovation projects, IEDC , SPIE outreach programmes , Entrepreneurship lab and college campus company ANDY. It has turned them into confident learners and also led to enhancement of their profile. In the past 4 years many students have taken advantage of the **Placement cell.**

Year	No. of students enrolled for CCPC	No. of students enrolled for CPC	No. of students who received placement offers	% of students who received placement offers through CCPC
2010-2011	88	75	12	13.63
2011-2012	192	84	113	58.85
2012-2013	172	55	61	35.46

| 2013-2014 | 95 | Direct | 60 | 63.15 |

2.6.5 How does the institution collect and analyse data on student performance and learning outcomes and use it for planning and overcoming barriers of learning?

A copy of the University results is sent to each department. The result is discussed at the departmental level. Appropriate corrective measures required like changes in distribution/sharing of papers among the faculty, continuous monitoring through evaluation, mentoring, counselling, remedial coaching are also taken. Possible measures to overcome these barriers are discussed in departmental staff meetings and staff-council meetings. These measures are implemented and reviewed from time to time.

2.6.6   How does the institution monitor and ensure the achievement of learning outcomes?

Refer to point 2.6.3

2.6.7   Do the institution and individual teachers use assessment/ evaluation outcomes as an indicator for evaluating student performance, achievement of learning objectives and planning? If 'yes' provide details on the process and cite a few examples.

The students' assessment outcome is analysed regularly by the teachers to decide whether the students are able to achieve the learning outcome. Besides the mandatory assignments and class tests, the regular classroom teaching is accompanied by problem solving in the class to assess the immediate understanding of the topic among the students. The students' progress is also monitored weekly during their practical classes on the basis of their lab work, experimental results and record books. From this assessment, the teachers encourage the students to overcome their shortcomings and at the same time they fine tune the experimental skills and data analysis ability. The common teachers of a class collectively analyse the performance of the students to find out the students who have a potential to excel. The results of the students who perform below average are also discussed to gauge whether the problem lies with the language or in basic understanding of the subject. Such students are given additional time beyond the regular classroom teaching.

CRITERION III

RESEARCH, CONSULTANCY AND EXTENSION

3.1 Promotion of Research

3.1.1 Does the institution have recognized research center/s of the affiliating University or any other agency/organization?

The college has the following dedicated Research Laboratories approved by University of Delhi and other International / National research organizations.

S. No.	Research Centre	Affiliating University/Agency/ Organization	Research Guide / Coordinator/ Principal Investigators
1	SPIE (Society of Photo-Optical Instrumentation Engineers) Chapter of University of Delhi at ANDC	University of Delhi – SPIE, USA	Dr. Amit Garg
2	Embedded Systems & Robotics project Laboratory	HRD Ministry and Cluster Innovation Centre, University of Delhi	Dr. Amit Garg Mr. Vishal Dhingra Dr. Arijit Chowdhuri Dr. Sunita Narang
3	lEDC (Innovation & Entrepreneurship Development Centre)	DST	Dr. Vibha Gaur, Mr. Sanjay Vohra
4	Business Incubator	Ministry of Micro, Small & Medium Enterprises (MSME), Government of India	Dr. Savithri Singh Mr. Sanjay Vohra
5	Polymer Research Lab	University of Delhi	Dr. Sunita Hooda
6	Microbial Technology Lab	UGC and University of Delhi	Dr. Monisha Khanna
7	Insect Pests & Vector Laboratory	University of Delhi	Dr. Sarita Kumar
8	Anti-Mycobacterial Drug Discovery Laboratory	CSIR-OSDD (Open Source Drug Discovery) and University of Delhi	Dr. Urmi Bajpai
9	Ciliate Biology Laboratory	UGC and DST	Dr. Ravi Toteja and Dr. Seema Makhija
10	Material Science Laboratory	University of Delhi (South Campus)	Dr. Amit Garg
11	Sensing Materials & Devices Laboratory	DST	Dr. Arijit Chowdhuri, Dr. Charu K. Gupta
12	Chemical Biology Research Laboratory	DST (IEDC)	Dr. Seema Gupta, Dr. Manisha Jain and Dr.

			Gagan Dhawan
13	Chandra Computational Physics Laboratory	DST (FASTRACK)	Dr. Subhash Kumar Dr. Sukanta Deb
14	Computational Biology Research Facility	NNMCB affiliate	Dr. Gagan Dhawan
15	Environmental Monitoring & Assessment Laboratory	DST (Indo-Slovenia)	Dr. Charu K. Gupta Dr. Arijit Chowdhuri Dr. Savithri Singh
16	Centre for Open Education	Creative Commons Affiliate	Dr. Savithri Singh
17	Mathematics Research Centre on Advancements in Combinatorial Sciences	Acharya Narendra Dev College	Dr. Chaman Singh
18	CUBE (Collaborative Undergraduate Biology Education)	Homi Bhabha Centre For Science Education (HBCSE), Tata Institute of Fundamental Research (TIFR)	Undergraduate students @ ANDC
19	Think Lab	Acharya Narendra Dev College	Undergraduate students @ ANDC

3.1.2. Does the Institution have a research committee to monitor and address the issues of research? If so, what is its composition? Mention a few recommendations made by the committee for implementation and their impact.

Yes. The college has the following research committees to monitor and facilitate research in the college.
Research Monitoring Committee:
The committee has been constituted for externally funded projects.
The members are:
Dr. Seema Gupta; Associate Professsor, Department of Chemistry, ANDC
Dr. Sanjeeta Rani; Associate Professsor, Department of Physics, ANDC
Dr. Saumya Saxena; Associate Professsor, Department of Botany, ANDC
Dr. Sona Pranav Kumar; Associate Professsor, Department of Electronics, ANDC
Recommendations of the committee:
Ensured that the guidelines provided for use of animals, radiations, and various chemicals, safe disposal of bio waste and chemicals are being followed.
Took various measures to design safe lab for researchers (ventilation, safety, lighting, fire safety etc.)
Ensured active involvement of UG students.
Encouraged inter and intra-college and inter institutional Collaboration/exchange of students and faculty.
The above mentioned recommendations enabled smooth and safe operations of research projects with involvement of college students.

Dissection Monitoring Committee

The committee was constituted as per the guidelines and UGC Ordinance

Members of the committee are as follows:

Dr. Poonam A Kant, Department of Zoology, ANDC (Convener)

Dr. Rajesh Chaudhary, Department of Biomedical Sciences, ANDC (Co-convener)

Dr. Sarita Kumar, Department of Zoology, ANDC

Dr. Urmi Bajpai, Department of Biomedical Sciences, ANDC

Dr. Ranjana Seth, Department of Zoology, Deshbandu College

Dr. Kamal Kumar Gupta, Department of Zoology, Deshbandu College

Recommendations of the committee:

a) The use of animals for reserach purposes shouild be in strict accordance with UGC guidelines on animal experimentation.

b) If animals are needed for the purpose, the procurement should be from the ethical sources and not removed from the wild.

c) Appropriate records should be maintained for the procurement of animals - their source, mode of transport, number of animals used, conditions in which kept and use of anaesthesia.

d) All Lab in-charges should provide an undertaking ensuring the strict compliance of UGC guidelines.

3.1.3 What are the measures taken by the institution to facilitate smooth progress and implementation of research schemes/ projects?

Autonomy to the Principal Investigator

The Principal Investigator is provided with complete autonomy regarding expenditure; procurement of equipment, stationery and other laboratory items; travel, selection of Project Fellow, hiring of Research Assistants, etc.

Adequate infrastructure and human resources

The adequate space for the establishment of a research laboratory is made available to the investigators along with the infrastructure needed as per demand and requirement. The college has also created a separate reading space in the college library for faculty and research scholars. The college also provides administration and technical support to the investigators as per need.

Timely availability or release of Grants

A separate bank account is opened in the name of the project as and when a project is sanctioned. The grants are received from the funding institution/organization in the particular account and the funds are released to the investigators for specified purpose.

Monitoring of periodic progress

Periodic progress reports are prepared by the investigators and are monitored by the Principal. The reports are submitted to the funding agencies duly forwarded by the Principal as per their format and requirement.

Time-off, reduced teaching load, special leave etc. to teachers

There is no provision for time-off, reduced teaching load or any special leave by the University and the funding agency Govt. of N.C.T of Delhi for conducting research projects. However, study leave is being sanctioned to the faculty members to carry out doctoral or post-doctoral research work as per the rules. Till date, 28% of the faculty has availed study leave for research activities.

Support in terms of technology and information needs

The Instrumentation Laboratory of the College, built as Central facility, is equipped with sophisticated and high-end equipments. The facility is made available to the investigators for conducting research projects. Furthermore, College campus is Wi-Fi enabled and has a openly

accessible web computer center to access literature. The system is part of University LAN allowing access to all the journals/books subscribed by the University. The college is also a member of INFLIBNET and faculty can access the subscribed journals sitting at home.

Facilitate timely auditing and submission of utilization certificate to the funding authorities

On completion of the Project an audit is carried out by a qualified Chartered Accountant and the Utilization Certificates are submitted to the funding agencies within stipulated time.

Any other

The Finance Committee of the college facilitates the purchase of equipment's, chemicals and other requirements for research activities following purchase rules prescribed under GFR.

3.1.4 What are the efforts made by the institution in developing scientific temper and research culture and aptitude among students?

The college envisions bringing research into the classroom to augment regular teaching-learning process. Promoting active participation by the students in research projects as a major co-curricular activity has been an exclusive feature in the college. Students are inspired to think of relevant research problems, choose mentors, search literature, access journals in library, develop laboratory and/or field skills and pursue projects autonomously during the summer break, of course, working with a faculty mentor. The college has access to a number of peer-reviewed research journals through INFLIBNET and DU network including SCOPUS, Science Direct etc.

The college made an understanding with all principal investigators that they shall provide training to undergraduate students either by allowing them to do projects in their laboratories or through conducting training workshops during breaks. Thus, since 2012, the college is running a summer training programme; ELITE (EDUCATION IN A LIVELY, INNOVATIVE and TRAINING ENVIRONMENT), which is fully funded by college. Under the scheme, the college provides about 200 fellowships to the students, each of Rs. 1000/- per month to give them opportunity to take on projects under a mentor teacher during summer break, i.e., June and July. It provides students wide exposure to diverse research possibilities to learn various laboratory techniques, collect data through field studies, conduct surveys, inculcate the habit of or reading research journals, and get an opportunity to execute their innovative ideas. Till date, a total of 275 undergraduate students have completed 88 research projects during summers under the supervision of 36 faculty members. The college has spent a total of Rs. 1,50,000/- in 2013-14 ELITE summer projects.

3.1.5 Give details of the faculty involvement in active research (Guiding student research, leading Research Projects, engaged in individual/collaborative research activity, etc.

Over the last decade ANDC has become a research hub with several research projects by faculty that has enabled creation of research labs, and recognition for independent Ph.D. supervision.

Research Guide:

The college has 6 recognized independent research guides:

Deparment of Zoology: Dr. Monisha Khanna, Dr. Sarita Kumar

Department of Chemistry: Dr. Sunita Hooda

Department of Bio Medical Sciences: Dr. Urmi Bajpai

Department of Electronics: Dr. Amit Garg, Dr. Udaibir Singh

Two students have been awarded Ph. D.

28 teachers in the college are also involved as co-guide in guiding M. Tech., Ph. D. and UG students of college under DST-IEDC, DU Innovation and Elite schemes. The details are:

Department of Bio-medical Sciences: Dr. Gagan Dhawan, Dr. Archana Pandey, Dr. Rajesh Chaudhary

Department of Botany: Dr. Rajeshwari, Dr, Saumya Sexena, Dr. Charu K. Gupta,

Dr. Geetika Kalra

Department of Chemistry: Dr. Seema Gupta, Dr. Neeti Misra, Dr. Manisha Jain, Dr. Vandana Uberoi, Dr. Geetu Gambhir, Dr. Vikrant Kumar, Dr. Pankaj Khanna,

Department of Commerce: Dr. Sandeep K Goel

Department of Computer Science: Dr. Sharanjeet Kaur, Dr. Vibha Gaur, Dr. Sunita Narang, Dr. Chandra Kant Samal.

Department of Mathematics: Dr. Roopesh Tehri

Department of Electronics: Dr. Sona P. Kumar, Dr. Ravneet Kaur, Mr. Vishal Dhingra,

Department of Physics: Dr. Arijit Chowdhuri, Dr. Subhash Kumar

Department of Zoology: Dr. Seema Makhija, Dr. Ravi Toteja, Mr. Ravinder Kumar Sagar,

Research Projects: The above listed teachers (45% permanent faculty) have been engaged in various research projects funded by external agencies.

3.1.6 Give details of workshops/training programmes/sensitization programmes conducted/organized by the institution with focus on capacity building in terms of research and imbibing research culture among the staff and students.

List of workshops/training programmes/sensitization programmes conducted/organized with focus on capacity building in terms of research and imbibing research culture in last four years:

S.No.	Details	Organizers	Date
1	Two-day workshop on FOSS for students	FOSS CLUB, ANDC	January, 2010
2	National Symposium on Chemistry in Biology: the Future of Life Sciences	ANDC	February 12-13, 2010
3	Application of Free and Open Source Softwares in Science Teaching and Research.	The College in association with NRCFOSS (National Resource Centre for Free and Open Source Software), Anna University, Chennai	April 14 - 15, 2010
4	FOSS: Awareness and Possibilities	College in association with NRCFOSS, Anna University, Chennai	April 16, 2010
5	Easy Now Techniques: Workshop on Multimedia Content Development	College in association with CEMCA, New Delhi	May 4-7, 2010
6	Summer Training Workshop for students on "Polyphasic characterization of actinomycetes and analysis of their antimicrobial potential"	Department of Zoology, ANDC	May 15- August 10, 2010
7	A 7-day Basic Computer Training Programme for the new entrants of the college	ANDC	August 20-26, 2010
8	Introduction to Linux platform and Open Software	Department of Computer Science,	October, 2010

		ANDC	
9	Web development using PHP and Drupal	Department of Computer Science, ANDC	March 15-16, 2010
10	International Conference OPEN 2011: Open Paradigms in Education	ANDC	January 31 - February 2, 2011
11	OER workshop held at Institute of Distance and Open Learning, Mumbai	Dr. Savithri Singh, Dr. Sarita Kumar (facilitators)	February 24-26, 2011
12	A workshop on Scilab	Department of Electronics in collaboration with FOSSEE Group, IIT Mumbai	March 10-11, 2011
13	Workshop on Evolutionary Perspectives in Modern Biological Teaching and Research, held at ILLL, University of Delhi	Dr. Savithri Singh (Convenor); Dr. Sarita Kumar	May 9-10, 2011
14	Workshop on Use of software to create Chemistry Document for chemistry students	Dr. Neeti Misra; Dr. Pankaj Khanna, Department of Chemistry	June 6-7, 2011
15	Molecular Phylogenetics: Understanding Evolutionary Histories	Dr. Monisha Khanna (Resource Person), Department of Zoology	June 15-16, 2011
16	Experimental Procedures of Cell and Molecular Biology for Botany Teachers	Dr. Monisha Khanna, Dr. RaviToteja, Dr. Seema Makhija (Co-ordinators & Resource Persons), Department of Zoology	September 9, 2011
17	'OER Workshop' held at Institute of Distance and Open Learning, University of Mumbai	Dr. Savithri Singh, Dr. Ravi Toteja, Dr.Neeti Misra	October 17-20, 2011
18	Teaching Redefined: Open Access to Education, sponsored by INASP, UK, held at ANDC.	Dr. Sarita Kumar (Convenor); Dr. Ravi Toteja	November 1, 2011
19	E-Content development in Economics and understanding soft skills, workshop for the faculty of Mumbai University	Dr. Savithri Singh (Convener), Dr. Sarita Kumar, Dr. Neeti Mishra, Dr. Ravi Toteja, Dr. Pankaj Khanna (Facilitators)	Novemebr 29 - Decemebr 2, 2011
20	Thin Films and their Applications, organized by ANDC SPIE chapter	Dr. Amit Garg (Convenor)	February 24-25, 2012

21	Collaborative Undergraduate Biology Education (CUBE) program" held at Homi Bhabha Centre for Science Education (HBCSE), TIFR, Mumbai	Dr. Savithri Singh, Dr. Sarita Kumar (Resource Persons)	June 29, 2012-July 1, 2012
22	One day workshop on Free & Open Source Software - MAXIMA	Dr. Laxmi Narain (Coordinator); Mr. Sadanand Prasad; Mr. Chaman Singh (Organising Secretaries)	August 17, 2012
23	Two day workshop on LabVIEW and Data Acquisition, organised by ANDC	Dr. Amit Garg	October 5-6, 2012
24	Workshop on Enzyme Linked immunosorbent Assay (ELISA for hands on training to the undergraduate students) by Mr. Vikas Sachdev from AIIMS, New Delhi	Department of Zoology, ANDC	
25	Three day workshop on Mobile Interfacing and Remote Laboratory access using LabVIEW	Dr. Amit Garg	January 8-10, 2013
26	One day workshop on Application of MATHEMATICA in Partial Differential Equations	Dr. Laxmi Narain (Convenor); Dr. RoopeshTehri, Mr. Gurudatt Rao (Coordinators)	March 1, 2013
27	A videoconference-based course on "Proteomics, Genomics and Bioethics" for the students of B.Sc. (H) Biomedical Science	Department of Biomedical Science, ANDC with Ohio State University, USA and Anna University, Chennai	March 2 - April 20, 2013
28	National Conference 'Redefining Science Teaching: Future of Education' held at South Campus, University of Delhi.	Dr. Savithri Singh, Dr. Sarita kumar, Dr. Gagan Dhawan, Dr. Ravi Toteja, Dr. Seema Gupta, Dr. Charu Khosla Gupta, Dr. Arijit Chowdhuri	March 7-9, 2013
29	Skype-Video-conference: on Mycobacteriophages for the summer trainees working on phage discovery. A talk by Prof.	Department of Biomedical Sciences, ANDC	June 17, 2013

	Graham Hatfull, University of Pittsburgh, USA was organized		
30	FOSS and LINUX workshop	FOSS Club, ANDC	August 6-7, 2013
31	Workshop on ethical hacking	FOSS Club, ANDC	September 2-5, 2013
32	One day workshop on 'Open Science for Higher Education and Research' at UDSC, New Delhi.	ANDC, Creative Commons and IIC	October 3, 2013
33	Workshop on Innovative pedagogies for Modern Optics and Photonics, organized by University of Delhi at ANDC SPIE Student Chapter	Dr. Amit Garg	October 10-11, 2013
34	Re-launch of 'Creative Commons India' at India Islamic Centre, Lodhi Road, New Delhi	Dr. Savithri Singh	November 12, 2013
35	CamTel Workshop for teachers	Dr. Savithri Singh; Mr. V Krishnamoorthy	November 21-23, 2013
36	One day workshop on 'Collaborative Undergraduate Biology Education; CUBE - 2014', held at ANDC	Dr. Sarita Kumar; Dr. Ravi Toteja	February 7, 2014
37	One day workshop on 'Think Lab-CUBE Interactive Meet' held at ANDC	Dr. Sarita Kumar; Dr. Ravi Toteja	September 18, 2014

3.1.7 .Provide details of prioritized research areas and the expertise available with the institution.

Laboratory/ In-Charge	Prioritized research areas	Expertise available
Dr. Savithri Singh, Principal	FOSS and Open Educational Resources	Open Education Evangelist
Microbial Technology Research Laboratory/ Dr. Monisha Khanna	Microbial technology	Isolation of bacteria from environment, its culturing, purification and storage Study on morphological, biochemical and physiochemical characteristics of isolates DNA profiling by horizontal gel electrophoresis, PCR amplification and sequencing Antimicrobial activity analysis of isolates against pathogenic strains Extraction of antimicrobial compounds Identification of bioactive fractions by Thin Layer Chromatography and bioautography Compound characterization by Mass and NMR spectrophotometry.

		Extracellular enzyme production by bacteria Analysis of enzyme assays in samples by spectroscopy Enzyme purification by dialysis followed by column chromatography Protein profiling on SDS-PAGE.
Polymer Research Laboratory/ Dr. Sunita Hooda	Synthesis, Characterization of Acrylic/Methacrylic Copolymers and their Applications as Chemical Sensors	Fabrication of chemical sensors using polymer matrices Preparation of ion selective electrode for sensing heavy metal ions in water and removal of toxins from industrial effluents. Synthesis and characterization of nano acrylic copolymers for controlled drug delivery. Study the compositional and configurational sequences of copolymers by NMR Spectroscopy. Synthesis and characterization of Polysaccharide based resin for water treatment. Development of Charcoal-based chelating resin for waste water treatment.
Insect Pests & Vector Laboratory /Dr. Sarita Kumar	Insect Pest and Vector Control	Rearing of insects under controlled conditions – Mosquitoes, Helicoverpa armigera, Dysdercus koenigii, Drosophila melanogaster Extraction of phytochemicals from plants Bioefficacy studies with plant extracts against insect pests and disease vectors Haemolymph and protein profiling of insects on SDS-PAGE DNA extraction from insects and study of DNA damage through electrophoresis and PCR Impact of plant extracts on behaviour and reproductive fitness of insects Histological alterations in gut and reproductive organs of insects Development of resistant strains and synergistic studies Study of biochemical constitution and enzyme titres in insects Identification of bioactive compounds in crude extracts through FTIR and GCMS Biological and microbial control of mosquitoes Formulation of nanoparticles with plant extracts and their characterization
Anti-Mycobacterial Drug Discovery Laboratory / Dr. Urmi Bajpai	Drug discovery for neglected diseases such as tuberculosis Exploring the potential of Mycobateriophages as	Biochemistry and Molecular Biology Cloning, Expression and purification of recombinant proteins Optimization of Enzyme assays for in-vitro screening (High throughput) of inhibitor

	source of anti – M. tuberculosis molecules	molecules for multi-target therapy.
Material Science Laboratory/ Dr. Amit Garg	Data Acquisition and interfacing; Science Education; Surface Plasmon Resonance; (SPR); Material Science	Data Acquisition using sensors and interfacing using LabVIEW Open Source software and hardware tools for interfacing with Android based Mobile phones Holography Optical Planar Waveguides fabrication, characterization and their applications as sensors Thin Films fabrication, characterization and their potential applications in Organic LEDs, Solar Cells and other sensing devices Nanomaterials RTR measurements for High Speed Signals Science Education Biomedical Instrumentation
Dr. Vikrant Kumar	Bioinorganic Chemistry; Bioactive Coordination Polymers; Transitional Metal Complexes in Catalysis	Biomimetic Chemistry, Medicinal Chemistry, Nano-size clusters Approach towards making antimicrobial materials for advanced applications. Production of fine chemicals, pharmaceuticals, renewable energy source and waste-treatment processes
Sensing Materials & Devices Laboratory / Dr. Arijit Chowdhuri, Dr. Charu K. Gupta	Experimental Material Science; Theoretical aspects of Astronomy	Environmental/Gas Sensing Radiation and signal sensing Thin film fabrication with optical & electrical characterization Plasma generation, characterization and analysis Nanomaterials Astronomy using archival data
Ciliate Biology laboratory / Dr. Seema Makhija and Dr. Ravi Toteja	Ciliate Biology	Microscopy In vitro Culturing Toxicology Microbial and Biotechnology Techniques
Chemical Biology Research Laboratory/Dr. Seema Gupta, Dr. Manisha Jain and Dr. Gagan Dhawan	Inorganic Chemistry, Chemical Biology, Synthetic Organic and Biophysical Chemistry	Greener Alternatives to chemistry experiments and chemical waste treatment Design and development of gold nanoparticle based optical biosensor for protease sensing.
Computational Biology Research Facility /Dr. Gagan Dhawan	in-silico drug discovery	Bio informatics Virtual screening Molecular docking
Computational Physics Dr. Subhash Kumar	Computational Astronomy and Astrophysical Plasma	Data Analysis Computer Simulation

3.1.8 Enumerate the efforts of the institution in attracting researchers of eminence to visit the campus and interact with teachers and students?

The college has been organizing talks and interactive sessions ever since its inception. These events became bigger with time and resulted in the National Symposium in 2003, 2010, 2013 and an International Conference in 2011.

The college Annual day has been graced by the presence of various eminent academicians and researchers; Dr. M. S. Swaminathan, Prof. Yash Pal, Dr. Kiran Karnik and Mr. Mike H. Pandey.

The Departmental Societies of the college organize Departmental Functions annually with a mandatory talk session where eminent scientists are invited to deliver a talk for the students and faculty. In last 5 years, around 60 scientists including international faculty have been invited by the Societies of different Departments of the college. Last Year Prof. Allan Warren (President of Life Sciences Department and Microbial Biodiversity Division, Natural History Museum, London; March 3,2014) and Dr. H. Philip Stahl from NASA(President SPIE2014; March 11,2014) delivered talk. More details may be found in the respective departmental reports.

At the college level, many workshops FOSS, OER and Creative Commons have been conducted. The college invited Dr. Richard M. Stallman (RMS); Founder of the Free Software Foundation (FSF, USA) and a free software activist; to the college in 2012 and again this year in January 2014.

3.1.9 What percentage of the faculty has utilized Sabbatical Leave for research activities? How has the provision contributed to improve the quality of research and imbibe research culture on the campus?

The provision of Sabbatical leave for college teachers at the level of Associate Professor has been recently made by the University in August, 2013. However, 21 teachers (28%have availed Study leave of a duration of 2-3 years for completing their Ph.D., Post-Doctoral work and additional Masters Program.

Most of the teachers who have availed study leave are continuing with research activities and are regularly publishing research articles in reputed journals.

The faculty with the experience gained in research during their study leave, participated actively in the project work with students.

Some of the teachers (Dr. Sharanjeet Kaur, Dr. Vibha Gaur) who availed the study leave are now guiding students for the Ph. D. degree.

One teacher (Dr. Chaman Singh) has worked as the Coordinator for the e-Content creation in Mathematics for the National Mission on Education; A project of UGC.

Dr. Gagan Dhawan after completing Master's course in Bio-informatics from University of Edinburgh started a new add-on course (approx 120 hours) in Bioinformatics and in silico Drug Discovery since August 2012 jointly conducted by Acharya Narendra Dev College. He has also been appointed as Member, National Network for Mathematical and Computational Biology (NNMCB) funded by Science and Engineering Research Board, Government of India. The primary goal of this network is to promote research activities and provide training in mathematical and computational biology throughout India.

3.1.10 Provide details of the initiatives taken up by the institution in creating awareness/advocating/transfer of relative findings of research of the institution and elsewhere to students and community (lab to land).

The college ensures and makes all efforts to provide a platform to showcase the research findings of the faculty and students. The various products developed by the research teams were exhibited at the cultural fest Antradhvani-2013 and 2014 hosted by University of Delhi.

S. No.	Title of the Project	Utility Lab to land	Mentors/Students Involved
1.	Control of mosquitoes using weeds	The effective extracts were formulated in the form of inert tablets and liquids. The formulations being highly effective and easier to use suggested the efficient use of these formulations in small water pools, home coolers etc. against mosquito larvae.	Dr. Sarita Kumar
2.	Formulation of certain beneficial products from waste water from Silk Industry	Various products of human use were prepared to overcome the problems associated with skin. The products prepared from the waste water include; Hair Shampoo; Body Lotion; Hand and Body Cream and Bath soap. These products are eco-friendly; proteinaceous, digestible by proteinaceous enzyme; biocompatible and biodegradable material; with gelling property, moisture retention capacity, skin adhesion capability, anti-wrinkle and anti-ageing efficacy; and sun-protective capability. The samples were tested in Government approved laboratory for the safety to user and ISO certification.	Dr. Sarita Kumar Mr. Sanjay Vohra
4.	Formulation of biodegradable and low-cost liquid detergent for laboratory glassware	Keeping the demand flow from the usage in the science laboratories in all the academic institutions and R&D laboratories, an effective, low-cos and biodegradable detergent for cleaning of laboratory glassware has been prepared.	Dr. Seema Gupta; Dr. Manisha Jain
5	Low cost glucometer	The glucometer developed under this project is a low cost solution	Dr. Amit Garg
6	Development of	Phototherapy is the most common	Dr. Amit Garg

	phototherapy blanket for treatment of jaundice in infants	treatment for jaundice in newborns. In India, neonates are at high risk of developing undetected hyper-bilirubinemia.	
7	Development of sensor module for gas sensing applications	A system has been developed wherein the CO_2 gas sensor module detects gas and sends quantitative data to a digital multimeter (DMM). The DMM then sends data wirelessly to an Android app enabled mobile phone using a Bluetooth dongle. The data generated is also logged into a laptop using RS – 232 interface.	Dr. Arijit Chowdhuri
8	Development of novel antifungal soap ingredient	Newly synthesized thiazole Schiff base compound possessed inhibitory activity for common pathogens with low concentration suggesting the use of Schiff base compound as soap ingredient for the diagnosis of common fungal infections.	Dr. Vikrant Kumar
9	Exploring useful bacteria from soil and; isolation and characterization of actinomycetes and analysis of their antibacterial potential	During running of the research projects, bacterial cultures isolated were submitted to M/s Nicholas Piramal Research Centre, Mumbai, who used high through-put screens for the discovery of new bio-molecules with anti-cancer, anti-tumour, anti-fungal, anti-bacterial, anti-inflammatory and anti-diuretic potential.	Dr. Monisha Khanna; Dr. Ravi Toteja and Dr. Vikrant Kumar

3.2   Resource Mobilization for Research

3.2.1   What percentage of the total budget is earmarked for research? Give details of major heads of expenditure, financial allocation and actual utilization.

Adequate provisions are provided in the budget for procurement of equipments, chemicals, apparatus etc. to conduct research activities in the college.

S.No.	Major heads Earmarked for research	Actual utilization (2013-14) (Rs.)
1	ELITE (Education in a Lively Innovative Training Environment)	1,50,000/-
2	Funding for participating in conferences and seminars within the country and abroad	36,380/-
3	To Conduct seminars, conferences and workshops	98,750/-

Funding for participating in conferences and seminars within the country and abroad

The College encourages its faculty and students to participate in national and international conferences and present their work at global level. The college provides them financial support for registration fees, accommodation and travel etc.

Grants to conduct seminars, conferences and workshops

The College has provided funding to conduct various workshops and seminars which are not funded by any external sources. The workshops on photography, multimedia training and laboratory training programs have been conducted successfully in the college utilizing own funds.

3.2.2 Is there a provision in the institution to provide seed money to the faculty for research? If so, specify the amount disbursed and the percentage of the faculty that has availed the facility in the last four years?

The college, being undergraduate college, has no provision for providing seed money to the faculty for research. However, there is a provision of financial support of Rs. 10,000/- per year to the mentors involved in the 'ELITE' students' summer research projects for the purchase of consumables. Around 20% of the faculty mentors have availed this facility in last four years.

3.2.3 What are the financial provisions made available to support student research projects by students?

The College floated a scheme that allowed any and all students who were interested and wanted to explore what it meant to do 'research' to do so through 'summer fellowships' – the ELITE fellowships. A programme that is fully funded by college, ELITE is a pioneering initiative – the first of its kind in the University. There are 200 scholarships at stake, each worth Rs. 1000/- per month.

Students are inspired to think-up relevant research problems, choose mentors, access journals in library, develop laboratory and/or field skills and pursue projects autonomously during the summer break, of course, working under a faculty mentor. The Mentors are sanctioned up to Rs. 10,000/- towards recurring grant for these projects.

3.2.4 How does the various departments/units/staff of the institute interact in undertaking inter-disciplinary research? Cite examples of successful endeavors and challenges faced in organizing interdisciplinary research.

The College has been awarded ten Innovation projects by University of Delhi (Six in 2012-13 and four in 2013-14). These are inter-disciplinary projects which conditionally involve faculty members and students across different streams. The faculty and students interact with each other, work in collaboration and share their knowledge of different areas of Science and tackle the questions in a holistic way. For example, Innovation project on development of Glucometer had a team comprising of people from Biomedical Science, Physics and Electronics who used their expertise towards development of a usable product. In addition the SPIE chapter at Delhi University of ANDC has members from Physics and Electronics.

Under the IEDC (Innovation and Entrepreneurship Development Centre) funded by DST, the faculty collaborate with each other, conduct innovation projects using their individual expertise and develop various marketable products.

3.2.5   How does the institution ensure optimal use of various equipment and research facilities of the institution by its staff and students?

The college is running 13 science courses and it has carved out a niche for itself in the field of Science education. The College has 28 well-equipped laboratories and 19 research centers. The students and faculty have access to all these laboratories to conduct research activities. The Central Instrumentation Laboratory maintains all the records of equipment use in the form of a log book. Faculty and students can also get equipments and consumables issued from the laboratories following due procedures.

3.2.6   Has the institution received any special grants or finances from the industry or other beneficiary agency for developing research facility? If "yes" give details.

The college received a grant of approximately 23 Lakhs from DST (2010-2015) for the development of Innovation and Entrepreneurship Development Center (IEDC) in the College to support research projects with marketable ideas in order to promote entrepreneurship culture among the students.

3.2.7   Enumerate the support provided to the faculty in securing research funds from various funding agencies, industry and other organizations. Provide details of ongoing and completed projects and grants received during the last four years.

To secure research funding the faculty requires infrastructural support. The college provides all possible support to all faculties willing to pursue research projects. They are provided with dedicated laboratories, power back up for labs, uninterrupted water supply, Wi-Fi enabled computers and laptops. The library has online access to many reputed journals to help them in their research.

On-Going Research Projects						
Nature of the Project: Major						
S. No.	Investigator (s)/ Department	Duration	Title of the Project	Name of the funding agency	Total grant sanctioned (lakhs)	Total grant received till date (Lakhs)
1	Dr. Seema Makhija, Dr. Ravi Toteja (Zoology)	2012 – 2015	Stress-induced induction of metallothioneins (MTs) gene in ciliates & its use as biomarker to assess environmental pollution.	UGC	09.42	05.17
2	Dr. Seema Makhija, Dr. Ravi Toteja (Zoology)	2012– 2015	A study on heavy metal-induced stress response at cellular and molecular level in ciliates for the development of a potential biosensor.	DST	28.0	10 .00
3	Dr. Monisha Khanna (Zoology)	2012 – 2015	Extraction and activity analyses of extracellular enzymes from soil	UGC	09.72	05.33

			actinomycetes.			
4	Dr. Urmi Bajpai (Biomedical Sciences)	2013 – 2015	Mtb Mur pathway enzymes: Potential candidates for multi-targeted therapy.	CSIR – OSDD	30.38	21.19
5	Dr. Arijit Chowdhuri (PI), Dr. Savithri Singh (Co-PI) & Dr. Charu K. Gupta (Co-PI)	2015-18	Exposure-Response Assessment of Ambient Air Pollution (AAP) and Hg contamination in Affected Cities of India and Slovenia: A Comparative Study	DST (Indo-Slovenia joint project)	17.00	--
6	Dr. Subhash Kumar (Physics) Dr. Sukanta Deb (Physics)	2013-16	Analysis of light curves of variable stars.	SERC DST	06.60	04.80
Nature of the Project: Students' Innovative Projects						
1	Dr. Vibha Gaur & Mr. Sanjay Vohra	2010-15	Innovation and Entrepreneurship Development Centre (IEDC) – it provides funds for 5 projects each year.	DST	27.55 (Further allocate as per the following list (24-45)	21.00
Completed Projects during last four years						
Nature of the Project: Major						
1	Dr. Ram Kumar (Zoology)	2008 – 2011	Evaluation of the potential of cyclopoid as copepod as an effective Bio-control agent for the control of disease vectors.	ICMR	16.00	11.99
2	Dr. Vandana Uberoi, Dr. Sunita Hooda, Dr. Geetu Gambhir (Chemistry)	2008 – 2011	Fabrication of new polymer sensors for Environmental protection.	UGC	07.56	07.86
3	Dr. Amit Garg, Mr. Vishal	2009 – 2012	Investigating science Hands-on to promote innovation & research at	UGC	10.54	10.65

	Dhingra, (Electronics); Dr. Savithri Singh (Principal)		undergraduate level.			
	Dr. Sarita Kumar (Department of Zoology)	2009 – 2012	Larvicidal Properties of Certain Botanicals against Mosquito larvae – An Alternative for Mosquito Control	UGC	13.73	13.78
4	Dr. Arijit Chowdhuri (Physics)	2009 – 2012	Development of magnetron source for plasma assisted growth of metal oxide thin films for sensor application.	DST	24.72	
5	Dr. Shallu Sachdeva (Chemistry)	2009 – 2012	One pot and solvent-less synthesis of metalloporphyrins – A green chemistry approach.	UGC	09.32	
6	Dr. Urmi Bajpai (Biomedical Sciences)	2010 – 2012	Cloning and Expression of Mycobacterium tuberculosis genes	CSIR	20.00	16.82
7	Dr. Vikrant Kumar (Chemistry)	2010 – 2013	Metal complexes as anti-cancer agents: Synthesis, characterization & their tumerogenesis evaluation.	DBT	16.11	16.11
Nature of the Project: Interdisciplinary projects/ Students'research projects						
1	Dr. Urmi Bajpai (BMS), Mr. Vishal Dhingra (Electronics), Dr. Sarita Kumar (Zoology)	2013-2014	Mobile healthcare: The future of health management in India- A Feasibility Study	DU Innovat ion Project	05.00	05.00
2	Dr. Amit Garg (Electronics), Dr. Roopesh Tehri (Mathematics), Dr. Chandra Kant Samal (Comp	2013-14	Development of low cost computer controlled science laboratory using Sensors and open source hardware and Software tools.	DU Innovat ion Project	06.00	06.00

	Sc.)					
3	Dr. Arijit Chowdhuri (Physics), Dr. Charu Khosla Gupta (Botany), Dr. Sunita Narang (Computer Science)	2013-14	Artificial Olfaction using e-nose –mimicking human nose for gas sensing applications	DU Innovation Project	05.00	05.00
4	Dr. Subhash Kumar (Physics), Dr. Sukanta Deb (Physics), Dr. Sharanjit Kaur (Computer Science)	2013-14	Astronomy using archival data.	DU Innovation Project	04.50	04.50
5	Dr. Amit Garg, (Electronics). Dr. Arijit Chowdhuri, (Physics), Dr. Rajesh Chaudhary (Biomedical Sciences)	2012-13	Glucose Detection – A Biosensing Approach	DU Innovation project	10.00	10.00 L
6	Dr. Seema Gupta, Dr. Manisha Jain, (Chemistry) Dr. Gagan Dhawan (Biomedical Sciences)	2012- 13	Survey-based study to identify the health hazards associated with occupational exposure of chemically reactive dyes used by dyers to color the fabrics.	DU, Innovation Project	10.00	10.00
7	Dr. Amit Garg, Mr.Vishal Dhingra (Electroncs) Dr.Pankaj	2012-13	Mobile Phone as a real time sensor based undergraduate laboratory	DU, Innovation Project	10.00	10.00

	Khanna (Chemistry)					
8	Dr. Savithri Singh, (Principal) Dr. M. S. Rajeshwari, (Botany), Dr. Rajesh Chaudhary (Biomedical Sciences)	2012-13	Recording and analysis of locomotory behaviour among birds	DU, Innovation project	10.00	10.00
9	Dr. Monisha Khanna, Dr. Ravi Toteja, (Zoology), Dr.Vikrant Kumar (Chemistry)	2012-13	Exploring useful bacteria from soil	DU, Innovation project	10.00	10.00
Nature of the Project: Students' Innovative Projects						
1	Dr. Seema Gupta (Chemistry), Dr. Manisha Jain (Chemistry) Dr. Gagan Dhawan (Biomedical Sciences)	2013-14	Design and Development of Gold Nanoparticle based Optical Biosensor for Protease Sensing	DST-IEDC	0.92	0.90
2	Dr. Charu K. Gupta (Botany)Dr. Arijit Chowdhuri (Physics)	2013-14	Development of compact water purifier system	DST-IEDC	0.87	0.87
3	Dr. Sunita Hooda, Dr. (Chemistry)	2013-14	Development of Charcoal Based Chelating Resin for Waste Water treatment	DST-IEDC	0.87	0.87
4	Dr. Ravneet Kaur (Electronics) Dr. Vibha Gaur (Computer Science)	2013-14	Sensors based Notification System for the Visually Handicapped	DST-IEDC	0.82	0.82

5	Dr. Saumya Saxena (Botany), Mr. Pawan Kumar (Physics)	2013-14	Generating Biogas and Organic fertilizer using solid waste from college and surrounding disposal sites	DST-IEDC	0.87	0.87
6	Dr. Ravi Toteja, Dr. Seema Makhija (Zoology)	2013-14	A low cost microbiotest for detecting insecticides by exploring behavioral and ecotoxicological response of fresh water ciliates	DST-IEDC	0.65	0.65
7	Dr. Gagan Dhawan (Biomedical Science)	2012-13	Use of open source tools integrating bioinformatics and cheminformatics for addressing complex problems in biology	IEDC, DST	0.92	0.92
8	Dr. Vikrant Kumar (Chemistry)	2012-13	Development of Novel Antifungal Soap Ingredient	IEDC, DST	0. 85	0. 85
9	Dr. Sarita Kumar (Zoology)	2012- 13	Evaluation of the beneficial properties and formulation of certain useful products from the waste peels of banana	IEDC, DST	0.85	0.85
10	Dr. Geetu Gambhir (Chemistry)	2012-13	Development of Bioactive Paper Sensor for determination of Pesticide Residues	IEDC, DST	0.85	0.85
11	Dr. Arijit Chowdhuri (Department of Physics)	2012- 13	Development of sensor module for gas sensing applications	IEDC, DST	0.85	0.85
12	Dr. Seema Gupta, Dr. Manisha Jain (Chemistry)	2012-13	Environment Management by Chemical Waste Treatment at the Source	IEDC, DST	0.68	0.68
13	Dr. Sunita Hooda, Dr. Madhu Bala Raigar (Chemistry)	2011-12	Fabrication of Novel Polysaccharide based Biosensors as Ion Exchanger	IEDC, DST	01.00	01.00
14	Dr. Seema Makhija, Dr. Ravi Toteja (Zoology)	2011-12	Use of Bioluminescent Ciliate sensors as an alternative method for measuring heavy metals in	IEDC, DST	01.00	01.00

			fresh water samples			
15	Dr. Seema Gupta, Dr. Manisha Jain (Chemistry)	2011-12	Formulation of biodegradable and low cost liquid detergent for laboratory glassware	IEDC-DST	01.00	01.00
16	Dr. Sarita Kumar, Mr. Sanjay Vohra (Zoology)	2011-12	Formulation of medically important products from Silk Cocoons waste	IEDC-DST	01.00	01.00
17	Dr. Amit Garg (Electronics)	2011-12	Development of Phototherapy blanket for treatment of jaundice in infants	IEDC-DST	1.00	01.00
18	Dr. Vibha Gaur (Computer Science)	2010-11	CASE Tool Box	IEDC-DST	1.00	01.00
19	Dr. Amit Garg (Electronics)	2010-11	Development of Low Cost Glucometer	IEDC-DST	1.00	01.00
20	Dr. Sarita Kumar (Zoology)	2010-11	Identification and formulation of products from weed extracts exhibiting anti-mosquito potential	IEDC-DST	1.00	01.00
21	Mr. Sanjay Vohra (Sericulture)	2010-11	Development of New Eco-friendly Natural Dyes from Potential Plants materials for dyeing different textile materials	IEDC-DST	1.00	01.00

3.3 Research Facilities

3.3.1 What are the research facilities available to the students and research scholars within the campus?

The college is equipped with a number of sophisticated equipments as enlisted. Students are encouraged to do projects in any departmental laboratory, central facility (Instrumentation Lab) or research laboratories.

To facilitate research in the college by faculty and students, over the years, the college has, procured state-of-the-art scientific equipment required for quality research (details in 3.3.3).

The College installed EPABX: an intercom facility in 1997 (one of the first colleges in DU to do so) to connect the whole college, office, library, departmental laboratories, staff rooms, research laboratories, and Web Facilitation Centre. The College is able to effortlessly provide a contemporary work environment that makes judicious use of technology intensive facilities.

A web facilitation centre has been set up in the college which is equipped with 80 computers. Students and faculty use this facility to access research journals available on University of Delhi Server.

All laboratories are wi-fi enabled to facilitate faculty and students for accessing any information.

Facility has been provided to the faculty for online access to research journals from home through INFLIBNET account

Financial assistance is provided to students and staff for attending conferences and presenting their research work.

3.3.2 What are the institutional strategies for planning, upgrading and creating infrastructural facilities to meet the needs of researchers especially in the new and emerging areas of research?

The infrastructural requirements are planned beforehand and submitted to the funding agency. Moreover, the faculty is encouraged to submit research proposals to external funding agencies. The grants sanctioned through the external projects are used to enhance the research facilities of the laboratories. College has state-of-the-art research laboratories wherein latest instruments are added on yearly basis.

3.3.3 Has the institution received any special grants or finances from the industry or other beneficiary agency for developing research facilities? If "yes", what are the instruments / facilities created during the last four years?

Yes, the college has received grants or finances from various funding agencies as given in sections 3.2.6 and 3.2.7.

The instruments procured during last four years are:

Buchi's Rotary Evaporator

4 - Channel Digital Storage Oscilloscopes (DSO)

CO_2 Incubator

Computer Interfaced Dedicated Gas Sensing Test Rig

Conductivity Meters

Digital Viscometer

DOT-BLOT System

Flame Photometers

Hot SS Air Sterilizer

Deep Freezers (- 20 °C and – 80 °C)

Gel Doc

Ice Flaking Machines

Laminar Flow Hoods (Horizontal)

Lyophilizer

Microplate Reader (ELISA)

Microscopes – Fluorescence & Phase Contrast

Millipore Water Filter

Mini-gel Documentation System

Orbital Shaking Incubators

PCR

Gradient PCR

pH Meters

Polarimeters
Potentiometers
Refrigerated Centrifuge
Spirometers
Sonicator
Tetra-cell Vertical gel electrophoresis system
Ultrasonic Processors
UV-VIS Spectrophotometers
UV-Trans-Illuminators
Vertical Autoclaves
Water Bath Shakers
Western Blot Apparatus with Power Pack
Work Station for High Speed Computing

3.3.4   What are the research facilities made available to the students and research   scholars outside the campus/other research Laboratories?
Students are encouraged to attend/join Summer Trainings conducted by various reputed institutes such as IIT-DELHI, IUAC-New Delhi, NII, DRDO, NCBR and PG departments of Universities (DU, JNU, JMI, HBCSE Mumbai).
Research scholars are facilitated to use hi-end sophisticated equipments and other research facilities available at Central Instrumentation Laboratories of University of Delhi.

3.3.5   Provide details on the library/information resource center or any other facilities available specifically for the researchers?
Separate/Glass partitioned space equipped with working stations are provided in the library exclusively for research scholars.
Online access for all the journals subscribed by the University is available for the researchers through University LAN.

3.3.6 What are the collaborative research facilities developed/created by the research insti tutes in the college. For ex.Laboratories, library, instruments, computers, new technology etc.
The College has a total of nineteen research centers (listed 3.1.1), fourteen research laboratories equipped with sophisticated equipments and adequate facilities to support the research work. These labs have been constructed from grants sanctioned to individual PIs from various funding agencies in addition to the grants provided by the College. These labs provide basic infrastructure required for basic and applied work in the Physical, Chemical and Life Sciences and provide a collaborative environment. The laboratories and the facilities within are available to all other faculty and students. The laboratories provide excellent platform and exposure to the students to inculcate scientific attitude through collaborative work. Many students across the departments are trained developing an interdisciplinary approach in their young minds towards Science.
The common instrumental facility houses some of the highly sophisticated instruments being used by all the faculty members. The list of instruments is given in 3.3.3.
The SPIE student chapter of University of Delhi at ANDC is a nodal point to spread the concept and applications of optics and photonics among students of University of Delhi as well as Schools of Delhi.

The College library supports the inquisitive minds with its huge collection of books which includes textbooks, magazines, fiction, literary work, books on specialized topics or disciplines, etc. The college library holds a book exhibition every year by leading publishers for all the students and staff. The College library through this effort adds latest and valuable books to its collection.

Delhi University has facilitated to develop Computer Centre in the college housing 76 computers, provided equipment for laboratories and books for Library.

3.4 Research Publications and Awards

3.4.1 Highlight the major research achievements of the staff and students in terms of* Patents obtained and filed (process and product)

The preparation of a potential herbal cure for Alzheimer's disease using Withania somnifera has yielded Dr Pankaj Khanna, Department of Chemistry, of the college with a publication in PNAS, USA (impact factor 9.809), a PCT patent, followed by a Granted US patent (also published Australian and European patents). The journal publication was also cited in The Telegraph, Calcutta. The details are as follows:

Patent:

Withania somnifera plant extract and method of preparation thereof.

PCT/IN2009/000430, Pub. No.: WO/2010/013254, Pub. on 04.02.2010

i)   US Patent, Pub No. 13003758, Pub. On 22.09.2011, Granted on 09.07.2013

ii)   Australian Patent, Pub No. 2009277963, Pub. On 13.01.2011

iii)   European Patent, Pub No. 2009787611, Pub. On 11.05.2011

* Original research contributing to product improvement
* Research studies or surveys benefiting the community or improving the services
* Research inputs contributing to new initiatives and social development

3.4.2 Does the Institute publish or partner in publication of research journal(s)?   If „yes", indicate the composition of the editorial board, publication policies and whether such publication is listed in any international database?

No, the college does not publish or is partner in publication of research journals. However, many faculty members are part of editorial board of other research journals published elsewhere.

3.4.3   Give details of publications by the faculty and students:

Publication per faculty   6.02

Number of papers published by faculty and students in
peer reviewed journals (national / international)   452

Number of publications listed in International Database (for Eg: Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)

Monographs   01

Chapter in Books   63

Books Edited   06

Books with ISBN/ISSN numbers with details of publishers   66

LIST BOOKS

S. No.	Title of the Book	Faculty	Publisher	Books with ISBN /ISSN
1	71+10 New Science Projects	Dr. Amit Garg	Pustak Mahal, Delhi	9789381384053
2	Electronics and Computer quiz book	Dr. Amit Garg	Pustak Mahal, Delhi	812230365X
3	Tsunami Lahron Ka Kehar	Dr. Amit Garg	Vidyarthi Prakashan	9788185256498
4	Vigyan Ke Dhamake	Dr. Amit Garg	Indraprashta Prakashan,Delhi	978-81-7150-061-1
5	Fun with Numbers	Dr. Amit Garg	Pustak Mahal, Delhi	8122303528
6	Financial Performance of Commercial Banks in India in Post Reforms Era, An Empirical Study	Dr. Sandeep Goel	LAP LAMBERT Academic Publishing, Germany, 2012	978-3-659-19176-3
7	Fuzzy Set Theory for M.Sc. Students,	Dr. Chaman Singh	Krishna Educational Publishers, Meerut, U.P. India	81-8283-226-8
8	Maths Magic for class 6	Dr. Chaman Singh	EDUWELL BOOKS Educational Publisher	81-8186-212-0
9	Maths Magic for class 7	Dr. Chaman Singh	EDUWELL BOOKS Educational Publisher	81-8186-213-9
10	Maths Magic for class 8	Dr. Chaman Singh	EDUWELL BOOKS Educational Publisher	81-8186-214-7
11	"Foundation Course: Information Technology"	Dr.Pankaj Tyagi	University Press (India) Private Limited	ISBN: 978-81-7371-900-4
12	"I Discover: A Workbook for ICSE Physics Class 8"	Dr.Pankaj Tyagi	Cambridge University Press, New Delhi, India	ISBN: 978-1-107-67192-8
13	"I Discover: A Workbook for ICSE Physics Class 7"	Dr.Pankaj Tyagi	Cambridge University Press	ISBN: 978-1-107-69930-4
14	"I Discover: A Workbook for ICSE Physics Class 6"	Dr.Pankaj Tyagi	Cambridge University Press	ISBN: 978-1-107-69004-2
15	"I Discover: A Textbook for ICSE Physics Class 8"	Dr.Pankaj Tyagi	Cambridge University Press	ISBN: 978-1-107-66922-2

16	"I Discover: A Textbook for ICSE Physics Class 7"	Dr.Pankaj Tyagi	Cambridge University Press	ISBN: 978-1-107-68127-9
17	I Discover: A Textbook for ICSE Physics Class 6	Dr.Pankaj Tyagi	Cambridge University Press	ISBN: 978-1-107-68412-6
18	"Visualised Science (Term I) – CBSE X"	Dr. Sarita Kumar Dr.Pankaj Tyagi	Sultan Chand and Son(s) Pvt Ltd.	ISBN: 978-81-8350-352-5
19	Visualised Science (Term II) –CBSE X	Dr. Sarita Kumar Dr.Pankaj Tyagi	Sultan Chand and Son(s) Pvt Ltd.	ISBN: 978-81-8350-353-2
20	Visualised Science (Term I) –CBSE IX	Dr. Sarita Kumar Dr.Pankaj Tyagi	Sultan Chand and Son(s) Pvt Ltd.	ISBN: 978-81-8350-354-9
21	Visualised Science (Term II) –CBSE IX	Dr. Sarita Kumar Dr.Pankaj Tyagi	Sultan Chand and Son(s) Pvt Ltd.	ISBN: 978-81-8350-355-6
22	"Self Tutor : Visualised Science – CBSE X" (Term I)	Dr.Pankaj Tyagi	Sultan Chand and Son(s) Pvt Ltd.	ISBN: 978-81-8350-289-4
23	"Self Tutor : Visualised Science – CBSE X" (Term II)	Dr.Pankaj Tyagi	Sultan Chand and Son(s) Pvt Ltd.	ISBN: 978-81-8350-343-3
24	"Visualised Physics – CBSE IX"	Dr.Pankaj Tyagi	Sultan Chand and Son(s) Pvt Ltd.	ISBN: 978-81-8350-277-6
25	"Visualised Physics – CBSE X"	Dr.Pankaj Tyagi	Sultan Chand and Son(s) Pvt Ltd.	ISBN: 978-81-8350-235-0
26	"Self Tutor Science Physics – CBSE X"	Dr.Pankaj Tyagi	Sultan Chand and Son(s) Pvt Ltd.	ISBN: 978-81-8350-228-8
27	I Explore: A Science Textbook for Class 8	Dr.Pankaj Tyagi	Cambridge University Press	ISBN: 978-0-521-18602-5
28	"I Explore: A Science Textbook for Class 7"	Dr.Pankaj Tyagi	Cambridge University Press	ISBN: 978-0-521-18600-1
29	"I Explore: A Science Textbook for Class 6"	Dr.Pankaj Tyagi	Cambridge University Press	ISBN: 978-0-521-18597-4
30	"Global Warming: Ek Karva Sach "	Dr.Pankaj Tyagi	Pallav Prakashan	ISBN: 978-81-8838-745-

				8
31	"Email – Aadhunik Chithi "	Dr.Pankaj Tyagi	Pallav Prakashan	ISBN: 978-81-8865-231-0
32	"Ekkisvin Sadi Ka Vigyan"	Dr.Pankaj Tyagi	Pallav Prakashan	ISBN: 81-88387-19-3
33	Laboratory Manual for Environmental Chemistry	Dr. Sunita Hooda and Sumanjit Kaur	S. Chand and Company (1999)	ISBN 81-219-1807-3.
34	Chemistry for X	Dr. Sunita Hooda	Saraswati House Publication (2003)	ISBN 81-7335-118-X.
35	Chemistry for IX	Dr. Sunita Hooda	Pyragon International Publication (2005)	
36	How to face Chemistry, Class XI	Dr. Sunita Hooda Dr. Seema Gupta Dr. Pooja Bhagat	Pyragon, International Publication (2005)	
37	New Visualized Science and technology, Class VI	Dr. Sunita Hooda Dr. Sarita Kumar Dr. VinayKumar	Sultan Chand and Son(s) Pvt. Ltd.	ISBN 81-8350-193-1.
38	Understanding chemistry through numerical problems	Dr. Neeti Misra	Arya Book Depot (2001)	
39	Chemistry –XI	Dr. Neeti Misra	Arya Book Depot (2003)	
40	Chemistry –XII	Dr. Neeti Misra	Arya Book Depot (2003)	
41	Complete Course in Chemistry, Class XI	Dr. Neeti Misra	Arya Publishing Company (2006)	
42	Complete Course in Chemistry, Class XII	Dr. Neeti Misra	Arya Publishing Company (2007)	
43	Numericals in Chemistry, Class XII	Dr. Neeti Misra	Avichal Publishing Company (2008)	
44	ISC Practical Chemistry, Class XI	Dr. Neeti Misra	Arya Publications(2008)	
45	Understanding ISC Chemistry, Class XI	Dr. Neeti Misra	Arya Publications(2009)	
46	Understanding ISC Chemistry, Class XII	Dr. Neeti Misra	Arya Publications(2008)	
47	ISC Practical Chemistry, Class	Dr. Neeti Misra	Arya Publications(2009)	81-88237-32-9

	XII			
48	Understanding chemistry through numerical problems	Dr. Neeti Misra	Arya Book Depot (2001)	81-88237-33-7
49	Chemistry –XI	Dr. Neeti Misra	Arya Book Depot (2003)	81-88237-28-0
50	Chemistry –XII	Dr. Neeti Misra	Arya Book Depot (2003)	
51	Complete Course in Chemistry, Class XI	Dr. Neeti Misra	Arya Publishing Company (2006)	
52	"Engineering Chemistry"	M. M. Uppal and Dr. Pooja Bhagat	Khanna Publishers	Under print
53	Science and Technology for class ninth.	Dr. Vandana Uberoi and Dr. Geetu Gambhir	Pyragon, International Publication	
54	Science and Technology for class Tenth	Dr. Vandana Uberoi and Dr. Geetu Gambhir	Pyragon, International Publication	
55	Our Environment- A Comprehensive Approach (Class VI)	Dr. Sarita Kumar	Sultan Chand and Son(s) Pvt Ltd.	978 81 8350 140 0
56	Our Environment- A Comprehensive Approach (Class VII)	Dr. Sarita Kumar	Sultan Chand and Son(s) Pvt Ltd.	978 81 8350 145 1
57	Our Environment- A Comprehensive Approach (Class VIII)	Dr. Sarita Kumar	Sultan Chand and Son(s) Pvt Ltd.	978 81 8350 163 X
58	New Visualised Science and Technology (Class VI)	Dr. Sarita Kumar	Sultan Chand and Son(s) Pvt Ltd.	978 81 8350 438 6
59	New Visualised Science and Technology (Class VII)	Dr. Sarita Kumar	Sultan Chand and Son(s) Pvt Ltd.	978 81 8350 441 6
60	New Visualised Science and Technology (Class VIII)	Dr. Sarita Kumar	Sultan Chand and Son(s) Pvt Ltd.	978 81 8350 443 0
61	Exploring Biology Class X	Dr. Sarita Kumar	Sultan Chand and Son(s) Pvt Ltd.	978 81 8350 207 8

62	Exploring Biology Class IX Based on ICSE Syllabus	Dr. Sarita Kumar	Sultan Chand and Son(s) Pvt Ltd.	978 81 8350 276 4
63	Visualised Biology for class X based on CBSE syllabus	Dr. Sarita Kumar	Sultan Chand & Sons, New Delhi	978 81 8350 236 8
64	Visualised Biology for class IX based on CBSE syllabus	Dr. Sarita Kumar	Sultan Chand & Sons, New Delhi	978 81 8350 286 5
65	Text Book of Biotechnology	Ravi Toteja	Anne Books Pvt. Ltd.	9789380156804
66	Comprehensive biology for class XI	Poonam A Kant	Laxmi publications Pvt. Ltd.	C2170

Citation Index   -
SNIP   25.886
SJR   23.16
Impact factor   62.4

3.4.4 Provide details (if any) of
∗   Research awards received by the faculty

Research awards received by the faculty	
Name of the Faculty	Research Award
Dr. Amit Garg, Dr Roopesh Tehri, Dr. Chandrakant Samal	DU Innovation project, ANDC 202, has been awarded the Best Display Award Under Scientific Arena at Annual Academic and Cultural Festival 'Antardhvani' organized by University of Delhi, February 2015
Dr. Arijit Chowdhuri, Dr. Charu Khosla Gupta and Dr. Sunita Narang	DU Innovation project ANDC 204 has been adjudged as the Best Innovative Idea at Annual Academic and Cultural Festival 'Antardhvani' organized by University of Delhi, February 2015
Dr. Seema Makhija	Awarded the best oral presentation for the research paper Inferring Phylogenetic Position of an Indian Isolate Tetmemena sp. (Ciliophora, Oxytrichidae) Using Morphological, Morphogenetic and Molecular Markers" in 2nd Asian congress of Protistology and Ninth Asian Conference on Ciliate Biology organized by Kalyani University, Kalyani, India (2014)
Dr. Amit Garg with team of four students namely; Avinash Kumar Shudhanshu, B.Sc. Physical Sciences with Elec., 2nd Year; Gaurav Singh, B.Sc. Computer Science (Hons.) 2nd year; Raj Kumar and	Stood First in this National Level project presentation competition in '7th National Level Science Symposium-2014' on "Recent Trends in Science and Technology" at Undergraduate level under 'Information Technology' categorysponsored by 'Gujarat Council of Science and Technology' at Christ College, Rajkot on February 23, 2014.

Sadashiv Raj Bharadwaj, B.Tech. Electronics, 1st Year	
Dr. Shallu Sachdeva	Awarded first prize for Poster - One pot and solvent-free synthesis of Metallophthalocyanines: A Green chemistry approach to synthesize metal complexes presented at National Conference on Green Chemistry: An approach to meet the challenges of sustainability held at Chem. Deptt., MMH College, Ghaziabad, on Jan 22-23, 2011.
Dr. Shallu Sachdeva	Awarded first prize for Poster - One Pot, Solvent-Free & Energy Efficient Synthesis of Metallophthalocyanines: A Green Chemistry Approach to Synthesize Metal Complexes presented at International Conference on Chemistry of Phytopotentials: Health, Energy and Environmental Perspectives, CPHEE 2011, held at Agra, on 4-6 Nov. 2011.
Dr. Amit Garg , Vishal Dhingra Reena Sharma and students Rohit Gambhir, Anshul Vinay Parmar, Migmar Dolma [B.Sc. (H) Electronics-IIIrd year]	Selected as the IIIrd best paper in VI Mantra 2008; Study of Hall Effect using LabVIEW; the Virtual Instrumentation contest for Science and Engineering Education, published by National Instruments, USA. As part of the prize, the team received the Student Version of LabVIEW (the specialized software that costs about 10 lakhs) and certificates from National Instruments to all the authors. The team also won 1000 USD from National Instruments for Lab up-gradation.
Dr. Amit Garg	Awarded second Prize of Rs.40000/- by Ministry of Earth Sciences, Govt. of India under Original book writing scheme in Hindi 2011 for Tsunami Lahron Ka Kehar.
Dr. Monisha Khanna	Best poster presentation award for the research paper titled Rifamycins- Strain Improvement Program", M Khanna, H Kaur, N Srivastava, S Lal and R LaI; at the 35th Annual Conference of Association of Microbiologists of India, held at Mysore, India (Nov. 1994).
	Consolation prize for the research paper "Screening of soil actinomycetes for antimicrobial compounds" at National Conference on "Redefining Science teaching: Future of education" held at South Campus, Delhi University, March 7-9, 2013.
Dr. Sarita Kumar and Radhika Warikoo, Research Scholar	Awarded first prize for the paper 'A Laboratory Study on the Larvicidal Properties of Three Peppercorns Against an Indian strain of Dengue Fever Mosquito, Aedes aegypti L. (Diptera: Culicidae).' at National Symposium; Chemistry in Biology: The Future of Life Sciences, held at New Delhi, Feb 2-3, 2010.
Dr. Sarita Kumar and Radhika Warikoo, Research Scholar	Awarded first prize for the paper 'Laboratory evaluation of the larvicidal efficiency of Parthenium sp. against an Indian strain of Aedes aegypti' at the 3rd International Conference on Parthenium, held at IARI, New Delhi, December 8-10, 2010.

Dr. Sarita Kumar and Anubha Seth, B.Sc. Life Scienes	Awarded first prize for the poster on 'Larvicidal and irritant potential of Citrus peel wastes against Indian strains of Malaria vector Anopheles stephensi (Diptera: Anophelinidae)' at National Conference on 'Redefining Science Teaching: Future of Education' held at University of Delhi South Campus, March 7-9, 2013.
Dr. Sarita Kumar and Ms. Mahak Juneja and Mr. Rahul Khewadia, B.Sc. (H) Zoology Part – III	Awarded encouragement prize for the poster on "Delayed and abnormal development of Red Cotton Bug, Dysdercus cingulatus (Hemiptera: Pyrrhocoridae) reared on Aloe vera aqueous leaf extract-treated diet." at National Conference on 'Redefining Science Teaching: Future of Education' held at University of Delhi South Campus, March 7-9, 2013.
Ms. Sunita jetly	First prize in poster presentation at 9th Annual Symposium on Frontiers in Biomedical Research, ACBR, DU, April 14-16, 2014
Dr. Arijit Chowdhuri	Best Poster award at the 27th PSSI National Symposium on Plasma Science and Technology (PLASMA 2012) held at Pondicherry University, Puducherry, India, December 10 – 13, 2012
	Best Poster award at the Third International Conference on Sensing Technology (ICST 2008) held at Tainan, Taiwan; Nov. 30 –Dec. 3, 2008
Dr. Sandeep Kumar Goel	Best Paper Award "Environment Reporting Practices of Indian Banks"36th All India Accounting Conference, Andhra University Vishakhapatnam, 2014
Dr. Chaman Singh	First prize for the best paper presentation in the national conference on Role of Management Science in Decision Making organized by Institute of Management Technology, Nagpur, February 13-14, 2009.

∗ **recognition received by the faculty from Reputed professional bodies and agencies, nationally and internationally**

Recognition received by the faculty from reputed Professional bodies and agencies, nationally and internationally	
INTERNATIONAL	
Dr. Savithri Singh, Principal	Invited as an expert at the meeting along with other education leaders and decision-makers from UNESCO, the Commonwealth of Learning and thirteen founding anchor partner colleges and universities from Africa, Australia, India, Canada, New Zealand, South Africa and the United States of America by the OER Foundation to attend the international open educational resources strategic meeting for implementation of the OER Tertiary Education Network – the OER University: 9 - 10 November 2011, Dunedin, New Zealand. Invited in March 2011 to be part of a study on 'Use and Reuse of OER in the region' being carried out by Professor Raj Dhanarajan, Hon. Director, Institute for Research and Innovation, Wawasan Open University, Penang, Malaysia.

	Invited by CEMCA to conduct a workshop on "Introduction to collaborative E-content Development" in Bangladesh from March 31 to April 02, 2012 Identified as one of five experts worldwide to help Wawasan Open University for an IDRC, Canada, funded project on "Planning Southern Research on Open Educational Resources [OERs]'. Member, Advisory Group, International Development Research Centre, Canada to improve educational policy, practice and research in developing countries 2013
Dr. Mamta Bhatia	J. William Fulbright Award for attending "Fulbright-Nehru International Education Administrators Seminar 2014", held in USA during October 26 to November 6, 2014. awarded by US State and Govt. of India
Dr. Pankaj Tyagi	Nominated for "The 2006 Man of The Year's Commemorative Medal" by Board of International Research of the American Biographical Institute (ABI), North Carolina, USA.
Dr. Pankaj Tyagi	Nominated for "The 2005 Man of The Year's Commemorative Medal" by Board of International Research of the American Biographical Institute (ABI), North Carolina, USA.
Dr.Sunita Hooda	Reviewer for African Journal of Pure and Applied Chemistry (AJPAC)
Dr. Sarita Kumar	Member of Scientific Advisory Board, Virginia, USA
	Associate editor, International Research Journal of Microbiology
	Member, Editorial Board, Asia Pacific Journal of Tropical Biomedicine, China
	Member, Editorial Board, Journal of Applied and Natural Sciences
	Member,Editorial Board ofThe Open Access Journal of Science and Technology (UK)
	Reviewer of the research papers in International Journals - - African Journal of Biotechnology (Nigeria), - Journal of Medicinal Plant Research (Nigeria) - Science Postprint (Japan) - MethodsX (UK) - Journal of Mosquito Research (Canada) - Asian Pacific Journal of Tropical Biomedicine (China) - Asian Pacific Journal of Tropical Diseases (China) - TANG Humanitas medicine (Korea) - Tropical Biomedicine (Malaysia)
Dr. Sona Pranav Kumar	Reviewer of International Journal of Physical Sciences (IJPS)
Dr. Amit Garg	Appreciated by digital Daily Science and Innovation newsletter Global talent newsletter; published from Barcelona under new models of learning; for the methodology adopted in promotion of undergraduate research for Promoting Science at School Level through hands-on Experiments. The link is: http://www.en.globaltalentnews.com/reflection/tribunes/5364/New-ways-to- communicate-and-learn-science.html.

	Editorial Reviewer Board member Optics and Lasers in Engineering by Elsevier Inc., USA Editorial Reviewer Board member American Journal of Optics and Photonics published by Science Publishing Group, USA Editorial Reviewer Board of The Science Education Review (SER), Australia. Editorial Reviewer Board of Computer Application in Engineering Education published by John Wiley & Sons. Editorial Reviewer Board of IJoES-International Journal of Engineering Sciences, India. Editorial Reviewer Board of International Research Journal of Engineering Science, Technology and Innovation (IRJESTI) Editorial Reviewer Board of European Journal of Physics Education
Dr. Urmi Bajpai	Invited to participate in brain storming session on 'Open Source Pharma' Organized by Rockfeller foundation at Bellagio, Italy, held from July 16 – 18, 2014.
	Invited Speaker in USA at the Centre for Life Science Education (CLSE), Ohio State University, Columbus, USA on July 9, 2012.
Dr. Gagan Dhawan	Visitingfaculty at Laboratoire de Chimie des PolymèresOrganiques (LCPO), University of Bordeaux, France (August, 2011)
	Visiting scientist at Institute of Structural and Molecular Biology, University of Edinburgh, UK (June, 2012).
	Visiting scientist at School of Chemistry, University of Edinburgh, UK (June, 2013).
Dr. Sharanjit Kaur	Member, Editorial board of International Journal of Data mining, modeling and management, Inder Science
Dr. Arijit Chowdhuri	Member, Editorial board of International Journal 'Sensors and Transducers'.
	Visiting Fellow, Department of Electronics Material Engineering, Research School of Physics and Engineering, The Australian National University, Canberra, Act 0200, Australia, June 2009
NATIONAL	
Dr. Savithri Singh, Principal	Nominated as member of National Resource Group (NRG) on ICT in School Education and also a member of National Resource Group (NRG) for Rashtriya Madhyamik Shiksha Abhiyan (RMSA), both constituted by the Ministry of Human Resource Development, Government of India. Dr Singh attended the first meeting of the NRG on ICT at the School of Education, NCERT, New Delhi on May 15, 2014.
Dr. Sarita Kumar	Member Editorial Board, Journal of Applied and Natural Science, Haridwar
	Reviewer of - International Journal of Pharmacy and Pharmaceutical Sciences (Madhya Pradesh) - Indian Journal of Medical Research (New Delhi)

Dr. Sona Pranav Kumar	Reviewer of IEEE Transactions on Electron Devices (TED)
Dr. Pankaj Khanna, Dr. Anju Agrawal, Dr. Amit Garg, Dr. Gagan Dhawan, Dr. VandanaUberoi, Dr Geetu Gambhir, Dr. Vikrant Kumar, Dr. M.S. Rajeshwari, Dr. Sunita Jetly, Dr. Anita Narang, Dr. Udai Bir Singh, Dr. Charu Khosla Gupta, Dr. Arijit Chowdhuri, Dr. Ravi Toteja	Jury Members of INSPIRE (INNOVATION IN SCIENEC PURSUIT FOR INSPIRED RESEARCH AWARD National Level Exhibition and Project Competition (NLEPC) - 2012 & 2013 organised by the Department of Science and Technology at PragatiMaidan. New Delhi.
Dr. Urmi Bajpai	Invited as a keynote speaker at international meeting in Jodhpur.Young Investigating Meeting (YIM) held at Jodhpur (9-14 February 2013), The theme of the event was integration of teaching and research. Was also Co-panelist with distinguished invitees (including a Nobel Laureate from University of Columbia, Prof. Martin Chalfle, Padam Shri Vijay Raghvan, Secretary, Department of Biotechnology, Ex-Vice Chancellor of University of Delhi, Prof Deepak Pental, Prof Richard Loscik, Harvard University and Prof G. Hatfull, Department Chair at the University of Pittsburgh) from various national and international institutes and universities on discussion on topics such as "how to be a successful teacher", "challenges in writing grants and setting up of laboratories", "science and women".
	Coordinator for TATA-CSIR-OSDD Fellowship (TCOF) and Coordinator for TATA-CSIR-OSDD Fellowship for Women (TCOFW) for research on neglected studies
Dr. Gagan Dhawan	Appointed as Member, National Network for Mathematical and Computational Biology (NNMCB) funded by Science and Engineering Research Board, Government of India. The primary goal of this network is to promote research activities and provide training in mathematical and computational biology throughout India.
	Invited Speaker,Conference on Emerging Trends in Development of Drugs and Devices organized by Department of Chemistry, University of Delhi and three National Science Academies of India, January 21-23, 2013
Dr. Monisha Khanna	Member, Referee/Reviewer for the Indian Journal of Microbiology"
	Member of the Working Committee involved in framing of Zoology E-Books for the Undergraduate Curriculum. This 45 crores National Project of setting

	up a National Science Digital Library (NSDL) had been launched by the National Institute of Science Communication and Information Resources (NISCAIR) CSIR.
Dr. Vikrant Kumar	Awarded Raman Fellowship for Post-Doctoral Research for Indian Scholars In United States for the year of 2014-15 by University Grant Commission (UGC). Research Area: 'Catalysts for Water Oxidation: Hope for Sustainable Energy Source'

∗ incentives given to faculty for receiving state, national and international recognitions for research contributions.   **None**

3.5   Consultancy

3.5.1   Give details of the systems and strategies for establishing institute- industry interface.
College had established IEDC (Innovation & Entrepreneurship Development Centre) sponsored by DST in 2010. It organizes very comprehensive Entrepreneurship Development Programmes (EDP) and Women EDPs (WEDPs) for the unemployed youth wherein various avenues and facets of entrepreneurship are explored. IEDC has organized 13 Entrepreneurship Awareness Camps (EAC) both inside and outside college and has supported 21 students' innovative projects worth Rs 19 lakhs. These training programmes are organized by inviting experts from industry. The trainees also undergo training at some of the industrial firms. For example, recently such programmes were organized with TARSONS Limited, Greater Noida. In such programmes, members from industrial also participate for training purpose.
The IEDC aims to convert a job seeker into a job giver by providing them a platform for entrepreneurship and possible commercialization of innovative ideas through the Entrepreneurship Laboratory. This has already fructified into ANDY (Acharya Narendra Dev Youth) – an in-campus company dealing with herbal cosmetics and souvenirs that are being marketed. Training at IEDC has already resulted in the creation of more than 15 independent enterprises. ANDC became the first college in DU to be awarded the BI (Business Incubator) by the Ministry of Micro, Small & Medium Enterprise (MSME). The BI activities systematically show the students the path of empowerment by equipping them with the necessary ingredients of a successful business project.

3.5.2 What is the stated policy of the institution to promote consultancy? How is the available expertise advocated and publicized?
The College strongly advocates and promotes the college-industry interface. It has a strong research base not only in the scientific domain but also in the OPEN paradigms and entrepreneurship. The Principal and the faculty interact with various industry stakeholders from time to time and apprise them about the various ongoing initiatives. These interactions turn into fruitful outcomes some of which are mentioned in 3.5.4.
25% of the consultancy amount is to be remitted by the beneficiary to the college.
The same is used for infrastructure development of the various facilities in the college. Advocacy and publicity of the available expertise is mainly done through participation in national and international conferences and publication of research articles in journals.

3.5.3 How does the institution encourage the staff to utilize their expertise and available facilities for consultancy services?

College provides a conducive and free environment to facilitate the promotion of consultancy work. Guidelines are in place to take on the consultancy services.

3.5.4 List the broad areas and major consultancy services provided by the institution and the revenue generated during the last four years

Parties of the MoU/ Contract	Particulars/ Nature of work involved	Duration	Finances involved
Acharya Narendra Dev College International Network for Bamboo and Rattan (INBAR)	To collaborate and work together on the Project title 'Development of Open and Distance Learning courses for rural communities in an inclusive manner using an e-authoring, knowledge repository and learning management system platforms'.	July 2006 to September 2007	USD 18,325
Acharya Narendra Dev College Commonwealth Educational Media Center for Asia (CEMCA), New Delhi	Conducting Easy Now Base Camp for 20 participants to produce learning materials aimed at undergraduate students in easy now formats and to upload the same on web.	September-October, 2009	Rs. 2,00,000/-
Dr. Savithi Singh Commonwealth of Learning, Vancouver, Canada.	Learning 4 content L4C workshops contracts signed with Commonwealth of Learning (COL), Vancouver, Canada.	January-June 2009.	7000 CAD
Dr. Savithri Singh CEMCA	Open Conference	January 2011	2000 CAD
Dr. Savithri Singh Commonwealth Educational Media Center for Asia (CEMCA), New Delhi	Consultancy contract for carrying out OER project for Mumbai University. To facilitate Mumbai University in the development of OER content for the first year syllabus of the	October 2011 to May 2012	Rs. 4,80,000/-

	undergraduate level Economics and a course on soft skills with the help of COL/ CEMCA.		
Dr. Savithri Singh Wawasan Open University, Malaysia	Planning Southern Research on Open Educational Resources (OERs) - Member of the Planning Committee to help steer the structure, content and related activities.	March-November, 2012	USD 6000
Dr. Savithri Singh Creative Commons Corporation	Enhanced teaching-learning process through promotion and development of Open Educational Resources (OERs), Creative Commons (CC) Corporation, a Massachusetts based non-profit corporation.	April 25, 2013	-
Dr. Savithri Singh University of Cape Town, South Africa	ROER4D: Research into Open Educational Resources for Development in Post-Secondary Education in the Global South. Working as Advisor on the following International projects of the ROER4D: Collaborative co-creation of OER by teacher educators and teachers in India: A participatory action research study ii. Co-creation of OER by teachers and teacher educators in Colombia OER integration for course development in India and Malaysia	Starting February, 2014; 2 years 18 months	ZAR 27,396
Ministry of Micro, Small and Medium	Establishment and support of 'UDGAM'	-	Rs. 62.5 Lakhs

Enterprises, Government of India Acharya Narendra Dev College	ANDC Business Incubator under the Scheme for providing support for Entrepreneurial and Managerial Development of SMEs through Incubators.		
Dr. Sarita Kumar University of Cape Town, South Africa	ROER4D Sub Project 2: Research into Open Educational Resources for Development in Post-Secondary Education in the Global South.	-	USD 1500
Ryot Chicory Growers & Suppliers IEDC, Acharya Narendra Dev College	To work jointly for establishment of Business Incubator in Malawi (a country in souther of Africa). Providing Training and Technological services/ support for implementation of this project and assisting in establishment of Business Incubator in Malawi.	MoU signed in May, 2014	Rs. 40 Lakhs
1. Acharya Narendra Dev College 2.CSIR-OSDD (Open Source Drug Discovery)	To collaborate and work together on the Project titles "Cloning and expression of Mycobacterium tuberculosis genes" and "Mur pathway enzymes: potential candidates for multi-targeted therapy", funded by Council of Scientific and Industrial Research (CSIR).	July 2010-November 2012	Rs. 16.85 Lakhs

3.5.4 What is the policy of the institution in sharing the income generated through consultancy (staff involved: Institution) and its use for institutional development?

25% of the consultancy amount is to be remitted by the beneficiary to the college. The same is used for infrastructure development of the various facilities in the college.

3.6   Extension Activities and Institutional Social Responsibility (ISR)

3.6.1 How does the institution promote institution-neighborhood community network and student engagement, contributing to good citizenship, service orientation and holistic development of students?

The vision of the college is to develop students into responsible citizens. With this in view the College organizes various activities for the cause of welfare of society through its NSS unit and through community projects by students. In the past, our social outreach programmes included:

Blood donation camps

Health check-up camps

Cleanliness drives

Supporting NGOs like Goonj

Diwali Shayog mela

Paper recycling

Used cloth collection and donations, etc.

Counseling and workshops for school students by Faculty.

Projects by students on

Old-age homes

Waste disposal mechanisms

Life in slums

Pollution and its effect on health and life of people, etc.

In a significant step in social sensitivity, ANDC adopted 10 female Thalassemic patients from poor background, for their routine blood requirement. This has happened for the first time in the University of Delhi. NSS volunteers have resolved to provide at least 4 required blood units per patient per year.

NSS unit at ANDC has adopted five villages in Delhi - Okhla, Kotla Mubarkpur, Khanpur, Kilokari and Zamrudpur with an aim to turn them into Adarsh Villages. The NSS members visit these villages on regular basis, identify the problems regarding sanitation and waste disposal, sensitize the local people about importance of cleanliness and carry out cleanliness drive in these villages every six months.

These and many other such projects have helped students to appreciate our social structure and its problems and it helps them to relate to the real world.

3.6.2 What is the   Institutional mechanism to   track students' Involvement in   various social movements / activities which promote citizenship roles?

The College promotes its social activities through NSS or other committees like Eco Club, Sashakt and Equal Opportunity Cell constituted formally in Staff Council. The Convenor and other faculty members of these committees motivate students to participate in the activities and also keep a track of students' involvement. The College also compensates attendance of students for participation in such activities if done through proper channel. This also helps to track students' involvement.

After briefing during orientation day of the college, new students are asked to join at least two extension/extracurricular/co-curricular activities. From the last three years ,students participate in Gyanodya project of University where in students travel to different parts of country and take up projects having socio-cultural dimensions.

3.6.3 How does the institution solicit stakeholder perception on the overall performance and quality of the institution?

The College gets feedback of its performance and quality from students through drop-boxes installed outside Principal's office and; meetings of students with their mentors, TICs and with the Principal. The pass-out students give their feedback and inputs through e-mails, on College Facebook page and also during Alumni meet. The parents are invited to College at various occasions to interact with the faculty, express their views and appreciate the efforts of the College.

3.6.4 How does the institution plan and organize its extension and outreach progra mmes? Providing the budgetary details for last four years, list the major extension and outreach programmes and their impact on the overall development of students.

College plans various extension and outreach programmes based on the expertise available in-house and to promote student participation and sensitivity to various social issues.

Through ECPDT (Effective Communication ans Personality Develeopment through Theatre), college stages an annual play to sensitize on various social issues.

Through SPIE, college conducts various workshops in schools to promote hands-on learning in Optics and Photonics.

Under the NSS the college organises various outreach activities, for instance

(i) Adoption of 5 urban villages for community service and cleanliness drives

(ii) Adoption of 10 under privileged Thalassemic girls for their blood transfusion needs throughout the year.

(iii) Collection and distribution of relief materials during national calamities.

(iv) Free medical check-up camps for community near the college in association with pharmaceutical companies.

So far college has spent more than twenty five lakh rupees on various extension and outreach programmes during the last four years. These activities have made students more sensitive to various social issues. The students have become more confident, mature and creative and responsible.

3.6.5 How does the institution promote the participation of students and faculty in extension activities including participation in NSS, NCC, YRC and other National/ International agencies?

Conveners of various committees address students during orientation day about the importance of their programme. Students are sensitized about extension activities and their role. Screening of documentaries highlighting the current social scenario and need for student participation is organized. The students are sensitized through talks on issues like Gender inequality, women issues, etc. The students are informed about various National and international activities and are motivated for participation.

The college has association with NGOs like Goonj, Aastha, etc. and the students participate in activities of these NGOs. The students are compensated for any loss of attendance due to participation in these social outreach activities.

3.6.6   Give details on social surveys, research or extension work (if any) undertaken by the c ollege to ensure social justice and empower students   from   under-
privileged   and   vulnerable   sections   of society?

The students have carried out various surveys and projects. The major activities included:

A documentary on old-age

A documentary on life in slums.

Spread awareness about Thalasemia through skits, rallies, etc. The College has adopted ten Thalasemics for their year-long blood requirements.

Surveys on water availability in various parts of Delhi and prevalence of associated water borne diseases.

Surveys on waste disposal mechanisms in Delhi.

Survey on Metro usage and people perception of Metro rail.

Survey on availability of toilets and Sewage disposal in various parts of Delhi.

Study of water quality from various parts of Delhi, etc.

Study on health hazards of dyers in Delhi-NCR.

In addition the College through its Innovation and Entrepreneurship Center (IEDC), set-up by DST (Govt. of India) promotes entrepreneurship among people in society by organizing awareness camps, workshops and training programmes. Many people from the community have started their own ventures after getting training at IEDC at the College.

3.6.7 Reflecting on objectives and expected outcomes of the extension activities
organized   by   the   institution,   comment on how they   complement   students' academic learning experience and specify the values and skills inculcated.

The contact with the society during the direct interaction in social outreach programmes provides an opportunity to the students to feel the realities of the world. This makes them more responsible in their actions, humanitarian in their approach and sensitive to the needs of differently abled and under-privileged. They become more expressive and concerned.

ANDC adopted 10 female Thalassemic patients from poor background, for their routine blood requirement. The NSS Unit of the college is keeping a record of these routine blood donations.

The college observed National Youth Day on January 12, 2015 marking the 152nd birth anniversary of Swami Vivekanand. On this day the students pledged to be responsible for their acts and their effect on surroundings in an oath taking ceremony.

The college celebrated Rashtriya Ekta Divas to commemorate the birth anniversary of Late Sardar Vallabh Bhai Patel on October 31, 2014. The event was marked by an oath taking ceremony followed by a 'Run for Unity' in the college playground. A college representation of students and faculty members also participated in the Run for Unity at India Gate.

Patronizing the philosophy of Swachh Bharat Abhiyan, a workshop was organized on September 25, 2014, to generate awareness about maintaining hygiene and cleanliness. The students did an awareness campaign in Govindpuri and Giri Nagar, the localities around the college.

The college NSS unit also organizes special programs on World AIDS day wherein college students wearing red ribbons and spread awareness about this dreadful disease.

3.6.8 How does the institution ensure the involvement of the community in its reach out activities and contribute to the community development? Detail on the initiatives of the institution that encourage its activities?

The College works in close association with NGOs. Through these NGOs we make sure the participation of the concerned people. Some of our activities involve:

(i) Sports activities for differently abled children in collaboration with NGOs.

(ii) Diwali mela with NGOs working with differently-abled people.

(iii) Collection of used paper and its recycling at NGOs to make hand-made paper.

(iv) Collection of used clothes from community for under-privileged, etc.

3.6.9 Give details on the constructive relationships forged (if any) with other institutions of the locality for working on various outreach and extension activities.

NSS unit of the college is actively involved in holding free health check-up camps for all stakeholders in college as well as nearby residents. The medical camps provide free consultation towards diagnosis of a wide array of medical problems. Some of the well-known institutions that support these camps include Cipla, Janki Healthcare centre, R.G. Stone Hospital, AIIMS, WUS South Campus etc.

The College works with Medical teams from hospitals such as AIIMS and GB Pant to organize Blood donations and health check-up camps.

The College works with NGOs - Goonj, Astha, SAKSHAM for its social out- reach programmes.

The College students are spreading awareness about Thalasemia and have adopted ten thalasemic girls for their year-long blood requirements.

In collaboration with Delhi Police the College organizes self-defense trainings for girl students.

The College provides its staff and support to Delhi election Commission to organize camps for registration and verification of voters of the locality. The College is also one of the voting centres.

3.6.10 Give details of awards received by the institution for extension activities an d/ contributions to the social/ community development during the last four years.

The College is a strong promoter of Free and Open Source Software (FOSS) and other open resources and has been working consistently for the cause. In 2011-12, the College was awarded with 'the OPAL Award of the Open Educational Quality Initiative', a consortium including UNESCO, ICDE, EFQUEL and several European Universities working to promote open educational practices in higher and adult education.

For its efforts to promote entrepreneurship in community the College was first in University of Delhi to get a grant to set up a Business Incubator by MSME, Govt. of India.

The activities of the college have been appreciated by the University of Delhi through Award for Good Practices consecutively in 2013, 2014 and 2015.

3.7 Collaboration

3.7.1 How does the institution collaborate and interact with research laboratories, institutes and industry for research activities. Cite examples and benefits accrued of the initiatives – collaborative research, staff exchange, sharing facilities and equipment, research scholarships etc.

Collaborative Research

"A Virtual Centre of Excellence for Coordinated Research on Tuberculosis: Development of Alternate Strategies" funded by the Department of Biotechnology (DBT), Govt. of India was carried out by the undergraduates in the college under the guidance of a faculty member. In this project, eight institutes from within the country participated. The principal collaborators were International Centre For Genetic Engineering and Biotechnology (ICGEB), New Delhi and Department of Biochemistry, University of Delhi (November 2006-March 2009, Grant: Rs. 24.85 Lakhs). Through this project, students were initiated into research where they contributed towards building a repository of drug-target genes & candidate vaccine genes from Mycobacterium tuberculosis, cloned into a suitable vector. Also the grant enable the development of a modern well-equipped laboratory in the college.

Open source drug discovery (OSDD) project: "Cloning and expression of Mycobacterium tuberculosis genes" (July 2010-November 2012, Grant: Rs. 16.85 Lakhs), funded by Council of Scientific and Industrial Research (CSIR). In all, eight undergraduate colleges were short-listed from across the country for participation in drug discovery activities of OSDD. Acharya Narendra Dev College was one of the selected colleges. In this project, so far about 40 students have participated and have contributed towards development of repository of recombinant proteins from Mycobacterium tuberculosis to be tested for their potential as drug targets. This work has been published in the inaugural Journal of Innovation and Undergraduate Research, brought out by University of Delhi in February, 2015 (Aamod Utpal et.al.2015. "Building a repository of potential drug targets in Mycobacterium tuberculosis by crowd sourcing". DU Journal of Undergraduate Research and Innovation Vol 1. pages 1-13). Also one of the ANDC faculty coordinated projects on Annotation of Mycobacterium tuberculosis and Zebra fish, which students carried out under the guidance of the scientists from Institute of Genomics and Integrative Biology (IGIB), Delhi. The students work involved the assembly of information on various pathways from literature, into a signal transduction pathway. The project had a micro-attribution system, where each student got due credit for the work.

Open source drug discovery (OSDD) project:"Mur pathway enzymes: potential candidates for multi-targeted therapy". The objective of this project is to clone, express and purify the Mur pathway enzymes and to develop assay methods for the individual enzymes, followed by development of a One Pot assay, optimized for High Throughput Screening (HTS). In this project, the college is collaborated with several research institutes in Delhi like Institute of Genomics and Integrative Biology (IGIB), Jawaharlal Nehru University (JNU) (March 2013-October 2015, Grant: Rs. 30.38 Lakhs.). One PhD student is working on this project. The assay developed in this study would enable screening of several anti-mycobacterial drugs possible. This project enabled the college to access several advanced instruments such as ELISA Reader, CD-Spectrophotometer, Electron Spray Ionization –Mass Spectrophotometry (ESI-MS) facilities etc. available in the above mentioned institutes.

Major highlights of these collaborative projects are:

Students participate in consortium projects where the products they generate have downstream users.

Students and faculty get to interact with scientists from collaborating institutions and there is profuse exchange of ideas.

Contribution of students is appreciated and acknowledged through award and research publications: i) Four students were awarded a laptop each for their significant contribution in Annotation projects; ii) The annotation work done by the students has been published (enclosed) and is an excellent example of crowd sourcing in research, which is gaining immense popularity

iii) they got opportunity to present their work during annual project review meetings as well as in competitive events such as Paper presentations. Some of the examples of students' contribution is as follows:

Shabaz Siddiqui (2009-2012): Gave oral presentation on the topic "Cloning, Expression and Purification of Rv2711 and Rv2069 of Mycobacterium tuberculosis H37Rv" at the Annual Review Meeting of OSDD at CSIR Science Centre, India international centre, New Delhi on 16 September 2011.

KhairunNissa (2010-2013): Presented her OSDD research work (carried out in May 2012) in a National Conference on Redefining Science Teaching: Future of Education, organized by ANDC and South Campus, University of Delhi (7-9 March, 2013). The topic was: "Cloning, expression and purification of†N-terminal domain of gene FtsK from Mycobacterium tuberculosis H37Rv" and got young budding scientists award for the Second Best oral presentation.

Ritu Arora (2010-2013) and Eniyan Kandasamy (PhD student): Presented a Poster "Cloning and expression of potential drug targets of Mycobacterium tuberculosis " at the Annual Review Meeting of OSDD at CSIR science centre, India international centre, New Delhi on 16 September 2012.

Deepika Kumari and Ritu Arora (2010-2013): Presented their OSDD research work in the form of a poster in National Conference on Redefining Science Teaching: Future of Education, organized by ANDC and South Campus, University of Delhi (7-9 March, 2013). The topics were: "Cloning and expression of Mycobacterium tuberculosis FtsW (Rv2154c) C-TERMINAL domain" and "Cloning, expression and purification of C-terminal domain of gene Rv2151c from Mycobacterium tuberculosis H37Rv.

The following eminent scientists/directors have been involved in the collaborative work in these projects.

Dr. Kanury Rao, Principal Scientist and Head, Immunology group at ICGEB, New Delhi
Prof Anil Tyagi, VC, Indraprastha University
Prof Samir Brahmachari, Chief, OSDD
Mr. Zakir Thomas, ex-Director, OSDD
Prof. Andrew Lynn, Centre for Bioinformatics, JNU, Delhi
Dr. Ramchandran, IGIB, New Delhi
Dr. Geetha Vani Rayasam, Director, Biology group- OSDD, CSIR
Dr. Anuradha Kumar, Consultant, OSDD at CSIR.
Dr. Anshu Bhardwaj, CSIR
Dr. Vinod Scaria and Dr. Sridhar, IGIB, New Delhi

A research scientist, VegardKolbj‾rnsrud, from the Department of Strategy and Logistics, BI Norwegian Business School visited us (4 December 2012) to understand how the students work in a collaborative setup. He is engaged in research on collaborative communities and interviewed some of the students who participated in OSDD project with me in 2011-2012.

Microbial Technology Transfer
During execution of the following research projects
Exploring useful bacteria (May 2012-2013)
Isolation and characterization of Actinomycetes and analysis of their antibacterial potential (Aug. 2006- Dec. 2009)

The bacterial cultures isolated were submitted to M/s Nicholas Piramal Research Centre, Mumbai, who used high through-put screens for the discovery of new bio-molecules with anti-cancer, anti-tumour, anti-fungal, anti-bacterial, anti-inflammatory and anti-diuretic potential.

3.7.2 Provide details on the MoUs/collaborative arrangements (if any) with institutions of national importance/other universities/ industries/Corporate(Corporate entities) etc. and how they have contributed to the development of the institution.

Acharya Narendra Dev College and CSIR-OSDD (Open Source Drug Discovery)
To collaborate and work together on the Project titles "Cloning and expression of Mycobacterium tuberculosis genes" (July 2010-November 2012, Grant: Rs. 16.85 Lakhs) and "Mur pathway enzymes: potential candidates for multi-targeted therapy", funded by Council of Scientific and Industrial Research (CSIR).

Acharya Narendra Dev College and International Network for Bamboo and Rattan (INBAR)
To collaborate and work together on the Project title 'Development of Open and Distance Learning courses for rural communities in an inclusive manner using an e-authoring, knowledge repository and learning management system platforms'.
July 2006 to September 2007
USD 18,325

Acharya Narendra Dev College and Commonwealth Educational Media Center for Asia (CEMCA), New Delhi
Conducting Easy Now Base Camp for 20 participants to produce learning materials aimed at undergraduate students in easy now formats and to upload the same on web.
September-October, 2009
Rs. 2,00,000/-

Dr. Savithri Singh and
Commonwealth of Learning, Vancouver, Canada.
Learning 4 content L4C workshops contracts signed with Commonwealth of Learning (COL), Vancouver, Canada.
January-June 2009.
7000 CAD

Dr. Savithri Singh and
CEMCA
Open Conference
January 2011
2000 CAD

Dr. Savithri Singh and
Commonwealth Educational Media Center for Asia (CEMCA), New Delhi
Consultancy contract for carrying out OER project for Mumbai University. To facilitate Mumbai University in the development of OER content for the first year syllabus of the undergraduate level Economics and a course on soft skills with the help of COL/ CEMCA.
October 2011 to May 2012
Rs. 4,80,000/-

Dr. Savithri Singh and
Wawasan Open University, Malaysia
Planning Southern Research on Open Educational Resources (OERs) - Member of the Planning Committee to help steer the structure, content and related activities.
March-November, 2012
USD 6000

Dr. Savithri Singh and
Creative Commons Corporation
Enhanced teaching-learning process through promotion and development of Open Educational Resources (OERs), Creative Commons (CC) Corporation, a Massachusetts based non-profit corporation.
April 25, 2013

Dr. Savithri Singh and
University of Cape Town, South Africa
ROER4D: Research into Open Educational Resources for Development in Post-Secondary Education in the Global South.
Working as Advisor on the following international projects of the ROER4D:
Collaborative co-creation of OER by teacher educators and teachers in India: A participatory action research study
Co-creation of OER by teachers and teacher educators in Colombia
OER integration for course development in India and Malaysia starting February, 2014
2 years 18 months
ZAR 27,396

Dr. Sarita Kumar and
University of Cape Town, South Africa
ROER4D Sub project 2: Research into Open Educational Resources for Development in Post-Secondary Education in the Global South.
Working as Local Coordinator of the above International project of the ROER4D:
2014-2015
USD 1500

University of Delhi (DU) Innovation project on MOBILE HEALTHCARE- The future of health management in India- A feasibility study was selected by three students of University of Michigan, USA for virtual participation (over Skype) in the project. It enabled them to earn points in their academic assessment where the undertaken project was evaluated by faculty advisor from Michigan on consultation with ANDC faculty. Their role was to include countries such as USA and China, besides India in secondary research on Mobile Apps used in monitoring of Diabetes and hypertension.

Ministry of Micro, Small and Medium Enterprises, Government of India and
Acharya Narendra Dev College

Establishment and support of 'UDGAM' ANDC Business Incubator under the Scheme for providing support for Entrepreneurial and Managerial Development of SMEs through Incubators.
Rs. 62.5 Lakhs

Ryot Chicory Growers & Suppliers and
IEDC, Acharya Narendra Dev College
To work jointly for establishment of Business Incubator in Malawi (a country in souther of Africa). Providing Training and Technological services/ support for implementation of this project and assisting in establishment of Business Incubator in Malawi.
MoU signed in May, 2014
Rs. 40 Lakhs

14. Letter of co-operation LoC signed on Dec 2,2011 for 2 years.between ANDC and Bhartiya Yuva Shakti Trust(BYST), C/O Confederation of Indian Industries(CII),23,Institutional area, Lodhi Road, to coordinate and cooperate in entrepreneurial development and business guidance.
Some of the faculty members of college could volunteer to become mentor counselors for counseling of the potential entrepreneur.
15. College is a member of Asia Pacific Incubation Network (Apin) for the period 2013-14.
It helped out to work out the Business incubator 'UDGAM' in the college and collaboration with different incubators all over Asia.

16. College is a member of National Entrepreneurship Network (NEN) since August 10, 2010.The workshops conducted by NEN has trained the trainees for development of entrepreneurship in educational institutes. A letter of intent also has been signed on 25.05 2015 with NEN to strengthen IEDC and UDGAM - ANDC Business Incubator technically.

17. The college established Innovation and Entrepreneur Development Cell (IEDC) in the college under the auspices of National Science and Technology Entrepreneurship Development Board (NSTEDB), Department of Science and Technology (DST), Govt. of India. The Centre provides training through Entrepreneurship Awareness Camps (EAC), Entrepreneurship Development Programs (EDP) and funding for Students' Innovation Projects.

18. The college started a 3-month job oriented course on Foundations of Banking in association with ICICI Bank on August 18, 2008.
All 24 students of our study centre successfully completed the course and were placed in various branches of ICICI Bank in NCR.
Certain technical problems have caused the course to be 'on hold'.
19. The college is a part of the collaboration between MetLife and the University of Delhi for running an Add-on course - Insurance Training and Career Opportunity.
Certified Faculty of MetLife conducts this course spread over nine weeks of study followed by one month of on-job training.
Certain technical problems have caused the course to be 'on hold'.

3.7.3 Give details (if any) on the industry-institution-community interactions that have contributed to the establishment/ creation/up-gradation of academic facilities, student and staff support,

infrastructure facilities of the institution viz. laboratories / library/ new technology /placement services etc.

Setting up of IEDC To inculcate innovation and entrepreneurship fervour amongst the students, college envisaged setting up a cell exclusively for those projects which are proposed/designed by the students with the help of college faculty as mentors. Thrust of the project is towards developing products/process which have viable commercial application. For this, college seeked grant from DST with which MoU was signed to establish IEDC (Innovation and Entrepreneurship Development Cell) unit in the college. The faculty coordinator of IEDC participated in the Faculty Entrepreneurship Development Programme conducted by National Foundation of Indian Engineers (NAFEN) from 22nd December, 2008 to 6th January, 2009, which gave them further fillip in conducting this cell in the college, with active participation of students from different streams.

Interaction with OSDD community: Interaction of students participating in OSDD projects with scientists from various institutes has been a very enriching experience for them. The work carried out by students in large groups earned them to author two research publications as a crowdsourced efforts.:

Meghna Singh, Deeksha Bhartiya, Jayant Maini, Meenakshi Sharma, Angom Ramcharan Singh, Subburaj Kadarkaraisamy, Rajiv Rana, Ankit Sabharwal, Srishti Nanda, Aravindhakshan Ramachandran, Ashish Mittal, Shruti Kapoor, Paras Sehgal, Divya Jagga, Zainab Asad, Kriti Kaushik, Muthulakshmi Muthuswami, Shamsudheen Karuthedath Vellarikkal, Rajendra K. Chauhan, Elvin Leonard, Ruby Priyadarshini, Mahantappa Halimani, Sunny Malhotra, Ashok Patowary, Harinder Vishwakarma, Prateek Joshi, Vivek Bhardwaj, Arijit Bhaumik, Aamod Jha, Aalok Kumar, Prerna Budakoti, Mukesh Kumar Lalwani, Bharat Bhatt, Rajeshwari Meli, Saakshi Jalali, Kandarp Joshi, Koustav Pal, Heena Dhiman, Saurabh V. Laddha, Vaibhav Jadhav, Naresh Singh, Vikas Pandey, Chetana Sachidanandan, Stephen C. Ekker, Eric W. Klee, Vinod Scaria and Sridhar Sivasubbu (2014) The Zebrafish GenomeWiki: a crowdsourcing approach to connect the long tail for zebrafish gene annotation. Database Vol.0 Pages 1-7

Rohit Vashisht Anupam Kumar Mondal, Akanksha Jain, Anup Shah, Priyanka Priyadarshini, Kausik Bhattacharyya, Harsha Rohira, Priti Vishnoi, Ashwini G. Bhat, Keya Mukherjee, Kumari Sonal Choudhary, Vikas Kumar, Anshula Arora, Anurag Passi, Prabhakaran Munusamy, Ahalyaa Subramanian, Aparna Venkatachalam, Gayathri S, Sweety Raj, Kaveri Verma, Salman Zaheer, Balaganesh J, Malarvizhi Gurusamy, Vijaya Chitra, Mohammed Razeeth, Ilamathi Raja, Madhumohan Thandapani, Vishal Mevada, Raviraj Soni, Shruti Rana, Girish Muthagadhalli Ramanna, Swetha Raghavan, Sunil N. Subramanya, Trupti Kholia,Varsha Bhavnani, Lakavath Chiranjeevi, Soumi Sengupta, Pankaj Kumar Singh, Swati Gandhi, Tiruvayipati Suma Avasthi, Shefin Nisthar, Meenakshi Anurag, Pratibha Sharma, Yasha Hasija, Debasis Dash, Arun Sharma, Vinod Scaria, Rajesh Patel, Naresh Atray, Zakir Thomas, OSDD Consortium, Nagasuma Chandra, Samir K. Brahmachari, Anshu Bhardwaj (2012) Crowd Sourcing a New Paradigm for Interactome Driven Drug Target Identification in Mycobacterium tuberculosis. Plos One Vol. 7 Issue. 7. e39808

Reaching out to international educationists:

A seven-Saturdays (21 hours, 2 March- 20 April 2013) videoconference based course on Proteomics, Genomics and Bioethics for twenty students of B.Sc. (H) Biomedical Science (Sem IV) with Ohio State University, USA and Anna University, Chennai was coordinated. Through this course, three professors from the USA (Prof. Amanda Simcox, Department of Genetics, Ohio State University, USA, Prof. Venkat Gopalan, Department of Biochemistry, Ohio State University, USA and one from Anna University (Dr. Sharmila, Anna University, Chennai, India) were the resource persons and faculty from ANDC and Garware College, Pune were the coordinators. This was a unique exercise where students and faculty from different parts of the country and abroad interacted, shared ideas, executed joint projects through generous use of technology and new methods of teaching and learning (through Video Conference, flipped classrooms, use of clickers for the feedback response from the students etc).

A talk on Mycobacteriophages by Prof G. Hatfull of University of Pittsburgh, USA was organized through videoconference (17 June 2013). Besides the excitement of discovering Mycobacteriophages while carrying out the research project, students (who were participating in Phage hunting project in June 2013, as ELITE fellow) also got to interact with and put questions to the eminent speaker who is known to be the leader in this field. This kind of exposure definitely helps not only in meeting international standards of research but also gives an opportunity to share and discuss various new ideas.

3.7.4 Highlighting the names of eminent scientists/participants who contributed to the events, provide details of national and international conferences organized by the college during the last four years.

The College strongly believes in supplementing class-room teaching with hands on training, seminars and symposia. Keeping this trend in view,the college organized the following symposia, conferences and workshops. Details given for last four years:
National:

S.No.	Details of Symposia, conferences and workshops	List of eminent scientists/participants who contributed to the events	Details of Events
1	National Conference 'Redefining Science Teaching: Future of Education' at South Campus, University of Delhi. (March 7-9, 2013)	Professor Indranil Das Gupta, Faculty, Department of Plant Molecular Biology, University of Delhi, South Campus.	Shared his experiences IN decoding the rice genome and how the transfer of technology takes place from academia to industry.
		Dr. Anshu Bhardwaj, Associate Professor, IGIB-CSIR, University of Delhi.	Talk on "Open Source Drug Discovery: Community Collaborative Research and Resources"

2	National Workshop titled 'Evolutionary Perspectives in Modern Biological Teaching and Research' in collaboration with Institute of Life Long Learning (ILLL) and Centre for Science Education & Communication (CSEC), University of Delhiheld at ILLL, North Campus, University of Delhi. (9-10 May, 2011)	Prof. Manda Clair Jost, Associate Professor Biology, Department of Natural Sciences, Western New Mexico University	Keynote addresson 'Role and value of evolutionary perspectives in modern biological teaching and research'
		Professor V Nanjundiah, Professor Indian Institute of Science, Bangalore	Gave a talk on 'An introduction to evolutionary thinking.'
		Professor K N Ganeshaiah, Professor, University of Agricultural Sciences, Bengaluru.	He addressed the gathering on the topic 'Evolution of Mutualism'
		Professor R. Geeta, Professor, Department of Botany, University of Delhi	Gave a talk 'How did we come to understand evolution?
		Dr. Mallikarjun Shakarad, Professor, Department of Zoology	Talk on the 'Role of selection inevolution'
		Professor G V R Prasad, Professor, Department of Geology	His talk 'Evolution and the fossil record' discussed the concepts of fossilization and records available with us.
3	International Conference OPEN 2011 Open Paradigms in Education 31 January– 2 February, 2011 India International Center New Delhi 110003	TAN SRI Emeritus Professor Gajaraj Dhanarajan, Hon. Director, Institute of Research and Innovation, Wawasan Open University, Penang, Malaysia	Chief Guest and gave a talk on 'Open Educational Resources: What does it mean to open learning in higher education?
		Dr. Sanjeev Singh, Teaching Faculty, IIC, University of Delhi South Campus.	chairedthe Session II - Teaching Redefined: Authoring Tools:based on the information of vast number of digital resources that are

			available for educationists to access the quality education.
		Professor CN Krishnan, Coordinator, NRCFOSS-AU, Chennai	Gave a talk on 'Free/Open Source Software Promotion in India – Need for Building a National Ecosystem'. He briefed the participants on the philosophy of FOSS (Free/Open Source Software)
		Mr. Colin Charles, an open source evangelist from Malaysia.	Gave a talk based on Databases and mainly about MySQL and MariaDB.
		Mr. RavikantSharmafrom Centre for Study of Developing Society (CSDS), Delhi.	Talked about smaller languages deserve as much content as main language.
		Dr. Andrew M. Lynn, Faculty, School of Computational & Integrative Sciences, JNU	Chaired the session Session III – Open Education and Licensing
		Mr. Pavan Duggal, a practicing Advocate, Supreme Court of India and a Cyber law Consultant	Gave a talk on various case studies of cybercrimes in India and threw a light upon the way they have been dealt with under Indian cyber law.
		Ms. Anandana Kapur, Independent Media Practitioner	Delivered a talk on 'Academics as Pirates: Limitations of IPR and Knowledge Commons as an alternate model'.

		Mr. Chamindra De Silva, Director, Sahara Open system, Sri Lanka	Presented a talk on "Contributing to Humanitarian Free and Open Source Software (HFOSS)" emphasizing the benefits of FOSS in the field of academics.
		Dr. Dinesh Kumar Abrol, Scientist, NISTADS.	The talk revolved around impact of FOSS in academia and skill development.
		Professor Kannan Moudgalya, Professor, IIT Mumbai.	His talk introduced a novel tool –'Spoken Tutorials' for IT literacy and employment.
		Dr. Gora Mohanty, Director Mimir Technologies	Chaired Session VI – Success Stories and Future Aspects
		Dr. Andrew Lynn, Faculty,School of Computational & Integrative Sciences, JNU, New Delhi	Talked about Open Source Drug Discovery(OSDD) project, a Government funded collaborative project to find a drug for tuberculosis.
		Mr. Pranesh Prakash, a lawyer working with 'The Centre for Internet and Society' (CIS). His work mainly deals with IPR, promotion of IP alternatives like Open Source, OER and open videos	Briefed about the various layers of OER (Open educational resources) that have to be considered.
		Dr. Anubha Das, Fellow Institute of Life Long Learning, University of Delhi, South Campus	Chaired Session VII - Teaching redefined: Empowering Teachers
		Mr. Chidambaram Kollengode from Nokia, Bengaluru.	delivered a talk on 'Open Paradigms-Opportunities and Challenges'

		Professor KR Srivathsan, Pro-VC, IGNOU, New Delhi.	delivered a talk on 'Towards Quality Education System for a Knowledge Society and Economy'

3.7.5 How many of the linkages/collaborations have actually resulted in formal MoUs and agreements? List out the activities and beneficiaries and cite examples (if any) of the established linkages that enhanced and/or facilitated –

a) Curriculum development/enrichment

The collaborations of Acharya Narendra Dev College with CEMCA and other International Universities have helped to spread and promote the concept of OER. A large number of faculty members have participated in these workshops who were trained to develop OER content. This has resulted in the development of e-content based on the University curriculum which is uploaded on the University of Delhi website under open domain. This content is enriched with videos and extra information resulting in better and more efficient conceptual understanding of the students. A few Biology faculty are busy in developing OER for postgraduate courses as a part of UGC e-pathshala project, enriched with audios, videos and supplemental information. All these efforts of the faculty are the result of collaborations with organizations associated with spread and promotion of OER.

The college has also trained faculty of University of Mumbai to understand the concepts of Self Learning materials, Open Licensing, Open educational resource and the techniques of uploading content on the wikieducator.org; who then developed two online courses; a first year undergraduate course in economics and a general course in 'Soft Skills'.

b) Internship/ On-the-job training

The Placement Cell of the College has entered into an understanding with Okhla Industrial Association that provides them job as well as training. A letter of Cooperation is signed between ANDC and Okhla Industrial Association, Delhi.

c). Summer placement: Some of the students participants of the collaborative projects undertook summer placements at International Centre For Genetic Engineering and Biotechnology (ICGEB), New Delhi, Institute of Genomics and Integrative Biology (IGIB), Delhi, School of Computational and Integrative Sciences (SCIS), JNU, New Delhi.

d) Faculty exchange and professional development

Universitas 21 Fellowship: A faculty member from the college was selected for Master's Degree program in Bioinformatics from University of Edinburgh, UK under University of Delhi Faculty Training Program-2010.

A faculty member has been awarded Raman Fellowship for Post Doctoral Research for Indian Scholars In United States for the year of 2014-15 by University Grant Commission (UGC). Research Area: 'Catalysts for Water Oxidation: Hope for Sustainable Energy Source'

e) Research

MoU between AND College and CSIR-OSDD was signed in 2009 for the following two projects:

Cloning and expression of Mycobacterium tuberculosis genes
Mur pathway enzymes: potential candidates for multi-targeted therapy
MoU between AND College and Department of Science and Technology (DST) has been signed for projects with DST for carrying out a number of IEDC projects since 2010.

f) Consultancy
OER development (Refer 3.1.6)

g) Extension
The collaborations with CEMCA resulting in formal MoUs have helped us to conduct a number of workshops within college premises, other educational institutions located in Delhi and also in different Indian cities in order to promote OER. The list of these workshops is present in Section 3.1.6

h) Publication:
Aamod Utpal, Abhinav Tyagi, Akhilesh Kumar, Amit Gaurav, Amrita Singh, Atul Kumar Tiwari, Avantika Singh, Beneeta Kalha, Bharat Bhatt, Bimlesh Yadav, Deepika Kumari, Harsha Rohira, Himanshu Bhatt, Kamlesh Kumari, Kartika Vashistha, Karuna Singh, Khairun Nisaa, Mohit Kumar, Navbhar Sharma, Preeti Yadav, Rajat Sharma, Ritu Arora, Ruchika Pokhriyal, Shahbaz Siddiqui, Sneha Mishra, Sonal Kapur, Srishti Nanda, Sumit Kinger, Sweety Raj, Vartika Channa, Vivek Bhardwaj, Kandasamy Eniyan and Urmi Bajpai (2015). "Building a repository of potential drug targets in Mycobacterium tuberculosis by crowdsourcing". DU Journal of Undergraduate Research and Innovation Vol 1. pages 1-13.

i) Student Placement
Most of the students who participated in these projects were selected for Master's/integrated-Ph.D./Ph.D. programs at various esteemed organizations in the country as well as abroad through competitive entrance examinations and group discussions and/or interviews.

j) Twinning programmes
The College organized a skill development course for Equity dealing under the Star Scheme launched by NSDC and Ministry of Finance, Govt. of India for the colleges of University of Delhi. ANDC was one of the 10 colleges of DU in this programme. The 30 day training programme was conducted for undergraduate students of various colleges. At ANDC around 75 students in two batches registered for the course. 74 out of 75 students were qualified by Skill Sector council for level 4 of skill development. The students were awarded a monetary reward of Rs. 10000/- each, which included support for the course fees. The course was conducted by IL&FS Ltd.
The college is in the process of formalizing its own MoU (Under University of Delhi) with NSDC and IL&FS for more courses for skill development. The programme will cover more areas including life sciences, medical diagnostics, etc in the next phase.

k) Introduction of new courses:
Certificate Course in Bioinformatics and in silico Drug Discovery, jointly organized by Department of Biomedical Science of Acharya Narendra Dev College and Bhaskaracharya College of Applied Sciences, University of Delhi, Duration: 128 hours. The course was introduced in August 2012. So far, about 75 students of B.Sc. (Hons) Biomedical Science have undertaken this

course. Faculty from Dr. Bhimrao Ambedkar Centre for Biomedical Research (ACBR), University of Delhi, Jamia Millia Islamia University and the scientists from Institute of Genomics and Integrative Biology (IGIB), Delhi also contribute towards conducting the course. This course was started after a faculty from the college completed Master's Degree program in Bioinformatics from University of Edinburgh, UK under University of Delhi Faculty Training Program-2010. Training received during this Master's program was constructively used in formulation and introduction of this course.

l) Student exchange

3.7.6 Detail on the systemic efforts of the institution in planning, establishing and implementing the initiatives of the linkages/collaborations.
The college is known for being a pioneer within the University in OER. Being a strong believer in open education, the college started an initiative in 2008 to train its own as well as teachers in other colleges of the University of Delhi towards an understanding of the 'Open Paradigm' inclusive of Open Educational Resources. Discussions on open licences and the technology involved in content upload as OER on http://wikieducator.org formed a major component of the trainings. Since then over twenty Learning for Content (L4C) workshops have been conducted by the faculty members - in an evangelist mode to spread the concept of 'open' in software and educational content. For conducting these workshops and training programs for educators in and outside Delhi, we have always got good support from the Commonwealth of Learning through its bounties.
Later, in 2011, our college was contacted by the Commonwealth of Learning (COL) through Commonwealth educational Centre for Asia (CEMCA) to help the University of Mumbai in preparing and uploading the e-content as OER. In this project about thirty teachers identified by the University of Mumbai were trained to understand the concepts of Self Learning materials, Open Licensing, Open educational resource and the techniques of uploading content on the wikieducator.org.
Keeping our commitment we hold an International conference ''OPEN 2011 - Open Paradigms in Education' at India International Centre, New Delhi in February 2011. Thereafter the college organized a one-day Seminar on 'Teaching Redefined: Open Access to education' on November 1, 2011 as part of the "Open Access Week'. For organizing the same we were selected as one of the ten institutions worldwide by 'International network for Availability of Scientific Publications' and were awarded a small amount. This seminar was one more step by Acharya Narendra Dev College in its journey of spreading awareness about the importance of open access to learning opportunities by sharing knowledge and learning resources, by exposing more and more teachers, research scholars and others to the ongoing efforts in the field of open education.
Thereafter, Acharya Narendra Dev College was accepted as a FTE4WE member of the Open Education Foundation and on December 2, 2011, our college was awarded 'Highly Commended' OPAL award for Institutions' at Berlin, Germany. It acknowledged outstanding achievements of the institutions in the fields of OER policy, promotion and use, through the provision of resources and support for the development of OER, participation in research and development, and a clear strategy for motivating its staff. This recognition motivated us to implement enhanced quantity and quality of open educational resources into higher education which would lead to greater effectiveness in teaching and learning. Then the series of events continued with meetings at different countries - Malaysia, Bangladesh, USA, Thailand, and more collaborations leading to establishing and implementing the OER initiatives.

Today, many faculty members are involved in preparing e-content on the topics related to University curriculum. Now AND college is Creative Commons affiliate, the only one in the University of Delhi. Dr. Savithri Singh, Principal not only promotes OER in Indian Universities. but also is part of many International Committees which formulated policies regarding OER.

The college has made concerted effort in identifying and reaching out to individuals/organizations who share the vision of improving the quality of undergraduates' learning through collaborative projects, which facilitate students' participation in multi-institutional projects.

Open Source Drug Discovery (OSDD), a CSIR (Council of Science and Industrial Research) Team India Consortium with Global Partnership and a vision to provide affordable health-care to the developing world. This initiative has been taken to provide a platform where researchers, students and organizations from across the world can collaborate & collectively endeavor towards the conquest of tuberculosis. OSDD invited applications for participation in its drug discovery program and selected ANDC amongst seven other institutions in the country out of a large number of applicants.

Great deal of planning went in to initiating students into in-silico/annotation work (under the guidance of scientists from collaborating institutes) while they were pursuing first year of their undergraduate program and did not have prior hands on training in techniques required to carry out experimental work. Subsequently, students were given hand on training w

College implemented the objectives through active participation of its students and faculty in building repositories of cloned genes and recombinant proteins, which are made available to OSDD community and by contributing in annotations of genomes of Zebra fish and Mycobacterium tuberculosis. Teams from various institutes, with unique expertise (Bioinformatics, molecular biology, medicinal chemistry to name a few) were involved in the collaborative projects with a common objective of working towards finding new drugs for Tuberculosis. The key participants were IGIB, JNU, IICT Hyderabad, OSDD unit at IISc, Bangalore, CDAC, Pune.

Through these collaborative research projects, we have not only contributed in meeting project objectives and goals but also have trained students in modern, experimental and analytical skills, given them exposure in contemporary challenges in scientific activities and in the process, acquired state of the art laboratory facilities in the college.

CRITERION IV
INFRASTRUCTURE AND LEARNING RESOURCES

4.1 Physical Facilities

4.1.1 What is the policy of the Institution for creation and enhancement of infrastructure that facilitate effective teaching and learning?

The college has always endeavored to create infrastructure and enhance it according to the needs of the course curriculum as per the standards and norms. The underlying policy for all any infrastructure development must include is in sync with good practices features like energy conservation, environment protection, accessibility for differently-abled and judicious use of value for money and resources. It is envisaged. The most centric amongst all is that the students get the most enabling infrastructural support which facilitates scholastic and as well as personality development.

Consequently, the College has adequate facilities and infrastructure for the existing academic programmes, administrative functions, co-curricular and extra-curricular activities. The college is constantly upgrading its library, laboratories and other infrastructure. Subject to the availability of funds, the requirements of various departments are taken for consideration on priority basis for the students and staff.

4.1.2 Detail the facilities available for

a. Curricular and co-curricular activities – classrooms, technology enabled learning spaces, seminar halls, tutorial spaces, laboratories, botanical garden, Animal house, specialized facilities and equipment for teaching, learning and health and hygiene etc.

❖ **Classrooms and tutorial space**
- Thirty classrooms that are:
  o Fully furnished and properly ventilated.
  o Equipped with state-of-the-art multimedia facilities which include LCD projectors (2500 ANSI lumen), K-Yans etc.
  o Wi-Fi enabled with each student having individual login id and password.
- Four tutorial-rooms specifically for the students belonging to Mathematics and Commerce streams providing personalized teacher-student interaction in small groups.

❖ **Technology enabled learning space**
  The Web centre with 76 machines allows students of the college to engage with on-line materials that would:
  o supplement their classroom learning,
  o give shape to their innovative ideas beyond the classroom,
  o enable to remain connected with teachers and peer group throughout through email, Skype and other platforms,
  o allow browsing for any specific information on the Internet.

❖ **Seminar Hall, Conference Hall & Principal's Committee Room**
- An air conditioned conference hall having capacity of 120 persons equipped with LCD projector, smart lectern, slide sorters, wireless microphones etc., where students and faculty can organize:
  o Functions of their Departmental Societies
  o Hold meetings of various Committees e.g. NSS, Sports, Annual Events
  o Arrange talks of eminent speakers on various multidimensional aspects enriching their knowledge,
  o Conduct workshops on subjects not usually covered in the classroom, but useful in opening up new frontiers,
  o Conduct On-line video conferencing sessions and attend lectures at distant locations. The college participated in on-line lectures delivered by University of Delhi in collaboration with

National Knowledge Network and recently a talk on Governance delivered by the Hon'ble President of India, Shri Pranab Mukherjee, on "Parliament and Policy Making" through National Knowledge Network on January 19, 2015. Another online lecture by the Vice Chancellor of the University of Delhi on "India in the 21st century" was held on January 30, 2015.

o On line sessions in collaboration with foreign universities either for the curriculum or for interacting for projects e.g. A course on 'Recent developments in Genomics, Proteomics and Bioinformatics and concept of Bioethics' was conducted by Ohio State University, USA, through video conferencing.

o Screening of movies on various subjects relevant in national, social and historical perspectives.

• A newly built seminar hall equipped with LCD projectors capable of accommodating 200 persons is the additional facility which is in the process of being suitably equipped.

• A fully furnished, Wi- Fi enabled committee room equipped with LCD projector and having a capacity of 15 persons for holding meetings, discussions etc.

❖ **The Botanical Garden**

A necessary component for teaching of Botany, the garden is ~ 8000 sq.ft. A part of the garden is maintained wild for Ecological studies. The garden houses some exotic species such as: *Aurocaria, Cycas, Zamia, Washingtonia* etc. Like everywhere else in Delhi termites and field rodents are a problem. Seasonal plants required for teaching taxonomy and other subjects are also cultivated every year. The College campus is fairly green and has a rich collection of trees and shrubs.

❖ **Laboratories:**

• The college being primarily a science college has a large number of laboratories both for teaching and research.

The following laboratories are dedicated to teaching i.e., for conduct of practical associated with the syllabi:

S. No.	Department	No. of Labs
1.	Chemistry	5
2.	Physics + Physical Science	5
3.	Electronics	2
4.	Computer Science	4
5.	Botany+ Life Science	4
6.	Zoology	3
7.	Biomedical Science	4
Total		27

Students have exclusive rights to two laboratories for them to do experiments as per their interest and inclination. We hope this will keep their creative thoughts going and is in keeping with our 'Beyond the class room' approach. These spaces are for the students, by the students!

CUBE and **TH!NK LAB**

CUBE (Collaborative Undergraduate Biology Education) is an undertaking by the students to work in collaboration with students in other colleges of Delhi University as well as those in colleges in Mumbai and Pune. Students plan and do experiments that they discuss in their peer group through a email group. This project has been undertaken in collaboration with Homi Bhabha Centre for Science Education, TIFR (Mumbai).

Th!nk Lab - The Science Society is another independent initiative of students– this space is for students to interact and discuss current topics in Science. These groups of students who are from diverse fields also interact through a Facebook group where interesting papers are uploaded for others to read and appreciate.

❖ Animal House

There is no Animal house due to ban on animal dissection, however the college maintains two museums for botany and zoology respectively having models and specimens for the plants and species in accordance with standard protocols and guidelines.

❖ Specialized facilities and equipments for teaching learning:

- 18 laptops are available exclusively for physically challenged students.
- 910 laptops are dedicated to students' use only. These laptops are issued to the students for the entire semester as per their requirements.
- 25 laptops are available use by the faculty in class rooms. These are issued on daily basis.
- Multimedia Equipments like LCD projectors, k-Yans, visualizer, handy cam, camera etc. are available in the college for the use of faculty and students.
- Lex vision aid camera -a reading system along with computer and assistive devices is available for visually challenged students in college library.
- Braille to speech converter is also available.

❖ Scientific Equipment:

The college has over the years, procured state-of-the-art scientific equipment required for quality teaching in science. All equipment required for efficient transaction of the approved curricula re a given. The maintenance is also ensured. Since some of the equipment are sensitive to voltage fluctuations in many laboratories the current flow is stabilised and several labs have a back-up through heavy duty UPS systems.

The equipments listed below are available in the college for research use, but may be utilised for classroom teaching too.

• Buchi's Rotary Evaporator • 4 - Channel Digital Storage Oscilloscopes (DSO) • CO_2 Incubator • Computer Interfaced Dedicated Gas Sensing Test Rig • Conductivity Meters • Digital Viscometer • DOT-BLOT System • Flame Photometers • Hot SS Air Sterilizer • Deep Freezers (- 20 °C and – 80 °C) • Ice Flaking Machines • Laminar Flow Hoods (Horizontal) • Lyophilizer • Ultrasonic Processors • UV-VIS Spectrophotometers • UV-Trans-Illuminators • Western Blot Apparatus with Power Pack	• Microplate Reader (ELISA) • Microscopes – Fluorescence & Phase Contrast • Millipore Water Filter • Mini-gel Documentation System • Orbital Shaking Incubators • PCR • Gradient PCR • pH Meters • Polarimeters • Potentiometers • Refrigerated Centrifuges • Spirometers • Sonicators • Tetra-cell Vertical gel electrophoresis system • Vertical Autoclaves • Water Bath Shakers

❖ Cleanliness and Hygiene

Being a space where we have over two thousand students and staff, it is utmost essential and basic norms of cleanliness and hygiene are followed. The quality of water in Delhi being highly variable, it is essential to ensure safe drinking water for all. Adequate RO systems with

sufficient capacities and well maintained, are installed at several places in the college. Students who live in rented spaces around the college are encouraged to carry RO water from college for their personal use.

Overall cleanliness is also a priority in the college despite being inadequately staffed. A recent visit by the inspection team appointed by the Board of Residence, Health and Discipline Board Ord.XV (Chapter VI) of the University of Delhi for checking health and hygiene at eatery places, toilets, street lighting etc., in various Colleges of the DU has ranked our college as good - the highest indicator on general cleanliness, status and facilities of drinking water, cleanliness and water facilities in toilets, cleanliness and hygiene conditions of the canteen and of the class rooms.

The college intends to set up waste management systems when we construct our new college building and shift there. It shall be integrated into the construction plan.

(b) Extra –curricular activities – sports, outdoor and indoor games, gymnasium, auditorium, NSS, NCC, cultural activities, Public speaking, communication skills development, yoga, health and hygiene etc. :

❖ **Extra-curricular Activities**

The college believes in all round development of the students in sync with its approach -*Beyond the classroom..* Accordingly, students are encouraged to indulge in meaningful co-curricular activities.

▪ Theatre in Education: The college believes in opening up at all levels, so that students can express themselves freely, without inhibitions and grow into responsible mature citizens. For this theatre is perceived to be an effective medium. With this objective a room has been dedicated, which is used for conducting an add-on course named ECPDT (Effective Communication and Personality Development through Theatre) and holding rehearsals for various plays, street plays and ATP (Annual Theatre Production). The room is equipped with all the required equipments.

▪ The Seminar that was constructed recently is being used as a multipurpose space, for hosting diverse activities, where student participation may be large, like Blood donation camps, Thalassemia screening and health check-ups, NSS programmes, theatre related activities etc. Recently the College used the space for organizing sessions of Youth Parliament – a competitive event at national level, judged by an eminent jury.

❖ **National Service Scheme (NSS)**

The NSS unit of the college with about 600 active members is very active and organizes many social outreach programmes, which are listed below.

• Sahyog – the Diwali mela – the mela is special since the products that are sold in it are made by the disabled persons. In this way we support such organizations that work with the disabled and we sensitise our students and staff.

• Thalassemia Initiative - The NSS unit at ANDC has embarked upon it the mammoth task of Thalassemia awareness and eradication through street plays, posters, interaction with thalassemia patients. It is worth mentioning that ANDC has committed to fulfil blood requirements of 10 under-privileged thalassemic girls throughout the year.

• It has adopted 5 villages for resolving their basic problems like cleanliness, sanitation and literacy programmes.

• It works in close association with an NGO named *Goonj* for the poor and under privileged sections of the society and participates in the social work at the time of natural disaster like earthquakes, floods etc.

• In sync with the national *Swatcha Bharat Abhiyan*, it regularly organises cleaning drives in and around the college.

Most of these activities are outdoor, but wherever needed necessary facilities and infrastructure is made available by the college for all the above activities.

Green Ambience

The college claims plush well maintained lawns and cool greenery around the campus. It has some very old trees including fruit bearing ones and medicinal ones. With its well-maintained greenery the college area stands apart in otherwise congested, concretized surroundings.

❖ **Sports and Recreational Facilities**

- Special coaches are hired for preparing students for inter college sports events.
- A sports room with some fitness equipment is available for students free of charge.
- A dedicated sports room available for students having facilities for indoor games like carom, table tennis, chess.
- A well maintained ground for games like Cricket, football and athletics etc.
- Courts for Badminton, Volleyball, and basketball are also available.
- An air conditioned room with wooden floor (used by theatre group) also serves as an activity room for students – and may be used for yoga etc.
- All sports and recreation activities are organized under the expert guidance of a regular sports teacher who is a Dronacharya Award recipient.

4.1.3 How does the institutional plan and ensure that the available infrastructure is in line its academic growth and is optimally utilized? Give specific examples of the facilities develop/augmented and the amount spent during the last four years (Enclose the Master Plan of the Institution / campus and indicate the existing physical infrastructure and the future planned expansions if any).

To achieve and progress, we need a proper environment & facilities. The space limitations should not hamper our growth, thus we are continuously adding to our infrastructure with funding from government of NCT Delhi, UGC and other governmental organizations. The number of students has been increasing. For example in 2006, we had below 1000 students which by 2016 is expected to reach about 2500. Every year we undertake significant consolidation and addition to the infrastructural facilities so as to provide an intellectually stable academic environment for the students.

➢ The library was earlier housed in the semi-permanent structure at the back of the College. Recognising the importance of the Library in academics it was first moved to a prime space – the multi-purpose hall of the college, Two year down the line the hall was horizontally split in a creative manner to double the space available for the library – was air-conditioned and a Web Centre carved out inside it.

➢ Some Departments were relocated to new spaces in order to increase the laboratory and other spaces available to them. E.g. Botany and Zoology Department. The Zoology Department has now very spacious well-lighted labs and good faculty rooms. In other cases additional lab facilities were created and spaces allotted to the Departments augmented e.g. Chemistry, Biomedical Science and Computer Science.

➢ With increase in student strength due to OBC expansion, the College had to take emergent measures to create space – 4 good sized classrooms and two huge laboratories were constructed within a very short period – these were housed in porta cabins. Bamboo structures were also constructed to house the canteen. (the space that the canteen occupied was converted into Chemistry labs).

➢ A new air conditioned web centre having high speed Wi-Fi internet connectivity has been set up in the upper floor of the Library with 76 web enabled computers and 2 servers provided by University of Delhi. Many workshops with hands-on sessions have been held in this dedicated high tech facility. This hub also houses a separate facility i.e. the reading hall to study, hold meetings and pursue research. Further the Wi-Fi network is backed up by

a 30 KVA uninterrupted power -supply (UPS) and can support more than 1500 users simultaneously. The college is one of the first to successfully implement the establishment of the Wi-Fi network in the campus.

➢ The construction of new office block was completed wherein the offices of Vice-Principal, Bursar, Administrative officer and Section Officer (Accounts) were shifted. To further strengthen the infrastructure, the college has made provision of four more classrooms, a seminar room having capacity of 200 students and two spacious laboratories all equipped with LCD projector by construction of a new wing with two floors in the college campus. This has become functional from the current academic term.

➢ Canopies have been constructed to join different blocks to protect against sun and rain. Replacement of existing false ceiling with Armstrong false ceiling in classrooms and main staff- room has also been done.

➢ With increasing student strength, faculty strength has also increased. An extension to the Faculty room was constructed to ensure sufficient space for the faculty.

➢ New toilets have been constructed and old ones renovated.

➢ Construction of three SPS (semi-permanent structure) type rooms for Xeroxing, Stationary shop and ATM facility has also been completed.

➢ Lack of space for students outside of classrooms was an issue. This was tackled to some extent by creating steps with green protection in front of the college.

➢ Increasing space for teaching, research and other activities has been a continuous process – in the last ten years every year some space or other has been created/added/improved.

Following is the list of grants received from the Directorate of Higher Education, UGC and DU for undertaking infrastructural works in the college in the past years. Since no growth can take place anywhere without sufficient funds so the college wishes to extend heartiest thanks to all the funding agencies for their generosity.

Year	Nature of Work	Funding Agency	Amount Sanctioned
2009-10	(i) Recurring Grant for Infrastructural work	DHE	Rs. 2,14,51,877
	(ii) Non-Recurring Grant	DHE	Rs. 1,24,70,000
2010-11	(i) Repairing &Renovation of false Ceiling, tiling, electrical installation, Generator Set (Recurring)	DHE	Rs. 94,14,106
	(ii) Non-Recurring Grant	UGC and DHE	Rs. 83,67,000
2011-12	(i) Infrastructural works in college for construction of additional floors, seminar hall & students activity Centre	UGC and DHE	Rs. 1,37,98,860
	(ii) Non Recurring	DHE	Rs. 30,00,000
2012-13	(i) Construction of additional rooms, whitewashing and development assistanc	DHE& UGC	Rs. 31,38,097
	(ii) Non Recurring Grant	DHE	Rs.1,05,00,000
2013-14	(i) Non Recurring	DHE	Rs. 85,00,000
	(ii) Construction of SPS room, Rain protection shade, Replacement of existing false ceiling in class room	DHE	Rs. 79, 50,991

*DHE: Directorate of Higher Education, Government of the NCT of Delhi
**UGC: University Grants Commission

4.1.4 How does the institution ensure that the infrastructure facilities meet the requirements of students with physical disabilities?

- Ramps with railings at various places for seamless accessibility are present in the campus. We try to ensure that all the classes of orthopedically challenged students are held on the ground floor in accessible areas.
- Availability of Lex vision aid camera reading system along with notebook computer (1) and assistive devices (4) for visually challenged students in college library.
- Facility for Braille to speech conversion is available.
- Wheelchair facility at the college gate.
- Free pick-up/drop facility from campus to Govindpuri metro station during examinations and we further plan to extend this service during regular days as well on demand basis.

4.1.5 Give details on the residential facility and various provisions available within them:
Hostel facility-Accommodation available: No hostel facility
Recreational facililities, gymnasium, yoga center, etc.:
- The sports room with Fitness equipment made available for students free of charge throughout the working hours.
- Space for yoga and meditation is made available for students and faculty.

Computer facility including access to internet in hostel: Not Available.
Facilities for medical emergencies: The College has provisions for in house first-aid and medical facility. The College also has tie-up with a neighborhood doctor for medical assistance in case of any medical emergency in the college. Moreover, there are many private and government hospitals, in the immediate vicinity of the college, where students are rushed in case of medical emergency.
Library facility in the hostels: Not Available.
Internet and Wi-Fi facility: The whole college campus is Wi-Fi enabled. In addition to 5 computer labs, a central Web Centre having 74 terminals is available for students. Laptops are also issued to students based on their requirements. The college has arranged a fall-back internet connectivity to ensure seamless connectivity even under adverse conditions.
Recreational facility-common room with audio-visual equipments: The female students have been provided with a common room. The college is in process of providing equipments/gadgets for recreational purpose like TV, audio-system, musical instruments etc.
Available residential facility for the staff and occupancy: Not available
Constant supply of safe drinking water: Five RO water dispensers for constant and safe drinking water are installed across the entire campus.
Security: Round the clock security is provided by outsourcing the services to a competent security agency. Three security personals (2 male + 1 female) are in position during day and two guards are on duty during night. The whole campus is equipped with CCTV camera which continuously monitors and keeps a tight vigil on the campus.

4.1.6 What are the provisions made available to students and staff in terms of health care on the campus and off the campus?
Every student is entitled to the membership of World University Health Services whose centers are situated at University's South and North Campuses. Reimbursement of expenses for hospitalization and medical treatment from empanelled Authorized Medical Attendants (AMA) and hospitals/ diagnostic centers is available to staff in accordance with the Delhi University and CSMA rules.
Fitness, mental as well as physical is one of the priorities of our college and keeping this in view NSS unit of the college is actively involved in holding free health check-up camps for all stakeholders in college and nearby residents. The medical camps provide free consultation and

diagnosis of a wide range of medical problems. Some of the well-known institutions that support these camps include Cipla, Janki Healthcare center, R.G. Stone, AIIMS, WUS South Campus etc. The college NSS unit also organizes special programs on World AIDS day wherein college students wearing red ribbons spread awareness about this dreadful disease that leads to severe loss of body's cellular immunity thus greatly lowering its resistance to infection and malignancy. NSS volunteers specifically target the younger folks who constitute the gullible group with impressionable minds.

The college has provisions for in house first aid and medical facility. The college has also tied up with a neighborhood registered medical practitioner for medical assistance during any medical emergency in the college. Moreover, there are many private and government hospitals, in the immediate vicinity of the college, where students/ staff is rushed in case of emergency.

Some instances of activities in health care in the recent past are mentioned below:

On 24th September, 2014 the college organized complete blood sugar test and lipid profile for all the students and staff of the college.

On 28th September, 2014 Dr. N.K. Bhatia a renowned blood specialist was invited to college and a special seminar cum camp was organised exclusively for girl students and female staff of the college for blood Hb check-up.

'Free Health check-up camp' in association with Cipla Pharmaceuticals and Janki Healthcare center were organised for the students, staff and nearby residents in September, 2013.

A medical counseling camp was organised with an NGO, 'Young Concepts' for the girl students and female staff of the college in September, 2013. A team of doctors from "Fortis Escorts Heart Institute & Research center' discussed health related issues with the students.

In collaboration with R.G. Stone Urology and Laparoscopic center a free health check-up was conducted on February, 2010 for college employees.

Many Thalassemia screening camp were organized in association with GTB Hospital in the college for students and staff since October, 2009. The college has declared Thalassemia screening for its staff, students and the community as its mission and has adopted 10 female thalassemic patients from economically weaker sections for their routine blood transfusion requirements.

4.1.7 Give details of the common facilities available on the campus-spaces for special units like IQAC, Grievance Redressal unit, Women's cell, Counseling and Career Guidance, Placement unit, Health center, Canteen, recreational spaces for staff and students, safe drinking water facility, auditorium, etc.

The IQAC unit has recently been formed as the college is applying for the first cycle.

The office of the Vice Principal e has been provided extra space with table and chairs. Since the entire student applications regarding their enquiries/problems are sent to vice-principal by the office, the meetings with the students and the concerned committee (sec.5.1.10) are held there.

For Counseling, Career Guidance and Placement unit a special air-conditioned room is designated. It is equipped with computer and multi-media facilities and has provisions for conducting meetings as well. The Placement Officer is also available here regularly for guidance and support to the students, we are probably the only traditional college in DU to have a Placement Officer. The placement officer works in association with the Career Counseling and Placement Cell of the University, which consist of faculty members who coordinate with the corporate and job providers.

The College canteen serves healthy food at reasonable price for students and staff. It is housed in an eco-friendly bamboo structure with provision for two microwave ovens and a spacious dining hall equipped with appropriate furniture. There is a separate air conditioned dining room for the staff of college. There is also a separate kiosk near the canteen which provides snacks,

ice-creams, juices and general stationary items. The college canteens also provide mess facilities for outstation students at a reasonable price.

There is provision of safe and drinking water on the campus. Five water purifiers (RO system) are installed in each block and are maintained regularly.

An air conditioned room with wooden floor serves as an activity room for students.

Recreational activities of the staff are generally undertaken in the main faculty room, which is equipped with rest-rooms, kitchen and gadgets like TV, EPBAX, refrigerator, microwave ovens and appropriate furniture. In addition each department has fully furnished separate staff room also. Such facilities are also available for the staff in their respective departmental rooms.

There is no auditorium is in the college. For holding small events the college Seminar room and Seminar Hall having a seating capacity of 120 and 200 persons are used. However for bigger events, tent-arrangement is done.

4.2 Library as a Learning Resource

4.2.1 Does the library have an Advisory Committee? Specify the composition of such a committee. What significant initiatives have been implemented by the committee to render the library, student/user friendly?

Yes, Library has an advisory committee consisting of the following.

1. Librarian
2. Convenor (A faculty member)
3. Teachers-in-Charge of all Departments (Members)

The library of the college is future focused, looking beyond where it is at today and anticipating the future. Meetings of the library committee are held to discuss the scope and modalities for improvement.

In 2008, library was shifted from the semi-permanent structures to the present spacious hall. In the session 2010-2011 in a very innovative move library hall was horizontally divided to double the space – this resulted in more reading space, creation of research wing as dedicated space for research scholars and a new web centre where 76 computers and two servers provided by the university have been housed. The newly constructed library is also air conditioned.

College library is unique in DU in organizing Book Fair/Exhibition annually for two days. Various publishers and dealers display the current titles and various reading material like text books, reference books, etc. in this fair/exhibition. Teachers and students are able to recommend the new books /editions after the fair/exhibition.

Since 1995, the library of the college is computerized. In house-developed software was used for circulation of books. Earlier the college library had LIBSYS software for its administration. Presently all library services are automated using a modern software *LS Ease* procured from TCS.

Online Public Access Catalogue (OPAC) is available in the reading hall for the users. Through this system users can find out every detail like title, author, year of publication, edition, publisher, no of copies available etc. including status of any book.

Library has a good collection of educational material like books, magazines, journals, which are available for circulation among students and teachers throughout the year. Apart from this there is a separate section of popular science books, fictions and books for general interest.

Course books are placed in two sections classified as Text books and General books. Text books are issued for 03 days and General books for 15 days to the students. Reference books are for consultation only. To inculcate the sense of responsibility and discipline among students, fine is levied to the students for returning the books after due date.

New periodicals, magazines and English and Hindi newspapers are added regularly to keep the staff, students and non-teaching staff of the college abreast with the latest information.

Suggestion box has been placed at prominent position in the library so that users can drop their suggestions. These suggestions are considered in the meetings and then implemented.

Book Bank facility is provided to the needy students.

Books are issued to the students and library remains open on 6 days instead of regular five working days during examination.

4.2.2 Provide details of the following:

Total area of the library (in Sq. Mts.)	595 Sq. Mts.
Total seating capacity	220
Working hours On working days on holidays before examination days during examination days during vacations	0900 Hrs to 1700 Hrs Closed 0830 Hrs to 1730 Hrs 0830 Hrs to 1730 Hrs 0900 Hrs to 1700 Hrs

(Library remains open 6 days a week)

Layout of the library (individual reading carrels, lounge area for browsing and relaxed reading, IT zone for accessing e-resources)

The library has

- Two air-conditioned reading halls for students
- One separate air-conditioned reading room for faculty and research scholars
- Circulation counter
- Separate area for Text books , Reference books, New Arrivals, Book Bank
- Stack Area
- Stands for Newspaper and Magazines
- Terminals for Online Public Access Catalogue (OPAC)
- Processing Room
- Librarian Room
- Separate Server Room
- Seventy Six computers for e-resources in web centre room of library

4.2.3 How does the library ensure purchase and use of current titles, print and e-journals and other reading materials? Specify the amount spent on procuring new books, journals and e-resources during the last four years.

In the beginning of each session, the annual budget allocated to the library is divided amongst the various departments of the college in a meeting. In this way specific amount is allocated to each department every year for ensuring the purchase of books, for which the library adopts following procedure:-

Library organizes Book Fair/Exhibition annually in the month of August for two days. Various publishers and dealers display the current titles and various reading material like text books, reference books, etc. in this fair/exhibition. Students and faculty members select the books and these selected books are then purchased after recommendations from teachers in charge/ teacher representatives of respective departments and approval from the principal.

Students and faculty members are encouraged to visit various other book fairs organized outside the college. They can select the titles from there and provide the list to the library for purchase.

List of new publications and latest catalogues of different publishers are sent to the faculty by library and books recommended by the faculty are purchased.

Faculty can also request the library directly to purchase any particular book.

After getting the list by any of the above method, library checks for duplication/multiplication of volumes. If there is no duplication the library places an order for the purchase after getting permission from the principal.

4.2.4 Provide details on the ICT and other tools deployed to provide maximum access to the library collection?

Library Holdings	Year 1 (2010-2011)		Year 2 (2011-2012)		Year 3 (2012-2013)		Year 4 (2013-2014)	
	Number	Total Cost (Rs.)	Number	Total Cost (Rs.)	Number	Total Cost (Rs.)	Number	Total Cost (Rs.)
Text Books and Reference Books	2712	4,68,331+5,02,507	1325	6,10,569	1055	3,99,194 + 1,60,000	1452	6,00,147
Journals/Periodicals (Including Newspaper)	21 + 10	21,334	24 + 10	35,034	21 + 10	24,728	27 + 10	41,217
e-resources	N-LIST through INFLIBNET and DU Intranet	5,000	N-LIST through INFLIBNET andDU Intranet	5,000	N-LIST through INFLIBNET and DU Intranet	5,000	N-LIST through INFLIBNET and DU Intranet	5,000
Any Other	617	2,00,000 (Book Bank)						

1	OPAC	YES (One terminal)
2	Electronic Resource Management package for e-journals	Through DU intranet and N-LIST through Inflibnet
3	Federated searching tools to search articles in multiple databases	Through University of Delhi intranet connection/ UGC INFONET through Delhi University Library System (DULS)
4	Library Website	
5	In-house/remote access to e-publications	In house access through DU intranet and remote access to N-LIST through Inflibnet
6	Library automation	Library is computerized since 1995. LS Ease Software has been installed since 2003. All books have been bar coded
7	Total number of computers for public access	76
8	Total numbers of printers for public access	NIL
9	Internet band width/ speed	100 mbps
10	Institutional Repository	NIL
11	Content management system for e-learning	
12	Participation in resource sharing networks/consortia (like Inflibnet)	N-LIST by INFLIBNET

4.2.5 Provide details on the following items:

1	Average number of walk-ins	600/day
2	Average number of books issued/returned	500/day
3	Ratio of library books to students enrolled	26950/1800 = 14.97
4	Average number of books added during last three years	1636
5	Average number of login to opac (OPAC)	150 approx.
6	Average number of login to e-resources	450 students per day (approx.)
7	Average number of e-resources downloaded/printed	The data for downloads is not maintained
8	Number of information literacy trainings organized	Library Staff upgrade their knowledge by attending training workshops. Teaching Faculty participated in e-learning workshop held in LSR College, organized by DULS.
9	Details of "weeding out" of books and other materials	158 (Obsolete books) 84 (Unserviceable)

4.2.6 Give details of the specialized services provided by the library

Manuscripts	Year wise bound volumes of research manuscripts by the students and faculty of the college are placed in the library
Reference	On Demand
Reprography	Facility of photocopying is available through photocopy kiosk in the college.
ILL (Inter Library Loan Service)	On Demand
Information deployment and notification (Information Deployment and Notification)	New arrivals are notified to the students through notice boards and to the faculty through email.
Download	Yes
Printing	Yes, on request for faculty

Reading list/ Bibliography compilation	New Arrivals list.
In-house/remote access to e-resources	In-house access through DU intranet and remote access to e-resources through N-LIST by INFLIBNET
User Orientation and awareness	Every year on orientation day, students are apprised of the rules and regulations of the library. They are also told about how to take maximum benefit from the college's library. Notice Boards of the library regularly display any latest instruction or facility introduced.
Assistance in searching Databases	The library staff assists students in finding the title by OPAC system
INFLIBNET/IUC facilities	INFLIBNET/DU Intranet

4.2.7 Enumerate the support provided by the Library staff to the students and teachers of the college.

The library staff assists students and teachers of the college in

- Finding the title by Online Public Access Catalogue (OPAC)
- Locating the book on bookshelf
- Locating syllabus, question papers of previous years from question bank
- Downloading

4.2.8 What are the special facilities offered by the library to the visually/physically challenged persons? Give details.

- Help by the support staff of the Library
- Braille books for visually impaired students
- Text to speech convertor

4.2.9 Does the library get the feedback from its users? If yes, how is it analysed and used for improving the library services. (What strategies are deployed by the Library to collect feedback from users? How is the feedback analysed and used for further improvement of the library services?)

Suggestion box has been placed in the library where the users can drop the suggestions for improving the existing library facilities.

Verbal feedback is also taken by the staff of the library and the members of the Library Committee.

These suggestions are duly discussed and analysed in the library committee meetings and steps are taken to achieve the suggested improvements.

4.3 IT Infrastructure

4.3.1. Give details on the computing facility available (hardware and software) at the institution.

Number of computers with Configuration (provide actual number with exact configuration of each available system):

There are a total of 254 Desktop PCs; 910 Laptops and 11 Servers as per details given below:

A. Hardware

S.No.	Details of Desktop Computers with Configuration	Qty.	LAN	Wi-Fi
1	Acer, Configuration: AMD Phenom 2 X 4810 processor, HDD: 320GB, RAM: 2GB	81	Yes	Yes
2	HP, Configuration: Intel Core 2 Duo 2.4 GHz, HDD: 80 GB/160GB, RAM: 2GB/1 GB/512 MB	74	Yes	Yes
3	HCL, Configuration: Intel Dual core E 5200 2.5 GHz, HDD: 320 GB, RAM: 2GB	01	Yes	Yes
4	IBM, Configuration: Intel PIV 3.2 GHz, HDD: 80 GB/250GB, RAM: 2GB/1 GB/512 MB	44	Yes	Yes
5	Dell, Model: Optiplex 980/Vostrov, Configuration: Intel Core i5, HDD: 500GB, RAM: 4GB	53	Yes	Yes
6	Zenith, Configuration: Intel Celeron ® 2.8 GHz, HDD: 80 GB, RAM: 256 MB	01	Yes	Yes
Total		254		

S.No.	Details of Laptop Computers with Configuration	Qty.	Internet Facility	Server Configuration	Qty.
1	HP 445, G1, 320GB HDD, 8GB RAM, AMD Processor	910	Yes	HCL, Configuration: Intel Xeon E5504, RAM: 2 GB, HDD: 300 GB	03
2	HP 445, G1, 500GB HDD, 8GB RAM, AMD Processor	11	Yes	HP, Configuration: Intel Xeon, RAM: 4 GB, HDD: 72 GB (Qty=3)	02/03
3	Lenova, 2GB RAM, 320GB HDD, Intel Processor	18	Yes	Acer, Model: AR 380 F1, Configuration: Intel Xeon E5620, RAM: 8 GB, HDD: 300 GB (Qty=3)	02/03
4.	HP 445, G1, 500GB HDD, 8GB RAM, AMD Processor	25	Yes	IBM, Model: X series-205, Configuration: Intel PIV , RAM: 256 MB , HDD:	02

				300 GB	

PRINTERS

LASERJET		DESKJET + Dot Matrix Printer		SCANNERS	
MAKE	QTY.	MAKE	QTY.	MAKE	QTY.
HP COLOR	1	HP DESKJET 3650	4	HP SCANJET G3110	1
HP 1606 DN	4	HP DESKJET F4185	1	HP SCANJET 5550C	2
SAMSUNG M2010	4	TVS MSP 1245 DMP	1	HP SCANJET 63110	1
HP 1015	4			HP SCANJET 4370	1
HP 1022	3				
HP 2420	3				
HP 1010	3				
HP 1000 SERIES	4				
HP P1008	1				
HP P1007	1				
TOTAL	28		06		05

Computer-Student Ratio	1:2
Stand Alone facility	Nil
LAN facility	There are 19 Gigabit Switches and 216 Machines are on LAN
Wi-Fi facility	This facility is made available through 21 Access Points, centrally managed by Zonal Director. As many as 590Machines are having wireless access at peak time; otherwise 1000 Machines are on Wi-Fi.
Licensed software	The college has a total of 19 Licensed Software. Detail given below
Number of Nodes/Computers with Internet facility	All computers are on Internet
Any other	The college has 25 LCD Projectors and 4 KYANs; 02 Xerox Machines

B. LICENSED SOFTWARE

S.No.	SOFTWARE	QTY.	License Holder
1.	Tally (6.3)	1 CD	ANDC
2.	Java Builder	4 CDs	ANDC
3.	MS Visual Studio 6.0 Prof. Edition	3 CDs	ANDC
4.	MS Visual Library MSDN	2 CDs	ANDC
5.	Red Hat Linux 7.2	7 CDs	ANDC

6.	MS Office 2003 Professional	1 CDS	ANDC
7.	Turbo C++ Suite	1 CDs	ANDC
8.	Visual Prolog 6.1	1 CDs	ANDC
9.	Oracle	50 CDs	ANDC
10	Driver HP Laserjet 1000 Series	1 CDs	ANDC
11	Cobol 85 Dos Version	2 Floppy	ANDC
12	Win 2000 Server	1 CDs	ANDC
13	Nero Ver. 5.5	1 CDs	ANDC
14	IBM Director	1 CDs	ANDC
15	Win XP	2 CDs	ANDC
16	Adobe Photoshop 7.0	1 CDs	ANDC
17	Windows Vista	14 CDs	ANDC
18	Multisim	1 CD	ANDC
19	Mathematica (Maths Deptt.)		ANDC

4.3.2 Detail on the computer and internet facility made available to the faculty and students on the campus and off-campus?

Computer and Internet facility is made available to the faculty and students both on the campus and off-campus.

There are a total of 253 Desktop Computers and 964 Laptops, 35 Printers and Scanners available in various departments as given below. The Laptops are issued to the students and teachers as and when required. The distribution and usage is well documented.

S.No.	Department	No. of PCs & Laptops	Laser Printer	Scanner	Software*
		Desktop			
1.	Principal + Vice Principal	IBM (01) Acer (01) Mac(1) Laptops (2)	HP Color (01)	1	Linux/Windows/Apple
2.	Sr. P.A. Room	Dell Optiplex 980 (01) Acer (01)	HP (01) 1606 DN	HP (01) Scanjet G 5550c	Linux
3.	Library	Dell Optiplex 980 (04) IBM (06) HP (01) HP Server (01) IBM Server (01)	Samsung (01) ML2010, HP (01) 1015	HP (01) Scanjet 5550c	Linux/ERP
4.	Administration	Dell Optiplex 980 (06)	HP (02) 1015 HP (01) 1022 HP (01) 2420	HP (01) Scanjet 5550C	Linux/ERP

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		Acer (01) HP (01)	dn, Samsung (01) ML2010, HP (01) 1010	HP (01) Scanjet 63110	
5.	Accounts	Dell Optiplex 980 (05) HP Server (01)	HP (01) 1015 HP (02) 1022 HP (01) 1606 HP (01) 2420 dn,		Customised software/ERP
6.	Web Centre	Dell Optiplex 980 (02) Acer (76) Sever AR 380 (02)	Samsung (01) ML2010		Linux/Window s
7.	BMS	Dell (01) HP (02) IBM (01) Dell (01) (Dr. Gagan in IEDC project)	Laser Jet (01) Samsung (01) HP Desk Jet (01)		Linux /Windows
8.	Physics	Dell (01) IBM (01) HP (02) (Project Dr. Arijit)			Linux FOSS
9.	Botany	Dell (02) IBM (02) IBM (01) ACER (01) (From DU grant)	HP Laser Jet 1010 (01) HP Laser Jet P1008 (01) Ink Jet 3650 (02)		Linux
10.	Chemistry	Dell (03) IBM (01)	HP Laser Jet 1010 (01)		Linux FOSS
11.	Zoology	Dell (01) IBM (01)	Samsang ML 33101ND (01)		Linux/Window 7
12.	Computer Science	IBM (24) HP Core 2 Duo (69)	Laser Printer (04) Network	HP Scan jet 4370 (1)	Linux/Window s

		Dell Optiplex (25)	Printer (02) Desk Jet printer (01)		
13.	Electronic Science	Dell (07) IBM (01)	HP Laser jet P1606dn (01) HP Laser jet P1008 (02)		Linux/Windows

Laptops are issued to all differently-abled and needy students and a proper register is maintained for this purpose.

The College is a part of NKN's fibre optic Gigabit Network through University of Delhi maintained by RAITEL with present Internet speed of 100Mbps.

Students and faculty members avail computing & internet facility within their departmental labs as well as in common facility such as computer centre and Library Computer Hub.

*Mathematica, Multisim, Oracle are some of the other softwares installed in teaching labs.

4.3.3 What are the institutional plans and strategies for deploying and upgrading the IT infrastructure and associated facilities?

Acharya Narendra Dev College has always laid a lot of emphasis on the IT development, since its inception. College has always possessed the best computing facilities available at those times and was the first to computerize issue-return of the library in the entire Delhi University, with the help of in-house software developed by its own under graduate students. There has been a constant endeavour to constantly upgrade its IT infrastructure. It is worth mentioning that ANDC was first in University of Delhi to make the internet facility available to the students and staff in the early days of the advent of internet on the IT scenario, wherein 72 students could work on internet and share files in three computer laboratories simultaneously through LAN and Internet.

The world of technology, however moves on a very fast pace, and one needs to be constantly on toes in order not to lag behind. Keeping this spirit, the college has continuously been upgrading, its IT infrastructure. Having reached to a stage, where, the entire campus and classrooms are wi-fi enabled and each member has a unique login id and each classroom has projector and computing facility, the college now aspires to undertake the following IT up gradation.

* Smart classrooms equipped with lecturs (electronic podium) and with attendance and assignments being available to the students and college instantly online.
* Putting all the departmental staffrooms on a networking system, wherein teachers can easily communicate with administration and library online and seek any information.
* Facility of remote login to all the authorised users for academic purposes.
* Developing e-repository of the college.
* Expand the video conferencing facility.

Acharya Narendra Dev College being a 100% funded by Govt. of N.C.T. of Delhi, depends for the funds on the government. We will in future prepare a proposal for the above listed plans and after due approval from the competent authority, send it to the government for approval.

The college has common computing facility such as computer centre and computer hub within the Library. Time to time the college upgrades the common IT Infrastructure ICT Infrastructure in the department as per the need of the curriculum.

In the beginning the college started with few Intel 8086/286 processors based system having DOS environment without any LAN. Today due to successful institutional plans and strategies, the college boasts of state of the art computer centres equipped with Servers, Printers, Desktop Machines, Laptops, LCD Projectors, and Scanners of latest configuration. The college Library as well as Administrative Offices are also running automated operations. Every financial year

requirement for purchase of new ICT equipments are invited from the all departments which are reviewed and approval of purchases. The regular upkeep, maintenance, deployment and up gradation work is being carried out through personnel of Computer Centre.

There is a special thrust on using the Free and Open Software (wherever possible) for academic as well as administrative purpose.

4.3.4 Provide details on the provision made in the annual budget for procurement, up-gradation, deployment and maintenance of the computer and their accessories in the institution (year wise for last four years).

Department- wise provision made in the annual budget for procurement, up-gradation, deployment and maintenance of the computer and their accessories in the institution for the last 4 years (i.e. from 2009 to 2014) is as given below:

S. No	Year	Department	Number of machines procured /upgraded	Expenditure (in Rs.)
1	2009-2010	Office	1	85,115
		UGC Grant	1	5,300
		Total	2	90,415
2	2010-2011	Library	11	2,14,620
		Physics & Chemistry	3	1,35,296
		Computer Sc.	28	12,62,758
		Electronics	1	45,099
		Zoology	1	45,099
		Botany	1	45,099
		BMS	1	45,099
		Office	13	6,68,256
		Classroom	2	1,89,000
		UGC Grant	6	1,93,937
		Total	67	28,44,263
3	2011-2012	Auditorium & Seminar	5	82,952
		UGC Grant	12	1,98,557
		Total	17	2,81,509
4	2012-2013	UGC Grant	2	61,700
		Total	2	61,700
5	2013-2014	Library	3	86,892
		Computer	1	23,944
		UGC Grant	1	7,200
		Total	5	1,18,036
Grand Total			93	Rs.33,95,923

4.3.5 How does the institute facilitate extensive use of ICT resources including development and use of computer-aided teaching/ learning materials by its staff and students?

The college has been a pioneer in extensive use of ICT recourse and computer aided teaching learning materials by the staff and students. Apart from providing a gigantic IT infrastructure in terms of its state of the art computer laboratories, web facilitation centre, technology enabled and multimedia /LCD projectors equipped wi-fi classrooms and a huge stock of laptops dedicated to students and faculty, it has strived for the computer enabled teaching-learning process in the following way:

- Encouraging use of ILLL (Institute of Life Long Learning, DU) study material available online on the university website (http:// vle.du.ac.in). Many teachers at ANDC have written study material in the form of e-chapters and contributed to the ILLL.

- Organizing workshops like Easy Now in collaboration with CEMCA (Commonwealth Educational Multimedia Centre in Asia) for training the faculty in developing e-content. A large number of teachers have been trained in developing e-lectures /streaming slide shows and audio-visual movies in ODL (Open Distance Lectures) format and the content were uploaded on the Canada based server of CEMCA.

- Using Open Educational Resources (OERs) available on various websites.

- College is an avid campaigner of FOSS and OERs and does not believe in trapping the education in the complexities of copyright materials. It encourages the staff and students to use OERs and share the content developed by the faculty created under Creative-Commons (CC) licensing. It provides freedom to use, modify and share the content.

- Several workshops and lectures by eminent personalities are organized in the college. In addition to many other personalities from the industry and academia Richard Michael Stallman (from MIT, USA), the founder and pioneer of the GNU platform has visited the college twice and interacted with the students and staff.

- Students are encouraged by teachers to utilize a lot of educational content from Wikipedia, Ted talks, You Tube and use of search engines in searching information.

- College has created Google-groups of each course and class, using which students can have 24x7 interactions with their teachers and peer groups. This facilitates exchanging study material, assignments, question banks and problem solving through interaction with the teachers and peer learning.

- Encouraging students interaction with faculty through email, Skype and other messenger services.

- Students of B.Sc. (H) Biomedical Science attended an add-on course at Ohio University USA through video conferencing.

- A large gathering of students and staff attended a lecture delivered by the Hon' ble President of India on "Parliament and Policy Making" through National Knowledge Network on January 19, 2015. Another online lecture by the Vice Chancellor of the University of Delhi on "India in the 21st century" on January 30, 2015 was presented to the students. These show the competence of the college in facilitating interactive video conferencing which could be successfully harnessed for the teaching-learning process.

- For computational and simulation purposes in the science laboratories the use of propriety as well as open source software like LabView, Mathematica, Matlab, Pspice, Multisim, Scilab etc is encouraged. Computer aided teaching is imparted using different licensed software packages such as Tally 9.0, Windows, Multisim etc.

- The institutional facilitates extensive use of ICT resources including development and use of computer aided teaching/learning materials by its staff and students by making these available for use in various departments and also at central computing facility such as Web

centre in the library. These ICT facilities are adequately staffed so as to optimize their usage. These common facilities remain open from 9:00 A.M. to 5:00 P.M on all working days which caters to the computing and ICT needs of students and faculty.

- Teachers are encouraged to use LCD projectors for their lecture in the Internet enabled Audio-Video classrooms. Students also use Projectors for their   presentations.
- The whole campus is Wi-Fi enabled for seamless connectivity.

4.3.6 Elaborate giving suitable examples on how the learning activities and technologies deployed (access to on-line teaching-learning resources, independent learning, ICT enabled classrooms/learning spaces etc.) by the institution place the student at the centre teaching-learning process and render the role of a facilitator for the teacher.

The conventional chalk and talk method of teaching, where a teacher would go to the classroom with ready material and deliver a lecture almost unilaterally and students are the passive participants, is no longer the 100% component of the teaching methodology. Instead with the help of modern ICT enabled class rooms it has become more and more student centric, turning them into autonomous learners. The role of a teacher is now more of a facilitator, mentor and guide. Since all the students and teachers have an access to computing facilities and laptops/ desktops, a teacher would initiate the topic of the class with the students by

- referring to certain e-content/ e-books / presentations and other relevant web-links and asking students to come with an outline idea of the topic to be undertaken in the class.
- holding group discussions amongst the class and conducting class in an interactive mode, wherein the students are not merely silent listeners, rather they are active inquisitive participants having some basic idea of the subject.

The interactive session is further groomed and matured by the inputs from the students and the teacher. This is certainly associated by basic lecturing and mathematical derivations (wherever needed) by the teacher. This is then followed by:

more and more problem solving and sharing amongst the peer groups and the teacher in the role of a guide via email, Google groups/ Skype etc. It is noticed that if a problem is posted by a student, it is answered by other student(s), and a teacher needs to pitch in very seldom, showing that students are turning into auto-learners.

- students coming up with presentations on the topic and their evaluation by the teacher. In this way students are continuously evaluated for internal assessment.
- Students are encouraged to make use of MOOCs (Massive Open Online Courses) and other e-portals and e-content/ Wikipedia etc. as additional resource.

Acharya Narendra Dev College being a strong campaigner of FOSS has put all its computer and laptops on Linux and conducts training workshops periodically for this purpose. As a result many students have become self sufficient in terms of loading of the operating system and software. The biggest evidence suggesting that our students have gained self reliance due to these practices is that the official website of the college is created and maintained by the students on an open source platform Drupal without involving any outside vendor and saving significant revenues of the college.

Learning activities resolve around Class-room teaching in various forms such as Assignments, Class-tests, Project Reports and Presentations. They are supplemented by co-curricular activities of the subject societies involving seminars, workshops, conference, summer training, Industrial projects, quiz competitions etc. and extra-curricular activities such as debates, dramatics and those of Eco club, NSS, photography and Sports.

There are many ways in which teaching-learning resources have been deployed and made accessible for use by students to make them independent learner. Teachers put their assignments on the college website which is easily retrieved by the students for their benefit.

Through technology students have been able to gain wider access to resources even beyond the class room. More examples of the freedom and self sufficiency percolated upon the students are as under:

- Use of simulating software like Scilab and P-spice facilitates developing and testing of electronic circuits on computer giving more scope of practice outside the bounds of the laboratory without using hard components.
- The College Library through N LIST programmes of INFLIBNET of the UGC provides remote access to thousands of scholarly full-text e-journals and almost over one lakh e-books.
- Recently the college has implemented ERP automation for effective and transparent implementation of its entire academic programmes for its student and faculty.
- ICT enabled class-rooms, Computer Centre, Library are the learning spaces through which teachers facilitate students centred learning. Teachers are encouraged, promoted and facilitated to use ICT equipments.
- Both faculty and students can get individual Laptops issued for better use of educational ICT.

4.3.7 Does the Institution avail the National Knowledge Network connectivity directly or through the affiliating university? If so, what are the services availed of?

Yes, the College avails the National Knowledge Network (NKN) connectivity through the University of Delhi. Various services that are being availed using NKN are namely

- Delhi University Wide Network Area Network (WAN)
- College Local Area Network (LAN)
- Access to the scholarly content of UGC-INFLIBNET Digital Library Consortium
- Local resource sharing services of Delhi University Library System
- Internet Services through dedicated Fiber Optic Network presently with 100Mbps
- Video Conferencing and Virtual class room activities through the University developed application called Virtual Learning Environment (VLE)

4.4 Maintenance of Campus Facilities

4.4.1 How does the institution ensure optimal allocation and utilization of the available financial resources for maintenance and upkeep of the following facilities (substantiate your statements by providing details of budget allocated during last four years)?

College has a Finance Committee (FC) who is responsible for the management of the financial resources available to the college. The FC holds meetings with the teachers in charge of all the departments, library, office etc. to assess their requirements and accordingly optimum funds are allocated maintaining and upkeep of the infrastructure/ facilities. A head wise statement for the fund allocated in rupees during the last four years is given below.

Head	2010-11	2011-12	2012-13	2013-14
Furniture	27,38,374	8,85,824	12,81,114	1,89,192
Equipment	1,38,625	1,37,774	2,27,469	4,91,632
Computers	22,92,794	3,28,957	1,66,839	6,19,903
Building/ Infrastructure	98,82,693	1,34,80,607	65,31,508	27,06,500
Vehicle	1,98,780	2,17,840	2,27,178	1,11,301
Laboratories	50,46,191	45,36,639	60,28,793	64,57,548
Any Others	15,05,135	8,64,882	8,92,773	15,72,467

4.4.2 What are the institutional mechanisms for maintenance and upkeep of the infrastructure, facilities and equipment of the college?

Institutional mechanisms for maintenance and upkeep of the infrastructure, facilities and equipments are as under.

- College Building is maintained by the Govt. through PWD.
- For IT infrastructure a system administrator, scientific assistants have been appointed who College has adequate are trained personals to look after for the routine maintenance of IT equipment, networking and computers.
- For routine maintenance, upkeep and minor repair of the laboratory equipment, laboratory assistants are responsible.
- Many of the Major electrical equipment like generator sets, 5-10 KVA UPS, the EPABX system, Xerox machines have been put on annual maintenance contract.
- For other equipment need based outsourcing, preferably from the manufacturer is done.

4.4.3 How and with what frequency does the institute take up calibration and other precision measures for the equipment/instruments?

All the sophisticated electronic instruments such as Digital Storage Oscilloscope, Function Generators, Spectrophotometer, flame photometer, pH-meters, colorimeters, potentiometers, laminar flow, electrophoretic equipment, BOD Incubator, Autoclave, and Sonicator are calibrated by the manufacturer. This calibration is checked and maintained in routine for regular conduct of laboratory sessions and if any deficiency is detected it is corrected immediately in consultation with faculty. Apart from this stock taking exercise is undertaken by the college on annual basis and condition of usable equipment is assessed by a committee constituted for the purpose. The other equipments are calibrated by the technical staff and the faculty as and when needed.

4.4.4 What are the major steps taken for location, upkeep and maintenance of sensitive equipment (voltage fluctuations, constant supply of water etc.)?

College has 100% power back up and three phase electric supply; servo voltage stabilizers and online UPS. For constant supply of water, college stores water in overhead tanks and also has provision for underground water with RO facility installed.

Any other relevant information regarding Infrastructure and Learning Resources which the college would like to include.

CRITERION V
STUDENT SUPPORT AND PROGRESSION

5.1 Student Mentoring and Support

5.1.1 Does the institution publish its updated prospectus/handbook annually? If 'yes', what is the information provided to students through these documents and how does the institution ensure its commitment and accountability?

At the time of admission each year the college publishes a prospectus that is sold along with the Admission form to the prospective students. All information in the prospectus may be downloaded from the College website too. The College updates and publishes its prospectus at the beginning of each academic year wherein it provides the following information: The courses offered, the eligibility conditions, the schedule of admissions, admission to special categories, requirements for admission, student intake, the previous year's cut-off, Fee structure and admission under sports and ECA category. It also gives a brief introduction and the college starting with a brief history, its strengths, its special achievements, its infrastructure, facilities including library, web, laboratories, the various activities available etc. It then goes on to provide information about our flagship schemes like ELITE, ECPDT, ELPC, SPIE, SAKSHAM, EXPLORE, ELP, OSDD, BIDD etc. It finishes off giving the University and the College calendar of activities and by explaining how academics are taken very seriously in the college. It also provides rules for the attendance and the anti-ragging affidavit.

In addition since last two years we have been providing students with a handbook that gives all the rules relevant to the student while he is at ANDC. The dairy also has space for noting the timetables.

Any changes/deviation in the information provided in the Prospectus/Handbook is publicized through notices and college website..

5.1.2 Specify the type, number and amount of institutional scholarships / freeships given to the students during the last four years and whether the financial aid was available and disbursed on time?

The college has various scholarships, which are given to the needy and meritorious students after following due procedures and guidelines formulated for each award.

S.No.	Scholarships by the college		Fee Concession (No. of Students)			
			2010-11	2011-12	2012-13	2013-14
1.	SAKSHAM (Student Aid for Knowledge, Success, Honour and Motivation)	Full Fee Waiver	16	10	12	112 till Sept,14
		Stipend of Rs. 800/- pm for 10 months	25	22	31	
		Stationery+ Photostat (Rs. 3000/-)	-	7	3	
		Book Bank	9	-	6	
2.	Merit Awards	Students with I, II or III rank in University of Delhi	2	1	5	2
		Students with I, II or III rank in University of Delhi,	12	11	13	5

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		South Campus				
		Class Toppers	Topper of each course (Securing more than 75%)			
3.	Ms. Teena Gupta Memorial Scholarship		4	-	6	6
4.	D.C. Arora Fellowship		3	4	3	4
5.	Dr. Usha Aggarwal Tejaswini Schoarship		-	-	1	3
6.	Shri Sultan Chand Endowment Scholarship		1	1	1	1
7.	Pushpa Paul Memorial Scholarship	Introduced from 2014				2

The disbursal of these free-ships/ scholarships is done according to a pre-decided schedule that is intimated to the students through the prospectus, notice boards and the College web-site. The College believes in following schedules diligently.

5.1.3 What percentage of students receives financial assistance from state government, central government and other national agencies?

The college has a Scholarship Committee that is responsible to for ensuring proper distribution of college-level schemes, also encourages students to apply for various scholarships provided by the Central Government, Government of Delhi, Scholarships from other states and various national agencies. The Committee displays the notices regarding these scholarships and also passes on the information through the class representatives in a timely manner. The Committee screens and verifies the received applications, before forwarding them to the respective departments after the Principal's approval and recommendations. The scholarships which our students receive regularly include:

S.No.	Scholarship/Awards	Awarding Agency	No. of Students			
			2010-11	2011-12	2012-13	2013-14
1	Science Meritorious Scholarship	University of Delhi	1	1	1	2
2.	Meritorious Scholarship	Govt. of NCT of Delhi	-	-	1	3

Our students have also received other prestigious scholarships which includes KVPY awards from the IISc. , JNCASR- Bangalore Summer scholarships and awards from the Indian Academy of Sciences (IAS).

The government schemes that provide aid include:
1. Central Scheme of Scholarship for college and university students by Dept. of higher education, Ministry of HRD, Govt. of India.
2. Board Scholarship, H. P. Board of School Education, Dharamsala (Kangra) H.P.
3. Merit Scholarship for OBC students by Govt. of NCT of Delhi.
4. Post Matric Scholarship by Govt. of NCT of Delhi.

5. Post Matric Scholarship for OBC students by Govt. of Haryana.
6. Post Matric Scholarship by Central of Ministry of Minority Affairs, Govt. of India.
7. Indira Gandhi P.G. Scholarship for single girl Child.

Students are also eligible to directly apply for other schemes of various States/employers for which no records are available in the College.

5.1.4 What are the specific support services/facilities available for Students from SC/ST, OBC and economically weaker sections

The college has organized coaching classes for students under UGC XI Plan. These classes; designated as '**Help Classes**' with one of the categories as '**Remedial Coaching Classes**' are being conducted in the college premises for the students belonging to SC / ST /OBC (non-creamy layer) / Minority communities who need coaching to overcome the problems associated with studies in order to reduce their failure and dropout rate.

The college financially helps economically weaker students through scholarships. The college has a benevolent scheme *SAKSHAM* **(Student Aid for Knowledge, Success, Honour and Motivation)**, with an objective to empower inclusive education for needy and deserving students. The scholarship supports the selected students either with full fee waiver or a stipend of Rs. 800/- pm for ten months. Besides this, students are also provided with book bank facility; and stationery & Photostat grant up to Rs. 3000/- for the whole academic year.

The college regularly makes student aware of various scholarships (Merit and post matric scholarships) announced for SC/ST, OBC and minority students by Central Government, Government of Delhi, Government of other states and National agencies.

The college also runs a scheme; "**Earn while you learn**"; in which college helps economically weaker students by engaging them in short-term jobs in the college office or library, whenever necessary. The scheme helps these students not only financially with a small honorarium provide for their work but also it boosts up their confidence and provides them a good exposure.

Students with physical disabilities

The college has an **Equal Opportunity Cell (EOC)** for the welfare of differently abled students which works in collaboration with EOC of the University of Delhi. It strives hard to ensure equity and equal opportunity for persons with disabilities (PwDs). Ground floor classrooms and accessible ramps are some of the facilities ensured by the EOC. During examinations, the college provides transport facilities from the college to nearest metro station and *vice-versa* for PwDs students and also arranges writers for them, if needed. The faculty ensures to create a congenial atmosphere amongst students for academic interaction and growth of healthy interpersonal relations. It is heartening to note that indoctrination by college EOC has resulted in inspiring a number of differently-abled students to come forward for para-sports events held at University of Delhi and state level- a field that our sports faculty member specializes in.

Overseas students

Overseas students are admitted in the college based on the guidelines formulated by the University of Delhi for their admissions. These guidelines are time-to-time uploaded on the college website as well as have been included in the prospectus of the college. Any queries from these students are addressed through telephones and emails.

Students to participate in various competitions/National and International

The faculty encourages and provides guidance to the students for participation in these events. The financial support is often provided by the funding agencies. However, if any student does not receive any financial assistance, the college provides provided financial assistance to the students either in the form of T.A., D.A. or by reimbursing registration fee.

Medical assistance to students: health centre, health insurance etc.

Every student is entitled to the membership of World University Health Services whose centers are situated at both South Campus and North Campus of University.

Fitness of a student, mental as well as physical, being priority of our college, NSS unit of the college is actively involved in holding **free health check-up camps** for all stakeholders in college as well as nearby residents. The medical camps provide free consultation towards diagnosis of a wide array of medical problems. Some of the well-known institutions that support these camps include Cipla, Janki Healthcare centre, R.G. Stone, AIIMS, and WUS South Campus. The college NSS unit also organizes special programs on World AIDS day wherein college students wear red ribbons and spread awareness about this dreadful disease. NSS volunteers specifically target the younger counterparts who constitute the gullible group with impressionable minds. Medical Counseling is provided for girl students and female staff of the college through camps.

The college has provisions for in house first aid and medical facility. The college has also tied up with a nearby doctor for assistance during any medical emergency in the college. Moreover, there are many private and government hospitals, in the immediate vicinity of the college where immediate treatments and medical care can be provided to the students in the hour of need.

Organizing coaching classes for competitive exams

The college organized coaching classes for competitive exams under UGC XI Plan. These classes are designated as '**Help Classes**' under which special "**Coaching Classes for Entry in Civil Services Examination**" is conducted. Students, looking for coaching classes for UPSC entrance examinations are selected and interviewed by experts for various categories as per UGC guidelines. Apart from these, the classes for Preliminary and Main IAS examination for General Studies (GS) are also initiated in August and designed in a way so as to finish well before the IAS preliminary examination.

Skill development (spoken English, computer literacy, etc.)

For skill development, college started short term **add-on courses.** Two such courses are **ELPC** (**English Language Proficiency Course**) and **ECPDT** (**Effective Communication and Personality Development Through Theatre**), which add to students' language, enrich their personality and boost their confidence. The Computer Science department of the college has FOSS (Free and Open Source Software) club, which spreads computer literacy among the students by organizing workshops on basic computer skills like word processing, presentations, web browsing etc.

As a unique initiative, the college provides summer fellowship to the students under the college scheme "**ELITE-Education in a Lively and Innovative Training Environment**". In this scheme students interested in research work under a faculty mentor during summer break and are provided with summer fellowships, ELITE fellowships, worth Rs 1000/- per month each. The students are inspired to take up relevant research problems and work on it with dedication. They are free to choose their mentors, access journals in library, use laboratory facilities and pursue projects autonomously during the summer break. This seems one of most welcome means for students to hone their skills.

Support for "slow learners"

Remedial classes are organized for students of all the courses in the afternoon after their regular classes are over. The students select difficult portions of their subjects which are then re-taught by the faculty in the remedial coaching classes. Special interactions are held with these students who are also provided with extra reading materials. These students can also interact with teachers via Google groups created for this purpose.

Exposures of students to other institution of higher learning/ corporate/ business house etc.

Whether a part of curriculum or otherwise, certain Departments arrange summer training/internships or projects for students during their long breaks. Commerce Department

has an arrangement with MetLife where 10-15 students do internships on insurance each year in the company. The students also stand a chance to get absorbed by the company.

Botany and Biomedical Science Departments organize educational excursions as a part of their curriculum. The aim is to study and understand the nuances of ecology, ecophysiology, distribution, biodiversity, competition, effect of man interference in nature etc through visits to natural forest/wild life sanctuaries etc. Besides excursions to visit research stations to understand their capabilities, functioning, look at advance techniques and instruments, interact with scientists is also a goal in some trips.

The EXPLORE scheme also provides space for Departments to visit institutions of higher learning/business houses etc.

Publication of student magazines

The college publishes its Annual Students' Magazine **Insight** and the Chief Guest of the Function usually releases it on the Annual Day. On the same day the companion publication – the Annual Report of the College is also released. The magazine helps to capture the feelings/thoughts of today's generation in the form of ink, pastel and pixel. The magazine has a student editorial board under some mentor teachers. Insight has both Hindi and English sections, under which students from different departments of the college shares their opinion and views in the form of articles, poetry, portrait, photographs etc. Under the guidance of the faculty, students play an important role in screening and editing the articles to be published in the magazine. Besides this, some departments of the college also publish their annual individual magazines and newsletters.

5.1.5 Describe the efforts made by the institution to facilitate entrepreneurial skills among the students and the impact of the efforts.

In order to promote and encourage young entrepreneurs Acharya Narendra Dev College has set up an Innovation & Entrepreneurship Development Centre (IEDC) that is sponsored by Department of Science & Technology, Govt. of India to develop an entrepreneurial culture among the academic institutions. The objective of establishing an IEDC is to set up an institutional mechanism to create self-employment opportunities and to convert "job-seekers" into "job-generators". To foster entrepreneurial culture among students, IEDC conducts various training programmes like Entrepreneurship Awareness Programmes (EACs) and Entrepreneurship Development Programmes (EDPs). In addition to this, it provides funding for innovative projects each year.

Over the years, the college has conducted three EDP's of 4 - 6 weeks duration and 13 EAC's of three days each; besides completing 15 innovative student-projects. The outcome of these projects is aimed to bring new products to the market or to develop new methodologies so as to generate/ manufacture existing products in a more cost effective and environment friendly manner. By doing so, IEDC has taken the first baby step to bridge the gap between education and industry. IEDC also establishes better linkages with industries, R&D institutions, financial institutions and other related organizations engaged in promoting small & medium enterprises (SMEs) including DST, NSIC, EDI, NIESBUD etc. The excellence of the IEDC centre, led the Ministry of Micro, Small and Medium Enterprise (MSME), Govt. of India to recognize ANDC, the only college in University of Delhi for the award of prestigious Business Incubator (BI) – to support commercialization of ten innovative ideas towards maturing into successful business enterprises.

Under IEDC, ANDC has pioneered a new idea by establishing Entrepreneurship Laboratory (EL) in 2013. Furthering the cause of EL, undergraduate students of the college have established an in-campus company, called ANDY that depicts the spirit of AND Youth. Even rudimentary exposure under EL has empowered the undergraduate students to shoulder responsibilities regarding management of ANDY's day-today affairs including administrative,

marketing and financial. The yeoman efforts put in by motivated students has resulted in the development of cost-effective and eco-friendly (herbal) products including soaps, shampoos, hand-wash and sanitizers in the first instance. ANDY is one of the nascent initiatives and the first in any undergraduate college under University of Delhi. It is a technology demonstrator whose main idea is not to earn profit but empower students with enough confidence for a start-up. The company is planning the launch of Campus merchandize soon.

Many students have started their own ventures after attending work-shops and guidance. Some of these are listed as:

S.No.	Name of Company	Name of Promoter	Product
1	People MediaNetworking	Mr. Sanjeev Kr. Pandey	Media & Entertainment
2	Fear Bids Services	Mr. Vishal Bhushan Mr. Mohit Baluni	IT Marketing Co.
3	3 Strings	Mr. Vishal Bhushan Mr. Mohit Baluni	Marketing Solutions Co.
4	Mile Stone One	Mr. Deepak Verma	Herbal Shampoo & Cosmetics
5	Organicus	Mr. Aakil Jamil	Herbal Shampoo & Cosmetics
6	Plutus Enterprises	Mr. Akshat Chadha	Trading
7	Maverick Sercvices	Mr. Rahul Rai Mr. Harsh	IT Services
8	Ariano Overseas	Mr. Arun Kr. Gaur	Garments Manufacturing
9	Panjabi Beats Event	Mr. Harpreet	Event Management

5.1.6 Enumerate the policies and strategies of the institution which promote participation of students in extra-curricular and co-curricular activities such as sports, games, Quiz competitions, debate and discussions, cultural activities etc.

The college has a number of committees, which encourage students to participate in various extra-curricular and co-curricular activities.

The Sports Committee of the College encourages and trains students for participation in the different sports at the College, University and National level. For the purpose, the college has appointed three sport coaches; for football, volleyball and cricket to give students specialized training and experience in these games. For some sports, the college has both women and men teams who are trained extensively.. The college also provides uniforms to each member of the sports teams and due support is provided whenever needed. The sports committee also ensures

to take care of each member of the team during the tournaments provide timely refreshments and all the support.

Besides, the students also participate in various skit and debate competitions organized at university and inter-state level on different social issues. For participation in debates, the debate committee of the college screens and trains the selected students to be sent for competitions. The dramatic society of the college, called *Dhwani*, provides a forum for the students for staging street plays, skits and theatrical productions. The college encourages the students to participate in various events of Delhi university Cultural festival i.e. ***Antardhvani*** and in Inter and Intra college cultural events. Every year, the theatrical production of the college is staged outside the premises of the college. Till date, the college has staged five annual theatre productions to give students a platform for showcasing their acting skills.

The college conducts screening tests to shortlist the students for participating in the quiz competitions held at other colleges and at University level. Every year, a team of selected students is sent to participate in QUEST – an inter college Science Quiz Competition, organized by Centre for Science and Communication (CSEC), University of Delhi. Many of our faculties are actively involved in the organization of the QUEST at University of Delhi.

The college has also constituted a committee to screen and guide the students for preparing relevant projects proposals for Delhi University *Gyanodaya* express. Since its inception, each year, one/two teams of AND college have been selected for this joyful cum study tour across the selected parts of India.

5.1.7 Enumerating on the support and guidance provided to the students in preparing for the competitive exams, give details on the number of students appeared and qualified in various competitive exams such as UGC-CSIR- NET, UGC-NET, SLET,ATE / CAT / GRE / TOFEL / GMAT / Central /State services, Defence, Civil Services, etc.

The college had held coaching classes under UGC XI Plan to provide support and guidance for competitive examinations. Special coaching classes were organized for "Entry in Civil Services Examinations". Students opting for coaching in these classes were selected and interviewed by experts for various categories as per UGC guidelines. The schedule of the classes was prepared keeping in mind the examination schedule. The classes for Preliminary and Main IAS examination for General Studies (GS) were initiated in August and were scheduled to finish well before the IAS preliminary examination. No formal records have been maintained on no. of students appeared and qualified in these examinations.

5.1.8 What type of counselling services are made available to the students (academic, personal, career, psycho-social etc?)

The college has career counseling and placement cell, which provides academic and career counseling to the students. The details of the placement cell are provided in the Section 5.1.9. There is no formal cell for providing personal and psycho-social counseling though, individual teachers and departments do informal counseling and mentoring of the students on regular basis. At the beginning of each academic year, a teacher mentor is assigned to a group of students which is duly notified and displayed on the student's notice boards. The mentor counsels his/her assigned group of students, individually or together, on all issues concerning academic, personal, career, psycho-social etc.

5.1.9 Does the institution have a structured mechanism for career guidance and placement of its students? If 'yes', detail on the services provided to help students identify job opportunities and prepare themselves for interview and the percentage of students selected during campus interviews by different employers (list the employers and the programmes).

The Career Counseling and Placement Centre (CCPC) has been established in Acharya Narendra Dev College in 2005, prior to the establishment of Central Placement Cell (CPC) in the University. Besides providing guidance on employability, the CCPC also provides counseling for careers in higher education. In the former programme we place the student either in our college or in any other industry that employs them. For the later scheme the Placement Cell has entered into an understanding with Okhla Industrial Association that provides them job as well as training. In special cases we even allow pass-out students to enroll for placement. First and second year students are also allowed to witness the whole process of placement which makes them more capable for facing the challenges of coming years. Under the aegis of CCPC, the Placement Cell of the college has emerged as a professional entity establishing linkages with prospective employers, industry associations and other such placements cells of various institutes in Delhi. Networking with the placement cells of other DU colleges and the University of Delhi's CPC, it has been able to attract off-campus opportunities as well for the aspiring students of the college. In the last few years, the following activities organized by CCPC have helped the students in getting appropriate placed.

The details of various activities organized by the CCPC for career counseling and placement are enumerated below:

Year	Topic	Name of Organization
2009-2010	1. Personal Skill development 2. Group Discussion, Interview Preparation 3. CV Preparation 4. Opportunities in Aviation Industries 5. World of Animation	Hero Mindmines Roots Education P T Education Trans Asia Aviation Animaster
2010-2011	1. How to improve Memory 2. Opportunities after Graduation 3. Opportunities in Clinical research 4. How to go Abroad for further Studies	Mr. Jitender Tiwari from PT Education Delhi Business School Indian Clinical Research Institute Edwise International
2011-2012	1. Soft Skill & Language Skill 2. Group Discussion, Interview Preparation and CV Preparation	Career Launcher P T Education
2012-2013	1. Financial Opportunities 2. Opportunities after Graduation 3.Tally - Accounting & Business Management Software	Bombay Stock Exchange Dr.B. R. Ambedkar University Dr. Hem Chand Jain, DDU College
2013-2014	1. What after Graduation 2. Group Discussion, Interview Preparation and CV Preparation	Career Launcher PT Education
2014-2015 (by Nov.2014)	1. Career option for Graduates in Overseas	The Chopra's

The details of placement provided through college's placement cell in various organizations are provided below. It also includes placement achieved through university placement cell working in tandem with CCPC.

Year	No. of students enrolled for CCPC	No. of students enrolled for CPC	No. of students received placement offers	% of students who received placement offers through CCPC	Name of Companies
2011-12	192	84	113	58.85	Wipro- Wase, Wipro- Wista,Wipro-BPO,HDFC Life Insu., Tech. Mahindra, Genpact, IBM Daksh, ICICI etc.
2012-13	172	55	61	35.46	Wipro- Wase, Wipro- Wista,TCS-BPO,HDFC Life Insu., Lybsys, Module One, IBM Daksh, etc.
2013-14	95	Direct	60	63.15	Wipro- Wase, Wipro- Wista,Wipro-BPO,HDFC Life Insu., IBM Daksh, Genpact, Libsys, MB Polyblends etc.
2014-15 (by Nov2014)	358	Direct	149	41.62	Concentrix (IBM) AON Hewitt WIPRO WASE & WISTA Motion Punch Studios Pvt. Ltd. Edu Tools Ltd. Libsys Ltd. A & A Heath Pvt Ltd. Genpact

CCPC- Career Counseling & Placement Cell, Acharya Narendra Dev College

CPC- Central Placement Cell, University of Delhi

5.1.10 Does the institution have a student grievance redressal cell? If yes, list (if any) the grievances reported and redressed during the last four years

The college has multi-level approach in addressing the grievances of the students which is interconnected through teacher-in-charge, proctor, internal assessment committee, internal complaints committee, vice-principal and Principal and communicates to address the grievances of the students as a unit. All the applications submitted in the college office route through the vice-principal.

The proctor of the college also acts as student advisor. The class representatives /student council approaches to the proctor for any issue. Students can approach the proctor In case of any dispute, the Proctorial committee takes immediate and appropriate action and resolves the issue and maintains the discipline.

The internal assessment committee takes care of timely upload of attendance and internal assessment marks. For any grievances regarding attendance, claiming attendance for medical purpose or due to participation in co- or extra-curricular activities or internal assessment marks, the committee and the vice-principal take the decision as per the guide lines.

The students also approach the Principal directly and put their grievances/suggestions directly in the suggestion-box kept outside the Principal's room.

These are the routine grievances pertaining to attendance, internal assessment, and requirement of remedial classes or sometimes nonworking lights/fans in any lecture theatre. The whole communication in the set-up is aimed to resolve any grievance in minimum time.

5.1.11 What are the institutional provisions for resolving issues pertaining to sexual harassment

In 2004, the college had constituted the College Complaints Committee (CCC) in accordance with Ordinance XVD of the University of Delhi to enforce gender-sensitiveness and women empowerment. In 2014, the CCC has been replaced by the Internal Complaints Committee (ICC) constituted specifically against sexual harassment. Apart from teaching and non-teaching members, the committee also comprises members of the university's apex committee which is set up by the university to examine and decide complaints of sexual harassment at workplace. It also involves representation of students and people from the civil society with experience of working in the areas of gender sensitivity and empowerment. The committee has more than 50% women members and is chaired by a female member.

5.1.12 Is there an anti-ragging committee? How many instances (if any) have been reported during the last four years and what action has been taken on these?

The college constitutes an Anti- Ragging committee at the beginning of each academic year under the aegis of the Proctorial committee. It consists of members from teaching faculty, non-teaching faculty and student council members. There has been no case of ragging reported in the college till date. The anti- ragging committee takes various precautionary measures to ensure a ragging free campus viz.-
a)   Posters are displayed at various locations in the college buildings depicting an anti-ragging environment.
b)   During various functions in the college premises, the college ties up with the local police to ensure peaceful atmosphere.
c)   Students are required to fill anti- ragging affidavits at the time of admission.
d)   A committee of anonymous students is formed which works throughout the year to ensure no ragging takes place in the college.
     The college maintains a strict vigil and the campus is closely controlled. There has never been a ragging case reported.

5.1.13 Enumerate the welfare schemes made available to students by the institution

The College provided the following facilities to the students as welfare measures-

A. Financial aid:

The college has a policy where any student who is financially weak is assured financial help. For this we have a scheme *SAKSHAM* under which funds collected from students for student aid are deposited. In addition are funds are collected through donations from faculty members, non- teaching staff and some well-wishers. The college supports a large number of students through this fund by way of -

➢ Full fee waiver (except security deposit)
➢ Rs. 800/- month stipend for ten months
➢ Stationary + Photostat up to Rs. 3000/- for the whole academic year
➢ Book bank facility up to 5 books/semester

This fund is also used to provide financial assistance for needy students in other ways e.g. for attending conferences, for course fee for Add-on courses etc.

B. Academic aid:
- Career counselling and placement services.
- Laptops are issued to the students for whole semester on demand and requirement.
- Book bank facility
- Academic and financial support to attend conferences/symposium

C. Nutritional aid:
- Canteen facility available at nominal rates.
- Subsidized meals arranged for outstation students.

D. Sports facilities:
- Modern Fitness equipment available for students free of charge
- A dedicated sports room available for students with facilities for indoor games like carom, table tennis, chess
- A well maintained ground for games like Cricket, football and athletics etc.
- Courts for Badminton, Volleyball, Basketball available.
- Special coaches hired for preparing students for inter - college sports events.
- All sports activities being organized under the expert guidance of a regular sports teacher who is a *Dronacharya* Award recipient.

E. Library Facilities
- Books issued to the students not only during semester but also during examinations even after taking the clearance.
- Library remains open for 6 days instead of regular 5 working days during examinations.
- Online access to research journals from home through INFLIBNET account.
- Availability of speaking software and Brail books for visually impaired students
- Apart from text books, encyclopaedias, competitive examination books, extra reading books, literature and story books available for students

F. Other Welfare Measures
- Transport provided for differently able students from the nearby metro station to the college and vice-versa during examinations.
- Special help desk set up for PwD and Special Category students during admission time.
- Regular workshops and interaction with experts for skill development and knowledge enhancement.
- Self defence training for female students conducted by Delhi Police

- Suggestion boxes being placed outside the Principal room and at prominent positions in the library where students can drop their suggestions and complaints. These suggestions are considered in the meetings after meeting with students and then implemented.
- First aid provided to the students in the college
- Girls' common room available in the college with bed facility.
- Earn while you learn scheme; through which the college provides an opportunity for students to earn whenever they can take time out from their classes. Some students are encouraged to work in the account section and library. Besides earning a valuable income, this helps the students to refresh their professional skills and learn basic work place etiquettes besides developing a dignity for labour.
- EXPLORE; For providing exposure to the students and to encourage the spirit of discovery, college organizes excursions under the programme called EXPLORE (Excursions for Peer Learning in an Open and Rejuvenating Environment). It is a unique programme initiated exclusively for second year students of the college and is driven by the belief that education doesn't end within the four corners of a classroom. Funded solely by the college EXPLORE, allows students to undertake excursions, trips accompanied by their classmates and faculty to different institutes.
- Provision for mentoring students on academic, psychological, personal issues by the faculty.
- Dedicated exclusive help desk for differently abled during admissions.

5.1.14 Does the institution have a registered Alumni Association? If 'yes', what are its activities and major contributions for institutional, academic and infrastructure development?

The College has constituted an alumni association about ten years ago. The Alumni get registered after paying the nominal fee and the records are maintained properly by the college. The Alumni Committee organizes an annual get-together on first Sunday of every February. During the meet, students meet and interact with their seniors who are either employedat good positions in reputed companies or pursuing higher studies in renowned organizations. They provide career guidance and firsthand experience to the students which help to choose their career options.

5.2 Student Progression

5.2.1 Providing the percentage of students progressing to higher education or employment (for the last four batches)highlight the trends observed.

Reliable data with respect to students' progression and careers is not available for all the courses in the College However, creditable data for one of the departments (Biomedical Science) is available. The same has been provided below to serve as a representative sample for the whole college.

Student progression	%
UG to PG	78
PG to M. Phil.	-
PG to Ph. D.	-

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	Employed	21
	• Campus selection	
	• Other than campus recruitment	

5.2.2 Provide details of the programme wise pass percentage and completion rate for the last four years (cohort wise/batch wise as stipulated by the university)? Furnish programme-wise details in comparison with that of the previous performance of the same institution and that of the Colleges of the affiliating university within the city/district

S.No.	Course	2010-11	2011-12	2012-13	2013-14
1	B.Com.(Hons)	97.7	100	100	100
2	B.Sc.(H)Mathematics	100	100	100	100
3	B.Sc.(H)Computer Science	100	95.6	100	100
4	B.Sc.(H) Botany	100	89.3	100	100
5	B.Sc.(H) Chemistry	91.7	94.6	100	100
6	B.Sc.(H) Physics	100	100	100	100
7	B.Sc.(H) Zoology	100	92.9	96.4	100
8	B.Sc.Physical Science (Chemistry,Electronics, Computer Science)*	-	-	100	100
9.	B.Sc. Prog. Physical Science	73.9	100	100	-
10.	B.Sc. Applied Physical Science	92.9	95.2	95.5	
11.	B.Sc. Life Science*	-	-	100	100
12.	B.Sc. Prog. Life Science	100	100	-	
13.	B.Sc. (H) Electronics	100	91.3	100	100
14.	B.Sc.(H) Biomedical Science	95.8	100	100	100

* Interdisciplinary Courses in Semester mode were introduced in 2010-11 replacing Annual mode Programme courses

5.2.3 How does the institution facilitate student progression to higher level of education and/or towards employment?

The college has a counseling and placement cell, which organizes seminars and training workshops for the students helping them to choose their career options. Besides, the college also invites top companies to visit college and conducts job placement programme. Such activities are also performed by departmental societies.

To encourage students to explore the possibility of becoming job-creators instead of job seekers, the College has established an **Innovation & Entrepreneurship Development Centre (IEDC)** in 2010 under the auspices of National Science and Technology Entrepreneurship Development Board (NSTEDB), Department of Science and Technology (DST), Govt. of India.

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The centre envisions motivating students to take up entrepreneurship in a proactive manner by providing them with the pre-requisite information about establishing a start-up. IEDC has twin initiatives of training - Entrepreneurship Awareness Camps (EAC) and Entrepreneurship Development Programmes (EDP), and of innovation (student-projects). Over the years the college has conducted three EDP's of 4 - 6 weeks duration and 13 EAC's of three days each besides completing 15 innovative student-projects. The excellence of the IEDC centre, led the Ministry of Micro, Small and Medium Enterprise (MSME), Govt. of India to recognize the college as the only college in University of Delhi for the award of prestigious **Business Incubator (BI)** – to support commercialization of innovative ideas. The BI will support ten innovative ideas towards maturing into successful business enterprises. Under **IEDC**, ANDC has pioneered a new idea by establishing **Entrepreneurship Laboratory** (EL) in 2013. Under EL, the undergraduate students of the college have established an in-campus company, called *ANDY* that depicts the spirit of AND Youth. *ANDY* is one of the nascent initiatives and the first in any undergraduate college under University of Delhi. It is a technology demonstrator whose main idea is not to earn profit but empower students with enough confidence for a start-up.

5.2.4 Enumerate the special support provided to students who are at risk of failure and drop out?
The college organizes special remedial classes to help students who demands special coaching in particular subjects. It is ensured that the students, specially the weaker students get personalized attention and academic support from the college through its faculty.

5.3 Student Participation and Activities
5.3.1 List the range of sports, games, cultural and other extracurricular activities available to students. Provide details of participation and program calendar.
Program Calendar of an academic year

Departmental Freshers' Day	Friday/Saturday of 2nd week of August
Book Exhibition	4th week of August/1st week of September
Students' Council Election	Same day as DUSU elections
Society Functions	September / February
Acharya Narendra Dev Memorial Lecture	31st October
ACCENTURE -Annual Cultural Festival	Last Week of January
Sports Week	1st Week of February
Annual Theatre Production	February / March
Sports Day	February
EXPLORE-Departmental Excursions (for II Year students)	Mid-February to mid-March
Annual Day	First week of April
Departmental Farewells	2nd / 3rd week of April

- **Sports and games**: The students of the college participate at intra and inter college levels in six sports *viz*., Football (Men), Cricket (Men), Volleyball (Men and Women), Athletics (Men and Women), Table tennis (Men) and Badminton (Men and Women). The sports activities are supervised under a regular sports teacher and special coaches for specific games are hired for coaching from time to time.

S. No.	Games	Intra College Sports Tournament-(Sports week) organized Odd Semesters		ANDC League Sports Tournament organized even semesters		Participation in Delhi University Inter College Tournament	
		2013 - 14	2014 - 15	2013 – 14	2014 - 15	2013 – 14	2014 – 15
1.	Cricket (Men)	155	148	11	11	16	16
2.	Volleyball (Men)	63	67	10	08	13	13
3.	Volleyball (Women)	42	34	04	05	13	11
4.	Table Tennis (Men)	09	08	21	11	05	05
5.	Athletics (Men & Women)	115	92	69	45	06	-
6.	Basketball (Men)	30	41	06	06	12	12
7.	Basketball (Women)	25	30	04	03	-	-
8.	Football (Men)	122	125	10	10	-	19
9.	Badminton (Men)	32	34	12	20	-	-
10.	Badminton (Women)	14	21	05	20	-	-
11.	Chess(Men)	16	10	-	-	-	-
12.	Chess(Women)	04	04	-	-	-	-
13.	Carrom (Men)	08	04	-	-	-	-
14.	Carrom (Women)	-	02	-	-	-	-

- **Cultural and other Extracurricular activities**

The range of activities available to the students are monitored through various Socities and Committees –NSS, '*Sashakt'* - the Society for women empowerment, Debate, Eco-Club '*Paritantra',* Dramatics Society '*Dhwani'*, SPIC-MACAY, Annual Cultural Events,Sports which organizes various cultural activities such as college Departmental Society functions, Annual day and Annual fest – ACCENTURE. A student can register themselves with these Societies and Committees. These committees provide them opportunities and guidance throughout the year to participate and excel in the activities of their interest.Most societies have an elected student body which takes responsibility of all the activities.

The committees also screen students, who participate in dance and music competitions held at inter-college, university and state level, such as *Antardhvani*, a mega festival organized by University each year.

❖ Under dramatic society *Dhwani*, 50 students have participated in intra- college and around 20 in inter- college events / competitions in 2014.

❖ Every Year, the students of '*Dhwani*' and ECPDTare part of an Annual Theatre Productions : *Kasauti*, The Quest for Truth (2015), SPARTACUS (2014), *Khul Ja Sim Sim* (2013), *Ye Daagh Daagh Ujaala* (2012) , *Sau Mein Laga Dhaga* (2011)

Student participation at Annual Cultural Festival (Accenture)-2013

Event	Student participation
Singing: solo	20
Singing: Duet	12
Dance: solo	15
Dance: group	22
Debate	06
Poster making	08
Just a minute	10
Pot painting	08
Face painting	10

Student participation at Annual Cultural Festival (Accenture)-2014

Event	Student participation
Singing: solo	18
Singing: Duet	10
Dance: solo	18
Dance: group	30
Debate	12
Treasure hunt	08
Just a minute	12
Band competition	
Hasya Kavita	10

❖ The college society called Sashakat (The Society for Women Empowerment) for the welfare of girl students of the college, works towards gender sensitization and empowerment of women. Some of the events organized by the committee (2013-14) are:

i. *Rangoli* Cometition on "Women in Society" March 8, 2014 (Women's Day)

ii. Poem recitation, Nukkad Natak on women issues October7, 2013

iii. Poster making competition on 'Where the mind is without Fear' and 'New Horizons of Womanhood' September 2013

   ❖ NSS unit has been proactively working hard to inculcate the spirit of self-less commitment to address social issues plaguing the society. This year the society had as many as 600 enrolments. Some important activities of NSS:

➢ 'Free Health Check-up Camp', in association with Cipla and Janki Healthcare Centre is organized for the students, staff, teachers and the nearby residents

➢ A self-defence training session for the girl students is organized in association with Delhi Police.

➢ A cleanliness drive with Eco-Club is organized on the NSS day.

➢ The Diwali Mela "SAHYOG" is organized to support various NGOs working for differently abled people. They sold self-made products such as candles, decorative materials, handmade products, diyas and various stationery items

➢ Blood donation camp

➢ An awareness talk on HIV/AIDS by Delhi AIDS Control Society

➤ Mock drills are conducted with the help of District Disaster Management Authority.

The NSS unit of college organizes awareness camps for Thalassemia. It has adopted 10 thalassemic girls from economically weaker section for their blood transfusion needs.

❖ The College has an active SPICMACAY (Society for Promotion of Indian Classical Music and Culture Amongst Youth) unit that organizes performances by stalwarts of Indian classical music and culture. Many distinguished personalities like Ashwani Bhide, Wadali Brothers, Rajan and sajan Mishra, Pandit Vishwa Mohan Bhatt, Ustad Mazhar Ali Khan and Ustad Jawaad Ali Khan, Ritesh and Rajneesh Mishra, Pandit Sanjeev Abhyankar, Aashish Khan and many others have performed in the College to motivate students towards our roots. In addition workshops for Indian traditional art forms like Madhubani and Kalamkari were organized. Movies of famous personalities like Satyajit Ray and Charlie Chaplin were screened.

❖ Youth Parliament Competition: To develop leadership qualities among students and for them to understand the parliamentary system Ministry of Parliamentary Affairs, Govt. of India organizes Youth Parliament competition. This year the college participated in the 12th national Youth Parliament Competition for colleges and Universities. The college team has 50 students from across the courses.

❖ The literary skills of the students are abundantly reflected in the annual magazine – Insight. The student editors work responsibly for the release of magazine under the guidance of Magazine Committee.

❖ To promote interest in Science and research, the students at ANDC are encouraged to step into the real world by participating in various science conclaves, conferences, workshops, competitions etc., at inter college/University/State/National/International level to let the world know and realize their potential. The details have been given in departmental evaluation reports. Last year, 16 students presented their research papers at various conferences and workshops.

5.3.2 Furnish the details of major student achievements in co-curricular, extracurricular and cultural activities at different levels: University / State / Zonal / National / International, etc. for the previous four years.

Our students indeed have brought laurels to the college at national and international platforms.
UNIVERSITY LEVEL
1. Raj Kumar and Shivam Sharma of B. Tech. (Electronics) won the **2nd and 3rd prize** respectively in 'My Diary' competition held at Gandhi Bhawan, University of Delhi on October 15, 2013.
2. Eshant Bhatia, Divyansh Mittal [B.Sc. (H) BMS-III], Nitish Malhotra [B.Sc. (H)BMS-I] **First prize** with a Trophy for poster presentation at the National Conference on "Understanding the Mechanisms and Challenges of Complex Diseases" UMCCD-2014 organized by SRCASW, University of Delhi from December 29-30, 2014.
3. Gaurav Prakash of B. Sc. (H) Chemistry won **First position** in the Quiz competition organized by B. R. Ambedkar Center for Biomedical Research at Antardhvani-2015 (Inter College Cultural event organized by DU).
4. Rachita Thaldi of B. Sc (H) Physics won the **First Prize** in the painting competition Art Gallery: DU Artist at Antardhvani-2015 (Inter College Cultural event organized by DU).
5. Sadashiv Raj Bharadwaj,Raj Kumar, SakshamTyagi [B.Tech. (Elec)-II], Avinash Kr., Shudanshu, Deepak Verma [B.Sc. Phy. Sc. (Elec) -III] awarded **Best Display Award** under Scientific Arena Theme on "Development of Low Cost Computer Controlled Science Laboratory Using Sensors and Open Source Hardware and Software Tools", in Innovation Plaza at Antardhvani 2015, organized by the University of Delhi from February 20-22, 2015.

6. Sadashiv Raj Bharadwaj,Raj Kumar, SakshamTyagi [B.Tech. (Elec)-II], Avinash Kr., Shudanshu, Deepak Verma [B.Sc. Phy. Sc. (Elec) -III] awarded Best Display Award under Scientific Arena Theme on "Development of Low Cost Computer Controlled Science Laboratory Using Sensors and Open Source Hardware and Software Tools", in Innovation Plaza at Antardhvani 2015, organized by the University of Delhi from February 20-22, 2015.
7. Nikhil Verma, Saptarshi Chakroborti, Shobha Badola [B.Sc. Phy. Sc. (Elec)-III] Prayas Tiwari, Ashish Pokhriyal, Pankaj Rawat [B.Sc. (H) Comp.Sc. - III], Rishi Bhukesh, Akshat Shrawat[B.Sc. (H) Bot - III], Sandal Azhar, Lakshika Raheja [B.Sc. Phy. Sc. (Elec)-III (Batch 2014)] awarded Best Innovative Idea Award under Scientific Arena Theme on 'Artificial Olfaction Using E-Nose – Mimicking Human Nose for Gas Sensing Applications' in Innovation Plaza at Antardhvani 2015, organized by the University of Delhi from February 20-22, 2015.

INTER-COLLEGE LEVEL
1. Dhruv Goel and Harsh of B.Sc. (H) Physics won the Third Prize in the Inter-College Quiz organized by Deshbandhu College (DU), February 23-24, 2012.
2. Rohit Chaudhary of B.Com. (H) bagged the Second Prize in the Inter college Dance competition organized by Delhi College of Arts & Commerce (DU) in 2011-12.
3. Pranay Moktan of B.Com. (H) won the First prize in Inter College Debate competition organized by Delhi College of Arts & Commerce (DU) in 2011-12.
4. Animesh and Debanjana of B. Sc. (H) BMS secured second position in the Plexus Quiz organized by Sri Rajguru College of Applied Science for Women (DU) in 2012-13.
5. Sakshi, B. Sc. (H) Biomedical Science Part-II, won consolation prize in Debate competition at Bharti College in 2013.
6. Rambir, Sachin Kumar, Amita B.Sc.(H) Electronics and Chemistry won First Prize for poster presentation entitled, ''Automating physical chemistry laboratory using sensors and data acquisition systems' at St. Stephens College on February 15-16, 2013
7. Aurobindo Sengupta of B. Sc (H) Zoology won the third prize in the Inter College Photography Competition organized by Ramjas College (DU) in 2013-14.
8. Eshant Bhatia [B.Sc. (H) BMSIII] won second prize in paper presentation at inter college science fest held at Kalindi College January, 19-20, 2014.
9. Ashish Choudhary, Mannu Shankar and Vikas Ahlawat [B.Sc. (H) Zoo-III] Second Prize in Oral presentation of paper entitled "Can Ciliates Sense Insecticides?" at one day symposium on Recent Trends in Biology held at Maitreyi College, DU on February 17, 2015.

STATE LEVEL
1. Avdesh Kumar Singh, Zamer Khan and Deepak Joshi of B.Sc(H) Electronics- Part II won consolation prize for their poster on Polarization studies in a computer based laboratory in the poster competition during Workshop on Optics organized by Rajguru College of Applied Science and IIT Delhi Student Chapter of OSA – The Optical Society, 3rd March 2011.
2. Suad of B.Sc. (H) BMS was awarded fifth prize (cash prize of Rs 5,000/-) in Essay Competition on 4 March, 2012 in Swami Vivekananda Essay Competition for Youth held by Ram Krishna Mission.
3. Dhruv Goel (B.Sc. (H) Physics) and Karishma Vashishtha won Rs.500/- in 2012 in Swami Vivekananda Essay Competition for Youth held by Ram Krishna Mission.
4. Deepti Nair of B.Com.(H) and Priyanka Das Gupta of B.Sc.(H) Zoology won the second prize in the Debate Competition organized by Reserve Bank of India on 19th August 2013.

NATIONAL LEVEL

1.   Raghvendra and Abhay Pratap Singh have won 3rd prize in Poster presentation in National Symposium on "Biodiversity, Biotechnology and Man: Interdependence and future challenges" held at Lansdowne, Uttarakhand from 26th to 28th March, 2010.

2.   Parul Gulati and Radhika Sharma of B. Com. (H) were adjudged the Regional winners of 10th National Competition for Management Students 2013 in a Debate organized by All India Management Association in October, 2013.

3.   Wanchcha Arya, Piyush Kumar Tiwari, Pooja Dogra won First Prize for poster presentation entitled, 'Role of tamarind triethylamine chelating resin as biosensor for monitoring of toxic metal ions from industrial waste' at National Symposium on Chemistry and Environment, Deen Dyal Upadhyay College, March 22-23, 2013

4.   Manisha Goel, B. Sc. (H) Biomedical Science Part-I was one of 866 students qualified for II round of Gen Next Leader Discovery Contest 2012, conducted by Ramkrishna Mission, New Delhi (out of over 27,000 students from over 4500 institutes all over country participated) as part of Awakening India initiative on 150th birth anniversary of Swami Vivekanand.

5.   Khairun Nisaa presented a paper entitled 'Cloning, expression and purification of Mycobacterium tuberculosis Rv2748c (ftsk) gene's N-terminal domain' won second prize at National Conference on 'Redefining Science Teaching: Future of Education' held at University of Delhi South Campus, March 7-9, 2013

6.   Veer Singh, Munendra Kumar, Kiran, Jyoti Rawat, Pooja Pant, Radha, Manav Gautam, Arpita Varshney, Khemchand Upreti, Megha Sharma received encouragement award on oralpresentation of a paper entitled 'Screening of soil actinomycetes for antimicrobial compounds' at National Conference on 'Redefining Science Teaching: Future of Education' held at University of Delhi South Campus, March 7-9, 2013

7.   Anubha Seth, Radhika Warikoo, received first prize on poster presentation of a paper entitled 'Larvicidal and irritant potential of Citrus peel wastes against Indian strains of malaria vector Anopheles stephensi (Diptera: Anophelinidae)' - at National Conference on 'Redefining Science Teaching: Future of Education' held at University of Delhi South Campus, March 7-9, 2013

8.   Rahul Khewadia, Mahak Juneja received encouragement award on poster presentation of a paper entitled entitled 'Delayed and abnormal development of Red Cotton Bug, Dysdercus cingulatus (Hemiptera: Pyrrhocoridae) reared on Aloe vera aqueous leaf extract-treated diet' at National Conference on 'Redefining Science Teaching: Future of Education' held at University of Delhi South Campus, March 7-9, 2013

9.   Divyansh Mittal of B. Sc. (H) Biomedical Sciences Semester II has achieved overall 13th position in the KVPY Fellowship selection test in 2014.

10.   Avinash Kumar Shudhanshu [B. Sc. PS - Elect-II] Gaurav Singh [B. Sc. (H) Comp Sc-II] Raj Kumar and Sadashiv Raj Bharadwaj [B. Sc. (H) Elect-I] won Best presentation at '7th National Level Science Symposium-2014' on "Recent Trends in Science and Technology" sponsored by 'Gujarat Council of Science and Technology' at Christ College, Rajkot on February 23, 2014.

11.   Eshant Bhatia and Shruti Sharma of B. Sc. (H) BMS won the Third prize in Tanabana (an event comprising of quiz, dumb-charades and creative storey telling) organized in the National Symposium held at BCAC, DU on March 21, 2014.

12.   Sadashiv Raj Bhardwaj, Raj Kumar SakshamTyagi [B.Tech. (Elect)-II], Avinash Kumar, Shudhanshu [B.Sc. Phy. Sc. (Elec)-III] Selected at the National Level Robotics Competition,(e-Yantra Robotics Competition), 2014 (Theme - Caretaker Robot), organized by IIT Mumbai,sponsored by MHRD through the National Mission on Education through ICT (NMEICT).

13. Rakesh Roshan, Smriti lekha Acharya, Rashmi Singh and Abhijeet [B.Tech. Elec-II] Selected at the National Level Robotics competition, (e-Yantra Robotics Competition), 2014 (Theme -Waste Segregation Robot), organized by IIT Mumbai, sponsored by MHRD through the National Mission on Education through ICT (NMEICT).
14. Sarthak Chauhan, Pankaj Dhaundiyal, Nitin Rawat and Rohit Jha [B.Tech. Elec-II] Selected at the National Level Robotics competition, (e-Yantra Robotics Competition), 2014 (Theme-Warehouse Management Robot), organized by IIT Mumbai, sponsored by MHRD through the National Mission on Education through ICT (NMEICT).
15. Raj Kumar, Sadashiv Raj Bharadwaj [B.Tech. Elec-II] Gaurav Singh [B.Sc. (H) Comp. Sc., III] First prize in project presentation competition in the form of Paper entitled "Technology Based Laboratory to Improve Science Learning" at '7th National Level Science Symposium-2014' on "Recent Trends in Science and Technology" Christ College, Rajkot, February 22- 23, 2014.
16. Arun Kumar and Manoj Kumar Sharma of B.Sc. (H) Chemistry received Certificate of Appreciation by Ministry of Youth Affairs & Sports, GOI for participation in the Suvichar & National Youth Convention on 'Clean, Green and Progressive India' at the 19th National Youth Festival held on 5-12 January 2015.

INTERNATIONAL LEVEL
1. Ms. Nikita of B. Sc.(H) Maths represented India in a five member delegation in SAARC YOUTH WORKSHOP FOR PROMOTING REGIONAL HARMONY organized by Ministry of Youth Affairs, Government of Pakistan in Islamabad, 28-30 Sept., 2010.
2. Raghuraman of B. Com. (H) won the Dr. R. Sreedher Award for Best Cinematography in the Plural+ Chinh India Kids Film Festival, at an International Contest organized by UNOAC (United Nations Alliance of Civilizations) on 9-14 November 2010.
3. Abhay Pratap Singh, Sahil Batra and Gokul Nair of the Department of Zoology have published a research article on "Impact of partherium sp. Leaf extract on the fecundity, fertility and behavioural response of Aaegypti" in Parasitology Research DOI:10.1007/s00436-010-2126-1.
4. Raghuraman of B.Com. (H) won National Geographic Channel Cover shot
5. Photography Contest 2013.
6. Priyanka Kachru, Ananya Paul and Shatakshi Singh [B.Sc. (H) Phy-III] First Prize for oral presentation on "Measuring the Size of Quantum Dots Using a Low Cost CCD" at SPIE Asia Student Photonics Conference (ASPC),2014 organized by IISER Kolkata under Postgraduate Category (M. Tech./ M. Sc./B. Tech./ B. Sc.), India.
7. Priyanka Dasgupta B.Sc. (H) Zoology Sem – IV was awarded a Certificate and Rs. 500USDby Delhi University-POSCO TJ Park Foundation (Korea) in 'Recognition of outstanding scholastic achievement and dedication to knowledge' in 2015.
8. Received a memento for Special Prize for Entrepreneurship Development in the CSR 2015 for the paper "Step towards Social Entrepreneurship: Innovative ideas to create mosquito repellent products" at 3rd International Conference held on 4-5 May,2015 at Sharjah(Dubai).

5.3.3 How does the college seek and use data and feedback from its graduates and employers, to improve the performance and quality of the institutional provisions?
The college seeks feedback from the alumni and employer through various channels like invited talks, discussions, social media and emails. The alumni are also encouraged to assist the college in arranging trainings, workshops, seminars, talks for their juniors on latest trends in their respective fields.

5.3.4 How does the college involve and encourage students to publish materials like catalogues, wall magazines, college magazine, and other material? List the publications/ materials brought out by the students during the previous four academic sessions.

The college publishes its Annual Students Magazine **Insight** and it is released by the Chief Guest on the Annul Day of the college. This magazine has an editorial board of students under faculty mentor. This magazine aims to bring out the feelings/thoughts of today's youth in the form of ink, pastel and pixel. The magazine has both Hindi and English sections, under which students from different departments of the college share their opinions and views in the form of articles, thoughts, poetry, and portrait, photographs etc. Along with the faculty, students play an important role in screening and editing the articles to be published in the magazine. Besides this some departments of the college also publish their individual magazines and newsletters which showcase not only the activities and achievements of the Department but also the writing skills of the students. Biomer and NICHE are examples of Departmental magazines.

5.3.5 Does the college have a Student Council or any similar body? Give details on its selection, constitution, activities and funding.

The College has a Students' Council for the effective representation of the students. The constitution of the student council is as follows:
a) Mayor
b) Deputy Mayor
c) Treasurer
d) Council Secretary
e) Cultural Secretary

The elected members further elect representatives from among elected Class Representatives for activities related to
  i.   Career Counseling and Placement
  ii. Sports
  iii. Women-related Issues

The elections for the Council are held every year in the beginning of the session and usually the date of elections coincides with that of DUSU elections. The Council is not only responsible for organizing student-related activities but to also give voice to students' common concerns. It also facilitates maintenance of discipline and decorum in the college and students learn to be responsible citizens of the country. Last year, elections for the Students' Council office bearers were held on September 13, 2014 for all the posts Council.

The constitution of this council, drafted in consultation with students has been duly approved by the statutory bodies of the college.

The student's council actively participates in various students' activities; such as organizing the college annual cultural festival called ACCENTURE and Annual day. The funding for the activities of the student's council comes through the fees collected from the students at the time of admission and through sponsorship.

5.3.6 Give details of various academic and administrative bodies that have student representatives on them.

The college has student representative in following committees. It is ensured that there is equal participation of both male and female students in each committee.
1. Annual Events: This committee is responsible to organize the college annual festival 'Accenture' and other student related events. The Mayor and the Cultural secretary of the students' council work under the guidance of the Convenor, Annual Events to raise sponsorship and organize various events.

2. Editorial and Magazine: A student editorial board has been constituted which looks after the publication of the college's annual magazine 'Insight'.
3. Alumni Committee: Student members of alumni committee network with the alumni for the organization of alumni meet and raise sponsorship.
4. Internal Complaints Committee: The committee has three students who represent the point of view of students while adjudicating any complaints of sexual harassment.

5.3.7 How does the institution network and collaborate with the Alumni and former faculty of the Institution.

The college considers its alumni as an integral component of its community and believes in its constructive engagement in the development of the institution. The Alumni Committee organizes an annual get-together and an Annual Alumni meet is scheduled every year on the first Sunday of February. The Alumni Association maintains a record of Alumni with their contact details and has a convener to manage its activities. The alumni have created a Google group called "Go for ANDC" (go-for-andc@gmail.com) which provides a forum to synergize the efforts of alumni and the college for the development of the institution.

CRITERION VI
GOVERNANCE, LEADERSHIP AND MANAGEMENT

6.1 Institutional Vision and Leadership

6.1.1 State the vision and mission of the Institution and enumerate on how the mission statement defines the institution's distinctive characteristics in terms of addressing the needs of the society, the students it seeks to serve, institution's traditions and value orientations, vision for the future ,etc.

Acharya Narendra Dev College has in the recent years attained importance in the University due to our consistent good performance in academics as well as for our stellar schemes that are tuned to take academic processes much beyond classroom teaching. The college has also earned a name for several of its flagship programmes that are aimed at improving the personality of the students and that give even children from deprived backgrounds an equal chance to achieve much in life. Delhi University's process of identifying colleges with '**Good Practices'** over the last three years (2013-2015) during Antardhvani - the mega-festival of the University was highly satisfying to our College. We are the only college in the University to have won prizes in all three editions of the competition – 3rd prizes in 2013, 2014 and the First prize for 'Colleges with Good Practices' in 2015. DU has 63 colleges with the regular undergraduate courses some of them old, well known and well established.

Our striving for excellence has also resulted in us being ranked among the top ten Science colleges in Delhi in the last five years by the India Today Neilson ranking. We have also been ranked 19th and 22nd in India by the same survey.

Our recognition on an International platform through the Highly Commended Opal Award for institutions at Berlin in 2011 is proof for the quality of our excellent work on open paradigms in Education. Our teachers have been recognized for their excellence in teaching and one our students recognized by the government as an "environment ambassador' for the Copenhagen conference.

All these recognitions enumerated above (and more), be it of the institutional practices, is faculty or its would not have come about without a conducive environment for work, for collaboration, for sharing and for leadership. The College provides for the perfect milieu for excellence. We are grateful for all the support that the College has been getting from the Governing Bodies, the University officials and the Delhi government system, over time.

Since its inception in 1991, Acharya Narendra Dev College has strived towards developing a value-based system rooted in commitment, sincerity and discipline along with imparting quality education to the students. The college fosters a vision of 360degree development which furthers the cause of education to produce matured individuals with scientific temperament and sensitivity to societal and national needs.

As one of the leading constituent college of the prestigious University of, Acharya Narendra Dev College has dedicated itself to the teaching-learning process through participative hands-on and research. In sync with higher education policy of India Acharya Narendra Dev College has time and again dedicated itself to enabling students for leadership and finding solutions to big challenges in this complex world. At the college, students are imbibed with extraordinary freedom to explore, collaborate and challenge themselves while pursuing undergraduate studies. This approach helps alleviate prevalent social inequality since students from different backgrounds and cultures having diverse perspectives and experiences come together in the huge melting-pot called '*ANDC'*. The college believes that learning is a life-long process and therefore, aims to train students as 'autonomous learners'. The college believes this to be one of the key elements in carving out a successful career. Coupled with it, is the college's belief in equipping the students with skills some of which are enumerated as follows:

1   Well versed in state-of-the-art technology in their respective fields.
2   Being confident in a challenging situation and honest in action.

3   Ability to work in a group while making a meaningful contribution.
4   Adaptable with externally controlled parameters at various levels.

The college has over the years tried to implement the above mentioned mission statement by proactively embracing the following approaches:

A   Hand-on experience for students through active and inclusive undergraduate research in cutting edge areas of science through various schemes like Innovation Projects, IEDC projects and ELITE.

B   Capacity building through 'Beyond the Classroom' approach which involves

i.   Education and personality development through theatre - ECPDT (Effective communication and Personality Development Through Theatre) and ATP (Annual Theatre Production) under the aegis of '*Dhwani*'-the college theatre society.

ii. Entrepreneurship – IEDC

iii. Spirit of enquiry and self discovery- the EXPLORE scheme

iv. Social outreach (NSS)

v.   Skill development amongst students (ICICI banking course, MetLife insurance course, NSDC course in equity trading)

C   Mentoring of students for their personal and academic problems.

D   Remedial coaching for SC/ST and underprivileged students.

E   Technology enabling of students - A dedicated web-facilitation Centre with internet enabled computers and a fully wi-fi campus. Facility for issue of laptops for students and a unique login-id and password for each student.

F   Promoting computer literacy amongst all stakeholders in the college namely students, faculty and non-teaching staff through hands-on promotional workshops on linux -an open source operating system and free open source software (FOSS).

G   Inclusion of E-resources, online content and video-conferencing in class room teaching and introducing the students to the world of Creative Common licences.

The college is sensitive to the economic under-pinning of its student population. Thus, it is a constant endeavor to carry out all its activities with provisions for the disadvantaged sections. The college recognizes the diversity in its students and considers it as enrichment to its academic and cultural life.

6.1.2   What is the role of top management, Principal and Faculty in design and implementation of its quality policy and plans?

Implementation of the policies and plans in the spirit of the above requires a constant planning, execution and monitoring on the part of the key functionaries of the college viz. the Governing Body (constituted by the University in consultation with Govt. of NCT of Delhi), Principal and the Staff Council. The Staff Council that consists of the entire faculty with the Principal as Chair is responsible for all academic and co-curricular as well as extracurricular activities in the College.   The SC formulates policies that are conducive to the implementation of teaching programmes in accordance with the norms laid by the University of Delhi and in furtherance of the vision of the institution. The faculty and the Principal continuously endeavor to bring in innovative and supplementary add-on programmes for the promotion of education, research and buildup of scientific temperament which is invariably supported by the governing body of the college in terms of policy and funds approval.

The College has been fortunate, over the years, to get good support from the University as well as the funding agency – the Directorate of Education, Government of the NCT of Delhi. None of our programmes have fallen through due to lack of support. The University has always involved the College Principal and the faculty in various academic processes of the University, be it in formulating syllabi, making arrangements for implementation of new curriculum/syllabi

or even in helping it make bulk purchases of computers, scientific equipment or in developing Admission guidelines.

6.1.3   What is the involvement of the leadership in ensuring:
- **the policy statements and action plans for fulfillment of the stated mission**
- **formulation of action   plans   for   all   operations   and Incorporation of the same into the institutional strategic plan**
- **Interaction with stakeholders**
- **Proper support for policy and planning through need analysis, research inputs and consultations with the stakeholders**
- **Reinforcing the culture of excellence**
- **Champion organizational change**

In order to ensure the implementation of the college policies and goals following approach is generally adopted by the leadership.

The Principal strongly believes in delegation of responsibilities, be it to the Vice Principal, the Bursar, the Teacher-in-charges, or to the Convenors of Committees. She also believes in the strength of the collective, and in collaboration and consultation being the best means of reaching a logical consensus and rational decision.

Consultation through participative 'thought sharing sessions' amongst the various members at all levels i.e. departmental committees, college committees constituted in the staff council lead to identification of the methods to adopt in keeping with the vision.

After a careful and critical analysis, a suitable action plan is figured out to realize the goals. In all such sessions and activities the leadership's role has always been very supportive and stimulating.

The approach and operational modality for the implementation of the action plan is *'all inclusive'* involving all the stake holders. Needless to mention that excellence is always *'in focus'* of all the actions taken up. The participative role of all the stake holders and components works as a lubricant in the hassle free implementation of the action plan.

The contribution of students as important stakeholders in matters directly of concern to them has never been undermined. Opinions of elected student representatives as well as other student leaders has always been taken into consideration in decisions that would affect students.

6.1.4   What are the procedures adopted by the institution to monitor and evaluate policies and plans of the institution for effective implementation and improvement from time to time?

The procedures adopted by the institution for monitoring and evaluating the policies and the plans are in accordance with the rules and regulations of University of Delhi as stated in the university acts, statutes and ordinances. The college functions through various committees duly constituted in a statutory body called the staff council with the Principal in the chair. The staff council committees look into all aspects of functioning of the College through Committees that function under it and report to it. The various SC Committees formed at ANDC include:

- Admission Committee
- Proctorial Committee
- Examination Committee
- Fellowship Committee
- Annual Events Committee – Academic Events & Cultural Events
- College Development Committee
- Time Table and Workload Committee
- Sports Committee
- Library Committee

- Editorial Committee
- Professional Development and Faculty Enrichment Committee
- Social Outreach Committee
- Women Students; Affairs Committee(*Sashakt*)
- IT Committee
- Equal Opportunity Cell
- Canteen Committee

New ideas are put up in the staff council for approval and implementation of various schemes and policies of the institution along with a desired roadmap. Additional Committees/subcommittees are formed as and when required for efficient functioning. Decisions taken by the Committees are sent to the GB for necessary sanctions and approval (if required).

6.1.5 Give details of the academic leadership provided to the faculty by the top management?

The academic leadership to the college is provided by the Principal, who is the Member Secretary of the top managing body i.e. the Governing Body. The Principal of the College has often led the college to strive for improvement and excellence. Her academic leadership has led the College to attain ranks in the Delhi State as well as at All India level for our Science teaching. In all this the Governing Body has always been highly supportive.

The twin philosophies of 'Beyond the classroom… and 'Preparing for the future…'were adopted by the college under the leadership of the Principal and these have been the guiding principles for all the diverse activities, schemes and projects that the college has undertaken in the last decade. It was the leadership that ensured that the College adopted 'Entrepreneurship' as a major area to work in so as to provide students cutting edge skills and the experience and capacity to become entrepreneurs. Theatre as a tool in education was also a concept unique to our College – again a something that would not have taken off or become a success without support from the Governing Body.

Our dream of becoming a hub for scientific research was possible because of funding from various governmental agencies, by recognition of our faculty as independent research guides by the University, by the support that the faculty got from the administration and accounts section in managing the research projects. Most important the college was able to carve out spaces for the research laboratories – something that would have been impossible without the support of DHE, Government of the NCT of Delhi.

The college also became a force to reckon with in the area of Open Educational Resources and our advocacy of FOSS. The GB of the college and the University has always supported us in these endeavours. The University decided to adopt the Linux OS for the 60,000 laptops they bought in 2013 due to our success in implementing FOSS in college.

Apart from implementing the regular course curriculum the faculty has strived and taken several measures in promoting the concept of taking teaching-learning 'beyond the class room' as mentioned below, which have the encouragement, support and sanction of the GB acting through the Principal.

a) Under graduate research through research based projects funded by the college, University of Delhi, DST, CSIR through various schemes like ELITE, Innovation Projects, IEDC and OSDD respectively.
b) Organizing regular workshops and training programmes.
c) Organizing conferences at national /international level.
d) The college has become a strong practitioner and campaigner of free open source software (FOSS) over the years under the guidance and active leadership of the Principal. In fact all the machines in the computer laboratories and departments are linux based and

safeguarded from the threat of virus. For this purpose special training sessions for the new entrants to the college are organized at the college level involving college faculty and experts from outside the college through video conferencing.

e) The leadership of the college is a strong advocate of free and open learning environment and has always strived for bringing the education beyond the issues of copyright and intellectual property right (IPR).

A glimpse of the work can be found in the following links:

1. http://www.edu-leaders.com/video/40053/dr-savithri-singh-creative-commons-license-impact-oer
2. http://wikieducator.org/Learning4Content/Workshops/Face-to-face_schedule
3. http://oer.nios.ac.in/wiki/index.php/OER_Workshop_at_Pune_on_dated_June_4-5,_2012
4. http://presentations.ocwconsortium.org/uk2012_282_singh_promotion_oer_development/

In recognition to the above efforts, the college was awarded the prestigious international OPAL Award in Berlin.

6.1.6 How does the college groom leadership at various levels?

As a natural outcome of the participative and collaborative functioning, the college fosters leadership among its components at various levels.

1. The College appointed a Vice Principal (on rotation) about 7 years back. The Vice Principal is allocated specific responsibilities and has been given the right to take independent decisions. Similarly the Bursar of the College as well as the Finance Committee are responsible for all financial aspects of running a College. The Principal ensures that the Vice Principal and the Bursar are kept aware of all aspects of administering the College.

2. For each committee constituted by the staff council, a convener is appointed for a term of two years, who is responsible for organizing activities and holding meetings to fulfil the goal. For Departmental functioning Teacher in Charge is appointed for a term of two years on rotational basis. The Teacher in Charge is entrusted with the administrative and academic responsibilities pertaining to that department. The teachers are also encouraged to conduct workshops/ seminars/ conferences which give them ample opportunities to learn organizational skills. Further the finance committee of the college shoulders the gigantic responsibility of making purchases in accordance with the General Financial Rules (GFR) of Govt. Of N.C.T. of Delhi to ensure the infrastructural growth in a transparent manner. This process naturally grooms the individuals as conscientious and informed leaders.

3. Today's students are the leaders of the tomorrow. Keeping this in mind, college takes a conscious effort to sow the seed of democracy in the young minds by giving them a role in the structural set up of the organization. For this purpose , the college holds elections for Class Representatives (CR) giving them the first flavour of democracy and the responsibilities of a leader. The Proctorial Committee of the college organizes and monitors a detailed formal process of elections of the various posts of the office bearers of the Student Representative Body i.e. Acharya Narendra Dev College Students' Council. This Council is entrusted with the task of bringing forth the student related issues and acting as an interface between the college administration and the students. This Council is also responsible for organizing student festivals and other student involving programmes. Further, each department has a society with student office bearers which provides a platform to the students to express themselves in a multidimensional way.

6.1.7 How does the college delegate authority and provide operational autonomy to the departments/units of the institution and work towards decentralized governance system?

The College strongly believes in collective wisdom and therefore has decentralized the governance to the maximum, giving adequate autonomy and freedom to various functionaries. To enforce this philosophy the principal has delegated the powers to various committees and departments in accordance with the University rules.

The day-to-day functioning of the college is undertaken through various committees constituted in the Staff Council. These committees have powers to design and execute their tasks. The committees work in coordination for smooth functioning and progress of the college and students. Teachers in charge of all departments are responsible for all affairs of their respective departments including organising and planning teaching, maintenance of infrastructure, purchases, future requirements, etc.

6.1.8 Does the college promote a culture of participative management? If 'yes', indicate the levels of participative management.

Each department has a teacher-in-charge who looks after the routine functioning of the department in consultation with the faculty and non-teaching staff of the department. The departmental policy decisions are taken in departmental meetings, whereas major policy decisions are taken in the staff council. The non-teaching staff of the college also has its association which gives inputs regarding non-teaching matters concerning the college.

Student related activities are organized and executed by involving students' representatives at all levels.

6.2 Strategy Development and Deployment

6.2.1 Does the Institution have a formally stated quality policy? How is it developed, driven, deployed and reviewed?

Even though the college is very particular about quality standards and protocols in all spheres of activities and constantly strives to improve its own standards each year, the college is yet to formulate a formal statement of quality policy. Certainly, the college envisages documenting such a policy in future.

6.2.2 Does the Institute have a perspective plan for development? If so, give the aspects considered for inclusion in the plan.

The college has already taken several initiatives and developed a unique blend of academics and research with a social-equity perspective in working towards its objectives. We envisage further development in the College along the following threads in a significant way.

1. Construct an environment friendly and a suitable building for the College and shift to the new campus at Rohini. Space constraints here have really hampered our progress. This will allow the college to develop its infrastructure with lesser spatial compromises and provide more academic prospects.
2. Enhance entrepreneurial practices to enable the students become job creators rather than being merely job seekers. This will allow students to tap their inherent talent and contribute to the society in a more meaningful manner by carving out their own roadmap. We aim to set up an '**Entrepreneurial hub**' at ANDC through our Business incubator. Our final goal is to set up a TBI – a technology-based Incubator to promote innovative enterprises. This set-up would also contribute to Skills-based education since hands-on is what we are looking at.
3. Enhance college-Industry interface to enrich students with the real world experiences and improve the employability.

4. Furthering undergraduate research and developing the institution into a research-hub. This gives the young researchers an insight into the research processes and consequently results in familiarization and inculcation of scientific temperament, so that in future they are able to take informed decisions about their career.

5. Promote confidence-building initiatives for the benefit of students especially those from socially and economically backward strata.

6. Another dream project for ANDC is setting up a "Sports Facility for the Disabled'. Sports and physical activity is good for students and not necessarily only from a competitive point of view. A healthy life-style would lead to a better life with fewer medical problems. This is not just the need of the abled population but also for the differently abled. Since it is not possible for the abled to share their space safely it is of utmost importance that special sports facility be set up for the differently abled. Such facilities would go a long way in strengthening the body systems and preparation for the life ahead. Of course, under the able tutelage of our sports teacher who is a Dronacharya, specializing in sports for the disabled specially the visually challenged, the College will slowly but steadily move towards creating world champions.

6.2.3 Describe the internal organizational structure and decision-making processes.

The organizational structure of the various offices of the College as a Unit is explained in the figure overleaf. The figure is also reflective of the flow of information and decision-making processes in the College.

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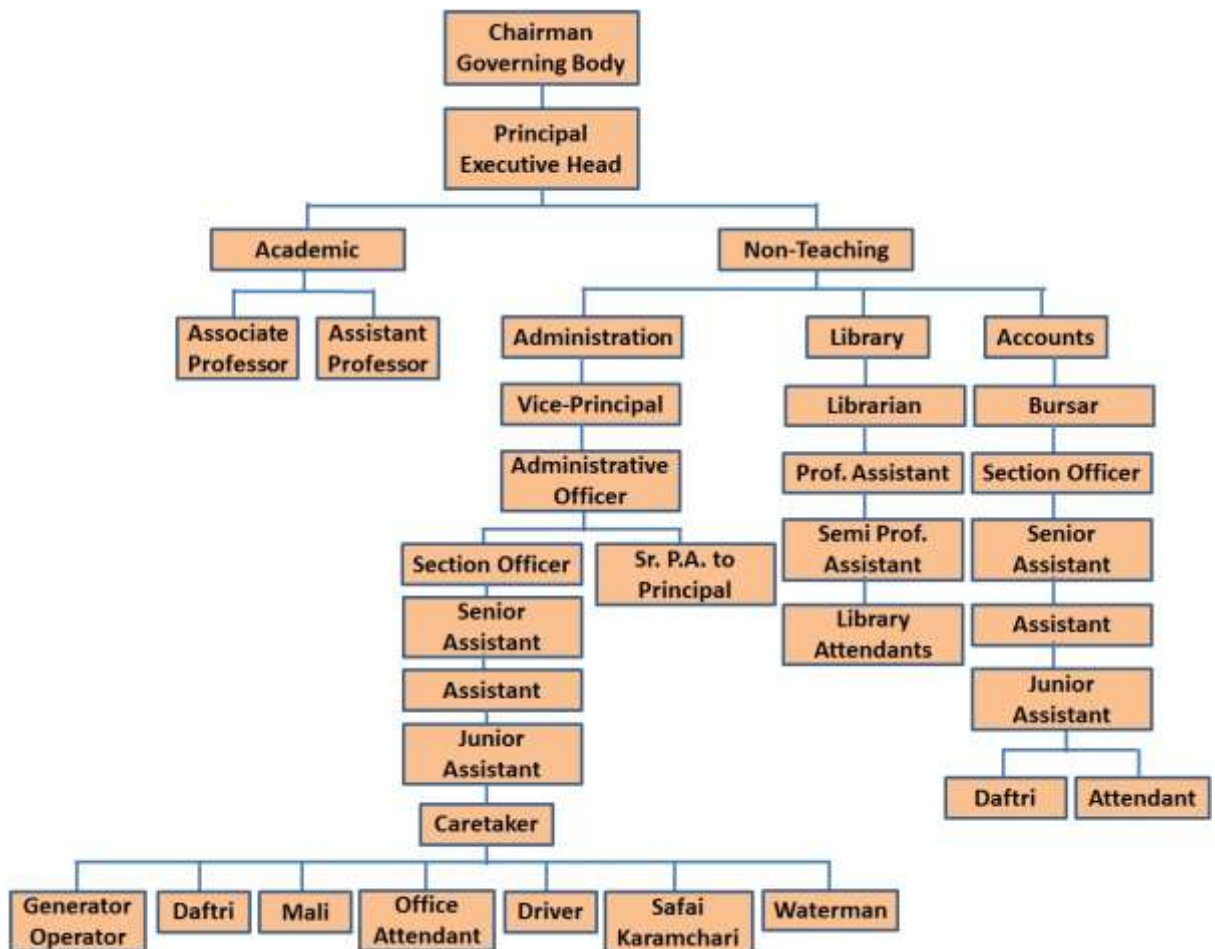
The Governing Body (GB) controls and supervises the overall functioning of the college. All the decisions are to be approved by the GB for implementation. GB has the authority to institute, suspend or abolish any teaching or non-teaching post in accordance with the acts and statutes of the university and guidelines of the Govt. of N.C.T. of Delhi.

The principal is the chief executive authority of the college. The principal realizes and receives all grants or other funds due to the college from the central/ state government, and the university and other persons, bodies and authorities on behalf of the institution. S/he is responsible for the organization of teaching and co-curricular activities of the college. S/he sanctions leaves of all types, within the rules prescribed, to all teaching and non-teaching staff and officiating arrangements, wherever necessary, are also made by her in accordance with the rules. Subject to control by the Governing Body the Principal in addition to other powers and functions (i) operates the Students Fund (ii) has powers to appoint class IV staff, and suspend and dismiss such staff and report the same to the Governing Body. The Principal decides the policies regarding examination (college), promotion and admission to the college in consultation with the staff council as constituted under ordinance XVIII (6).

All the members of the teaching staff and the librarian constitute the staff council. The Principal is the *ex-officio* chairperson of the staff council. Subject to the provisions of the acts, the statues and the ordinances of the university, the staff council takes decisions in respect of the following matters:

1   Preparation of the college time-table.
2   Allocation of extra-curricular work of teachers' not involving, payment of remuneration.
3   organising extra-curricular activities, including cultural activities of students, sports, games, NSS and other social services schemes and academic societies.
4   Laying down guide-lines for purchase of library books and laboratory equipment in consultation with the appropriate departments.
5   Organizing admissions of students.

The staff council functions through committees appointed by the council with principal in chair.

6.2.4   Give a broad description of the quality improvement strategies of the institution for each of the following

➤**Teaching & Learning:**
The college regularly conducts workshops for teachers to help them upgrade their teaching skills. These include workshop on multimedia techniques for classroom teaching and preparing e-learning materials. The college has also conducted workshops on teaching and research methodologies. For students, the college conducts workshops and training programmes on basic computer techniques and FOSS at the start of each academic session.

➤**Research &Development:**
The college actively encourages research projects for teachers and students by providing support and infrastructure. A large number of faculty members are involved in various research projects funded by various governmental agencies. The undergraduate students are encouraged to pursue research during summer vacations and even during regular teaching days through various schemes like Innovation projects, IEDC projects and ELITE projects funded by University of Delhi, DST and the college respectively.

➤**Community engagement**
We strongly believe that public institutions need to revisit their roles, assume greater social responsibility and foster sustainable development. ANDC believes in carrying on the ever growing socio-economic developmental responsibilities through its wide array of societies based on their responsible and sensitive policies and philosophies. These efforts are spearheaded by the National Service Scheme (NSS) of the college. Some of its recent activities

are described in the following paragraph.

The NSS unit of the college strives to sensitize students about their social responsibilities and inculcate the spirit of voluntary social service. It attempts to spread awareness and develop a better understanding and appreciation about the life and problems of people. The students working in this unit gain valuable work experience which stands them in good stead for future employment. NSS is involved in various activities like organizing blood donation camps, free health check-up camp and Thalassemia-screening camps. A notable contribution of the NSS unit in the current year has been its commitment to 10 Thalassemic girls from economically weaker background to fulfill their blood transfusion needs throughout the year. The NSS unit of the college has always responded to the call of the nation e.g., volunteering for 19th commonwealth games (2010, New Delhi), participating in SAARC youth summit (Islamabad, 2011), disaster management during Uttarakhand and Kashmir floods, joining the *Swatch Bharat* campaign etc.

The NSS unit of the college has adopted a few urban villages in Delhi for their cleanliness and community development. The NSS unit's emphasis has been the welfare of differently abled people from the college and outside. Due to an active participation of several NGOs working for differently abled people, a Diwali Mela '*SAHYOG*' has become an annual feature. The NSS unit has established ties with '*GOONJ*', an NGO working to provide basic necessities like clothes, food, sanitary items, etc. to the poor and underprivileged in urban as well as rural areas throughout India. The NSS volunteers of the college visit their centers regularly to hand over generous donations of clothes, books and stationery items collected from college students, teachers and staff.

➡**Human resource management**

Efforts are made to recruit the most deserving and competent individuals of integrity and dedication on all the teaching/ non-teaching positions after adhering to recruitment rules formulated by the University of Delhi. Ample opportunities are provided to the staff for their carrier advancement and skill enhancement. The teaching/non-teaching staff is sanctioned study leaves to enhance their future prospects as per the norms.

➡**Industry interaction**

The college develops curriculum for add on courses like ECPDT and BIDD in consultation with the industry. Experts from theatre (like NSD) help in designing and implementation of course work for the ECPDT course to enhance the skills of communication and personality development of students.

The primary aim of BIDD course is to suit the fast track needs of bioinformatics and in-silico drug discovery divisions of pharmaceutical companies and research organizations. The course structure has been formulated in consultation with the members of course-advisory committee consisting of eminent scientists from academia as well as industry. Experts from various academic institutions and industry participate in conducting the course and its evaluation also.

Earlier, the college ran add-on courses on banking and insurance in association with ICICI bank and MetLife Inc. respectively.

6.2.5 How does the Head of the institution ensure that adequate information (from feedback and personal contacts etc.) is available for the top management and the stake holders ,to review the activities of the institution?

All the teachers submit their list of achievements for a given year to the college. The activities and the achievements of the department including students' activities are compiled by each department. The society convenors compile the reports of their respective committees. All the reports along with the university positions of the students are collated in the Annual Report of the College. Necessary measures for improvements are initiated by the Principal in consultation with the faculty and the staff council.

The Governing Body Chairperson and members are invited for all major activities in the college and that opportunity is used for interaction with the staff. Most GB Chairpersons have close interactions with the faculty due to their frequent visits and because of being on some College Committees together.

6.2.6 How does the management encourage and support involvement of the staff in improving the effectiveness and efficiency of the institutional processes?

The teachers follow their own teaching methodologies with a significant degree of flexibility. The faculty members have freedom to express their opinions regarding the improvements in institutional processes and these are discussed and implemented if approved by the staff council. Major policy decisions are referred to the governing body for necessary approval.

6.2.7 Enumerate the resolutions made by the Management Council in the last year and the status of implementation of such resolutions.

The GB of the college in its meeting held on May1, 2013 granted permission to start an entrepreneur laboratory in the college for students. It also approved a corpus funding of Rs. 50,000/- and initial support of Rs. 30,000/- from the college society account as interest free loan to entrepreneur laboratory.

The entrepreneur laboratory has been set up and projects related to the same are in the various stages of planning and execution.

6.2.8 Does the affiliating university make a provision for according the status of autonomy to an affiliated institution? If "yes", what are the efforts made by the institution in obtaining autonomy?

No. The University of Delhi does not allow status of autonomy to its constituent colleges.

6.2.9 How does the Institution ensure that grievances/ complaints are promptly attended to and resolved effectively? Is there a mechanism to analyze the nature of grievances for promoting better stake holder relationship?

The college has a grievance committee with teaching and non-teaching staff as members. The teacher's representatives in the governing body are members of the committee.

The students take their grievance to their teachers or teachers-in-charge or the principal, vice-principal, proctorial committee depending upon the nature of the grievance.

The college has constituted an 'Internal Complaints Committee' in accordance with the provisions of the Sexual Harassment of Women at Workplace- Prevention, Prohibition and Redressal Act 2013, notified in the Gazette of India. The objective of the committee is to safeguard the fundamental right of a woman to equality as enshrined in the constitution of India. It endeavours to protect a woman's right to live with dignity and practice her profession in a safe environment, free from sexual harassment.

6.2.10 During the last four years, had there been any instances of court cases filed by and against the institute? Provide details on the issues and decisions of the courts on these?

S. No.	Title	Subject	Status
1.	SAMBHAWNA VS DELHI UNIVERSITY & ORS	Regarding PwD appointments	7-05-15 The case is pending for arguments.
2.	GIRINAGAR SUDHAR SAMITI VS GOVT. OF NCT &ORS	Installation of Gate	Disposed. Directed Complainant to remove the gate near main gate.

3.	MAHINUR RAHMAN VS University of Delhi and others	Case regarding Laboratory Staff pay scales.	Decided in favour of Laboratory Assistants as UGC agreed for retaining old pay scale.
4.	DELHI UNIVERSITY SC/ST/OBC/FORUM VS DELHI UNIVERSITY & ORS	Regarding teaching appointments due to implementation of 200-point Reservation Roster.	20-05-2015 The case is listed for arguments.
5.	RAMA NAND VASHIST VS DELHI UNIVERSITY & ORS	Regarding retirement age of Librarians	Decided on 18-2-15 in favour of University of Delhi.

6.2.11 Does the Institution have a mechanism for analyzing student feedback on institutional performance? If "yes", what was the outcome and response of the institution to such an effort?

No formal mechanism exists for this purpose, the college encourages and welcomes feed backs, suggestions and opinions on the various aspects of the college life through various channels viz., letters e-mails, facebook postings etc.

6.3 Faculty Empowerment Strategies

6.3.1 What are the efforts made by the institution to enhance the professional development of its teaching and non-teaching staff?

The institution promotes professional development of the teaching and non-teaching staff to the greatest possible extent. The college has a Professional Development Committee constituted through the staff council which looks after professional development of teaching faculty.

The college has a specific fund as 'professional development fund' which is utilized by various departments of the college to organize seminars, conferences and workshops and for reimbursing travel grant (national/ international) for attending the conferences.

In addition to this, the college also organizes national and international level seminars/conferences, which also helps in professional enrichment of the faculty.

Further, college grants study leave to the staff for perusing higher degrees like Ph.D./ post-doctoral programme as per the UGC norms with full pay and allowances and allows the teaching faculty to attend orientation/ refresher courses/ training programmes organized by CPDHE/ various academic staff colleges/ departments.

The college allows non-teaching staff to attend skill development programmes.

6.3.2 What are the strategies adopted by the institution for faculty empowerment through training, retraining and motivating the employees for the roles and responsibility they perform?

The college is a firm believer of empowerment of its employees. To actualize the activities mentioned in 6.3.1, the college recommends its employees for the various training programmes. The information regarding the training programmes is circulated to all employees through emails as well as through notices.

6.3.3 Provide details on the performance appraisal system of the staff to evaluate and ensure that information on multiple activities is appropriately captured and considered for better appraisal.

The self-appraisal form is filled by the teaching faculty for career advancement scheme (CAS) as per UGC guidelines.

6.3.4   What is the outcome of the review of the performance appraisal reports by the management and the major decisions taken? How are they communicated to the appropriate stakeholders?

The self-assessment performa filled-in by the staff members for their promotions are evaluated by a screening/evaluation committee headed by the principal. If there is a point of difference on any parameter in these performa, the same is communicated to the staff member in writing within a month for rectification.

6.3.5   What are the welfare schemes available for teaching and non- teaching staff? What percentage of staff have availed the benefit of such schemes in the last four years?

The College has several welfare schemes for its faculty and non-teaching staff members as per the policies of University of Delhi in conjunction with those of Government of India e.g. Group Insurance Scheme (GIS), Children Education Allowance, Medical Reimbursement and Leave Travel Concession/Home Town Concession). In addition washing Allowance and Uniform Allowance is provided to Class–IV staff.

Space for conducting research by faculty and students is also provided by the college. The college has air conditioned common staff room for teaching faculty in addition to separate departmental staff rooms. The common staff room is equipped with computers and printer and other basic amenities like microwave oven, refrigerator, induction cook-top etc. Apart from this there is a dedicated reading room in the library for the faculty members.

The college also provide free of cost Wi-Fi to its employees and a unique login-id with password.   These facilities are availed by the non-teaching staff also.

6.3.6   What are the measures taken by the Institution for attracting and retaining eminent faculty?

The recruitment of faculty is governed as per the rules and regulations of the University of Delhi.

6.4 Financial Management and Resource Mobilization

6.4.1   What is the institutional mechanism to monitor effective and efficient use of available financial resources?

All decisions about utilization of funds is made by the Finance Committee of the College. It has representation from each Department of the College. It is this Committee that decides the items to be purchased, the quantities, that follows the procedures and makes the purchases. The finance Committee is also involved in making the financial estimates and the budget for the upcoming financial year. Once the grantee organisations release grants it is this Committee that is responsible for the judicial use of funds. There is through and through transparency in all the financial procedures in the College.

The budget proposals as well as utilization certificates are forwarded to the University only after approval of the GB, the Chairperson and Treasurer GB. Once approved by the University they are forwarded to the DHE for funding.. Similarly audit reports are also placed in the GB and the reply to audit paras have to be approved by GB before being forwarded through the University. It is pertinent to mention that Delhi Government colleges are audited thrice over.

All the funds are judiciously spent following GFR 2005 as per the budgetary provisions. All budgets, balance sheets and utilization certificates are duly approved by the Governing Body of the college.

6.4.2 What are the institutional mechanisms for internal and external audit? When was the last audit done and what are the major audit objections? Provide the details on compliance.

Internal audit is done by CA duly approved by University of Delhi and ELFA audit by Government of NCT of Delhi annually. ELFA audit has been done till the financial year 2013-14. Satisfactory reply and compliance is shown to the various audit objections.

6.4.3 What are the major sources of institutional receipts/funding and how is the deficit managed? Provide audited income and expenditure statement of academic and administrative activities of the previous four years and the reserve fund/corpus available with Institutions, if any.

College is 100% funded by Directorate of Higher Education, Govt. Of NCT o f Delhi.

6.4.4 Give details on the efforts made by the institution in securing additional funding and the utilization of the same (ifany).

College receives funding through externally sponsored research projects, IEDC, MSME, Plan grant from UGC and consultancy services rendered by the staff. The details have already been provided in the previous sections/criterion.

6.5 Internal Quality Assurance System(IQAS)

1. Composition of the Internal Quality Assurance Cell:

1. Chairperson: Head of the Institution - Dr.Savithri Singh
2. Senior administrative officers   Vice-Principal, Bursar & AO
3. Teachers:
   a. Dr.Seema Gupta   Associate Professor, Department of Chemistry
   b. Dr.Sanjeeta Rani   Associate Professor, Department of Physics
   c. Ms.Anupama   Associate Professor, Department of Mathematics
   d. Dr.Urmi Bajpai   Associate Professor, Department of Biomedical Sci.
   e. Ms.Anuradha Sarin   Associate Professor, Department of Commerce
   f. Mr.Vishal Dhingra   Assistant Professor, Department of Electronics
   g. Dr.Geetika Kalra   Associate Professor, Department of Botany
   h. Mr.Ravinder K. Sagar   Assistant Professor, Department of Zoology
   i. Dr.Harita Mehta   Assistant Professor, Department of Computer Sci.
   j. Mr.Manoj Kumar Garg   Assistant Professor, Department of English
4. External Member   Professor K.N. Tripathi
5. External Member   Dr. Harsh Kumar
6. Coordinator/Director   Dr.Seema Gupta (Department of Chemistry)

6.5.1 Internal Quality Assurance Cell (IQAC)

a. Has the institution established an Internal Quality Assurance Cell (IQAC)? if yes, what is the institutional policy with regard to quality assurance and how has it contributed in institutionalizing the quality assurance processes?

The college has constituted IQAC, which is in the process of drafting institutional policy in sync with the college's ethos and perceptions.

b. How many decisions of the IQAC have been approved by the management /authorities for implementation and how many of them were actually implemented?

The Cell was recently constituted

c. Does the IQAC have external members on its committee? If so, mention any significant contribution made by them.

Yes, there are two external members on the committee, who are eminent figures in their respective fields.

1. Prof. KN Tripathi
2. Dr. Harsh Kumar

6.5.2 Does the institution have an integrated frame work for Quality assurance of the academic and administrative activities? If yes, give details on its operationalization.

Recently constituted Cell.

6.5.3 Does the institution provide training to its staff for effective implementation of the Quality assurance procedures? If yes, give details enumerating its impact.

6.5.4 Does the institution undertake Academic Audit or other external review of the academic provisions? If yes, how are the outcomes used to improve the institutional activities?

6.5.5 How are the internal quality assurance mechanisms aligned with the requirements of the relevant external quality assurance agencies/regulatory authorities?

6.5.6 What institutional mechanisms are in place to continuously review the teaching learning process? Give details of its structure, methodologies of operations and outcome?

6.5.7 How does the institution communicate its quality assurance policies, mechanisms and outcomes to the various internal and external stakeholders?

IQAC has been constituted. The recommendations of the cell will be duly followed and executed.

CRITERIA VII
INNOVATIONS AND BEST PRACTICES

7.1 Environmental Consciousness
7.1.1. Does the Institute conduct a Green Audit of its campus and facilities?
No formal green audit of the campus has been conducted.

7.1.2 What are the initiatives taken by the college to make the campus eco-friendly?
- **Energy conservation**

(i) No incandescent lamps are used anywhere in the campus. All lighting is done using energy efficient tube-light or CFLs or LEDs. Efforts are made to capture the natural light to the maximum.

(ii) Street lights within the campus utilize solar energy only.

- **Use of renewable energy**

Exclusive use of solar energy for street lighting within the campus.

- **Water conservations**

(i) Rain water harvesting facility is operational in the college and utilization of harvested water is being done for recharging of water table.

(ii) Glassware in labs is cleaned using biodegradable cleansing agent which consumes much less water compared to regular synthetic inorganic detergents

- **Check dam construction**Not applicable
- **Efforts of carbon neutrality**

(i) Eco friendly BAMBOO CANTEEN is constructed in the college premises for students and the staff separately.

(ii) The college emphasizes on the use of **one sided/ rough/ used papers** for notices, results, attendance, etc. Most of the information, notices, minutes of the meeting and pay-slips are sent via E-mail, which reduces the consumption of paper to a great extent. Leave applications, joining letters, requisitions are dedicatedly truncated in size to further reduce the use of papers.

- **Plantation:** College has added four times more plants since shifting to the present premises.
- **Hazardous waste management**

(i) Bulk centrifuge facility has been developed for re-use and recycle of the residual chemicals in Labs. It minimizes the release of hazardous inorganic materials in the environment.

- **e-waste management**

Our College has a formal environmental society "**Paritantra**". This eco-club of our college is an affirmation to environmental concern and adaptation of healthy practices for sustainable development. The environmental society regularly organizes following activities to generate awareness among students about environment.

i) Talks by eminent environmentalists are regularly organized to create awareness among students about the ill effects of global warming and how famines, water shortages and extreme weather conditions results as a direct consequence of it.

A presentation by **Dr. B.C. Sabata** (scientist in-charge, Department of Environment, Govt. of NCT) was organized by the college. The students from B.Sc. Maths (Hons.) have also given a presentation on Yamuna pollution as a part of their ELITE project under the supervision of their teachers.

A series of documentaries on "crime against wildlife" was given by **Mike. H. Pandey**. This was organized in association with "Earth Matter Foundation".

ii) The society also regularly organizes skit competition related to environmental issues. A skit i.e. "**Sahil ki cigarette**" written by the members of society was performed by our students.

iii) The society organizes poster competition every year on topics related to environmental issues on special days, like **Car free day** (September 22), **Anti-cracker day**, **Water day** (March 22) etc. The students from other colleges also participate in these activities.

iv) Visit to Bio-diversity parks

Eco club organized visit to **Yamuna bio-diversity Park**. The Students from all streams with teaching and non-teaching staff visited the park to learn about the importance of these parks which are homes for biologically rich wetlands, grassland communities, fruit yielding species and medicinal herbs.

v) A **cleanliness programme** in association with NSS is done every year. Students and teachers participate in it to clean the college. Special cleanliness drive was organized to clean the surrounding area of the college. A survey was conducted by the students to enquire the garbage disposal system, consumption of paan and tobacco products in the neighbouring region of the college.

7.2 INNOVATION

7.2.1 Give details of innovations introduced during the last four years which have created a positive impact on the functioning of the college.

i. The college has taken initiative to provide mess facility to outstation students at nominal price from the college canteen.

ii. The college is sensitive to the special needs for differently-abled people. For that college has contributed an equal opportunity cell consisting of members from teaching and non-teaching staff of the college to look after their needs.

iii. The college provides VAN facility to physically disabled students from Govindpuri metro station to college and back to station during theory and practical examinations.

iv. One of the unique programmes initiated for second year students in college is EXPLORE (Excursions for Peer Learning in an Open and Rejuvenating Environment) with a motto that the education does not end within four corners of the classrooms. Funded partially by the college it allows students to undertake excursions, educational tours and field trips.

v. Proctorial committee of the college makes extra effort to deal with distracted and disturbed students to solve their problems. At times their parents are also contacted and called to college for discussions.

vi. Remedial classes are held for weak students. Help classes are organized to provide coaching for entrance examinations at PG level and IAS.

vii. In order to facilitate the communications, confidence and interpersonal skills, the students are required to be member of the two societies.

viii. Special Linux workshops are conducted for students to familiarize them with it. A series of Workshops on "**B**asic **C**omputer **T**raining **P**rogramme" are organized every year in the beginning of each session for first year students.

ix. Special sports coaching is provided to students for football, volleyball and cricket by professional coach to give students a quality training.

x. Every year a 100-hour short term add-on course on **E**ffective **C**ommunication and **P**ersonality **D**evelopment through **T**heatre (**ECPDT**) is being successfully conducted. The main aim of this course is to build up confidence, oral communication skills, decision making capability and ability to think independently. The faculty associated with National school of Drama act as resource persons.

xi. The college believes in mentoring students to solve their academic and personal problems and to bridge the gap between teachers and students.

xii. Career counseling and placement cell of the college provides training and placement of students in different organizations.

xiii. The **I**nnovation and **E**ntrepreneurship **D**evelopment **C**entre (**IEDC**) established in the college in July 2010, aims to motivate the students towards entrepreneurship become job creator instead of job seekers. The project is sponsored by **N**ational **S**cience and **T**echnology **E**ntrepreneurship **D**evelopment **B**oard (**NSTEDB**) of Department of Science and Technology.

xiv. The college provides financial assistance to needy students in the form of full/partial fee waiver and/or monthly stipends, book bank facility through **S**tudent **A**id for **K**nowledge **S**uccess **H**onor and **M**otivation (**SAKSHM**).

xv. Under "**Earn while you learn**" programme, the students coming from humble background are given an opportunity to fund their education while working in the college.

xvi. The college provides refreshments to students during **P**ractical **E**xaminations, **A**nnual **F**est, **A**nnual **D**ay, and, **O**rientation **D**ay.

xvii. All the department/societies functions are mainly organized by the students.

xviii. The college organized a two day camp on PAN card preparation in the college premises/campus during February 8-9, 2010 due to the rising needs of the college community. **UTI T**echnology **S**ervice **L**imited, a vendor authorized by Government of India made PAN cards at approved rates.

xix. College promotes use of technology in teaching. Students are encouraged to use LCD projectors/ visualizer for their presentation in the internet enabled Audio-Video class rooms. Library provides remote access to teaching and learning e-resources. Computer aided teaching is imparted using different software packages like LABVIEW, MATHEMATICA.

xx. Schedules of **O**rientation **D**ay, Fresher's day, Founder's day, Annual fest, Annual day, and Farewell are decided in advance and published in the college prospectus. Compliance of dates and schedules by one and all in the college itself is an evidence of success for this practice.

xxi. Cluster **Lab:** A project funded by University of Delhi (Rs 1.5 lakh) was taken up wherein a portable computing system was created with old computers and open source software. The configuration of computing created performed computing in parallel i.e. among a cluster of processors thereby enhancing the computing power manifold. The project was solely undertaken by the students of college under the supervision of faculty.

xxii. CUBE AND THINK Lab: CUBE (Collaborative Undergraduate Biology Education) and Th!nk Lab; are two independent initiatives for self motivated students for implementation of their original ideas and discussions. These laboratories are run by the students and for the students.

xxiii. Self defence training session for girl students is organized in assistance with Delhi Police in the college campus.

7.3 BEST PRACTICES

Elaborate on any two best practices in the given format at page no. 98, which have contributed to the achievement of the Institutional Objectives and/or contributed to the quality improvement of the core activities of the college.

The two Best Practices mentioned below has among other practices of the college, greatly contributed to the achievement of the Institutional Objectives and/or contributed to the quality improvement of the core activities of the college.This has been affirmed in the University community by the recognitions the college has received by the award of:

i. First Prize in Awards for Good Practices among all colleges of the University at the mega multidimensional event of DU- *Antardhvani*-2015.

ii. Third Prize in Awards for Good Practices among all colleges of the University at the mega multidimensional event of DU- *Antardhvani*-2014.

     iii. Third Prize in Awards for Good Practices among all colleges of the University at the mega multidimensional event of DU- *Antardhvani*-2013.

BEST PRACTICE 1:
1. Title of the Practice
IMPORTANCE OF RESEARCH IN EDUCATION
2. Goal
The college envisions bringing research into the classroom to augment regular teaching-learning process. Students and faculty share an adventure of discovery that keeps the laboratories abuzz with relentless and engaging research throughout the year. It is also believed that promotion of research among students may lead to solutions for the problems and challenges of the country and the mankind.

3. The Context
The practiceis based on 'learning and doing'. It is believed engagement of students in scientific research is a critical component of the teaching learning process, which can promote learning, sense of discovery, innovation and collaboration. The exposure to scientific research allows a student to make an informed choice about taking up research as a career.

4. The Practice
Promoting active participation of students in research projects has been an exclusive feature in ANDC. Since the last 7-8 years, faculty in the college has been successful in garnering substantial financial support for research from various governmental agencies which includes UGC, DST, DBT, MoEF, ICMR etc. The projects typically of 2-3 years duration has helped the establishment of state-of-the-art laboratories in the college besides providing students with an exposure to cutting-edge technology in the frontier areas of science and technology.Since the last 7-8 years, faculty in the college has been successful in garnering substantial financial support for research from various governmental agencies which includes UGC, DST, DBT, MoEF, ICMR etc. The projects typically of 2-3 years duration has helped the establishment of state-of-the-art laboratories in the college besides providing students with an exposure to cutting-edge technology in the frontier areas of science and technology.

Thus far, research grant of about Rs. 2.5 crores has been received in the college and a total of fourteen research laboratories have been established to pursue advanced scientific research. These include; Biomedical Science Project Laboratory, Chemistry Project Laboratory, Ciliate Biology Laboratory, Inorganic Chemistry Research Laboratory, Insect Pest & Vector Laboratory, Instrumentation Laboratory (Physical Sciences), Instrumentation Laboratory (Life Sciences) and Microbial Technology Laboratory.

Some of the endeavours that have helped college build attributes and indoctrinate culture of research amongst the stakeholders are enumerated below.

- ANDC believes in inculcating a research-oriented culture on its campus that percolates right down its most important stakeholders – the students. Even before the University launched its 'Innovation projects' the college had floated a scheme that allowed all students who were interested and wanted to explore what it meant to do 'research' to do so through 'summer fellowships' – the **ELITE** fellowships. While we recognize that the 'Innovation projects' of the University and those under 'IEDC' in college, do provide space for such exposure, the ELITE scholarships on offer has allowed wider participation and hence been a great success. In this scheme students are allowed take-up relevant research problems, choose mentors, access journals in library, develop laboratory and/or field skills and thus pursue projects autonomously during the summer break under the guidance of a faculty mentor. A programme that is fully funded by college, ELITE is a pioneering initiative – the first of its kind in the University. There are 200 scholarships on offer each worth Rs. 1000/- per month. Till date, a total of 88 projects have been completed – the result of summer research of 275 undergraduate students under supervision of around 40 faculty members.

- The Society of Photo-Optical Instrumentation Engineers (SPIE), USA is an internationally renowned society that promotes an interdisciplinary approach to the science and application of light. On 06th August 2010, SPIE formally approved the establishment of a **University of Delhi at Acharya Narendra Dev College SPIE Student Chapter.** This chapter is exclusively established at ANDC with its membership open to the whole University of Delhi. With its establishment, AND college joined the elite group of institutions within India and abroad running such a Chapter. The Chapter is entitled to receive **Activity Grants, Officer Travel Grants, Visiting Lecturer Program and Collaborative Conference Grants** from the parent organization. Chapter members are entitled to free access of an online journal published by SPIE.

Using the Activity grant from SPIE, the Chapter holds advanced workshops in specialized areas of Photonics like 'Digital Holography', 'Thin Films and their Applications', 'Lab VIEW and Data Acquisition' and 'Innovative Pedagogies for Modern Optics and Photonics'. Besides hands-on training, students also get to interact with many subject-experts as also opportunities to visit state-of-the-art laboratories doing high-end research in different areas.

ANDC SPIE student chapter not only gives exposure to its student members but also enables them to a good idea of research opportunities that would be available to them in future.

5. Evidence of Success

Since inception, the College has had 13 major extramurally funded research projects completed and currently five major projects are in various states of execution. The publication of large number of research papers by teachers and students in peer-reviewed journals every year bears testimony to the quality of research work done in the college. Since 1991, faculty has to its credit 271 research papers published in peer-reviewed International and National journals. It is a matter of pride for the College that six of its faculty members have been recognised for independent research guidance for Ph.D. by the University of Delhi. Currently, five research scholars are carrying out doctoral studies in the college. In fact, one Ph.D. student has successfully defended her thesis and another is in final stages of submission.

Activities of the SPIE chapter have enabled many members to participate in various National and International conferences in India and abroad, attend the winter-school at IISER Kolkata, and also publish research papers. The exposure provides members a platform to work on different projects giving them an opportunity to learn on how to approach any scientific problem and of referring to current research published in journals. Pratik Chakravarty and Phalguni Mathur got very special opportunities to represent the chapter and present papers at **SPIE Optics + Photonics 2011 and 2012**, respectively, in San Diego, California, USA whereas Mohammad Aiman Ali Raza, has attended Photonics West 2014 in San Francisco, USA. Travel and other expenses of these students were being borne by SPIE, USA (http://spie.org/x1742. xml?chapter_id=1051713).

That our student chapter is doing excellent work, was recognized, when it was selected to be one of the 25 organizations worldwide for **SPIE Education Outreach Grant** to promote optics and photonics-related education outreach projects. The chapter received a grant of USD 5000 for this purpose in 2011-12. Using a part of this grant, student members developed a low cost optical fiber kit to promote fiber optics at school level. They went to the schools with this kit and conducted the hands-on workshops for students of classes IX to XII. These workshops were conducted in 14 schools of Delhi where they also encouraged the school students to develop high quality models numbering 26. These models were later exhibited in an **OPTICS FAIR**, at Acharya Narendra Dev College in December 2012. Small tokens of appreciation were given to students and their teacher mentors in the form of telescopes.

ANDC SPIE student chapter not only gives exposure to its student members but also enables them to a good idea of research opportunities that would be available to them in future.

6. Problems Encountered and Resources Required

The college does not have any separate fund for the implementation of this practice, thus it has to depend for grant of projects for this purpose from various agencies. The college has innovatively made room for availability of resources for research under the ELITE scheme. However it remains limited and an expansion in these resources can make the research programmes more broad based. Infrastructure requirements of labs remains a challenge since the college is housed in a school building.

BEST PRACTICE-2

1. Title of the Practice

ENTREPRENEURSHIP AND SKILL DEVELOPMENT

2. Goal

With changing social traditions, creation of self-employment opportunities and acquiring entrepreneurship skills have become de-rigueur. It aims to encourage students to explore the possibility of becoming job-creators instead of job seekers.

3. The Context

The practice envisions motivating students to take up entrepreneurship in a proactive manner by providing them with the pre-requisite information about establishing a start-up, and create self employment opportunities.

4. The Practice

Acharya Narendra Dev College has established an **Innovation & Entrepreneurship Development Centre** (IEDC) in February 13, 2009 under the auspices of National Science and Technology Entrepreneurship Development Board (NSTEDB), Department of Science and Technology (DST), Govt. of India.IEDC has twin initiatives of training - Entrepreneurship Awareness Camps (EAC) and Entrepreneurship Development Programmes (EDP). EAC was organized during March 21-22, 2013 in the college premises. The guest of honour Mr. Sanjay Kapoor consultant, National Entrepreneurship Network (NEN) informed the students about the work being carried out by their organization. The main objective of EAC's is to spread awareness amongst students about various facets of entrepreneurship as an alternative option.

Under **IEDC**, ANDC has pioneered a new idea by establishing **Entrepreneurship Laboratory** (EL) in 2013. EL seeks to foster an entrepreneurial mindset amongst students and provides an enabling environment which promotes their innovations, initiatives and commitment. This is a space where students are encouraged to bring their novel ideas to life by receiving support in setting up a small enterprise. The college believes that helping students to develop this kind of mindset is not only invaluable but also progressive because in future this is what ultimately helps transform them into successful entrepreneurs. A right dose of self-confidence and development of managerial skills is necessary to embark on a new business venture. This is indoctrinated through guidance and hand-holding techniques under the aegis of EL and is expected to go a long way in transforming students into successful entrepreneurs. EL envisages empowering potential entrepreneurs by converting their ideas into products while simultaneously creating jobs for others.

5. Evidence of Success

Over the years the college has conducted three EDP's of 4 - 6 weeks duration and 13 EAC's of three days each besides completing 15 innovative student-projects.

The excellence of the IEDC centre, led the Ministry of Micro, Small and Medium Enterprise (MSME), Govt. of India to recognize ANDC, the first college in University of Delhi for the award of prestigious **Business Incubator (BI)** – to support commercialization of innovative ideas.The BI is supporting ten innovative ideas to mature into successful business enterprises.

Furthering the cause of EL, undergraduate students of the college have established an in-campus company, called *ANDY* that depicts the spirit of AND Youth. Even rudimentary exposure under EL has empowered the undergraduate students to shoulder responsibilities regarding management of *ANDY's* day-today affairs including administrative, marketing and financial activities. The yeoman efforts put in by motivated students has resulted in the development of cost-effective and eco-friendly (herbal) products like soaps, shampoos, hand-wash and sanitizers in the first instance. *ANDY* is one of the nascent initiatives and the first in any undergraduate college under University of Delhi. It is a technology demonstrator whose main idea is not to earn profit but empower students with enough confidence for a start-up. The company is planning the launch of Campus merchandize soon.

6. Problems Encountered and Resources Required

The college does not have any separate fund for the implementation of this practice, thus it has to depend for grant of projects for this purpose from various agencies. Sometimes it becomes very difficult to mark physical areas for this purpose since the college is housed in a school structure. Hiring of specialized staff for effective implementation of this practice remains a challenge as the college has no regular professional in its cadre for this purpose.

7. Notes (Optional)

8. Contact Details

Name of the Principal: Dr. Savithri Singh
Name of the Institution: Acharya Narendra Dev College
City: New Delhi
Pin Code: 110019
Accredited Status: Applied for First Cycle of NAAC Accreditation
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PART – III

DEPARTMENT WISE EVALUATIVE REPORT

Evaluative Report of Department of Biomedical Science

1. **Name of the department :** Biomedical Sciences
2. **Year of Establishment :** 1999
3. **Names of Programmes / Courses offered:** B. Sc. (Hons.) Biomedical Sciences
   Ph.D. in Biomedical Sciences
4. **Names of Interdisciplinary courses and the departments/units involved:**
   Certificate Course in Bioinformatics and on *in silico* Drug Discovery, jointly organized by Department of Biomedical Science of Acharya Narendra Dev College and Bhaskaracharya College of Applied Sciences, University of Delhi, Duration: 128 hours.
5. **Annual/ semester/choice based credit system Semester:** Semester System
6. **Participation of the department in the courses offered by other departments:**
   - Biophysics in B.Sc. (H) Physics
   - Environmental Science for other departments
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.** Process of establishing an educational cooperation between Acharya Narendra Dev College, University of Delhi and The University of Edinburgh, Scotland, UK has been initiated with the aim of strengthening relationships, sharing expertise, and improving educational opportunities that may include Ph. D education, collaborative research and shared Masters and undergraduate programs.
8. **Details of courses/programmes discontinued (if any) with reasons:**
   Annual Mode B.Sc. (H) Biomedical Sciences and Four Year Undergraduate Programme with multiple exit options have been discontinued by University of Delhi.
9. **Number of Teaching posts:**

	Sanctioned	Filled
Professors	NIL	NIL
Associate Professors	NIL	03 (Promoted Under CAS)
Asst. Professors	09	02+ 04* *Posts Filled as Temporary/Ad-hoc Assistant Professors

10. **Faculty profile with name, qualification, designation, specialization:**

Name	Qualification	Designation	Specialization	No.ofYears of Experience	No.ofPh.D. Students guidedforthe last4years
Dr. Urmi Bajpai	PhD	Associate Professor	Microbiology	15 years 10 months	01
Dr. Gagan Dhawan	PhD	Assistant Professor	Computational Biology and Drug Discovery	14 years	---

Ms. Sunita Jetly	MSc, M. Phil (Ph.D. Perusing)	Associate Professor	Physiology, Blood Cancer	16 years	---
Dr. Archna Pandey	PhD	Associate Professor	Human genetics and molecular biology	14 years	---
Dr. Rajesh Chaudhary	PhD	Assistant Professor	Hormone Biochemistry	5 years	---

11. **List of senior visiting faculty: None**
12. **Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty:** 55 % of Practical and theory classes were taken by permanent faculty whereas rest 45% of Practical and Theory classes were taken by Ad-hoc faculty during past five years.
13. **Student-Teacher Ratio (Programme wise):** 12.67:1
14. **Number of academic support staff (technical) and administrative staff; sanctioned and filled:** Sanctioned: 05, Filled: 05
15. **Qualifications of teaching faculty with DSc./ D.Lit/ Ph.D/ MPhil. / PG**

Qualifications	Numbers
Ph.D	04
M. Phil.	01

16. **Number of faculty with ongoing projects from a) National b) International funding agencies and grants received.**
     Number of ongoing projects: 03
     Grant: INR 36.38 Lakhs (**Details in Appendix-I**)
17. **Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received:**
     Number of projects (ongoing and completed): 19
     Total grants received: 109.05 Lakhs
18. **Research Centre /facility recognized by the University**. Research Lab of Dr. Urmi Bajpai is recognized by the University for Doctoral Research.
19. **Publications:**
   a) Publication per faculty: **20/5 = 4**
   b) Number of papers published in peer reviewed journals (national/International) by faculty and students: **20 (Faculty) + 03 (Students)**
   c) Number of publications listed in International Database: **20 (Faculty)**
   d) Monographs, Chapter in Books, Books Edited: Total 2
        a. **Monograph- 01**
        b. **Book Chapter -01.**
   e) Books with ISBN/ISSN numbers with details of publishers: **None**
   f) Citation Index, SNIP , SJR, Impact factor, h-index, Cumulative value to be given against each
       Cumulative SNIP: 11.128, SJR: 16.2, Impact Factor: 31.064.
   20.   **Areas of consultancy and income generated:**   An MoU signed between CSIR and ANDC for carrying out scientific projects under OSDD, consortium with global partnership with an aim to make healthcare affordable, dated FEBRUARY 9, 2010. Rs. 16.82

Lakhs received for carrying out scientific projects under OSDD.

21.   Faculty as members in a) National committees b) International Committees c) Editorial   Boards:

S.No	Name of faculty	Membership
1.	**Sunita Jetly**	**National Membership** 1. Indian Association of Cancer Research 2.Reviewer and member of Society of Cancer Research –A national body of India 3. Member of University Technical Committee for the purchase of college equipment 2007-2008. 4. Member of Course Committee, Department of Biomedical Science at Dr. Bhim Rao Ambedkar Centre for Biomedical Research (ACBR), University of Delhi 5. Resource person in developing question bank and reference material for B.Sc. (Life Sciences), DU, ILLL, (2009,2010, 2014)
		International Membership 1. European Haematology Association
2.	**Dr. Urmi Bajpai**	**National Membership** 1. Member of DRC (Department Research Committee), Dr. Bhim Rao Ambedkar Centre for Biomedical Research in the University of Delhi 2. 2. Co-coordinator from all over India for TATA CSIR-OSDD Fellowship (TCOF). 3. Co-coordinator from all over India for TATA CSIR-OSDD Fellowship for Women (TCOFW) 4. Co-panelist of Young Investigating Meeting (YIM) held at Jodhpur (9-14 February 2013) 5. Member of Course Committee, Department of Biomedical Science at Dr. Bhim Rao Ambedkar Centre for Biomedical Research (ACBR), University of Delhi 6. Member (since 2010) of Open Source Drug Discovery, a CSIR (Council of Science and Industrial Research) Team India Consortium with Global Partnership 7. Co-coordinators of workshop on Biotechnology, organized by the college and Institute of Life Long learning (ILLL) for the teachers of University of Delhi. 8. On advisory board of a website called Science Mission 9. Invited member of question bank committee for the prestigious KVPY (Kishor Vaigyanik Protsahan Yojna) fellowship in IISER, Pune (July 26-27, 2010). 10. Resource person in developing reference material for Biology for schoolteachers, question-answers for Biotechnology (for class XI and XII) through various workshops conducted by NCERT from 2008-2013. 11. Resource person in a five days workshop on Science Education organized by Acharya Narendra Dev College (May 14-19, 2012) and gave a talk on "Undergraduate

		Science Education".
3.	**Dr. Gagan Dhawan**	**National Membership** 1. Coordinator of the certificate course in Bioinformatics and *insilico* Drug Discovery 2. Member of Board of Research Studies of University of Delhi 3. Member of National Network in Mathematical and Computational Biology 4. Resource person in workshop on theory and practical course "Biochemistry and Environmental Chemistry" for B. Sc. (Hons) Chemistry (CHHT-514 and CHHP-514) organized by Department of Chemistry, University of Delhi, 2-7th July, 2012. 5. Resource person in the workshop for Biology Laboratory Course of B. Sc. program III year organized by Institute of Lifelong Learning and Centre for Promotion of Undergraduate Research and Training. 6. Jury Member, Department of Science and Technology-INSPIRE JURY PROCESS: 3rd National Level Exhibition and Project Competition (NLEPC) for school students during October 08-10, 2013 at Delhi. 7. Member, Course Restructuring Committee for the three year (semester mode) and Four Year Undergraduate Program syllabus of B.Sc (Hons) Biomedical Science course of University of Delhi. 8. Member, Question paper setting committee for Central Universities Common Entrance Test (CUCET-2014) for M.Sc. and Ph.D programs in Life Sciences.

22. **Student projects**:

(a) Percentage of students who have done in-house projects including inter departmental/programme: **53% approximately. (Last 4 years)**

(b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/ other agencies: **47% approximately (Last 4 years)**

Note: Majority of students who were placed for project in organization outside the institution have done their second project in the college.

23. **Awards / Recognitions received by faculty and students:**

a) *Teachers awards and recognitions:*

S.No.	Name of faculty	Award/ recognition	Details
1.	**Dr. Urmi Bajpai**	**1.**Invited to participate in brain storming session on 'Open Source Pharma'	Organized by Rockfeller foundation at Bellagio, Italy, held on 16th to 18th July 2014.

		2. Meritorious Teacher' award of the NCT of Delhi (2013-2014).	Carries a citation and INR 1 lakh as award
		3.On the College@ DU website	First time anybody from ANDC has been on the DU website banner.
		4.UGC-Travel grant	For Poster presentation at the Society for the Advanced Biology Education Research (SABER July 12-15, 2012) at the University of Minnesota, USA.
		5. Invited Speaker in USA.	At the Centre for Life Science Education (CLSE), Ohio State University, Columbus, USA on 9 July 2012. The audiences were the teaching and administrative staff of CLSE.
		6. Invited as a keynote speaker at international meeting in Jodhpur.	Young Investigating Meeting (YIM) held at Jodhpur (9-14 February 2013), The theme of the event was integration of teaching and research. Was also Co-panelist with distinguished invitees (including a Nobel Laureate from University of Columbia, Prof. Martin Chalfle, Padam Shri Vijay Raghvan, Secretary, Department of Biotechnology, Ex-Vice Chancellor of University of Delhi, Prof Deepak Pental, Prof Richard Loscik, Harvard University and Prof G. Hatfull, Department Chair at the University of Pittsburgh) from various national and international institutes and universities on discussion on topics such as "how to be a successful teacher", "challenges in writing grants and setting up of laboratories", "science and women".
		7. Invited speaker for School teachers' workshop.	A talk on "Cloning vectors and methods of DNA sequencing" in a workshop (August, 2010) organized by Modern School, Vasant Vihar for the school teachers, teaching biotechnology to class XI & XII. Was also invited to give a talk to promote interest in Biology amongst students of class X so as to encourage them to take biology in Class XI. Have also participated in a workshop as a resource person held in the college for the schoolteachers, organized by NCERT.
2.	**Dr. Gagan Dhawan**	**1.** Meritorious Teacher' award of the NCT of	Award carries a citation and INR I Lac.

		Delhi (2014-2015).	
		2. Travel Grant by UGC	For paper Presentation at 13th International Conference on Systems Biology, 19-23 August, 2012, Toronto, Canada.
		3. '*Universityas 21*' Fellowship	For Master's Degree in Bioinformatics from University of Edinburgh, UK under University of Delhi Faculty Training Program-2010.
		4. Visiting faculty	At LCPO, University of Bordeaux, France (August, 2011)
		5. Visiting scientist	At Institute of Structural and Molecular Biology, University of Edinburgh, UK (June, 2012).
		6.Visiting scientist	At School of Chemistry, University of Edinburgh, UK (June, 2013).
		7. Guest faculty	a. Division of Biotechnology, Netaji Subhas Institute of Technology, University of Delhi (Teaching Drug Discovery and Development to B.E (Biotechnology) students. 10th August, 2008- 30th June, 2010. and10th January, 2013-Till Date. b. Skin Institute and School of Dermatology, Delhi to DNB (equivalent to MD) students'. 6th August, 2012--Till Date.
		8. Invited Speaker	Conference on Emerging Trends in Development of Drugs and Devices organized by Department of Chemistry, University of Delhi and three National Science Academies of India, 21-23 January, 2013
		9. Development of training package	In Biology for Higher Secondary stage and part of committee constituted by NCERT for the reviewing and development of reference material for school teachers (Class XI and XII).
		10. Guest Researcher	CSIR-IGIB, Delhi, Project: Design, Development and Characterization of Metallic Nanoparticles.
		11. Member, Research Advisory Committee	Of a PhD Student at Netaji Subhas Institute of Technology, Govt. of NCT of Delhi.
3.	**Ms. Sunita Jetly**	**1.** First prize in poster presentation	At 9th Annual Symposium on Frontiers in Biomedical Research , ACBR, DU

		2. Abstract accepted and going for 19th congress of European Haematology Association	(June 12-15 2014), UGC
		3.Invited Speaker at DU-FM	Invited to deliver talks on Leukemia under the Hello Doctor programme of Delhi University Radio station
		4.Invited to be a part of selection committee of Bal Bharti School NOIDA	Selection of Science TGT teachers.(2008)
		5.Invited to give Career Counseling lecture by Danik Jagran	Career counseling for student of Science stream Class XI and Class XII (2006)

b) *Students Awards and recognitions:*

Below are the achievements of Students during past few years:

S.No.	Name of Student	Award/ Recognition
1	Himanshu Bhatt	1st rank IIT-Jam 2012
2	Shabaz Siddiqui	2nd rank IIT-Jam 2012
3	Subhashrèe	80th IIT-Jam 2012
4	Megha	81 IIT-Jam 2012
5	Atul	86 IIT-Jam 2012
6	Dhananjay Huiligol	Frontiers Science Program, one of the most prestigious international fellowships awarded to top 5% of all applicants
7	Lipsa Panda	Received the "Junior scientist award" given by the state council of Science and Technology, Govt. of Delhi for the project titled, "Investigation of therapeutic effect of anti-hTR oligonucleotides as an alternative cancer therapy", with a grant of Rest. 3 lakh, 2009
8	Ruchika Pokhariyal	Won the First Prize in **Prithvi Ratnaan** All India level essay. She was sponsored to attend the United Nations Framework Convention for Climate Change, Dec 7-18, Copenhagen, Denmark
9	Haroon Kalam	Secured the 4th rank in IIT-JAM, 2011, joint admission test for admission in M.Sc. in Biotechnology. Currently pursuing PhD from ICGEB.
10	Rajat Sharma	Secured the top rank in IIT-JAM, 2011, joint admission test for admission in M.Sc in Biotechnology.
11	Kirti Gupta	1. Secured the second rank in All India Combined entrance examination 2011, conducted by JNU, Delhi or admission to M.Sc. in Biotechnology. Currently pursuing PhD from TIFR, Mumbai. 2. Secured the second rank in All India Combined entrance examination 2011, conducted by JNU, for admission to M.Sc. in Life. Sciences

12	Swati Tyagi	She was the only Indian student in 2010 whose application was selected for the program and was judged the best out of 75 applicants across the world.
13	Soumya Gupta	TIFR-NCBS, Bangalore, Scientific Writer at Mechano-biology institute, National Singapore University.
14	Bimlesh	Attended the 4th science conclave held at Allahabad, 2011.
15	Megha	
16	Himanshu	Represented the college at QUEST-2012, DU. The college was ranked 6th.
17	Shabaz	
18	Anaab	Selected for IAS fellowship
19	Bulbul Tirkey	First prize in poster making competition held on international women's day.
20	Animesh Kar	Received D.C. Arora Scholarship.
21	Sakshi Sareen	Topped in SAT
22	Animesh	Part of Delhi university QUEST team and secured 4th position in Quest, 2012-13
23	Himadri	
24	Simran	
25	Surabhi	IAS Fellowship 2013.
26	Divyansh Mittal	1. 13th Rank in KVPY 2012 2. Selected for JNCASR Summer Research Fellowship, 2013-14.
27	Meenakshi Bhaskar	Awarded Sitaram Jindal Scholarship 2012-2013.
28	Hemant Goswami	
29	Khairun Nissa	2nd prize in oral presentation at National conference on "Redefining Science Teaching: Future of Education" 2013.
30	Yashika Bhatia	Selected for "National Initiative Undergraduate Science (NIUS) Camp" 2012-13.
31	15 Students of BMS	Selected to attend 6th Science Conclave, 2013.
32	Rishabh	Produced a movie on Old Age Homes that was screened during Antardhwani, 2014.
33	Eshant Bhatia Divyansh Mittal Nitish Malhotra	Participated and won First prize in poster presentation in the National Conference on Understanding the Mechanism and Challenges of Complex Disease at Department of Biomedical Sciences, 2014, Shaheed Rajguru College of Applied Sciences for women, University of Delhi.
34	Eshant Bhatia	2nd prize in paper presentation at intercollege science fest held at Kalindi college 2014-15.
35	Rahul Shaha	Selected for KVPY fellowship 2014-15.

Several of our students have also qualified entrance examinations in various esteemed institutes such as: NCBS, TIFR, IISc, IISER, ACBR, AIIMS, JNU, NBRC.

24. **List of eminent academicians and scientists / visitors to the department:**

S.No	Name of Eminent Academician/ scientist (visitor)	Home Institute of the visitor
1.	Prof. Vani Brahmachari	Dr. B.R. Ambedkar Center for Biomedical Sciences (ACBR)
2.	Prof. Daman Saluja	Dr. B.R. Ambedkar Center for Biomedical Sciences (ACBR)
3.	Prof. Natarajan	Dr. B.R. Ambedkar Center for Biomedical Sciences (ACBR)
4.	Dr. Mandira Basil Verma	Vallabh Bhai Patel chest Institute (VPCI)
5	Prof. G.P. Talwar	*Indian National Science Academy*(INSA)
6	Dr. Kanury Rao	International Centre for Genetic Engineering and Biotechnology
7	Dr. Sunil Lal	International Centre for Genetic Engineering and Biotechnology
8	Dr. R. Bamezai	Jawaharlal Nehru University (JNU)
9	Prof. Ram Ramaswami	Jawaharlal Nehru University (JNU)
10	Prof. Rakesh Bhatnagar	Jawaharlal Nehru University (JNU)
11	Dr. Andrew Lynn	Jawaharlal Nehru University (JNU)
12	Dr. Devapriya Choudhry	Jawaharlal Nehru University (JNU)
13	Dr. Rajiv Bhat	Jawaharlal Nehru University (JNU)
14	Dr. Arif Ali	Jamia Milia Islamia (JMI)
15	Dr. Dinakar Salunke	National Institute of Immunology (NII)
16	Dr. SushanshuVrati	National Institute of Immunology (NII)
17	Dr. Satyajit Rath	National Institute of Immunology (NII)
18	Dr. Vineeta Bal	National Institute of Immunology (NII)
19	Dr. Aditya Mittal	Indian Institute of Technology
20	Dr. Rajesh Gokhale	Institute of Genomics & Integrative Biology (IGIB)
21	Dr. Ramchandran	Institute of Genomics & Integrative Biology (IGIB)
22	Dr. Shantanusen Gupta	Institute of Genomics & Integrative Biology (IGIB)
23	Dr.S Ramachandran	Institute of Genomics & Integrative Biology (IGIB)
24	Dr. Sridhar Sivbasu	Institute of Genomics & Integrative Biology (IGIB)
25	Dr. K. C. Gupta	Institute of Genomics & Integrative Biology (IGIB)
26	Dr. Debasis Dash	Institute of Genomics & Integrative Biology (IGIB)
27	Dr. Vinod Scaria	Institute of Genomics & Integrative Biology (IGIB)
28	Dr. Anshu Bhardwaj	Council of Scientific & Industrial Research

29	Dr. Narayansami	The Centre for Genomic Application (TCGA)
30	Dr. B. N. Malik	Jawaharlal Nehru University
31	Dr Andrew Lyn	Jawaharlal Nehru University
32	Dr. Madhu Chopra	Dr. B.R. Ambedkar Center for Biomedical Sciences (ACBR)
33	Dr.Amulya Panda	National Institute Of Immunology (NII)
34	Dr. Souvik Maiti	Institute of Genomics & Integrative Biology (IGIB)
35.	Dr. Avinash Bajaj	Regional Centre for Biotechnology (RCB)

25. Seminars/Conferences/Workshops organized & the source of funding.

a) National:

i) National Conference on Redefining Science: Future of Education at University of Delhi, South Campus, New Delhi (7-9 March, 2013).

ii) National Symposium on Chemistry in Biology: The Future of Life Science at India International Center, New Delhi (12-13 February, 2010).

iii) National Symposium on Biotechnology: Expanding Horizons at Indian National Science Academy, New Delhi (17-18 October, 2003).

Source of Funding: UGC, DST, DBT, ICMR, CSIR

b) International: None

26. Student profile programme/course wise: (2014-15)

Name of the Course/programme (refer question no. 4)	Applications received (Central Application Form of University)	Selected	Enrolled		Pass percentage
			*M	*F	
B.Sc.(H)BMS	**25723**	46	**23**	**23**	97.56

27.

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad
B.Sc. (H) BMS Part I	56.60	43.40	0.00
B.Sc. (H) BMS Part II	46.20	56.30	2.50
B.Sc. (H) BMS Part III	37.50	62.50	0.00

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?

Number: Last 3 years data: 20+23+25= 68 out of 87 students. (78%)

S.No.	Entrance Exam qualified	Batch 2010-11	Batch 2011-12	Batch 2012-13
1.	IIT/PGIMER	08	02	03
2.	Various Universities: JNU/ MKU/JMI/DU/IP/PU/MDU/BHU	04	11	14
3.	NCBS/IISc	00	1	03
4.	TIFR/TERI	02	1	02
5.	ACBR	03	6	01
6.	MBA entrances	02	1	00
7.	AIIMS	01	1	02
	TOTAL	**20**	**23**	**25**

29. Student progression

Student progression	Against % enrolled
UG to PG	78 % (Last three years)*
Campus Selection	21%

Most of our Students are pursuing higher studies in Institutes such as NCBS (Bangalore), TIFR (Mumbai), IISc (Bangalore), IISER (Pune, Mohali, Kolkotta), ACBR (University of Delhi) , AIIMS (Delhi), JNU (Delhi), NBRC (Manesar), JMI (Delhi), Department of Genetics, Department of Plant Molecular Biology, University of Delhi South Campus, Banaras Hindu University (BHU), Madurai Kamraj University (Madurai), IITs, etc.

Detail*

S. No	Batch (Passing out year)	Students enrolled	PG pursuing students	% against enrolled students
1.	2010-2011	24	20	83.3%
2.	2011-2012	25	23	92%
3.	2012-2013	38	25	65%

30. Details of Infrastructural facilities
   a) Library: The department uses College's Central Library.
   b) Internet facilities for Staff & Students: College has WIFI system enabling students to access internet
   c) Class rooms with ICT facility
   d) Laboratories: Three well equipped Labs and one instrument room. The Department has various Modern Instruments:

Instruments in Department of Biomedical Sciences

S. No.	Name of the Instrument
1	Spectrophotometer

2	Microtiterplate reader
3	Digital Viscometer
4	Spectrophotometer with Peltier assembly
5	PCR machine
6	Gradient PCR Machine
7	High speed refrigerated Centrifuge
8	Shaker Incubator
9	Laminar Flow
10	Work Station
11	Sonicator
12	Gel-documentation system
13	-20°C Refrigerators
14	Binocular Microscopes
15	Ice flaking machine
16	Melting point apparatus
17	Microscope image projection System
18	Paper electrophoresis system
19	Tissue flotation Bath
20	Circulating water Bath
21	Microtome
22	U.V.Transilluminator
23	Vertical and Horizontal Electrophoresis System
24	Double Distilation Plant
25	Water baths
26	Incubators
27	Electronic Weighing Balances
28	P^H Meters
29	Colorimeter
30	Biopack system
31	CO_2 Incubator

31. Number of students receiving financial assistance from college, university, government or other agencies.

S.No.	Number of students (2013-14)	Name of Scholarship/Funding Agency
1	02	SAF/ College
2	20	ELITE/ College
3	03	DU Innovation Project
4	03	IEDC Project
5	01	KVPY fellowship
6	01	IAS fellowship

32. Details on student enrichment programmes (special lectures / workshops / seminar) with external experts.

a. Special Lectures: Lectures have been organized on contemporary issues in Biomedical Science by eminent speakers at regular intervals, especially during the BMS students' society function "Cathexis". Some of the eminent speakers are listed below.

S. No.	Speaker
1	Prof. G.P.Talwar (TRF)
2	Dr. Kanury Rao (ICGEB)
3	Dr. Sunil Lal (ICGEB)
4	Dr. R. Bamezai (JNU)
5	Prof. Ram Ramaswami (JNU)
6	Prof. Rakesh Bhatnagar (JNU)
7	Dr. Andrew Lynn (JNU)
8	Dr. Devapriya Choudhry (JNU)
9	Dr. Rajiv Bhat (JNU)
10	Dr. Arif Ali (JMI)
11	Dr. DinakarSalunke (NII)
12	Dr. SushanshuVrati (NII)
13	Dr. SatyajitRath (NII)
14	Dr.Vineeta Bal (NII)
15	Dr. Aditya Mittal (IIT)
16	Dr. Rajesh Gokhale (IGIB)
17	Dr. Ramchandran (IGIB)
18	Dr. Sridhar Sivbasu (IGIB)
19	Dr. Vinod Scaria (IGIB)
20	Dr.Anshu Bhardwaj (CSIR)
21	Dr.Narayansami (TCGA)
22	Prof.VaniBrahmchari (ACBR)
23	Dr.Mandira Basil Verma (VPCI)
24	Dr. SouvikMaiti

(b) Workshops: **The College promotes Active Learning through various events.**
International exposure given to the students:

i) A **videoconference-based course** on "Proteomics, Genomics and Bioethics" for the students of B.Sc. (H) Biomedical Science (20 students, Sem. IV) with Ohio State University, USA and Anna University, Chennai was coordinated. This course is a pioneer effort in this field in the University of Delhi. The content and design of the course was discussed and formulated with the Prof. Amanda Simcox, Department of Genetics, and Prof. Venkat Gopalan, Department of Biochemistry, Ohio State University, Columbus, USA. The duration of course was 2^{nd}March 2013-20th April 2013.

ii) *Skype-Video-conference:* A talk by Prof. Graham Hatfull, University of Pittsburgh, USA was organized on Mycobacteriophages on June 17, 2013 by Skype-Videoconference for the summer trainees working on phage discovery.

iii) Students (3 in number) participating in Innovation project on "Mobile healthcare" funded by University of Delhi have interacted and exchanged ideas worked **with the student of University of Michigan.**

(iv) A large number of students have participated in various Multi-institutional projects (under the supervision of Department faculty) funded by external agencies such as DBT and CSIR (through OSDD program) aimed at building repository of clones of genes from Mycobacterium tuberculosis whose product could serve as potential drug target and/or candidate vaccine. About 115 students have participated in these projects. Students have built a repository of 75 genes cloned in a suitable vector and expressed and purified 15 recombinant proteins. Ten students have also isolated and purified Mycobacteriophages,

which have been submitted in an international database maintained by University of Pittsburgh.

(v) Some of the students also participated in project "Annotation of Mycobacterium tuberculosis and Zebra fish", which they carried out under the guidance of the scientists from Institute of Genomics and Integrative Biology (IGIB), Delhi. The students' work involved the assembly of information on various pathways from literature, into a signal transduction pathway. The project had a micro-attribution system, where each worker gets due credit for the work. Four students were awarded one laptop each for their contribution. The annotation work done by these students has been published in which nine students of BMS are coauthors.

(vi) *Educational Visits / tours:*

(a) Students were taken on an educational visit to Sulabh International, Delhi in March 2014.

(b) An educational visit was conducted for students in March 2014 at ACBR, DU and at IGIB.

(c) BMS has a legacy of continuous efforts towards providing opportunities for a holistic development to our students through excursions.

S.No	Year	Destination	Institutes/place Visited
1.	2012-13	Chail, Himachal Pradesh	Chail Wildlife Sanctuary
2.	2011-12	Jim Corbett National Park, Nainital	Jim Corbett National Park
3.	2010-11	Goa	National Institute Of Oceanography (NIO)
4.	2009-10	Manali	Punjab University
5.	2008-09	Mukteshwar	Indian Veterinary Research Institute at Mukteswar
6.	2007-08	Jim Corbett National Park	Jim Corbett National Park
7.	2006-07	Dehradun, Mussourie	Forest Research Institute (FRI) Dehradun, Institute of Himalayan Geology.
8.	2005-06	Rajasthan	National Brain Research Center
9.	2004-05	Indian Science Congress, Ahmedabad	Indian Science Congress, Ahmedabad
10.	2003-04	Indian Science Congress, Chandigarh	Indian Science Congress Chandigarh
11.	2002-03	Chandigarh and Shimla	Institute of Microbial Technology (IMTECH)
12.	2001-02	Jaipur and Ajmer (BISR)	Birla Institute of Scientific Research

d. *National conference:*

Our students of BMS participated and won prizes in the oral/poster presentations in various seminars and symposia below are the details of awards/ prizes won by students during past few years:

Oral/Poster presentations given by the students:

1. During National Conference on Redefining Science Teaching: Future of Education from 7-9th March, 2013.
2. **Shabaz Siddiqui (2009-2012):**Gave oral presentation on the topic "Cloning, Expression and Purification of Rv2711 and Rv2069 of *Mycobacterium tuberculosis* H37Rv" at the **Annual Review Meeting of OSDD** at CSIR science centre, India international centre, New Delhi on 16 September 2011.
3. **Khairun Nissa (2010-2013):** Presented her summer research work (carried out in May 2012) in a National Conference on Redefining Science Teaching: Future of Education, organized by ANDC and South Campus, University of Delhi (7-9 March, 2013). The topic was: "Cloning, expression and purification of N-terminal domain of gene FtsK from *Mycobacterium tuberculosis* H37Rv" and got young budding scientists award for the **Second Best Oral Presentation.**
4. **Ritu Arora (2010-2013)** and **Eniyan Kandasamy** (PhD student): Presented a Poster "Cloning and expression of potential drug targets of *Mycobacterium tuberculosis* " at the **Annual Review Meeting of OSDD** at CSIR science centre, India international centre, New Delhi on 16 September 2012.
5. **Deepika Kumari (2010-2013):** Presented her summer research work (carried out in May 2012) in the form of a poster in National Conference on Redefining Science Teaching: Future of Education, organized by ANDC and South Campus, University of Delhi (7-9 March, 2013). The topic was: "Cloning and expression of *Mycobacterium tuberculosis* FtsW (Rv2154c) C-TERMINAL domain".
6. **Ritu Arora (2010-2013):** Presented her summer research work (carried out in May 2012) as **oral presentation** in National Conference on Redefining Science Teaching: Future of Education, organized by ANDC and South Campus, University of Delhi (7-9 March, 2013). The topic was: "Cloning, expression and purification of C-terminal domain of gene Rv2151c from *Mycobacterium tuberculosis* H37Rv".
7. **Ekta Sachdeva, Kirti Juneja and Ritu Bhardwaj (2010-2013):** Presented their summer research work in the form of a poster in National Conference on Redefining Science Teaching: Future of Education, organized by ANDC and South Campus, University of Delhi (7-9 March, 2013). The topic was: "Synthesis of ZnO nano particles and to study their antimicrobial effect"**.**
8. **Eshant Bhatia, Divyansh Mittal and Nitish Malhotra** (2014) Participated and won First prize in poster presentation in the National Conference on Understanding the Mechanism and Challenges of Complex Disease at Department of Biomedical Sciences, 2014, Shaheed Rajguru College of Applied Sciences for women, University of Delhi.
9. **Eshant Bhatia** won 2nd prize in paper presentation at inter-college science fest held at Kalindi college

33. Teaching methods adopted to improve student learning:

Department Promotes Active learning through……………………………

1. **Seminars:** Students are asked to give seminars (as PPT presentation) on the topic of their interest, which is followed by discussion. It gives them opportunity as well as confidence to make presentations, search scientific literature and respond to queries.
2. **Hands on training:** While taking practical classes, it is ensured that each student gets hands

on training rather than demonstrations. Emphasis is on teaching/enhancing analytical skills, interpretations of results, precautions to be taken, lab safety etc. and to build confidence in students so that they can work independently. Also try to sensitize students about the bio-safety, ethics and ensure that teaching is interactive and not didactic.

1. **Construction of questions:** Questions for the class tests and quiz and topics for the assignment are framed so as to discourage rote learning and stimulate original thinking and reasoning. Regular activities like quiz, chart making and scramble for various biochemical pathways.

2. **Undergraduate research** as innovative method of teaching: The department has taken initiative to introduce students to research early on so that they not only get hands on training in various techniques but also build scientific temper. The research experience contributes in personal gains such as confidence, ability to work independently as well as in a team etc.

3. The Department has also initiated the weekly event of **Journal Club "Milieu"** in the college in which students from different department are encouraged to present seminars on several contemporary topics related to their curriculum using multi-media tools in a forum.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities:

Students of the department participate in Activities such as:

1. Blood donation camp
2. Self-defense, health Checkup Camp
3. Eco club activities of the college

35. SWOC analysis of the department and Future plans:
STRENGTHS:

- Research
- Holistic Development of the students
- Modern infrastructure developed from rich grants received from various agencies
- Young and dynamic faculty
- A vibrant department culture that promotes excellence in academics as well as non-academic pursuits and a healthy interaction between faculty and the students.

1. **Undergraduate Research Programs:** Undertaking a research project for each student has been mandatory since the beginning of the course. The training gives them early exposure to advanced techniques and in better understanding of the subject. It also justifies the cost of undergraduate research in terms of the value added. The significant fact is that it gets the students sufficiently interested in pursuing Science as a subject in higher studies.

2. **Inter-disciplinary education:** The course curriculum has been designed in such a manner that students get to study subjects such as Biophysics, Social and Preventive Medicine, Medical laboratory techniques, Biostatistics and Bioinformatics which help them connect different disciplines in Science.

3. **Imparting soft skills to the students:** From the inception of the department, we have always encouraged and mentored the students to build the department society (Cathexis). The society is a joint endeavor of students and teachers aimed at building a cohesive and congenial atmosphere within the college by organizing seminars, symposia, quiz and extempore, paper presentation competitions, etc. Such opportunities showcase the talent of students and also facilitate reaching out to students and faculty in other departments within the college. The society also believes in promoting academic and socio-cultural linkages with peers in other colleges and institutions.

a) **Department annual magazine 'BioMer':**Students under the supervision of the faculty, bring out BioMer, contribute in the selection of the theme of the magazine, write and edit articles, editing and cartoons. The articles are also invited from the eminent scientists

working on the theme subject. Theme of the magazine in the past few years were: ***Gene Therapy, Pharmacogenomics, Rapid Evolution, Global Warming, and Antibiotic Resistance.*** This gives them platform to articulate and express their ideas through their writing and drawing skills.

b) Students go on educational trips to various parts of the country and it is a mandatory activity in the department. Such trips not only give students exposure to accomplishments of scientists and facilities available at select institutes in the country but also help them develop soft skills. The students are involved in every aspect of planning the excursion trip. All this helps in creating a special bond amongst peer group as also between the students and faculty and the non-teaching staff, non-teaching staff.

WEAKNESS: Space constraints: Our classrooms and laboratory space are inadequate in proportion to the batch size.

OPPORTUNITY: Our students get the best of the opportunities to express/cultivate various skills (academic as well as personal) and we can say with great confidence that the years spent by them in pursuing the Undergraduate course in the department of Biomedical Science prepares them very well for a great career in Science and also instills in them values such as punctuality, honesty and integrity.

Evaluative Report of Department of Botany

1. Name of the department **: BOTANY**
2. Year of Establishment   :   **1994**
3. Names of Programmes/Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D. etc.) :   **B.Sc. (H) Botany**
4. Names of Interdisciplinary courses and the departments/units involved: **B.Sc.Prog. Life Sciences with Zoology and Chemistry**
5. Annual/semester/choice based credit system (programme wise) :
All courses are in semester system.
6. Participation of the department in the courses offered by other departments :

As per the system of 3 year UG Courses, Botany faculty teaches students of Botany, Life-Sciences and Zoology. Apart from these courses, the faculty also takes a few papers for most other courses as follows:

Course	Paper
B.Sc. (H) Chemistry	Biology-II
B.Sc. Physical Science	Biology- I
B.Sc. (H) Chemistry	Environmental Studies
B.Sc. (H) Physics	Environmental Studies
B.Sc. (H) Electronics	Environmental Studies
B.Sc. (H) Computer Science	Environmental Studies
B.Sc. Life Science	Environmental Studies

7. Courses in collaboration with other universities, industries, foreign institutions, etc.:
    Nil
8. Details of courses/programmes discontinued (if any) with reasons:
    B.Sc. (H) Botany in annual mode and Four Year Undergraduate were discontinued by the University of Delhi
9. Number of teaching posts:

Teaching Posts	Sanctioned	Filled
Professors	---------	-----------
Associate Professors	-----------	06 (Promoted under CAS)
Assistant Professors	12	02

10.   Faculty profile with name, qualification, designation, specialization, (D.Sc. /D.Litt. /Ph.D. /M.Phil.etc.)

S.No.	Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students Guided for the Last 4 years
1.	Dr. M.S. Rajeswari	Ph.D	Associate Professor	Plant Ecology, Plant Systematics	20	Nil
2.	Dr. Saumya Saxena	Ph.D	Associate Professor	Biochemistry, Molecular Biology ,Genetics	21	Nil
3.	Dr. Anupama Shukla	M.Phil, Ph.D	Associate Professor	Mycology	19	Nil
4.	Dr. Anita Narang	M. Phil, Ph.D	Associate Professor	Cytogenetics, Plant tissue culture	17	Nil
5.	Dr. Charu Khosla Gupta	M.Phil, Ph.D	Associate Professor	Reproductive Biology	16	Nil
6.	Dr. Geetika Kalra	M.Phil, Ph.D	Associate Professor	Plant physiology and Biochemistry Biochemistry	13	Nil
7.	Mr. Yasheshwar	M.Sc. Ph.D. in progress	Assistant Professor	Plant physiology	09	Nil
8.	Dr Rashmi Sharma	Ph.D	Assistant Professor	Biochemistry	7	Nil

12. Percentage of lectures delivered and practical classes handled   (programme wise) by temporary faculty: **33%**
13. Student-Teacher Ratio (programmewise):
    11:1
14. Number of academic support staff (technical) and administrative staff; sanctioned and filled:
    Sanctioned : **11**
     Filled   : **11**
15. Qualifications of teaching faculty with D.Sc. /D.Litt/PhD/MPhil/PG:

Qualifications	Numbers
Ph.D.	07
PG.	01

16. Number of faculty with ongoingprojects from a) National b) International funding agencies and grants received: **6.74 L**

FACULTY	PROJECTS
Dr. Charu Khosla Gupta	**DU Innovation Project ANDC – 204 Delhi University; Grant INR 5.0 lakhs** **Development of compact water filter** (2014-2015)- **IEDC, DST(0.87 L)**
Dr. Saumya Saxena	**Generating Biogas and Organic fertilizer using solid waste from college and surrounding disposal sites (2014-2015) IEDC(DST)(0.87 L)**

17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received : 34.59 L
18. Research Centre/facility recognized by the University:
    Nil
19. Publications:
    ∗ a) Publication per faculty 23/8= **2.87**
    ∗ Number of papers published in peer reviewed journals (national/
      International) by faculty and students: **23**
                    Number of publications listed in International Database (For E.g. : Web of Science ,Scopus ,Humanities International Complete ,Dare Database-International Social Sciences Directory ,EBSCO host ,etc.)
          ∗ Monographs
          ∗ Chapter in Books

Anupama Shukla	01 chapter in book 03 Chapter in ILLL course material

Charu Khosla Gupta:	02 chapter in book 01 vle. DU 01 Chapter in ILLL course material
Geetika Kalra	04 Chapter in ILLL course material
Rashmi Sharma :	01 Chapter in ILLL

∗Citation Index   ---------
* SNIP (cumulative)   **10.887**
* SJR (Cumulative)   **8.21**
* Impact factor (cumulative) **19.876**
* h-index   ----------

20. Areas of consultancy and income generated: **Nil**
21. Faculty as members in
a) National committees b) International Committees c) Editorial Boards….

Nil

22. Student projects
a) Percentage of students who have done in-house projects including interdepartmental/programme
Student projects in last 3 years:

Year	Funding agency	Number of students	Mentor/s
2012	ELITE- ANDC Summer Project	13	Dr. Charu Khosla Gupta Dr.Geetika Kalra
2012-13	DU Innovation Project ANDC - 106	10	Dr. Savithri Singh, Dr. M. S.Rajeswari, Dr. Rajesh Chaudhary (BMS)
2013	ELITE- ANDC Summer Project	02	Dr. Charu Khosla Gupta
2013-14	IEDC-DST	03	Dr. Saumya Saxena Dr. Pawan Kumar (Physics)
2013-14	IEDC-DST	03	Dr. Charu Khosla Gupta Dr. Arijit Chowdhuri (Physics)
2013-14	DU Innovation Project ANDC – 204	10	Dr. Charu Khosla Gupta Dr. Arijit Chowdhuri (Physics) Dr. Sunita Narang (Comp. Sc.)
2014	ELITE- ANDC Summer Project	04	Dr. Charu Khosla Gupta

b) Percentage of students placed for projects in organizations outside the institution i.e. In Research laboratories/Industry/ other agencies: **NA**
23. Awards/Recognitions received by faculty and students:

FACULTY	AWARD RECEIVED
Dr. M.S. Rajeswari	Distinguished Teacher Award 2009

	Womens's Achievement Award 2008
Dr. Saumya Saxena	Shiksha Ratna Puruskar 2011
Dr Anita Narang	Womens's Achievement Award 2008
Dr. Charu Khosla Gupta	DST Young Scientist 2003

24. List of eminent academicians and scientists/visitors to the department:

DATE	VISITORS	TOPIC
September , 2008	Dr. Subodh Sharma (Director, MoEF)	Global Climate Change
September 2010	Dr. Mohit (Apollo Hospital)	HLA Typing,
March2011	Dr. Deepak Gaur (ICGEB)	Red cell Invasion by Plasmodium
August, 2012	Prof. H.Y.Mohan Ram (Dept. of Botany, Retd.)	The Magnificent Life of Trees
August, 2012	Dr. C.V. Srikant (Regional Centre for Biotechnology)	Research in Biology- a quest to understand Nature
March 2013	Dr. Koustubh Sharma	Snow Leopards- the Ghosts of the Mountains
September 2013	Dr. Sandeep Das (Department of Botany, Delhi University)	Mapping the Genomic Landscape with Bioinformatics,

25. Seminars/Conferences/Workshops organized & the source of funding
 a) National

Workshops organized:
- Understanding Complexity of Life from Molecules to Systems : Concepts to tools May 2008.
- Biology Laboratory Course of B.Sc.Programme Life Sciences Part III organized by Acharya Narendra Dev College, University of Delhi
- **Chemistry in Biology: The Future of Life Sciences** organized by Acharya Narendra Dev College, University of Delhi at India International Centre, New Delhi (2010).
- On February 7, 2014 Department of Botany co-organized **CUBE (Collaborative Undergraduates Biology Education) workshop**, that observed participation from students&/or teachers from six colleges of university of Delhi besides ANDC. CUBE is a community initiative to promote collaborative education, research and outreach in biology. Its objective is to establish functional linkages across all spans (primary school to colleges to research centers) via poster competitions, seminars, workshops, collaborative research projects etc.

 b) International: **Nil**

26. Student profile programme /course wise: (2013-14)

Name of the	Applications		Enrolled	

Course/programme(refer question no. 4)	received (Central Application Form of University)	Selected	*M	*F	Pass percentage
B.Sc. (H) Botany	24419	132	50	82	95.24

*M=Male *F=Female

27. Diversity of Students (2014-2015)

Name of the Course	%of students from the same state	% of students from other States	%of students from abroad
B.Sc. (H) Botany Sem-I	58. 00	42.00	0.00
B.Sc. (H) Botany Sem-II	40.50	59.50	0.00
B.Sc. (H) Botany Sem-III	35.70	64.30	0.00

28. Howmanystudentshaveclearednationalandstatecompetitiveexaminationssuch   as   NET, SLET, GATE, Civil services, Defense services, etc.? **NA**

29. Student progression

Student progression	Against % enrolled
UG to PG	NA
PG to M .Phil.	NA
PG to Ph.D.	NA
Ph.D. to Post-Doctoral	NA
Employed •Campus selection •Other than campus recruitment	NA
Entrepreneurship/Self-employment	NA

30.   Details of Infrastructural facilities

  a) Library The Department maintains a number of books which are issued to the students as and when they require them.

  b) Internet facilities for Staff & Students -- Students provided with Wi-Fi enabled Laptops

  c) Class rooms with ICT facility   01

  d) Laboratories   **04**

Laboratories	Seating Capacity	Area (Sq. ft.)
1	20	20x24
2	20	20x24
3	25	23x31
4	40	30x50

31. Number of students receiving financial assistance from college, university, Government or other agencies

   6 students (Botany Honours) and 9 students (Life Sciences) received aid from the college Student Aid Fund.

32. Details on student enrichment programmes (special lectures/workshops/ seminar) with external experts:

   At least 2 special lectures by experts in the field each year. (Sl. No. 24)

33. Teaching methods adopted to improve student learning:

   The Department follows an interactive approach like active blended learning wherein student are allowed to combine or blend face to face classroom methods with computer mediated activities to form an integrated instructional approach through AV aids followed by brainstorming sessions in order to generate creative ideas.

   Learners are asked to convert complex concepts into simpler ones so that learners can connect themselves with their surroundings and leaving no space for rote learning.

   Interactive **discussion sessions** conducted, check the depth of understanding, knowledge and communication among the students. During the sessions, the inquisitive nature of the students is encouraged. The **class tests** and discussions are conducted after the completion of each topic for the clarity of concepts and better understanding of the next topic.

   Presentations: Teaching them through presentations using LCD projectors. This enhances their understanding of the basic concepts in an interesting manner. Also since the students are encouraged to prepare their own presentations and present in front of the teachers and their peer group, it helps in building up their self confidence, broaden their horizon and prepares them for future competitions.

   Projects: The students are involved in various projects to enhance their scientific aptitude and practical knowledge by providing them hands-on experience of the theoretical concepts.

   Academic tours and Excursions: Academic tours to different institutes are arranged occasionally to acquaint them with the modern techniques as well as the classical techniques. The annual excursions that are organized for the students inculcate a cohesiveness, caring for each other, a sense of adventure etc.are taken enabling them to survive and do excellent in the competitive world.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities :

The faculty of the department participates in Institutional Social Responsibilities (ISR) by being members of various committees like Sports, NSS, Environmental Committee, Theatre Society, Proctorial Committee, Excursions , Annual Events committee, Examination committee Admission committee, Curriculum enrichment (syllabus, educational material, designing of new experiments etc.)

Three members of the Faculty were appointed as Jury member for National level exhibition &

project competition (NLPEC-2013) under innovation in science pursuit for INSPIRED Research (INSPIRE) program, Department of Science & Technology, from 8th to 10th October 2013.

35. SWOC analysis of the department and Future plans:

STRENGTH

Faculty dedicated to teaching and research.

Non- Teaching Staff always willing to work and have a very congenial relation with each other.

Library of the Department ensures that the books required in huge numbers are provided to the students

Well equipped laboratories are well maintained for the smooth functioning of the practical classes.

WEAKNESS

Space Constraint: The laboratory space is limited and it has become very difficult to manage after the increase in student strength after implementation of OBC reservation.

OPPORTUNITIES

Department promotes the culture of hands-on training amongst undergraduate students, which has resulted in students publishing and presenting their work in reputed journals and Conferences.

A creative and interactive environment in theory and practical classes is provided to the students which help student's confidence building and team work.

Students have access to Wi-Fi system within the college premises round the clock.

CHALLENGES

To develop interest in the subject and make them realize their hidden potential.

To update them about the recent findings in the subject.

Students have to be trained in such a way that they are ready to face all challenges in their life, academic and non-academic.

Evaluative Report of Department Of Chemistry

1. **Name of the department :** CHEMISTRY
2. **Year of Establishment :** 1992
3. **Names of Programmes / Courses offered:** B.Sc. (H) Chemistry
   M.Sc. Chemistry
   Ph.D. Chemistry
4. **Names of Interdisciplinary courses and the departments/units involved:**

S.No.	Names of Interdisciplinary Course	Other Departments Involved
1.	B.Sc. Life Sciences	Botany and Zoology
2.	B.Sc. Physical sciences with Chemistry	Physics and Mathematics

5. **Annual/ semester/choice based credit system Semester:** Semester System
6. **Participation of the department in the courses offered by other departments:**
   - B.Sc.(H) Physics
   - B.Sc.(H) Mathematics
   - B.Sc.(H) Botany
   - B.Sc.(H) Zoology
   - B.Sc.(H) Biomedical Science

7. **Courses in collaboration with other universities, industries, foreign institutions, etc.** NA
8. **Details of courses/programmes discontinued (if any) with reasons:**
   B.Sc. (H) Chemistry, B.Sc. (Programme) Life Sciences and B.Sc. (Programme) Physical Sciences in annual mode and Bachelor with Honours Chemistry; Four year undergraduate programme were discontinued by the University.
9. **Number of Teaching posts:**

Post	Sanctioned	Filled
Professors	Nil	–
Associate Professors	–	09 (Promoted Under CAS)
Asst. Professors	18	04+05* *Posts Filled /Ad-hoc Assistant Professors

10. **Faculty profile with name, qualification, designation, specialization:**

Name	Qualification	Designation	Specialization	No.ofYears of Experience	No.ofPh.D. Students guidedforthe last4years
Dr. Sunita Hooda	M. Tech., Ph.D.	Associate Professor	Physical Chemistry	22	One
Dr. Seema Gupta	M. Phil., Ph.D.	Associate Professor	Inorganic Chemistry	23	NIL

Dr. Pooja Bhagat	Ph.D.	Associate Professor	Organic Chemistry	19	NIL
Dr. Shallu Sachdeva	Ph.D.	Associate Professor	Inorganic Chemistry	16	NIL
Dr. Rashmi Thukral	Ph.D.	Associate Professor	Organic Chemistry	18	NIL
Dr. Neeti Misra	Ph.D.	Associate Professor	Physical Chemistry	18	NIL
Dr. Manisha Jain	Ph.D.	Associate Professor	Inorganic Chemistry	14	NIL
Dr. Neelu Dheer	Ph.D.	Associate Professor	Physical Chemistry	18	NIL
Dr. Vandana Uberoi	Ph.D.	Associate Professor	Inorganic Chemistry	17	NIL
Dr. Geetu Gambhir	Ph.D.	Assistant Professor	Organic Chemistry	13	NIL
Dr. Dinesh Kumar Arya	Ph.D.	Assistant Professor	Inorganic Chemistry	08	NIL
Dr. Vikrant Kumar	Ph.D.	Assistant Professor	Organic Chemistry	06	NIL
Dr. Pankaj Khanna	Ph.D.	Assistant Professor	Organic Chemistry	09	NIL

11. **List of senior visiting faculty:** None
12. **Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty:** Around 28% of the classes are taken by temporary teachers.
13. **Student -Teacher Ratio (Programme wise):** 17.2:1
14. **Number of academic support staff (technical) and administrative staff; sanctioned and filled:** 07
15. **Qualifications of teaching faculty with DSc./ D.Lit/ Ph.D/ MPhil. / PG**

Qualifications	Numbers
Ph.D	13

  *Details as given in column no. 10

16. **Number of faculty with ongoing projects from a) National b) International funding agencies and grants received.**
   Number of faculty with ongoing projects (National): 03
   Grants received: Rs. 1,79,000/-
   Details:
   Dr. Sunita Hooda Dr. Madhu Bala Raigar DST (IEDC) Rs.87,000/-
   Dr. Seema Gupta Dr. Manisha Jain DST (IEDC)   Rs.92,000/-

17. Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received:

Completed and On-going Projects- 15

Total grants Received- Rs. 79,38,000/-

18. Research Centre /facility recognized by the University.

Research Centre	University	Research Guide
Polymer Chemistry Research Lab	University of Delhi	Dr. Sunita Hooda

19. Publications:

      (a) Publication per faculty: 142/13 = 10.92

      (b) Number of papers published in peer reviewed journals (national/international) by faculty and students: 125

      (c) SNIP   SJR   Impact factor

S. No.	Name of Journal in which faculty has published papers (No. of papers published)	Impact Factor (2014)	SNIP (2012)	SJR (2012)
1.	Macromolecular Chemistry and Physics (2)	2.386	0.779	0.879
2.	Polymer (3)	3.438	1.773	1.381
3.	Polymer International (1)	2.125	1.000	0.717
4.	J. of Macromolecular Science-Pure and Applied Chemistry A36 (1)	0.807	0.509	0.311
5.	Inorganic Chemistry (1)	4.551	1.336	1.778
6.	Inorganica Chimica Acta (2)	1.687	0.758	0.758
7.	Indian Journal Of Chemistry (4)	0.787	0.499	0.276
8.	Transition Metal Chemistry (1)	1.073	0.751	0.342
9.	Proceedings of National Academy of Sciences of the USA (1)	9.737	2.641	5.473
10.	Current Organic Chemistry (1)	3.039	0.960	1.176
11.	Mini-Reviews in Organic Chemistry (3)	1.063	0.694	0.572
12.	Arkivoc (2)	1.057	0.473	0.352
13.	Synthetic Communications (1)	1.06	0.558	0.389
14.	Indian Journal of Chemistry - Section B Organic and Medicinal Chemistry (2)	0.689	0.742	0.362
15.	Phosphorus, Sulfur and Silicon and the Related Elements (1)	0.601	0.389	0.270
16.	Thermochimica Acta (2)	2.016	0.220	0.208
17.	Journal of Chemical Sciences(1)	1.298	0.010	-
18.	Journal of Polymer Sciences, Polymer (4)	3.543	0.973	1.281

19.	Journal of Polymeric Research (1)	2.019	1.288	0.634
20.	Journal of Applied Polymer Science (5)	1.4	1.071	0.595
21.	Journal of Molecular Structure (9)	1.404	0.811	0.444
22.	European Polymer Journal (3)	2.562	1.712	0.935
23.	Polymer Journal (2)	1.496	0.721	0.523
24.	Journal of Polymeric Materials (4)	1.8	0.219	0.165
25.	Indian Journal of Chemistry, Sec. A (8)	0.787	0.499	0.276
26.	Journal of Macromolecular Science-Chemistry (1)	1.64	-	-
27.	Journal of Radio Analytical & nuclear chemistry (1)	1.467	-	-
28.	Macromolecular Chemistry (1)	2.386	0.779	0.879
29.	Journal of Indian Chemical Society (2)	0.25	0.342	0.137
30.	Journal of Pure & Applied Chemistry (1)	3.39	0.509	0.311
31.	Surface Engineering (1)	2.04	0.292	0.197
32.	Analyst	3.969	0.899	1.302
33.	Analytical Chemistry	5.695	1.032	1.024
34.	Sensors and Activators	3.535	0.975	0.265
35.	Green Chemistry Letters & Reviews	1.392		

- **Number of papers oral/poster presented at national/international conferences /symposium by faculty and students**: 46
- **Patents Registered**

  Withania somnifera plant extract and method of preparation thereof. Vijayalaksmi Ravindranath, Alok Gupta, Neha Sehgal, Subhash C. Jain, Suman Thakur and **Pankaj Khanna**.

1 **PCT**/IN2009/000430, Pub. No.: WO/2010/013254, Pub. on **04.02.2010**.
2 **US Patent Granted** on 09.07.2013, No. US 8,481,087 B2. Earlier Pub No. US20110229591 A1, Pub. on 22.09.2011.
3 Australian Patent, Pub No. 2009277963, Pub. On 13.01.2011.
4 European Patent, Pub No. 2009787611, Pub. On 11.05.2011.
- ChapterinBooks: 02
- BookswithISBN/ISSNnumberswithdetailsofpublishers: 23

S. No.	Chapter in Books/e chapters/ e material/books edited.	Faculty	Publishers/Site/Publication	Books with ISBN /ISSN
1.	Laboratory Manual for Environmental Chemistry	Dr. Sunita Hooda and Sumanjit Kaur	S. Chand and Company (1999)	ISBN 81-219-1807-3.
2.	Chemistry for X	Dr. Sunita Hooda	Saraswati House Publication	ISBN 81-

			(2003)	7335-118-X.
3.	Chemistry for IX	Dr. Sunita Hooda	Pyragon International Publication (2005)	
4.	How to face Chemistry, Class XI	Dr. Sunita Hooda Dr. Seema Gupta Dr. Pooja Bhagat	Pyragon, International Publication (2005)	
5.	New Visualized Science and technology, Class VI	Dr. Sunita Hooda Dr. Sarita Kumar	Sultan Chand publication (2007)	ISBN 81-8350-193-1.
6.	Understanding chemistry through numerical problems	Dr. Neeti Misra	Arya Book Depot (2001)	
7.	Chemistry –XI	Dr. Neeti Misra	Arya Book Depot (2003)	
8.	Chemistry –XII	Dr. Neeti Misra	Arya Book Depot (2003)	
9.	Complete Course in Chemistry, Class XI	Dr. Neeti Misra	Arya Publishing Company (2006)	
10.	Complete Course in Chemistry, Class XII	Dr. Neeti Misra	Arya Publishing Company (2007)	
11.	Numericals in Chemistry, Class XII	Dr. Neeti Misra	Avichal Publishing Company (2008)	
12.	ISC Practical Chemistry, Class XI	Dr. Neeti Misra	Arya Publications (2008)	
13.	Understanding ISC Chemistry, Class XII	Dr. Neeti Misra	Arya Publications (2008)	
14.	ISC Practical Chemistry, Class XII	Dr. Neeti Misra	Arya Publications (2009)	
15.	Laboratory Techniques in Organic Chemistry	Prof. V.K. Ahluwalia, Dr. Pooja Bhagat and Dr. Renu Aggarwal	I.K. International Pvt. Ltd. (2005)	81-88237-32-9
16.	Intermediates for Organic Synthesis	Prof. V.K. Ahluwalia, Dr. Pooja Bhagat, Dr. Renu Aggarwal and Prof. Ramesh Chandra	I.K. International Pvt. Ltd. (2005)	81-88237-33-7
17.	Multiple Choice Questions for Medical Entrance	Prof. V.K. Ahluwalia and Dr. Pooja Bhagat	I.K. International Pvt. Ltd. (2006)	81-88237-28-0
18.	Understanding Chemistry through Assertions &	Prof. V. K. Ahluwalia and Dr. Pooja Bhagat	Milestone Publishers & Distributors (2008)	

	Reasons			
19.	Easynow manuals, Vol.1-6	Dr Savithri Singh and Dr. Neeti Misra	CEMCA publication.(2009)	
20.	Four Chapters in class XII book	Dr. Neeti Misra	CBSE-i (2013)	
21.	"Engineering Chemistry"	M. M. Uppal and Dr. Pooja Bhagat	Khanna Publishers	Under print
22.	Science and Technology for class ninth.	Dr. Vandana Uberoi and Dr. Geetu Gambhir	Pyragon, International Publication	
23.	Science and Technology for class Tenth	Dr. Vandana Uberoi and Dr. Geetu Gambhir	Pyragon, International Publication	
24.	Energy and Environment Perspectives	R. K. Sharma, Shikha Gulati and Shallu Sachdeva	Springer Publication (2012), Chapter 41.	987-3-642-23393-7
25.	Approach towards cleaner environment	Shikha Gulati, Shallu Sachdeva and R. K. Sharma	Durga Publications, Chapter 5.	81-8428-016-5
E-Resources				
26.	Question bank for B.Sc. Programme Part -I and Part -II.	Dr. Sunita Hooda	Institute of Life Long Learning (ILLL)	
27.	Question bank for B.Sc. Programme Part –III	Dr. Pooja Bhagat	Institute of Life Long Learning (ILLL)	
28.	Lectures for B.Sc. Programme Part -I.	Dr. Sunita Hooda	Institute of Life Long Learning (ILLL)	
29.	Study materials on chemistry.	Dr. Sunita Hooda	http://wikieducator.org/Assignments http://wikieducator.org/Study_material_on_Plastics http://wikieducator.org/Sunitahooda#Videographic_presentation_on_Ionic_Liquid http://wikieducator.org/Power_point_presentations	
30.	Question bank on Chemical Bonding and Organometallic Compounds	Dr. Seema Gupta	Institute of Life Long Learning, Univ. Of Delhi	
31.	Study materials on chemistry.	Dr. Neeti Misra	http://wikieducator.org/AND Chemistry/Chemistry_Assignments	
32.	Study materials on chemistry.	Dr. Seema Gupta	http://wikieducator.org/User:Seemagupta/Atmosphere	
33.	Developed videos on use of lab	Dr. Manisha Jain	http://wikieducator.org/How_to_make_Chemistry_lab_an_e	

	apparatus uploaded on http://wikieducator.org/User:Mani_g1		fficient_place_of_learning_while_working http://wikieducator.org/Preparation_of_lab_reagents http://wikieducator.org/Preparation_of_Tetraamminecopper(II)sulphate_monohydrate	
34.	Unit on Chemical Thermodynamics	Dr. Neeti Misra	Institute of Life Long Learning, University Of Delhi	
35.	Question bank on Chemical Thermodynamics and Ionic Equilibrium	Dr. Neeti Misra	Institute of Life Long Learning, University Of Delhi	

20. Areas of consultancy and income generated: NIL

21. Faculty as members in

    a) National committees: NIL

    b) International Committees: NIL

    c) Editorial Boards:

        REVIEWER OF JOURNALS:

        i. Dr. Sunita Hooda as reviewer for African Journal of Pure and Applied Chemistry (AJPAC).

        ii. Dr. Sunita Hooda is appointed as reviewer for Life Sciences.

d)Scientific Societies:

S. No.	Name of Faculty Members	National Committees	Organization
	Life Membership		
1.	Dr. Sunita Hooda, Dr. Seema Gupta Dr. Pooja Bhagat Dr. Shallu Sachdeva Dr. Neeti Misra Dr. Manisha Jain Dr. Vandana Uberoi Dr. Pankaj Khanna	Indian Society of Analytical Scientists– Delhi Chapter India	Indian Oil Corporation Ltd. Faridabad, India
2.		Russian Culture committee.	Russian Culture Centre, K.G. Marg, New Delhi.
3.	Dr. Sunita Hooda	Member of American Society.	American Society, K.G. Marg, New Delhi.
4.		Member of Bhai's Society.	Bhai's Society, Canning Road, New Delhi
5.	Dr. Sunita Hooda, Dr. Pooja Bhagat, Dr. Vandana Uberoi, Dr. Geetu Gambhir	Member of Indian Science Congress.	Indian National Science Congress Association. Calcutta.

6.	Dr. Seema Gupta Dr. Pooja Bhagat Dr. Neeti Misra Dr. Manisha Jain Dr. Vandana Uberoi Dr. Geetu Gambhir	Indian Association of Chemistry Teachers. Promoting Excellence in Chemistry Education.	Homi Bhabha Centre for Science Education (TIFR) Bombay, India

22. Student projects:

(a) Percentage of students who have done in-house projects including inter departmental/programme:

In annual mode 100% students did in-house projects as part of the curriculum. In semester mode, under the college schemes ELITE , IEDC and University Innovation Projects, around 10% students have done projects in last 4 years.

(b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/ other agencies: Students visit various research laboratories in organizations outside the institution viz,IITDelhi,Jamia Milia Islamia ,Shri Ram Centre etc. during summer projects.

23. Awards / Recognitions received by faculty and students:

c) Teachers awards and recognitions:

S. No.	Name of the Teacher	Awards / Recognitions
1.	**Dr. Sunita Hooda**	Meritorious Teacher Award By Directorate of Higher Education, N.C.T. of Delhi, May 2012.
2.		Women's Achievement Award, on International Women's Day celebrations, at New Delhi, 8th March, 2008, organized by court of Governors of Women International Network and its Departments.
3.	**Dr. Vikrant Kumar**	Visiting Young Scientist Aug 08 to 31 Oct 2008. Conducted research on "Construction of metal substituted myoglobin and its mutants (Artificial metal-enzymes)" supported by "Global Center of Excellence" in Chemistry of Nagoya University, Japan. Prof. Y. Watanabe, Laboratory of Bioinorganic Chemistry, Department of Chemistry, Graduate School of Science, Nagoya University, Japan.
4.		IASc-INSA-NASI Summer Research Fellowship-2012Conducted research on "DNA Binding Studies of Copper Complexes" for two months supported by Indian Academy of Science, Indian National Science Academy and The National Academy of Science, India collectively. Prof. A.R. Chakravarty, Department of Inorganic and Physical Chemistry, Indian Institute of Science, Bangalore, India.

S. No.		Awarded Raman Fellowship for Post Doctoral Research for Indian Scholars In United States for the year of 2014-15 by University Grant Commission (UGC).Research Area: 'Catalysts for Water Oxidation: Hope for Sustainable Energy Source'.
5.		Awarded Raman Fellowship for Post Doctoral Research for Indian Scholars In United States for the year of 2014-15 by University Grant Commission (UGC).Research Area: 'Catalysts for Water Oxidation: Hope for Sustainable Energy Source'.
6.	**Dr. Pankaj Khanna**	Selected and worked as Vice Chancellor's Fellow, University of Delhi, 2013-2014.

d) Students Awards and recognitions:

S. No.	Name	Course	Awards , Scholarship and Name of the Agency	Year
1.	Pooja Rawat	B. Sc (H) Chemistry II	D.C.Arora Scholarship for meritorious students	2013-14
2.	Anish Kumar	B.Sc. (H) Chem. Sem II	• Merit Position – III in University of Delhi • Merit Position-I, University of Delhi, South Campus (UDSC)	2011-12
3.	Amit Kumar	B. Sc. (H) Chem. III	1st position in UDSC	2011-12
4.	Neha Sharma	M.Sc. Chemistry Semester IV	Indira Gandhi P.G. Scholarship(amount-20,000/-)	2011-12
5.	Amit Kumar	B. Sc. (H) Chem. I	• Science Meritorious award, University of Delhi • Second in University of Delhi,South Campus (UDSC)	2010-11
6.	Vijay Gupta	B. Sc. (H) Chem. III	Science Meritorious award University of Delhi	2010-11

7.	Vijay Gupta	B. Sc. (H) Chem. II	D.C.Arora Scholarship for meritorious students award	2009-10

Several of our students have also qualified entrance examinations in various esteemed institutes such as: NCBS, TIFR, IISc, IISER, ACBR, AIIMS, JNU, NBRC.

24.   List of eminent academicians and scientists / visitors to the department:

Many important and eminent academicians and scientists /visitors graced various functions, seminars, talks and workshops organized in the department of Chemistry.

Eminent Academician /Scientist / Visitor	Subject of the Talk delivered	Organizations/ Institution
Prof. B.S. Garg, Former Head	Talk on Green Chemistry on the occasion of Environment Day celebrations	Department of Chemistry, University of Delhi (2005)
Dr. Khandewal, Director, Sri Ram Centre	Talk on Industry and Academics job prospect	Sri Ram Centre (2006)
Dr. G.S. Sodhi, a renowned Forensic Science Expert	Talk on Forensic Science and Society on the inaugural address of our Chemical Society Abhikriya	Forensic Science Expert, S.G.T.B. Khalsa College, University of Delhi (2007)
Mr. Jagat S. Jawa, Director, General Solar Energy Society	Talk on renewable Energy on the occasion of World Environment day	General Solar Energy Department, Government of India (2008)
Prof. A. K. Bakshi, Former Head	Talk on Quantum chemistry. on the Inauguration celebrations of science week	Department of Chemistry, University of Delhi (2009)
Prof. Monica Dutta	Talk on Chemistry and Society	Department of Chemistry, University of Delhi (2010)
Dr. R.K. Suri, Joint Director	Talk on Environment and Pollution on the celebrations of OZONE day	Ministry of Environment and Forest, Govt. of India. (2011)
Prof. Gurmeet Singh	Talk on Corrosion causes and its effects at the annual celebrations of its science society	Department of Chemistry, University of Delhi (2012)
Dr. Kalolmay Biswas, Research Scientist	Talk on Organic Synthesis on Organometallic compounds using Chiral Ligands for drug Designing in Medicinal Chemistry	Jubliant Chemical Society, New Delhi (2013)

Prof. Rita Kakkar	Talk on 'Chemistry Our Life Our Future, at the festival celebration Synergia	Department of Chemistry, University of Delhi (2014)
Prof. A. K. Singh	Inorganic Chemistry:Memory Lanes to Future Canvas	Department of Chemistry, IIT Delhi (2015)

25. Seminars/Conferences/Workshops organized & the source of funding.

The Department actively participates in the Seminars/Conferences/Workshops organized by the college.

S. No.	Seminars/ Conferences/Workshops organized	Faculty	Source of Funding
a) National			
1.	National Conference on Redefining Science: Future of Education at University of Delhi, South Campus, New Delhi (7-9 March, 2013).	Dr. Seema Gupta Dr. Pooja Bhagat Members Organizing Committee	UGC
2.	National Seminar on Teaching Redefined: Open Access to Education, held at ANDC (1st Nov 2011).	Dr. Manisha Jain Member Organizing Committee	Organised by Acharya Narendra Dev College. Sponsored by INASP, UK
3.	National Symposium on Chemistry in Biology: The Future of Life Science at India International Center, New Delhi (12-13 February, 2010).	Dr. Seema Gupta Dr. Pooja Bhagat Dr. Neeti Mishra Dr. Manisha Jain Members Organizing Committee	DST, UGC, CSIR, ICMR
4.	National Symposium on Biotechnology: Expanding Horizons at Indian National Science Academy, New Delhi (17-18 October, 2003).	Dr. Seema Gupta Dr. Pooja Bhagat Members Organizing Committee	DST, UGC, CSIR, DBT
b) International			
5.	International Conference on Open Paradigms in Education, OPEN 2011 (31 Jan-2 Feb 2011).	Dr. Neeti Misra and Dr. Manisha Jain Members Organizing Committee	Organised and funded by Acharya Narendra Dev College.
c) University and College level			

6.	"Easy Now Techniques: A workshop on multimedia content development" in the college held (4-7 May, 2010).	Dr. Neeti Misra Facilitator and resource person. Dr. Manisha Jain and Dr. Pankaj Khanna Resource persons	Acharya Narendra Dev College
7.	Two day workshop on "Application of Free/Open Source Software (FOSS) In Science Teaching and Research" in the college (14-15 April, 2010).	Dr. Neeti Misra and Dr. Pankaj Khanna Members Organizing Committee	Acharya Narendra Dev College
8.	L4C workshops of WikiEducator in the college (13-17 Apr, 12-15 May and 16-18 May, 2009).	Dr. Neeti Misra Facilitator and resource person	Acharya Narendra Dev College
9.	EasyNow Educational content creation workshop held in the College (12 September - 5 October, 2009).	Dr. Neeti Misra Facilitator and resource person	Acharya Narendra Dev College
10.	Workshop for B.Sc. (Hons.) Chemistry students on Use of software to create chemistry documents held at Acharya Narendra Dev College (6-7 June 2011).	Dr. Neeti Misra and Dr. Pankaj Khanna Members Organizing committee	Acharya Narendra Dev College.

26. Student profile programme/course wise: Data Given for 2013-14

Name of the Course/programme (refer question no. 4)	Applications Received (Central Application Form of University)	Selected	Enrolled		Pass
			*M	*F	percentage
B. Sc.(H) Chemistry Sem I	75407	69	60	9	92.19

*M = Male *F = Female

27. **Diversityof Students (2014-15):**

Nameofthe Course	%of students fromthe samestate	%ofstudents fromother States	%of students from abroad
B.Sc. (H) Chemistry 1st Year	29.82	70.18	0.0
B.Sc. (H) Chemistry 2nd Year	8.9	91.1	0.0
B.Sc. (H) Chemistry	26.3	73.8	0.0

3rd Year			

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defence services, etc.?

29. Student progression : Complete data for all students not available

Student progression   **Against % enrolled**

UG to PG   -

PG to M. Phil.   -

PG to Ph.D.   -

Ph.D. to Post-Doctoral   -

Employed

- Campus selection   8%
- Other than campus recruitment

Entrepreneurship/Self-employment   -

30. Details of Infrastructural facilities

Library: The college library has a collection of wide range of books on almost all spheres of Chemistry.

Internet facilities for Staff & Students: The entire campus is Wi-Fi enabled where each and every student, staff and Non-teaching staff member is being provided with an individual Id address to maintain security and confidentiality.

Class rooms with ICT facility: All the class rooms are equipped with Wi-Fi, projectors and ICT facilities.

Laboratories: There are five well equipped chemistry laboratories. All of them have been renovated and reconstructed according to the student strength. There is enough space to accommodate 60-70 students comfortably. The labs are well equipped with:

S.No.	List of Instruments
1.	Fuming chambers
2.	Vacuum pumps
3.	Hot air ovens
4.	Distillation plants
5.	Weighing balances
6.	Digital balances
7.	Conductivity meters
8.	Potentiometers
9.	Colorimeters
10.	Incubators

11.		Flame photometers	
12.		UV Spectrophotometers	
13.		Polarimeter	
14.		Deionizer	
15.		Constant Temperature bath	
16.		UV cabinet (to see TLC spots)	
17.		Contact Thermometer (To set the fix value of temp.)	
18.		Electrophoresis chamber	

31. **Number of students receiving financial assistance from college, university, government or other agencies.**

S. No.	Financial Year	Name of Student	Financial Assistance
1.	2013-14	Munesh Kumar (B.Sc. (Hons.) Chemistry-I)	SAKSHAM ANDC
2.	2013-14	Vinod Kumar (B.Sc. (Hons.) Chemistry-I)	SAKSHAM ANDC
3.	2013-14	Kirti Sharma (B.Sc. (Hons.) Chemistry-I)	SAKSHAM ANDC
4.	2013-14	Dinesh Kumar (B.Sc. (Hons.) Chemistry-I)	SAKSHAM ANDC
5.	2013-14	Neha Kumari (B.Sc. (Hons.) Chemistry-II)	D.C. Arora Fellowship for Needy Students
6.	2011-12	Amit Kumar (B.Sc. (Hons.) Chemistry-II)	Full Fee Waiver (Except Security Deposit) & Stipend of Rs. 600/- p.m. for 10 months
7.	2011-12	Ravi Kumar (B.Sc. (Hons.) Chemistry-II)	Full Fee Waiver (Except Security Deposit)
8. .	2010-11	Amit Kumar Chaturvedi (B.Sc. (Hons.) Chemistry-II)	Full Fee Waiver (Except Security Deposit) & Stipend of Rs. 500/- p.m. for 10 months
9. .	2010-11	Ravi Kumar (B.Sc. (Hons.) Chemistry-II)	Full Fee Waiver (Except Security Deposit)
10.	2010-11	Vishal Kumar Chaturvedi (B.Sc. (Hons.) Chemistry-II)	Full Fee Waiver (Except Security Deposit) & Stipend of Rs. 500/- p.m. for 10 months
11.	2010-11	Ashish Kumar (B.Sc. (Hons.) Chemistry-II)	50 % Fee Waiver (Except Security Deposit)
12.	2009-10	Ms. Vijay Gupta (B.Sc. (Hons.) Chemistry-II)	D.C. Arora Scholarship for meritorious students

32. Details on student enrichment programmes (special lectures / workshops / seminar) with external experts. Please refer point 24.

33. Teaching methods adopted to improve student learning:

Methods: Chemistry department can easily boast of using the best and the latest scientifically proven methodologies to improve the learning process in students. The most popular methods used are:

1. Interactive sessions in the classroom rather than one way imparting of information.
2. Presentations by students on various topics of their choice to develop immense confidence in public presentations.
3. Group Discussions and debates to develop an understanding of a subject rather than rote learning.
4. Use of models to explain topic like stereochemistry, bonding, structure of solids etc.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities:

The University of Delhi regularly updates and brings changes in the curriculum. The faculty members actively participate in the committees formulated to suggest the changes in the curriculum.

The faculty members organize and participate in various workshops as resource persons and contribute in various activities even beyond the college campus.

Chemistry department is sensitive towards various environmental issues arising due to the chemical waste. Many of the students' projects are designed to study these issues. Some of our projects include:

- To study the health hazards occurring in unorganized sector of fabric dyers,
- Designing membranes to remove heavy metal ions from water,
- Chemical Waste Recycling at Source,
- Salvaging aluminium from used aluminium foils.

These projects help sensitizing the students towards environmental issues.

Also students are encouraged to participate in the social outreach programmes like NSS, Eco Clubs, Sahyog Melas, etc.

35. SWOC analysis of the department and Future plans:

STRENGTHS:

The Department has a team of sincere faculty members and highly efficient support staff, who are available in the department to take care of all aspects of the department, both academic and personal.

a) The Chemistry faculty with excellent academic profile of its members (rank holders, prestigious award recipients, researchers) is amongst the best in the whole University of Delhi.

b) The teaching learning process in the department takes place in a conducive environment resulting in students securing meritorious positions and awards (Section 23). The effective teaching by the faculty is reflected in a large number of ANDC Chemistry graduate students pursuing chemistry in higher education.

c) Each faculty member takes personal interest in mentoring the students of the department and puts in the best efforts to nurture the individual talents of the students beyond academics.

d) Department offers a co-curricular platform to its students in the form of department society 'Abhkriya' where each student is encouraged to involve in activities like paper presentations, quizzes, posters, discussions, etc. related to chemistry. This helps in enthusing students to develop a passion for their subject and pursue it for higher studies.

e) The department is further strengthened by the ongoing research activities in it. The

Chemistry Faculty is active in research which is reflected in 15 externally funded projects (completed and ongoing) undertaken. The research activities are not only limited to faculty only but are extended to undergraduate students as well. A large number of students undertake Summer Research Projects in Chemistry under the supervision of Chemistry Faculty members every year. These students have presented papers in National and International Conferences.

f) The available, however small, infrastructural support offered by the department to students can be compared with the best in the University of Delhi. (mentioned in section 30 of this document)

WEAKNESS: A lack of space creates hurdle in offering a 100% decongested and safe working environment in chemistry labs which is a must.

OPPORTUNITY: The department offers research opportunities in terms of summer research projects to not only chemistry students but also other streams in form of interdisciplinary projects. Students are also engaged in long term externally funded research projects. This helps in inculcating a research aptitude in undergraduate students thus preparing them for more dedicated research later.

CHALLENGES:

- To provide a decongested and safe lab environment to chemistry students.

To expand the research activities to involve greater number of willing students.

Evaluative Report of the Department of Commerce

1. Name of the department: **Department of Commerce**
2. Year of Establishment: **1991**
3. Names of Programmes /Coursesoffered**: B.Com(H)**
4. Names of Interdisciplinary courses and the departments/units involved: **Nil**
5. Annual/semester/choice based credit system (programmewise): **Semester Mode**
6. Participation of the department in the courses offered by other departments: **Nil**
7. Courses in collaboration with other universities, industries, foreign institutions, etc.: **Nil**
8. Details of courses/programmes discontinued (If any) with reasons:

Name of the Course	Organizers	Duration	Area of Interest
Bachelor with Honours Commerce	Introduced in 2013 under Four Year Undergraduate Programme of University of Delhi	4 Years	As per decision of University of Delhi
Foundations of Banking	Acharya Narendra Dev College in collaboration with Institute of Life Long Learning and ICICI Bank	3 Months	Knowledge about Banking Operations and Practices.
Yuvodaya	Acharya Narendra Dev College in collaboration with University of Delhi and Met Life	13 Weeks	Functioning of insurance sector, Corporate Grooming.

Courses discontinued because of change in the internal policy of the organizations with respect to conducting courses in colleges.

9. **Number of teaching posts:**

	Sanctioned	Filled
Professors	Nil	Nil
AssociateProfessors	Nil	6*
Asst.Professors	13	2+5**

*Promoted under CAS
**Ad-hoc

10. **Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D./M.Phil.etc.,)**

Name of Faculty	Designation	Specialization	Qualification	Teaching Experience	No. of Ph. D. Students
Ms. Sangeeta Relan	Associate Professor	Finance, Insurance, Micro Economics	M. Phil (Delhi School of Economics)	23 years	Nil
Ms. Sadhana Gupta	Associate Professor	Law, Finance, Organisational Behaviour and Development	M. Phil (Delhi School of Economics)	29 years	Nil
Ms. Surinder Kaur	Associate Professor	Finance and Tax	M. Com. Ph. D. (Thesis submitted, Faculty of Mgt. Studies)	19 Years	Nil
Ms. Poonam Chauhan	Assistant Professor	Finance	M.Com. (University of Delhi)	11 Years	Nil
Ms. Anuradha Sarin	Associate Professor	Finance, Organizational Behaviour	M.Phil (Delhi School of Economics)	18 Years	Nil
Ms. Rupali Pabreja	Associate Professor	Finance , Law	M.Phil (Delhi School of Economics)	16 Years	Nil
Dr. Sandeep Kumar Goel	Associate Professor	Banking , Accounting and Finance	M.Phil. Ph. D. (Jamia Milia Islamia)	15 Years	Nil
Ms. Shalu Mahajan	Assistant Professor	Management, Finance and Banking	M. Phil. Ph. D. (Thesis submitted, Faculty of Mgt. Studies)	14 Years	Nil

11. List of senior visiting faculty: **Nil**

12. Percentage of lectures delivered and practical classes handled (programmewise)
    By temporary faculty: **38%**
13. Student-Teacher Ratio (programmewise): **20.1 :1**
14. Number of academic support staff (technical) and administrative staff, sanctioned and

filled: **Nil**

15.   Qualifications of teaching faculty with DSc/D.Litt/Ph.D/MPhil/PG.

* Qualifications of teaching faculty	Number
Ph. D.	1
M. Phil. / M. Tech.	5
PG	2

*Details as given in point number 10

16.   Number of faculty with on going projects from a)National b) International funding agencies and grants received: **Nil**
17.   Departmental projects funded by DST-FIST;UGC, DBT, ICSSR, etc. and total grants received: **Nil**
18.   Research Centre/facility recognized by the University: **Nil**
19.   Publications:

  ➢ Publication per faculty: **0.625**
  ➢ Conference Publications by faculty and students: **02**
  ➢ Chapters in Books   **03**
  ➢ Academic e Content for Universities: **05**
  ➢ Books Authored: **01**

20.   Areas of consultancy and income generated: **Nil**
21.   **Faculty as membersin:**
     (a) National committees:

Dr. Sandeep Kumar Goel	Executive Committee Member	Indian Accounting Association

     (b) International Committees: **Nil**
     (c)Editorial Boards: **Nil**
22.   **Studentprojects:**
a)   Percentage of students who haved one in-house projects including interdepartmental/ programme**:   90%- 95%   (Paper CH 6.3 (b): Project Work)**
b)   Percentage of students placed for projects in organizations outside the institution i.e. in Research laboratories/Industry/ other agencies: 15% (Approx)
23.   **Awards/Recognitions received by faculty and students:**

Faculty:			
Name	**Award**	**Theme/Topic**	**Organizer**
Dr. Sandeep Kumar Goel	Best Paper Award	"Environment Reporting Practices of Indian Banks"	36th All India Accounting Conference, Andhra University Vishakhapatnam, 2014
Students:			
Ms.Radhika Sharma, Ms. Parul Gulati	Ist Prize, East Zone	Inspired Leadership Through Turbulent Times and Power of Youth	AIMA (All India Management Association), 2013.

Ms. Deepti Nair	2nd Prize	Inter College Debate	Reserve Bank of India , 2013
Ms Divya, Ms Akanksha Badola, Mr. Gaurav Chitkara	Usha Aggarwal Tejaswini Scholarship	Academic Excellence	ANDC, 2014

24. **List of eminent Academicians and Scientists/ visitors to the Department:**

Name of Speaker	Designation	Discussion Perspective
Prof. Sanjay K. Jain, September 2008.	Professor, Department of Commerce, University of Delhi	"Stepping into Corporate World: Strategic Perspective"- illuminated the students about changing facets of world corporate environment.
Prof. Madhu Vij, September, 2009	Professor, Faculty of Management Studies, University of Delhi	"Financial Service- Seizing the Opportunities"- gave an account of global financial sector
Ms. Mansi Gupta, September, 2009	Director, Wordsworth Institute	"Grooming for Placements in Financial Sector"- focused on good interactive skills and there indispensability in corporate sector.
Mr. Preetinder Chaddha, 2009	Deputy Director, Met Life Insurance	Educated the students about career opportunities in Insurance industry.
Prof. K Mamkootam, February 2012	Director, School of Business, Public Policy and Social Entrepreneurship, Ambedkar University	Insights to students regarding MBA Progamme and encouraged students to take up professional such courses as the CA.
Mr. Deepak Mendiratta, September 2012	Managing Director, Insurance Broking Services Pvt. Ltd.	Gave insight into the working and operations of the insurance sector, and presented opportunities for the students in insurance industry as a career.
Mr. R P Tulsian, March 2013	Associate Professor, Shaheed Bhagat Singh College(Eve)	Educated students about investor protection, and presented students with facts needed for a sound investment.

25. **Seminars/Conferences/Workshops organized & the source of funding:**
    (a) National: **Nil**
    (b) International: **Nil**

26. **Student profile programme/ coursewise (2013-14)**

Name of the Course/programme (refer question no. 4)	Applications received	Selected	Enrolled		Pass percentage
			*M	*F	
B. Com. (H)	86612	87	59	28	95.12%

*M=Male *F=Female

27. **Diversity of Students (2014-15):**

Name of the Course	%of students from the same state	% of students from other States	%of students from abroad
B. Com. (H) Ist yr.	56.73	41.35	1.92
2nd Yr.	35.1	64.9	0.0
3rd Yr.	35.0	64.6	0.0

28. **How many students have cleared national and state competitive examinations such asNET, SLET, GATE, Civil services, Defense services, etc.?**

   15% (approx) appear and clear Chartered Accountancy Exam conducted by the Institute of Chartered Accountants of India, Institute of Company Secretaries of India examination.

29. **Student progression**

Student progression	Against % enrolled
UG to PG	60-65% (Approx.)
PG to M.Phil.	No data available
PG to Ph.D.	No data available
Ph.D. to Post-Doctoral	No data available
Employed •Campusselection •Other than campus recruitment	66% No data available
Entrepreneurship/Self-employment	40-45% (Approx.)

30. **Details of Infrastructural facilities:**
   a) Library: College Library well Equipped with Latest Books based on Curriculum and Research related to Commerce/Management.
   b) **Internet facilities for Staff & Students:** Campus Premises fully covered by college Wi-Fi, for 100% access by students and faculty.
   c) **Class rooms with ICT facility:** All class rooms are IT enabled with Projectors and Screen.
   d) Access to 100 computers in Computer Labs for Computer oriented subjects of the curriculum.
31. Number of students receiving financial assistance from college, university, Government or other agencies:**4**

32. **Details on student enrichment programmes (special lectures/workshops/ seminar) with external experts:**

The Department conducts various Seminars /Talks by esteemed Academicians and eminent Professionals from Industry to enrich academic potential of the students. The Speakers invited till now: (Please Refer to Pt. 24.)

33. **Teaching methods adopted to improve student learning:**

   a) **Lectures:** The Department follows a learner centered approach while teaching where the faculty is sensitive to students' experience, perspective, talents, interests, capacities and needs.

   b) **Assignments:** The lectures are supplemented with post writing assignments which enable students to apply critical thinking skills and learn the course content better.

   c) **Presentations/ Projects:** Our teaching methodology makes use of various audio-visual aids (pictures, diagrams, films etc) where in the students are assessed on basis of presentations and projects. It boosts up their confidence, makes them tech-savvy and helps them to understand the relevance of working together as a team.

   d) **Group Discussions/ Open Dialogue:** The Department follows an open teacher student interface where regular talk sessions are conducted to equip students with knowledge on numerous topics of commercial relevance such as the functioning of the Stock Market, the Global Economic Meltdown, Case Studies related to Law, Corporate Scams and Scandals etc.

   e) **Role Play/ Mock Interviews:** To sensitize students on intricacies of real work environment and enhance their professional growth we follow techniques as role play, simulations etc. These techniques improve comprehensive & decision making ability of the students, whereas, mock interviews teach them how to present their strengths in front of the board with confidence.

   f) **Visits of Experts:** Prominent speakers from academics and industry are invited to motivate and guide students about various trades to enhance their subject knowledge and develop their professional aptitude. (Refer to point 24)

   g) **Field Trips:** The Department combines class room lectures with regular trips to places of commercial importance for students to gain knowledge on various crafts and professions they may take up in future. Our recent trips to Jaipur and Agra have been both commercially informative & explorative, besides being pleasurable.

Destination	Industry / Site Visited	Learning
Excursion 2013, Agra	Handicrafts Marble Industries	Marble Crafting
Excursion 2014, Jaipur	Anokhee Museum	Block Printing

34. **Participation in Institutional Social Responsibility (ISR) and Extension activities:**

   a) **Corporate Internships:** The Department encourages students to do internship during the summer break which builds up their professional aptitude. This exposes them to real life work situations where they assimilate the commercial knowledge and skills which have been imparted to them academically. Our students have interned in organizations of repute as MetLife, ICICI Bank, Ernst and Young, KPMG, Seimens, Deloitte, Kribh Co., United Airways, etc. We are proud of our many professionally well established ex-students who re-visit the college to scout for zealous, ambitious

and talented fresher's to work for/ intern in their organizations.

b) **Entrepreneurial Endeavour's:** Many students from commerce are a part of the "Innovation and Entrepreneurship Development Cell (IEDC)" and are actively engaged in various events organized by it. The subject knowledge gained in class is successfully used by them in IEDC's entrepreneurial ventures as it has come up with the very first student's owned company of the University of Delhi "Acharya Narendra Dev Youth - ANDY" which makes chemical free soaps, sanitizers etc. A remarkable 50% of the Board of "ANDY" comprise of talented and dynamic students of commerce. A few of our students have also established their own ventures in high spirit and confidence at a young age. To name a few:

  ➢ Sameer Goel (V Sem) opened his social enterprise "Pushap Enterprises" which successfully deals in manufacture and trade of decorative pieces intricately hand crafted by abandoned females. His noble endeavor is responsible for providing much needed livelihood to them providing them financial and social empowerment.

c) **Student Excursions:** The Department has organized trips for students to distant locales for their social as well as commercial enrichment. These excursions are fully financed for the students belonging to economically weaker strata, through the aid received from SAKSHAM- a society in college for benefit of financially deprived students.[Refer to point 33,(g)]

d) **Development of Students Initiative:** The Departmental society "Vanijya" is successfully managed by the students who responsibly organize the Commerce Fest – "Corpomaze" every year. The students get practical exposure of managerial and financial tasks, as the finance for the festival is fully raised by them. They also plan and manage various mind jolting events as designing of advertisements, hunting for hidden treasure etc. which improves their practical knowledge, develops foresight (through meticulous planning) and fosters team spirit as they work cohesively in a group. Eminent speakers from diverse spheres are also invited who provide their valuable guidance on area of their interest.

e) **Media Exposure:** To enable students to voice and develop their opinion, some students were given an opportunity to participate in a famous talk show on NDTV India, to discuss the issues related to topic "Khaap Panchayats and their Role in Contemporary Society".

35. **SWOC analysis of the department and Future plans:**

a) **Strengths**
  ➢ Increased Student Base: Department of Commerce is the sole Non Science Department in the college and has been rendering unmatched services ever since its foundation. We harbor devoted, well-learned and a pro-active faculty whose dedicated efforts have raised the number of students in the subject by more than double since the time of inception of the Department.
  ➢ After College Placement: The committed services rendered by the esteemed faculty has seen many of our alumni placed successfully in noble professions as Chartered Accountants, Company Secretaries, NDA, Journalism, Theatre etc. and the figures of professional churn outs from our Department are ever rising. The students are all grateful to the faculty for their sincere and dedicated support, due to which they have enhanced employment opportunities after college, as many of them are well placed in diverse professions ranging from purely commercial streams such as Chartered Accountancy, MBA, education etc., creative fields as Theatre and Music, and other challenging vocations such

as Defence, Journalism, Hospitality and Airways.

- ➢ Channelizing Latent Potential in Students: The enthusiastic and versatile faculty members have constantly motivated students to perform in all spheres as a result of which, we now have a bunch of budding sportsmen, singers, dancers, theatre actors and orators amongst our students. Many of our students have represented our college in university events as (to name a few):
  - ❖ Antardhwani: Sunny, Sem V, one of the founder members of College Dance and Music Society "Dhun"- won 4th prize in Antardhwani 2014 in 1st year of establishment ,

- ❖ Music: College Dance and Music Society "Dhun", has many talented and potential singers as Madhumita Bannerjee and Rohit Chowdhary Sem V. Rohit has already made a name for himself in music industry, as he got invited to the Lingaya's Institute of Management as a guest performer on their annual festival.
  - ❖ Theatre: College Theatre Society "Dhwani" has Sadhna Yadav Sem V. as Joint Secretary in addition to many active students from commerce and,
  - ❖ Debate: Many of our students such as Deepti Nair Sem V have excelled as orators bringing in prestigious awards for college from other institutions.

- ➢ **Thick and Fraternal Teacher Student Relationship:** The strength of Department lays in the purity and beauty of relationship which our esteemed and easily approachable faculty shares with the present as well as ex-students, beyond the text. Our students have been constantly guided, supported and mentored by the learned members of Department on various facets that extend over commerce, and are grateful for the same. Their respect for the teachers can be gauged from the fact that many of our ex-students who are placed well professionally absorb our students in their organizations, and are ever keen to contribute to the college in various forms. For example:
  - ✦ Mr. Nitin Deveshwar (alumni) and Mr. Rohit Chowdhary (Sem V), gave handsome sponsorship for the Annual Theatre Production (2014) of the college.
  - ✦ Mr Raman Sachdeva (alumni) has returned back to college to contribute towards quality education and services, as he is currently associated with college as Assistant Professor in the Department.
  - ✦ Mr Deepak Mendiratta,(alumni) an expert in insurance came back to college as a Speaker, to guide our up-and-coming commerce students on avenues and prospects of the insurance industry in India and abroad.

- ➢ **Rich Alumni Bank:** Our Department proudly boasts of its professionally rich and diverse alumni pool which is ever thankful to the devoted and earnest efforts of the faculty, who have always strived for development of each student to his/her full capacity. Our students have made a mark in not just pure commercial fields in India, but also earned fame in numerous run off the mill professions as mass communication, defence etc., and many have earned global reputations.

To name a few of our priced alumnus possessions:
  - ❖ Commerce:
    - ✦ Mr. Raman Sachdeva, Assistant Professor, Acharya Narendra Dev College, University of Delhi.
    - ✦ Ms. Parul Thakur, General Manager, Mariott International

Bangalore.
- ✦ Mr. Rajesh Narayanan, IIM Kolkata, Regional Head, North India, Standard Chartered.
- ✦ Ms. Pooja Gupta, Deputy Manager, Wipro.
- ✦ Mr. Dheeraj Kalra, Vice President, Make My Trip.Com.
- ✦ Mr. Deepak Mendiratta, Managing Director, Insurance Broking Services Pvt Ltd.
- ✦ Mr. Dinesh Bhatia, Senior Controller, Microsoft.
- ❖ Others:
  - ✦ Ms. Purva Bhatia, Freelance Journalist and Content Writer.
  - ✦ Mr. Bharat Babbar, associated with the "Hollywood".
  - ✦ Mr. Deepak Kalra, Classical Singer.
- ❖ Our Global Alumni:
  - ✦ Mr. Nikhil Dhawan, Senior- Assurance Department, Ernst and Young, Washington D.C.
  - ✦ Mr. Jaidev Krishnamoorthy, Financial Analyst, HP, Sydney.
  - ✦ Ms. Ritika Sapra, Coty, Singapore.
  - ✦ Mr. Sandeep Srivastava, Senior Director, Ernst and Young, Dubai.
  - ✦ Mr. Dushyant Lowe, Manager, Tax, Government Contractor Service Group, Washington D.C.
  - ✦ Mr. Abhishek Tayal, Acturial Services, Columbia University.
  - ✦ Ms. Priya Chahan, Assistant Researcher, RBS, Worldpay, Netherlands.
  - ✦ Mr. Kunwar Singh, Chartered Accountant, Manager-Corporate Finance, Ernst and Young, Singapore.

b)   **Weakness:**
- ➢ The Department faces a space crunch to place its rapidly growing student base.
- ➢ The absence of our own student's residential hostel makes us lose many outstation students who are desirous of joining the college.

c)   **Opportunities:**
- ➢ The Department plans for conducting more workshops/seminars for the students which are expected to provide them better knowledge about industry and opportunities.
- ➢ We are hopeful of being provided with increased space (in form of more in number and bigger class rooms) soon where we can accommodate our growing number of students.

d)   **Challenges:**
- ➢ The Department endeavors to strengthen its research base in order to pace up with growing needs of the academic industry.

Evaluative Report of Computer Science Department

1.   **Name of the department:**   Department of Computer Science

2.   **Year of Establishment:**   1992

3.   **Names of Programmes/ Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; IntegratedPh.D.,etc.):**

- B.Sc (H) Computer Science (3 years),
- B. Sc. Physical Science (Computer Science) (3 years),

4.   **Names of Interdisciplinary courses and the departments/units involved**

Interdisciplinary Course	Departments Involved
B.Sc (H) Computer Science	Mathematics, English, Electronics
B. Sc. Physical Science (Computer Science)	Mathematics, Physics
B.Tech (Computer Science)	Mathematics

5.   **Annual/semester/choice based credit system (programmewise):** Semester System.

1.   **Participationofthedepartmentinthecoursesofferedbyotherdepartments:**
- C^{++} and Data Structures [B. Tech. Electronics]
- Communication and Networks [B. Tech. Electronics]
- Programming Fundamentals [B. Sc. (H) Electronics]
- Data Structures [B. Sc. (H) Electronics]
- Computational Skill [B. Sc. (H) Zoology, B. Sc. Life Science, B. Sc. (H) Botany, B. Sc. Physical Science with Electronics, B. Sc. Physical Science with Chemistry, B. Sc. (H) Bio-Medical Science, B. Sc. (H) Electronics]

7.   **Courses in collaboration with other universities, industries, foreign institutions, etc:** NA

8.   **Details of courses/programmes discontinued (if any) with reasons:**
The following courses have been discontinued:
1. PGDCA discontinued by University of Delhi
2. BIS discontinued by University of Delhi
3. BIT discontinued by University of Delhi
4. B. Tech (Computer Science) discontinued as per university guidelines with respect to FYUP discontinuity.

9.   **Number of Teaching posts:**

	Sanctioned	Filled
Professors	NIL	--
AssociateProfessors	--	2(Promoted Under CAS)
AssistantProfessors	11	4 +1(Temporary)+4 (Adhoc)

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D./ M.Phil.Etc.,)

Name	Qualification	Designation	Specialization	*Experience (In Yrs)*	No. of Ph.D. Students guided for the last 4 years
Dr. Sharanjit Kaur	Ph. D., MCA	Associate Professor	Data Mining	19	1(Enrolled in March 2014 in dept of Comp. Sc. , DU)
Dr. Vibha Gaur	Ph. D., MCA	Associate Professor	Software Engineering	17	2
Dr. Sunita Narang	Ph. D., MCA	Assistant Professor	Operating Systems, Financial Derivative	15	-
Ms. Harita Ahuja	Ph. D., MCA	Assistant Professor	Recommender Systems	9	-
Dr. Preeti Marwaha	Ph. D., M. Sc.	Assistant Professor	Service Oriented Computing	13	-
Dr. Chandra Kant Samal	Ph. D., M.Tech (Comp. Sc.), MCA	Assistant Professor	Networks	9	-

11. List of senior visiting faculty: NIL

12. Percentage of lectures delivered and practical classes handled (programme wise) by Temporary faculty: 45.5 %

13. Student-Teacher Ratio (programmewise):
- B.Sc (H) Computer Science :   15.1   : 1
- B. Sc. Physical Science (Computer Science):   13.79 : 1

14.   Number of academic support staff (technical) and administrative staff; sanctioned and filled:

	Sanctioned	Filled
Technical Staff	8	2 Permanent + 1 Ad-hoc

15.   Qualifications of teaching faculty with D.Sc. / D.Litt /PhD /M.Phil./PG:

Name	Qualification
Dr. Sharanjit Kaur	Ph. D.
Dr. Vibha Gaur	Ph. D.
Dr. Sunita Narang	Ph. D.
Ms. Harita Ahuja	Ph. D.
Dr. Preeti Marwaha	Ph. D.
Dr. Chandra Kant Samal	Ph. D.

16.   Number of faculty with ongoing projects from a)National b)International funding agencies and grants received:
a.)   National:

Name	Name of the Projects	Duration	Funding Agency	Grant
Dr. Sharanjit Kaur	Astronomy using archival data.	2013-14	DU	4,50,000
Dr. Vibha Gaur	• Case Tool Box • Sensor Based Notification System for the Visually Handicapped	2010-11 2013-14	DST DST	1,00,000 82,000
Dr. Sunita Narang	• Multi-disciplinary project on Artificial Olfaction using e-nose – mimicking human nose for gas sensing applications • Multi-disciplinary project on "CO2 Gas Sensing - an ICT based investigation for pollution control	Ongoing 2013-14	DU DU	10,00,000 5,00,000
Dr. Chandra Kant Samal	Development of low cost computer controlled science laboratory using Sensors and open source hardware and Software tools.	2013-14	DU	6,00,000

b.) International: **NIL**

17.   Departmental projects funded by DST-FIST;UGC, DBT, ICSSR, etc. and total grants received:

Dr. Vibha Gaur	• Case Tool Box	2010-11	DST	1,00,000
	• Sensor Based Notification System for the Visually Handicapped	2013-14	DST	82,000

18.   Research Centre/facility recognized by the University: NA

19.   Publications:

a) **Publication per faculty**:

Total Number of publications: 75
Total Number of Faculty: 6
Publication Rate = Total Number of publications/ Total Number of Faculty
             = 75/6
             = 12.5

Number of papers published inpee rreviewed journals (national/international) by faculty and students

* Number of publications listed in International Database (For Eg:Web of Science, Scopus, Humanities International Complete, Dare Database – International Social Sciences Directory, EBSCO host,etc.)
* Monographs
* ChapterinBooks
* BooksEdited
* BookswithISBN/ISSNnumberswithdetailsofpublishers
* CitationIndex
* SNIP
* SJR
* Impactfactor
* h-index

Name	No of Journals	No of Conferences	Book Chapter	Citation index
Dr Sharanjit Kaur	4	6	3	30
Dr Vibha Gaur	16	14	-	62
Dr Sunita Narang	3	1	-	2
Ms. Harita Ahuja	6	3	3	6
Dr Preeti Marwaha	4	4	-	6
Dr Chandra Kant Samal	4	3	1	7

Note: Please See Appendix for the following:

- Table 1a to 1f: Detailed List of publications of each Faculty Member.
- Table 2: Impact Factor of Journals of Publications mentioned in Table 1a to 1f.
- Table 3: Papers Presented by Faculty Members.

20.   Areas of consultancy and income generated: NIL

21.   Faculty as membersin

a)   National committees: **NIL**
b)   International Committees: **NIL**
c)   Editorial Boards: Dr. Sharanjit Kaur is a member of editorial board of International journal of Data mining, modeling and management, Inder Science.

22.   Student projects

5   Percentage of students who have done in-house projects including interdepartmental/ programme: 100%, [In-house project was part of the curriculum of B.Sc. (H) Computer Science-VI (till 2011).]

6   Percentage of students placed for projects inorganizations outside the Institution i.e. in Research laboratories/Industry/ other agencies: **NIL**

7.   Awards/Recognitions received by faculty and students:

S. No.	Name of Teacher	Paper
1.	Dr. Vibha Gaur	Received the Best Paper Award for the paper with the details as follows: Punam Bedi, Vibha Gaur. (2007). Exploring the Interdependencies among Communication, Knowledgeability and Performance of Multi-agent Systems, Proc. WCE'07 - International Conference of Information Engineering, World Congress on Engineering, London, U.K., 1:547-552.

8.   List of eminent academicians and scientists/visitors to the department:

Date of Technical Talk	Eminent Speaker
6th to 7th December 2007	Introduction to Linux, User Experience on Linux by Mr. Vikas Singh, Recruitment Consultant (Google & Dell)
	Mr. Atanu Datta, Editorial Coordinator, Linux For You, Programming aspects of Linux, Linux in Business Environments
	Case study: Om Logistics by Mr. S. K. Goel, Vice President (I.T.), Om Logistics
4th March 2008	Dr. A.K Datta, Former advisor DST, Ex-president CSI.
	Dr. A.K. Mahapatra, Faculty IP University.
	Dr. A.R. Rao, Sr. Scientist, IASRI
	Dr. Anil Rai, Sr. Scientist, IASRI
2nd September 2008	Dr. Vasudha Bhatnagar, Associate Professor, Department of Computer Science, Delhi University.
3rd to 7th January 2009	Mr. Amit Karpe (promoter and evangelist of GNU/Linux and FOSS), Mr. Niyam Bhushan (FOSS enthusiast) and Mr. Dnyanraj Mali were the main resource persons for the workshop.
29th January 2009	Experts from Delhi LUG conducted sessions on various Open source software. Mr. Gora Mohanty covered various aspects of FOSS, Mr. Supreet Sethi conducted a session on OpenMoku and Mr. Sawood Alam talked about Ruby on Rails.
8th August 2009	The workshop was conducted by Mr. Vivek Khurana (a technology consultant interested in building new FOSS based solutions) and Mr. Atul Jha (a Linux enthusiast). Mr. Gaurav Pant (a FOSS evangelist from Pune) covered advanced shell programming for a group of 30 students from final year.
4th September 2009	Dr. Sudhakar Yerneni, C-DAC, India and Dr. Sanjay Kumar Dhurander
8th to 9th January 2010	Mr. Satyaakam Goswami (a FOSS enthusiast), Mr. Mohit Singh (HOD of M.Tech.(CS) at IIMT Engineering College, Meerut) and Mr. Narendra Sisodiya (a Linux expert).
4th September 2010	Dr. Punam Bedi, Associate Professor, Department of Computer Science, Delhi University.
4th September 2011	Dr. Ruchika Malhotra, Assistant Professor, Department of Software Engeneering, Delhi Technological University.
1st September 2012	Dr. S. Ramanarayana Reddy, Associate Professor,

	Department of Computer Science, IP University.
	Mr. Himanshu Bansal, Software Engineer, Nagarro Software Pvt. Ltd. and Mrs. Udita Mitra, Software Tester, HCL Technologies Alumni, 2007 batch of ANDC.
2nd March 2012	Mr. Diwakar Vats, Chief Technical officer and Ms. Swati Bhardwaj, Technical officer, Nano-Technology.
21st to 22nd March 2013	Mr. Vaibhav Jain, Sr. Software Engineer at Kelton Tech conducted two days session on Drupal overview and installation, Admin Panel, Database Architecture, Core and Contributing modules/themes, Practical and prototype, creation and basics of custom module development.
9th October 2013	Mr. Sheikh Faraz Osmany, Deputy Director, Petroleum Planning and Analysis Cell, Ministry of Petroleum and Natural Gas.
9th January 2014	Mr. Richard Stallman, Founder &President, Free Software Foundation.
3rd September 2014	Mr. Vidit Baxi, Director, Cyber Securities Pvt. Ltd.

Note: For Details refer answer of question no. 32

25. **Seminars/Conferences/Workshops organized & the source of funding**
   (a) National: **NIL**
   (b)International: **NIL**

26. **Student profile program /course wise: The following data is for first year students of 2013-14 sessions**

Name of the Course/programme	Applications received	Selected	Enrolled M + F	Pass percentage	Total
B.Sc. (H) Computer Science	68943	56	51+5	100	50

   *M=Male *F=Female

27. **Diversity of Students**

Name of the Course	%of students fromthe samestate	%ofstudents fromother States	%of students from abroad
B.Sc. (H) Computer Science Sem I, 2014-15	35.42	64.58	0.00
Physical Science Computer Science, Sem I, 2014-15	53.85	46.15	0.00

28.   How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.: Data not available.

29.   Student progression: NA

Student progression	Against % enrolled
UG to PG	Usually 75% of students enroll for PG
PG to M.Phil.	
PG to Ph.D.	
Ph.D. to Post-Doctoral	
Employed •Campus selection •Other than campus recruitment	100% (those registered with college placement cell)
Entrepreneurship/Self-employment	

30.   Details of Infrastructural facilities
   a.) Library: having approximately 100 books and is maintained for the faculty only.
   b.) Internet facilities for Staff & Students: Wi-Fi enabled and broadband connection on each system.
   c.)   Class   rooms   with   ICT   facility: 2
   d.) Laboratories: 5

Labs	PC PIV	Core 2 Duo	I5	Total	Server	Printer	Scanner
1		HP (22)		22		HP(01) - 2420DN	
2		HP (24)		24		HP(01) 1000	
3	IBM (01)	HP (25)		26	HP (01) Intel Xeon	HP(01) 1000	HP (01) 4370)
4	IBM (01)		Dell (25)	26	HCL (01) Intel Xeon E5504	HP (01) 1606	
5	IBM (21)			21	IBM (01) Intel PIV	HP(01) 1000 HP (01) 1606	

Specifications are as follows:
   - **HP: Core 2 duo, 2.4 GHz with 2 GB RAM**
   - **IBM: P IV, 3.2 GHz with 2 GB RAM**
   - **Dell: Intel Core i3 550 (3.2 GHz/ 4MB cache) with 8 GB RAM.**

31.   Number of students receiving financial assistance from college, university,

government or other agencies:

Scholarships / Fellowship to Students:

Students of Computer Science Department have been awarded with various scholarship and awards in past. The details are as follows:

Teena Gupta Memorial Scholarship

S.No.	Name	Course	Year
1.	Praphulla kumar	Applied Physical Science-I	2008
2.	Hema Nayal	Applied Physical Science –II	2008
3.	Mamta Sharma	Applied Physical Science –II	2008
4.	Prakash singh	Applied Physical Science –I	2009
5.	Mamta Sharma	Applied Physical Science -III	2009
6.	Praphulla kumar	Applied Physical Science –II	2009
7.	Gagan Gupta	Applied Physical Science –I	2010
8.	Chandan ji	Applied Physical Science –I	2010
9	Sujit ji	Applied Physical Science –I	2010
10.	Rahul Panday	B.Sc. Physical Science (Computer Science) Sem I	2011
11.	Vicky Thakur	B.Sc. Physical Science (Computer Science) Sem II	2012
12.	Rahul Panday	B.Sc. Physical Science (Computer Science) Sem IV	2012
13.	Brij Kishore	B.Sc. Physical Science (Computer Science) Sem IV	2012
14.	Nitish Shrivastava	B.Sc. Physical Science (Computer Science) Sem V	2013
15.	Rahul Panday	B.Sc. Physical Science (Computer Science) Sem V	2013
16.	Vicky Thakur	B.Sc. Physical Science (Computer Science) Sem IV	2013
17.	Monika	B. Tech Computer Science Sem I	2014
18.	Kishan Haider	B. Tech Computer Science Sem I	2014
19.	Vicky Thakur	B.Sc. Physical Science (Computer Science) Sem III	2014

D C Arora Scholarship

S.No.	Name	Course	Year
1	Hema Nayal	Applied Physical Science II	2008

Outside Agencies:

S.No.	Name	Course	Year	Scholarship	Amount
1.	Manika Bhaskar	Applied Physical Science II	2008	SC/ST/OBC Minority And Govt. Of Nct Delhi	4200
2.	G.Abhishek kumar	B. Sc (H) Computer Science Sem I	2008	NTSC Award NCERT	6000
3.	Hema Nayal	Applied Physical Science I	2008	Udyan shauni sch. For Girl Child	9000
4.	Ruchika Chugh	Applied Physical Science I	2008	Udyan shauni sch. For Girl Child	9000
5.	Priyanka Gupta	B. Sc (H) Computer Science Sem VI	2012	Post. Matric Sch.(obc) , Haryana	1900
6.	G.Abishek kumar	B. Sc (H) Computer Science Part-III	2009	National Talent – Search Seh. NCERT	9000
7.	Suraj kumar	B. Sc (H) Computer Science Sem II	2013	Subodh Chander Aniya Banerjee Memorial	600 (p.a)

			book chant for year2012-13	
8.	Manoj Ahiswar	B. Sc (H) Computer Science Sem II	2013	Post-Matric sch. Madhya-pradesh for financial year 2012-13	35000 (p.a)

SAF

S.No	Name	Couse	Year
1	Praphulla Kumar	Applied Physical Science I	2008
2	Gaurav Yadav	Applied Physical Science I	2008
3	Md.Aslam Pervez	B. Sc (H) Computer Science Sem III	2008
5	Vishwesh Pandey	B. Sc (H) Computer Science Sem I	2009
6	Aeyan Ahmad	B. Sc (H) Computer Science Sem II	2009
7	Rayaz Ahmad	B. Sc (H) Computer Science Sem II	2009
8	Shailander Singh	B.Sc. Physical Science (Computer Science) Sem I	2011
9	Chandan Kumar	Applied Physical Science III	2011
10	Priyanka	B. Sc (H) Computer Science Sem I	2011
11	Vidushi bhuskara	B. Sc (H) Computer Science Sem I	2011
12	Yogender Singh	B. Sc (H) Computer Science Sem I	2011
13	Ravi Kumar	B. Sc (H) Computer Science Sem I	2011
14	Ritech Kumar	B. Sc (H) Computer Science Sem I	2011
15	Shailender Singh	B. Sc (H) Computer Science Sem IV	2012
16	Vickey Thakure	B.Sc. Physical Science (Computer Science) Sem II	2012
17	Suraj	B. Sc (H) Computer Science Sem I	2013
18	Laxmi	B. Sc (H) Computer Science Sem I	2013
19	Poonam Gupta	B. Sc (H) Computer Science Sem II	2014
20	Monika Bansal	B. Sc (H) Computer Science Sem III	2014
21	Ekta Soni	B. Sc (H) Computer Science Sem II	2014
22	Laxmi	B. Sc (H) Computer Science Sem II	2014
23	Vikey	B.Sc. Physical Science (Computer Science) Sem III	2014
24	Kishan Haldar	B. Tech Computer Science Sem I	2014
25	Mond. Anas	B. Tech Computer Science Sem I	2014
26	Monika	B. Tech Computer Science Sem I	2014

32.   Details on student enrichment programmes (special lectures/workshops/ seminar) with external experts:

The Turing Society of Computer Science department provides a platform to the students to showcase their talent beyond the classroom. It conducts following events:

•   Every year, the society, organizes its Inaugural function in the month of September, wherein Technical talks on various computing trends by invited Experts and discussions give students an opportunity to learn and explore new areas. Details are shown in Table 4a.

- The society also conducts an Inter-college Technical Fest "Overload++" in the month of February/March. It attracts many students from various colleges to participate in several events such as Battle of Codes, LAN Gaming, Bug Hunt, Techno Quiz, Android Gaming, Web Designing etc. It is an enriching experience for the students to showcase their skills with a competitive spirit. Also, Technical talks on various computing trends by invited Experts are organized. Details are shown in Table 4b.

- The world of **FOSS** (Free & Open Source Software) believes in giving "Power to People". It gives freedom of innovation to the programmer by providing an opportunity to enhance and analyze open source code, which enables in developing and customizing user specific environments with ease. Our College firmly believes in the adoption of Free Open Source Software (FOSS) as an instrument of inclusive digital education and breaking the shackles of restrictive licensing policies in education. Keeping with this goal, the computer science department has been regularly conducting hands-on workshops since December 2007 to introduce Linux and FOSS to students, teaching & non-teaching staff. Details are shown in Table 4c.

Table 4a: List of Technical Talks conducted during Inaugural function of Turing Society

Date of Technical Talk	Eminent Speaker	Topic of Technical Talk
2nd September 2008	Dr. Vasudha Bhatnagar, Associate Professor, Department of Computer Science, Delhi University.	Data Warehousing and Data Mining
4th September 2009	Dr. Sudhakar Yerneni, C-DAC, India and Dr. Sanjay Kumar Dhurander	Trends in FOSS
4th September 2010	Dr. Punam Bedi, Associate Professor, Department of Computer Science, Delhi University.	Recommender Systems
4th September 2011	Dr. Ruchika Malhotra, Assistant Professor, Department of Software Engeneering, Delhi Technological University.	Software Testing
1st September, 2012	Dr. S. Ramanarayana Reddy, Associate Professor, Department of Computer Science, IP University.	Embedded Systems and Mobile Architecture
	Mr. Himanshu Bansal, Software Engineer, Nagarro Software Pvt. Ltd. and Mrs. Udita Mitra, Software Tester, HCL Technologies	Shared their experience and guided the students on future career prospects in the software

	Alumni, 2007 batch of ANDC.	industry.
9th October, 2013	Mr. Sheikh Faraz Osmany, Deputy Director, Petroleum Planning and Analysis Cell, Ministry of Petroleum and Natural Gas.	Information Security.
3rd September 2014	Mr. Vidit Baxi, Director, Cyber Securities Pvt. Ltd.	Career Opportunities in Enterprise Cyber Securities and Digital Forensics.

Table 4b: List of Technical Talks conducted during Technical Fest of Turing Society

Date of Technical Talk	Eminent Speaker	Topic of Technical Talk
4th March 2008	Dr. A.K Datta, Former advisor DST, Ex-president CSI.	History of Computing
	A.K. Mahapatra, Faculty IP University.	Cyber Crime & Terrorism
	Dr. A.R. Rao, Sr. Scientist, IASRI	Bio-Informatics: An Introduction
	Dr. Anil Rai, Sr. Scientist, IASRI	Data Warehousing: An Overview
2nd March, 2012	Mr. Diwakar Vats, Chief Technical officer and Ms. Swati Bhardwaj, Technical officer, Nano-Technology.	Workshop on "Mobile Application Development with Qt (Nokia)"

Table 4c: List of Workshops/ Talk conducted by FOSS Club

Date and Duration	Workshop/ Talk
9 January, 2014. (1 Day)	Talk on Free Software: Defending your freedom by Mr. Richard Stallman, Founder &President, Free Software Foundation
16-19 December, 2013. (4 Days)	Workshop on IT Tools for non-teaching staff of college
2-4 September, 2013. (12 Hours)	Workshop on "Ethical Hacking" by the students.
6-7, August, 2013. (2 Days)	Workshop on FOSS &Linux for students by college faculty
21-22 March, 2013. (2 Days)	Workshop on "DRUPAL". This workshop was conducted in association with Kelton Tech Solutions Ltd. Mr. Vaibhav Jain, Sr. Software Engineer at Kelton Tech conducted two days session on Drupal overview and installation, Admin Panel,

	Database Architecture, Core and Contributing modules/themes, Practical and prototype, creation and basics of custom module development.
August, 2012. (1 Day)	Workshop on Linux using spoken tutorials organized by students and faculty in collaboration with Spoken tutorial project team, IIT Mumbai.
February, 2012. (1 Day)	Workshop on Linux using spoken tutorials organized by students and faculty in collaboration with Spoken tutorial project team, IIT Mumbai.
March, 2011. (2 Days)	Workshop on "Drupal and Php"
October, 2011. (1 Day)	Workshop on LATEX using spoken tutorials organized by students and faculty in collaboration with Spoken tutorial project team, IIT Mumbai.
August, 2011. (2 Days)	Workshop on FOSS for students by college faculty.
8-9 January, 2010. (2 Days)	Workshop on FOSS for students covering 'Importance of FOSS in IT industry, career prospects in FOSS, basics of kernel and its security, socket programming and Jquery. Talks were delivered by Mr. Satyaakam Goswami (a FOSS enthusiast), Mr. Mohit Singh (HOD of M.Tech.(CS) at IIMT Engineering College, Meerut) and Mr. Narendra Sisodiya (a Linux expert).
3-7 January, 2009. (5 Days)	Training and familiarization Linux &Clustering workshop. The workshop included lectures on Open Source, Free Software, Licenses along with interactive sessions and handson training sessions on Linux machines. Amit Karpe (promoter and evangelist of GNU/Linux and FOSS), Mr. Niyam Bhushan (FOSS enthusiast) and Dnyanraj Mali were the main resource persons for the workshop.
29th January, 2009. (1 Day)	Experts from Delhi LUG conducted sessions on various Open source software. Mr. Gora Mohanty covered various aspects of FOSS, Mr. Supreet Sethi conducted a session on OpenMoku and Mr. Sawood Alam talked about Ruby on Rails.
8th August, 2009. (1 Day)	The workshop was conducted by Mr. Vivek Khurana (a technology consultant interested in building new FOSS based solutions) and Mr. Atul Jha (a Linux enthusiast). Mr. Gaurav Pant (a FOSS evangelist from Pune) covered advanced shell programming for a group of 30 students from final year.
6–7 December, 2007. (2 Days)	Introduction to Linux, User Experience on Linux by Vikas Singh, Recruitment Consultant (Google & Dell)
	Atanu Datta, Editorial Coordinator, Linux For You, Programming aspects of Linux, Linux in Business Environments
	Case study: Om Logistics by Mr. S. K. Goel, Vice President (I.T.), Om Logistics

33. Teaching methods adopted to improve student learning

1. The use of teaching methods in educational institutions has the potential to improve education and overall development of an individual. In our effort to bring innovations in the field of teaching, the Computer Science Department adopted the following teaching methods especially teaching Foundation Course -IT.

2. A Heterogeneous group of students, consisting of 8 students per batch were formed. It was important to ensure peer to peer learning among them.

3. Small group activities were given to each batch to enhance their analytical and communication skills and help promote the excellent relationship between students and staff. The students were required to make oral presentations on the work done, during the semester.

4. Laboratory work, where hands on exercises were given to students. The practical sessions helped in their technical exposure.

5. The selected topics were given to small groups for discussion. The group discussion encouraged every student to present his/her viewpoint on the on-going discussion. It was evaluated in the presence of an Internal and External Examiner.

6. Projects were given to groups of students, during the semester. Some of them involved field-trips to certain places such as blind schools, villages. It encouraged students to think critically and expose them to outside world. The students made oral presentations on the work done.

Apart from this, the department ensures that programs objective are constantly met and learning outcome are monitored. Following are the step taken by the department.

1. Regular test, quiz group discussions are taken along with presentation from the students.
2. The students are divided into groups. Each group is assigned a teacher who serves as the mentor and familiarizes the student with the college activities especially first year students. As students are new to the college environment, the mentor acts as an intermediate between the college authorities and the students.
3. A Class Representative is elected democratically by the students of the class. Class Representative puts forward the problems faced by the students.
4. The Computer Science Department takes reformatory actions against students who commit mistakes and offers them a chance to improve:
5. In case of short age of attendance an undertaking is filled by the defaulter.
6. In some cases students are made to work in the college and help the college working staff.
7. In case of emergency medical aid is provided to the students.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities: Nil

35. SWOC analysis of the department and Future plans

Strengths:

1. Every year the department conducts Linux and FOSS workshop for I year students of the entire college.
2. 50 % syllabus is covered by permanent faculty (mostly Ph. D. holders).

3.   The students of first year of foundation course paper in IT under FYUP are divided so that each class is interdisciplinary in nature consisting of students of various courses.

4.   In sixth semester of B. Sc(H) Computer Science, the students are given the academic flexibility to choose one elective out of two subjects(data mining & artificial intelligence) based on their interest

5.   Keeping the vibrant eco friendly culture in ANDC, the Computer Science Department works in paper saving mode. Students maintain only the soft copy of their projects & programs listed in their practical guidelines. This initiative has drastically reduced the huge burden of hard copies.

6. Availability of laboratory infrastructure for the students. The department maintains 5 laboratories, each of capacity 25, which will be raised in future.

ELITE – Education in a Lively Innovative Training Environment Scholarship
During summer vacations of 2012, 25 students of Department of Computer Science enrolled under ELITE scholarship program started by the college in which each student received a stipend of Rs.1000/- per month and a certificate on successful completion of the program. All the students were given training on PhP, MySql, Java Script and Latex for 8 days by few students of B.Sc. (H) Computer Science, 3rd year under the guidance of mentors. Javascript, PhP and Mysql were used by students for project development whereas Latex was used for report writing. Students were divided into four groups and each group was assigned a project for development. The details are given below:

NAME	PURPOSE	FRONT END	BACK END	NO OF STUDENTS
Result Analysis	Computerized Result Analysis System(Semester and Annual both)	HTML, CSS ,JAVA SCRIPT,AJAX	PHP ,SQL	5
Alumni Database	Keeping a database of alumni students & providing an online interface for them	HTML ,CSS,JAVA SCRIPT	PHP,SQL	7
Online Election System	Providing an online Interface for voting &other election management activities	HTML ,CSS,JAVA SCRIPT	PHP,SQL	10
Student forum	An online forum for student interaction & disribution of different notices online	HTML ,CSS,JAVA SCRIPT	PHP,SQL	8

Excursion:

Excursions facilitate a multifaceted perception of the world. They play an essential part in the holistic development of a student. Each year, the department organises excursion for CS II year students with diverse destinations across the country. These play a vital role in student's learning curve, give them the chance to build closer bonds with their classmates, experience new environments and impart out-of-classroom teaching and learning.

Excursion 2013- Jim Corbett National Park and Nainital

In spring of March 2013, a short 3-day trip was organized across Jim Corbett jungles and the hills and lakes of Nainital. The fun began when 85 students and 11 teachers of ANDC started their journey to the Jim Corbett National Park. Such trips to exotic locations and places are a part of providing integrated learning and fun to our students.

Excursion 2014- Manali

The students of IV semester were taken on a 3-day trip to the beautiful valley of Kullu and Manali during March, 2014.The panoramic view of snow capped mountains of Solang valley was breath taking. The students enjoyed ice skating, rope way trip and bike riding in the Solang valley. They also enjoyed river rafting in the Beas River.

Alumni Affairs:

Considering alumni affairs an integral component of an educational institution the college holds the alumni met on first Sunday of February every year. Go for ANDC Google group energize the efforts of alumnus. After pursuing higher studies (MCA/M.Sc. from DU, IP, MDU) the alumni of Computer Science department get placed in various IT based companies like in Microsoft, Wipro, Face book, Sapient, IBM, HCL etc. The list of few of them is given below:

Name	Course	Batch	Current Company	Current Designation
Nilanajan Samajdar	BIS	1999-2003	Aricent Group	Engineering Project Manager
Aditya Mahajan	BIT	1998-2002	Sapient Consulting	Senior Associate Technology
Ankur Sadhoo	B.Sc(H) Computer Sc.	2003-2006	Facebook Inc, California, USA	Software Engineer
Himanshu Gupta	B.Sc(H) Computer Sc.	2004-2007	Wize commerce	Software Engineer
Neha Thakral	B.Sc(H) Computer Sc.	2004-2007	ST Microelectronics Pvt. Ltd	Sr. Software Engineer
Ritika Puri	B.Sc(H) Computer Sc.	2004-2007	Zillious solutions Pvt Ltd.	Technical Associate
Anant Sandhu	B.Sc. (H) Computer Sc.	2002-2005	Modulus sysetms	Entrepreneur
Megha Dawra	B.Sc. (H) Computer Sc.	2002-2005	Naggaro Software pvt. Ltd.	Sr. Software Engineer
Bindu Batra	B.Sc. (H) Computer Sc.	2006	Sapient	Quality Lead
Bhuvnesh Kumar	B.Sc. (H) Computer Sc.	2004	Ciena	Tech Lead
Neha Thankral	B.Sc. (H) Computer Sc.	2007	ST Microelectronics	Application Development Manager
Himanshu Bansal	B.Sc. (H) Computer Sc.	2007	Wize commerce	Senior Software Engineer
Shivam Mishra	B.Sc. (H) Computer Sc.	2007	Appstar Pvt Ltd	Business Analyst

The Department of Computer Science feels proud of the achievements of its students. Our students actively participate in technical as well as non-technical festivals organized by various institutions and bring laurels home. Their competitive streak and the support provided by the department faculty makes them successful and help them in achieving outstanding positions in both in-house competitions and inter-college fests. Moreover, our students have achieved meritorious positions in prestigious competitive examinations. The students also attend various esteemed workshops organized by the likes of IIT.

Apart from competitions, the Department of Computer Science encourages its students to organize and assist faculty in conducting various workshops and society events. We believe in "Learning through Practicing". This helps our volunteer students in constantly improving themselves, instills in them the confidence of public speaking and enhances their leadership qualities. This learning would aid them in achieving their targets in both education as well as professional career. In the outside world, students are judged by their capabilities & abilities which they develop in an education institution. To enhance their skills, students of Computer Science departments indulge in various best practices by not only participating in departmental fest but also conducting workshops throughout the semester.

The following activities are completely monitored by students giving them a chance to cultivate   capabilities to face real world situations.

During Departmental fest	During Workshops
1. Preparing and inviting all other college to participate in the fest.	1. Collection of data/material.
2. Arranging sponsorship from various companies.	2. Giving Presentation on the topics.
3. Organizing all the events of the fest.	

Also various **faculties recharging strategy** are conducted and shown in table below:

Name	Refresher	Orientation Programs	Workshops	Training Programs
Dr Sharanjit Kaur	4	1	4	4
Dr Vibha Gaur	3	1	3	1
Dr Sunita Narang	3	1	4	-
Ms Harita Mehta	1	1	2	-
Ms Preeti Marwaha	1	-	5	-
Dr Chandra Kant Samal	-	1	1	1

Weakness:
    i. Due to lack of space, the faculty members don't have individual cabins to prepare lectures.
    ii. Existing Infrastructure does not support adequate research facilities for the faculty
        members and students.

Challenges:
    1. Syllabus of Computer Science is updated very frequently to pace with change in IT technology. All the faculty members have to constantly upgrade themselves to deliver effectively.
    2. Preparing time tables keeping in mind limited infrastructure and continuous classes for students with appropriate breaks imposes a major challenge for the department.
    3. As technology keeps on changing, new courses have been added and old courses have been phased out. Our faculty members took it as a challenge and worked hard to keep pace with these changes in technology.
    4. The faculty members take it as a challenge to provoke students to secure top positions   in   the   university.

Opportunities:

i. The curriculum provides a professional degree which imparts technical knowledge to the students which plays a major role in employing them in good IT Companies.

ii. The course is designed in such a way that students at PG level can opt for MCA, M.Sc electronics, M.Sc. Computer Science and as well as MBA and other management courses.

Future Plan of the Department

    i Prepare students to participate in

- Various open programming events.
- Educational tours
- Industrial visits
- Internships during summer and winter break.
- The department plans to involve more Faculty & Students of Computer Science in department new DST/MICT funded research projects in future.

    ii Organize the following for students:

1. National / International seminars / conferences.
2. Weekly proficiency classes in soft skills.

Evaluation Report of Department of Electronics

1. **Name of the Department**:ELECTRONICS
2. **Year of Establishment:** 1991
3. **Names of Programmes/ Coursesoffered:**B.Sc(Programme) in Physical Science with Electronics (3 years)

   B.Tech in Electronics (4 years)

   B.Sc (Hons) Electronics (3 years)

   Ph.D.
4. **Names of Interdisciplinary courses and the departments/units involved:**
   All the students of FYUP (B.Tech. Electronics) were offered the 11Foundation courses.
   B. Sc. Physical Sciences with Department of Physics and Computer Science
5. **Annual/semester/choice based credit system:**
   All Courses are in Semester System.
6. **Participation of the department in the courses offered by other departments:**
   - Department of Physics, Chemistry and Computer Science.
7. **Courses in collaboration with other universities, industries, foreign institutions:**
   NIL
8. **Details of courses/programmes discontinued (ifany) with reasons:**
   Four Year Undergraduate Programme (FYUP) have been discontinued.
9. **Number of Teaching posts:**

Post	Sanctioned	Filled
Professors	Nil	-
AssociateProfessors	-	03 (Promoted Under CAS)
Asst.Professors	09	03+03*

   *Posts Filled as Temporary/Adhoc Assistant Professors

10. **Faculty profile with name, qualification, designation, specialization:**

Name	Qualification	Designation	Specialization	No.ofYears of Experience	No.ofPh.D. Students Guidedforthe Last4years
Dr. Sona P Kumar	Ph.D., M.Sc. Electronics	Associate Professor	Microelectronics	22 years	Nil

Dr. Anju Agrawal	Ph.D., M.Phil., M.Sc. Electronics	Associate Professor	Microelectronics	19 years	Nil
Dr. Amit Garg	Ph.D., M.Sc. Electronics	Associate Professor	Laser Material Interaction, Science Education, Material Science	17 Years	02 students registered
Mr. Vishal Dhingra	M.Sc. Electronics	Assistant Professor	Science Education,	16 Years	Nil
Dr. Udaibir Singh	Ph.D., M.Sc. Electronics	Assistant Professor	Optics and Material Science	11 years	01 students registered
Dr. Ravneet Kaur	Ph.D., M.Sc. Electronics	Assistant Professor	MOSFET Modelling (Microelectronics)	06 Years	Nil

11. **List of senior visiting faculty :** NIL
12. **Percentage of lectures delivered and practical classes handled(programmewise) by temporary faculty:** 25% of the lectures delivered and practical classes taken by ad-hoc/temporary teachers.
13. **Student-Teacher Ratio (Programmewise):**13:1
14. **Number of academic support staff (technical) and administrative staff; sanctioned and filled:** Support Staff (technical staff): 06 (permanent), (02) contract basis
15. **Qualifications of teaching faculty with DSc/D.Litt/Ph.D/MPhil/PG.**

Qualifications (Last degree)*	Numbers
Ph.D.	05
M.Phil/M.Tech	01
PG	01

*For details refer to Column No. 10

16. **Number of faculty with ongoing projects from**
    a)National:

Number of faculty with ongoing projects*	Number of ongoing Projects	Total Grant Amount
01	01	Rs. 6,00,000/-

    b)International funding agencies and grants received - NA

17. **Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received:**
    Total Grants Received: Rs. 32,54,300/-

18. **Research Centre/facility recognized by the University:** Material Science Research Laboratory which houses latest state of the art equipments for growth and characterization of thin films.

19. **Publications:**
    a) **Publication per faculty:** 60/ 6 = 10.0
    b)**Number of papers published in peer reviewed journals(national /international) by faculty and students:**60

    c) Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database-International Social Sciences Directory, EBSCO host, etc.) :**60**
            Monographs   :
            Chapters in Book   :
            Books Edited   :
            Books with ISBN/ISS Numbers with details of publishers:5

S.No.	Name of the Faculty	Publications in peer review journals	No. of international Conferences	No. of national Conferences	Chapters/E books
1	Dr. Sona P Kumar	06	16	05	
2	Dr. Anju Agrawal	13	16	05	
3	Dr. Amit Garg	10	09	14	5
4	Mr. Vishal Dhingra	06	04		
5	Dr. Udaibir Singh	06	03		
6	Dr. Ravneet Kaur	19	35	12	

Name of Faculty: <u>Dr. Sona P Kumar</u>
Total Publications:
Papers Published in International Referred Journals: 06

Papers Published in International Conference: 16

Papers Published in National Conference: 05

Name of the Journal	No. of Articles		Impact Factor	SNIP 2012	SJR 2012
	As an author	As a Co-author			
Super lattices and Microstructures	1		1.56	0.831	0.542
Microelectronics Journal	3		1.224		
Microwave and Optical Technology Letter		1	0.585		
Microelectronics Reliability	1		1.137	0.659	0.301

Name of Faculty: **<u>Dr. Anju Agrawal</u>**

Total Publications:

Papers Published in International Referred Journals: 17

Papers Published in International Conference: 16

Papers Published in National Conference: 05

Name of the Journal	No. of Articles		Impact Factor	SNIP 2012	SJR 2012
	As an author	As a Co-author			
Superlattices and Microstructures		1	1.56	0.831	0.542
Microelectronics Journal		3	1.224		
Microwave and Optical Technology Letter	4	6	0.585		
Microelectronics Reliability		1	1.137	0.659	0.301

Name of Faculty: **Dr. Amit Garg**

Total Publications:

 Papers Published in International Referred Journals: 10

Papers Published in International Conference: 09

Papers Published in National Conference: 14

Name of the Journal	No. of Articles		Impact Factor	SNIP 2012	SJR 2012
	As an author	*As a Co-author*			
Optics & Laser Technology	02	-	1.365	1.34	0.55
Journal of Optics	01	-	1.990		0.17
SPIE Proceedings	08	01			0.22
International Journal on Recent Trends in Engineering &Technology(IJRTET)		01			
International Journal of Electronic and Electrical engineering		01			
Latin-American Journal of Physics Education	01				
International Journal on Hands-on Science	01				
European Journal of Physics Education	01				
Physics Education	02				

Name of Faculty: **Mr. Vishal Dhingra**

Total Publications:

Papers Published in International Referred Journals: 06

Papers Published in International Conference: 04

Name of Faculty: **Dr. Udaibir Singh**

Total Publications:

Papers Published in International Referred Journals: 06

Papers Published in International Conference: 03

Name of the Journal	No. of Articles		Impact Factor	SNIP 2012	SJR 2012
	As an author	As a Co-author			
Optics and Laser Technology	3		1.365	0.55	
SPIE Proceeding	3			0.22	
International Journal of Artificial Intelligence and Expert System (IJAE)		1			
Journal of Applied Sciences		1			0.91
SAJOSPS		1			

Name of Faculty: **Dr. Ravneet Kaur**

Total Publications:

Papers Published in International Referred Journals: 19

Papers Published in International Conference: 35

Papers Published in National Conference: 12

Name of the Journal	No. of Articles		Impact Factor	SNIP 2012	SJR 2012
	As an author	As a Co-author			
IEEE Transaction on Electron Devices	3	1	2.06	1.874	1.261
Semiconductor Science and Technology	2	3	1.92	0.820	0.812

Microelectronic Engineering	1	1	1.224	0.959	0.680
Superlattices and Microstructures		4	1.56	0.831	0.542
International Journal of Numerical Modeling: Electronic Networks, Devices and Fields		1	0.537	0.734	0.281
Microwave and Optical Technology Letter	1	1	0.59	0.542	0.470
Journal of Semiconductor Technology and Science		1	0.58	0.659	0.301

National/International Conferences attended by Students/ Papers Published -19

20. **Areas of consultancy and income generated**:   None

21. Faculty as members in

   a) **National committees:**

   b) **International Committees :**

   c) **Editorial Board:**

   d) **Scientific Societies:**

Dr. Sona P Kumar

   1. Reviewer of International Journal of Physical Sciences (IJPS) .
   2. Reviewer of IEEE Transactions on Electron Devices (TED)
   3. Member- Organizing Committee: International Symposium on Microwave and Optical Technology (ISMOT)-2009 , December 16-19,2009 in Hotel Ashok, New Delhi, India
   4. Member- Organizing Committee: The 18th WIMNACT(Workshop and IEEE EDS Mini-colloquium on Nanometer CMOS Technology)-New Delhi, India - Mini-Colloquia on "Compact Modeling and Fabrication techniques of advance MOSFET/ HEMT structures", June 04-05, 2009 at University of Delhi South Campus, New Delhi, India sponsored by the IEEE Electron Device Society under its Distinguished Lecturer Program

Dr. Anju Agrawal

   1. Participated as the member of Jury of INSPIRE (INNOVATION IN SCIENEC PURSUIT FOR INSPIRED RESEARCH AWARD National Level Exhibition and

Project Competition (NLEPC)- 2012 & 13 organised by the Department of Science and Technology at Pragati Maidan. New Delhi.

2. Participated as an expert member on the Interview Board for selection of candidates for the post of TGT for the Kendriya Vidyalaya Sangathan.

Dr Amit Garg

1. Jury ember for National Level Exhibition and Project Competition (NLEPC)-2012, 2013 under INNOVATION IN SCIENCE PURSUIT FOR INSPIRED RESEARCH (INSPIRE) programme, Department of Science and Technology
2. Member, Advisory Committee, Conference on Convergence of Optics and Electronics, COE 2011, Joint Conference organized by SPIE student chapters of JIS College of Engineering and University of Calcutta, March 26-27,2011, Science City, Kolkata, India
3. Optical Society of India
4. Member, Program Committee, International Conference on Applications of Optics and Photonics, May 26-30, 2014, Aveiro, Portugal
5. Member, Technical Program Committee, Laser and Optoelectronics Conference 2014(LOC-2014), 28th -30th November, 2014, Beijing China,
6. Session Chair, International Scientific and Program Committee, International Conference on Applications of Optics and Photonics, May 3-7, 2011, Braga, Portugal
7. Member, International Scientific and Program Committee, International Conference on Applications of Optics and Photonics, May 3-7, 2011, Braga, Portugal
8. Society of Photo-Optical Instrumentation Engineers (SPIE), USA
9. Member, Network for the Public Communication of Science and Technology(PCST), Australia
10. Editorial Reviewer Board member Optics and Lasers in Engineering by Elsevier Inc., USA
11. Editorial Reviewer Board member American Journal of Optics and Photonics published by Science Publishing Group, USA
12. Editorial Reviewer Board of *The Science Education Review (SER)*, Australia.
13. Editorial Reviewer Board of *Computer Application in Engineering Education* published by John Wiley & Sons.
14. Editorial Reviewer Board of *IJoES-International Journal of Engineering Sciences,* India.
15. Editorial Reviewer Board of International Research Journal of Engineering Science, Technology and Innovation (IRJESTI)
16. Editorial Reviewer Board of European Journal of Physics Education

Dr. Udaibir Singh

1. Participated in the Jury Process of INSPIRE (INNOVATION IN SCIENEC PURSUIT FOR INSPIRED RESEARCH AWARD National Level Exhibition and Project Competition (NLEPC)- 2012 &2013organised by the Department of Science and Technology at Pragati Maidan. New Delhi.
2. Member of organizing committee in the National Seminar and Workshop on "*Integrating Multiple Technologies to Support Teaching and Learning* " jointly Organized by Department of Electronics, Maharaja Agrasen College, University of Delhi and Institute of Informatics and Communication, University of Delhi South Campus with support from University Grants Commission during 24-26th September 2009.

Dr. Ravneet Kaur

1. Participated in the Jury Process of INSPIRE (INNOVATION IN SCIENEC PURSUIT FOR INSPIRED RESEARCH AWARD National Level Exhibition and Project Competition (NLEPC)- 2012 & 13organised by the Department of Science and Technology at Pragati Maidan. New Delhi.
2. Reviewer of Journal of Electrical and Electronics Engineering Research (JEEER)
3. Reviewer of IEEE Transaction on Electron Devices
4. Reviewer of International Conference - Asia Pacific Microwave Conference (APMC)- 2008 ,*16-19, December 2008 in Hong Kong Convention and Exhibition Center, Hong Kong, China.*

22. Student projects

a) Percentage of students who have done in-house projects including interdepartmental/programme:

Sl. No.	No. of students	Project	Duration
1	03	ELITE Fellowship programme-Title- *"Physics Based Numerical Problem Solving Using Mathcad"*	Nov.2013 – 2014 Nov.
2	92	UGC Major Research Project*"Investigating Science Hands-on to Promote Innovation and Research at the Under-graduate Level"*	Feb2009-March2012
3	10	Innovative Projects funded by Delhi University: ANDC-101 *"Glucose Detection – a biosensing approach"*	June 2012-June 2013
4	10	Innovative Projects funded by Delhi University: ANDC-103*"Mobile Phone as a real time sensor based undergraduate laboratory"*	June 2012-June 2013
5	10	Innovative Projects funded by Delhi University: ANDC-202 *"Development of low cost computer controlled science laboratory using sensors and open source hardware and software tools"*	June 2013-June 2014
6	04	ELITE 2012 Scheme: *"Sensors interfacing with computer with different Science experiments"*	June 2012-June 2013
7	04	ELITE 2012 Scheme: *"Electronic Hobby Circuits"*	June- July 2012
8	04	ELITE 2012 Scheme: *"Development of low cost Fiber-optics Kit"*	June- July 2012
9	02	ELITE 2013 Scheme: *"Understanding Data Acquisition and its real world applications using LabVIEW"*.	June- July 2013
10	03	ELITE 2013 Scheme:*"To study data acquisition through LabVIEW and its application in real time"*	2013
11	04	IEDC SCHEME: *"Low cost Glucometer"*	2013
12	03	IEDC SCHEME:*"Development of Phototherapy Blanket for treatment of Jaundice in Infants"*	2013

Students from Outside Institutions doing 6 weeks/6 months training(Project names and year to be furnished)

1. Miss Shweta Jha- B.Tech(Chemical engineering), IInd Year, Banasthali Vidyapeeth, Rajasthan, " Sensor based experiments in Chemistry, 2010
2. Mr. Arvind Kumar,M.Sc(Electronics), IInd Year, Jamia Millia Islamia, Delhi, VHDL & FPGA Design, 2011
3. Mr. Praacheesh Arya, M.Sc(Engineering physics), Amity University, Preparation and Optical properties of sol gel processed Barium Titnate thin films, 2013
4. Miss Pinky , M.Sc(Electronics), IInd Year, Jamia Millia Islamia, Delhi, Fabrication and Characterization of ZnO thin films, 2014

b) Percentage of students placed for projects in organizations outside the institution i.e. in Research laboratories/Industry/ otheragencies:**None**

23. **Awards/Recognitions received by faculty and students:**

Dr. Amit Garg

1. Recipient of the Meritorious Teachers' Award of the Directorate of Higher Education, Government of NCT of Delhi for the year 2012-13. Received cash award of Rs. 1,00,000/- on this occasion from Smt. Sheila Dixit, Hon'ble Chief Minister of Delhi in the august presence of Dr. A.K. Walia, Hon'ble Minister for Higher Education.

2. Tsunami Lahron Ka Kehar, awarded second Prize of Rs.40000/- by Ministry of Earth Sciences, Govt. of India under Original book writing scheme in Hindi 2011.

   Other details in Criteria II.

Students

1. A team of four student members of ANDC-202 under the mentorship of Dr. Amit Garg , namely Avinash Kumar Shudhanshu(B.Sc. Physical Sciences (with Elec.), 2nd Year), Gaurav Singh(B.Sc. Computer Science (Hons.), 2nd year), Raj Kumar and Sadashiv Raj Bharadwaj(both from B.Tech. Electronics, 1st Year) participated in '7th National Level Science Symposium-2014' on "Recent Trends in Science and Technology" sponsored by 'Gujarat Council of Science and Technology' at Christ College, Rajkot on 23rd February 2014 and among 25 participating teams across different states of India, ANDC team stood First in this National Level project presentation competition.

2. Study of Hall Effect using LabVIEW, Rohit Gambhir, Anshul Vinay Parmar, Migmar Dolma, Amit Garg, Reena Sharma, Vishal Dhingra, selected as the IIIrd best paper in VI Mantra 2008, The Virtual Instrumentation contest for Science and Engineering Education, published by National Instruments, USA.

24. **List of eminent academicians and scientists/visitors to the department:**
1. Dr. Philip H Stahl, NASA,USA, SPIE 2014 President
2. Prof. K.L. Chopra, PADAMSHRI, FNA, FNASc, FASc, FNAE, D.Sc(hc), Former Director, IIT – Kharagpur, President, Society for Scientific Values
3. Prof. Kehar Singh, Formerly Professor of Physics, IIT, Delhi
4. Prof. Joby Joseph, Professor, Department of Physics, IIT, Delhi
5. Prof. Vinay Gupta, Department of Physics and Astrophysics, University of Delhi, Delhi

6. Prof. E.K. Sharma, Department of Electronic Science, UDSC, New Delhi
7. Prof. Ajoy Ghatak, FNASc, Formerly Professor of Physics, IIT, Delhi
8. Prof. P.K. Bhatnagar, Head, Department of Electronic Science, UDSC, New Delhi
9. Dr.A.T. Reghunath, Scientist G, LASTEC, DRDO, Delhi

25.**Seminars/Conferences/Workshops organized & the source of funding**:
a) National
b)International:
2012 and 2014 Education Outreach Grant Recipient – USD 9000
26. **Student profile programme/coursewise:**

Name of the Course/programme (refer question no. 4)	Applications received	Selected	Enrolled		Pass percentage
			*M	*F	
B.Sc (H) Electronics	43884	55	50	05	94.44

*M=Male *F=Female
27. **Diversity of Students:**

Nameofthe Course	%of students from the same state	%of students from other States	% of students from abroad
B.Sc (H) Electronics Sem I	52.27	47.73	-
B.Sc (H) Electronics Sem III	12.80	87.20	-
B.Sc (H) Electronics Sem V	25	75	-

28. **How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?** Data not available

29. **Student progression:** Data not available

Student progression	Against % enrolled
UG to PG	
PG to M.Phil.	
PG to Ph.D.	
Ph.D. to Post-Doctoral	

Employed	
• Campus selection	
• Other than campus recruitment	
Entrepreneurship/Self-employment	

30. **Details of Infrastructural facilities**
   a. **Library:** The college library has a collection of wide range of books on almost all spheres of Chemistry.
   b. **Internet facilities for Staff & Students:** The entire campus is Wi-Fi enabled where each and every student, staff and Non-teaching staff member is being provided with an individual Id address to maintain security and confidentiality.
   c. **Class rooms with ICT facility:** All the class rooms are equipped with Wi-Fi, projectors and ICT facilities. Latest computers are available to students to cater the software and simulation based requirements.
   d. **Laboratories:** There are two well-equipped laboratories. All of them have been renovated and reconstructed according to the student strength.. The labs are well equipped with state of art equipment:

S.No.	List of Instruments
1.	Digital Storage Oscilloscope
2.	Function Generators
3.	Power Supplies
4.	FPGA modules
5.	Microcontroller and Microprocessor Kits
6.	Robotics Development Kits
7.	PCB design and Fabrication Kits
8.	Multisim simulation software
9.	LabVIEW
10.	Data Acquisition Cards
11.	Modern Communications kits on PCM, FM, AM, DPCM, Delta modulation etc
12.	Motor Modules

31. **Number of students receiving financial assistance from college, university, Government or other agencies:**
   • Tina Gupta memorial: Every year 3 students are awarded this scholarship.
   • Other Scholarships: SAKSHAM, Pushpa Paul Memorial Scholarship,DC Arora

Memorial Scholarship

32. **Details on student enrichment programmes (special lectures/workshops/ seminar)with external experts. Electrwork, SPIE Workshops**

33. **Teaching methods adopted to improve student learning:**
Lectures   : emphasis is laid down on:

- Importance/Significance of content-- to clarify lesson objective
- How the information can be applied to real-world problems
- Use of concrete examples from real life, current events and make use of simple syntax
- Macro to micro level discussion- to accomplish both course content goals and active engagement on the part of students
- Comparative study with other related topics
- Relating the theory with experiment to be performed and extending the experiment beyond the prescribed limits in syllabus.
- Short explanation of and rationale for using back-of-the-envelope calculations, plus examples.

Assignments and Problem Sets   :
Students are given

- Complex and topic-comprehensive problems to solve that can aggressively challenge and move forward students' understanding and skill in working with the course material
- Problems based on unexplained/unsolved topics and exercises left to reader.
- Problems actively engaging students and placing more responsibility on them for their own learning through assignments.

Class Tests   : Problems based on fundamentals, concepts & applications

Viva-Voce   : To improve expression, confidence & technical fluency

Projects   **:** Hands-on projects on various problems related to electronics/ physics education. This will inculcate in them the habit of referring to research journals.

Presentations & Discussions: Proficient oral skills through

- Project report presentations using PowerPoint followed by discussion.
- Encouraging students to read widely, to question and to analyze what they have read, and to talk over openly their own ideas in the class discussions
- Formal presentation on the recent innovations in the field of study where other students can question, clarify and challenge

Practicals :

- Develops analytic and problem solving skills for which detailed added exercises are given to the students to further improve understanding of underlying concepts, instrumentation & rational analysis of results**.**
- Completion of the lab handout

34. **Participation in Institutional Social Responsibility(ISR) and Extension activities:**

The department has University of Delhi at ANDC SPIE student chapter that conducts an outreach program to strengthen secondary/tertiary education. The student members conduct workshops in various schools of Delhi to expose school students with various hands-on activities on optics and photonics. Also students are encouraged to participate in the social outreach programme such as NSS. The University of Delhi regularly updates and brings changes in the curriculum. The faculty members actively participate in the committees formulated to suggest the changes in the curriculum. The faculty members organize and participate in various workshops as resource persons and contribute in various activities even beyond the college campus.

35. **SWOC analysis of the department and Future plans:**

Strengths:

- The faculty is young and highly motivated, with excellent academic profile.
- We have integrated teaching and research. The research activities are not only limited to faculty only but are extended to undergraduate students as well.
- Each faculty member takes personal interest in mentoring the students for their overall development.
- A course in demand

Weaknesses:

- Lack of space.

Opportunities:

- New college building
- A course which has industry employability
- The department offers research opportunities in terms of summer research projects and externally funded research projects. This helps in developing research aptitude in undergraduate students thus preparing them for industrial employment.

Challenges :

- To increase working space in terms of Laboratories.
- To expand the research activities to involve greater number of willing students.
- To upgrade the teaching and learning methods.
- To work out industrial tie ups
- To enhance the competence level of the support staff

Evaluative Report of the Mathematics Department

1. **Name of the Department:**   Mathematics
2. **Year of Establishment:**   1991
3. **Names of Programmes/Courses offered:**
   - B.Sc. (Hons.) Mathematics (3 year)
   - M.Sc. (Mathematics)
4. **Names of Inter disciplinary courses and the departments/units involved:**
   - B.Sc. Physical Science with Electronics :
     Departments of Mathematics, Physics, Electronics,
     Computer science, English are involved.
   - B.Sc. Physical Science with Chemistry:
     Departments of Mathematics, Physics, Chemistry,
     Computer Science, English are involved.
   - B.Sc. Physical Science with Computer Science:
     Departments of Mathematics, Physics ,Computer science,
     English are involved.
5. **Annual/semester/choice based credit system (programme wise):**   Semester system
6. **Participation of the department in the courses offered by other departments:**
   B.Sc. (H) Physics, B.Sc. (H) Chemistry, B.Sc. (H) Computer Science,
   B.Sc. (H) Zoology, B.Sc. (H) Botany, B.Sc. (H) BMS
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.:** Nil
8. **Details of courses/ programmes discontinued (if any) with reasons:** No
9. **Number of Teaching posts**

	Sanctioned	Filled
Professors	NIL	NIL
Associate Professors	_	6(Promoted under CAS)
Asst. Professors	13	2+5* *Posts filled as Temporary/Adhoc Assistant professor

10. Faculty profile with name, qualification, designation, specialization(D.Sc. /D.Litt. /Ph.D. /M.Phil. Etc.,)

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students Guided for the Last 4 years
Ms. Anupama	M.Phil. (Maths)	Associate Professor	Computer Programming	20 years 6 months	-
Dr. Vatsla Kohli	Ph.D. (Maths)	Associate Professor	Queuing Theory	19 years	-
Mr. Gaurav Sharma	M.Phil. (Maths)	Associate Professor	Non-Linear Dynamical Systems &Chaos	15 years 9 months	-
Dr. Roopesh Tehri	Ph.D. (Maths)	Associate Professor	Chaos and Dynamical System	15 years 10 months	-
Dr. Laxmi Narain	Ph.D. (Maths)	Associate Professor	Optimization Techniques	14 years 6 months	-
Ms. Seema Gupta	M.Phil. (Maths)	Associate Professor	Mathematical Programming	16 years 7 months	-
Dr. Sadanand Prasad	Ph.D. (Maths)	Assistant Professor	Dynamical System, Space Dynamics	7 years 6 months	-
Dr. Chaman Singh	Ph.D. (Maths)	Assistant Professor	Inventory Control and Management.	5 years	-

11. List of senior visiting faculty: Nil

12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty:

38% by temporary and adhoc faculty

13. Student–Teacher Ratio (programme wise):

B.Sc. (Hons.) Mathematics   23.22

B.Sc. Physical Sciences (Chemistry)   18.47

B.Sc. Physical Sciences (Computer Science)   13.79

B.Sc. Physical Sciences (Electronics)   18.73

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled: NA

15. Qualifications of teaching faculty with DSc/ D.Litt. /Ph.D./M. Phil./PG.:

Qualification of teaching faculty*	Number
Ph.D.	5
M.Phil./ M.Tech.	3
PG	-

*Details as given in column no. 10

16. **Number of faculty with on going projects from a) National b) International funding agencies and grants received :**
National
Innovation project sanctioned by University of Delhi
Grant received – 6 lakhs.
Project on "Development of low cost computer controlled science laboratory using sensors and open source hardware and software tools" by
Dr. Roopesh Tehri, Dr.Amit Garg, Mr. Chandra Kant Samal.
17. **Departmental projects funded by DST–FIST; UGC, DBT, ICSSR, etc. and total grants received:** Nil
18. **Research Centre/ facility recognized by the University:** Nil
19. **Publications:**
    a) **Publication per faculty:** 44/9=4.88
    Number of papers published in peer reviewed journals (national/international) by faculty and students: 44

∗**Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database– International Social Sciences Directory, EBSCO host, etc.) :**
∗**Monographs:** Nil
∗**Chapter in Books:** **20**
∗**Books Edited:** Nil

∗**Books with ISBN/ ISSN numbers with details of publishers:**
DR. CHAMAN SINGH:
   • "Fuzzy Set Theory for M.Sc. Students" Published Krishna Educational Publishers, Meerut, U.P. India, ISBN 81-8283-226-8.
   • "Maths Magic for class 6" Published by EDUWELL BOOKS Educational Publisher with ISBN 81-8186-212-0.
   • "Maths Magic for class 7" Published by EDUWELL BOOKS Educational Publisher with ISBN 81-8186-213-9.
   • "Maths Magic for class 8" Published by EDUWELL BOOKS Educational Publisher with ISBN 81-8186-214-7.

20. **Areas of consultancy and income generated:** Nil
21. **Faculty as members in a) National committees b) International Committees**
    c) Editorial Boards….
    (a) National
    Dr. SADANAND PRASAD
    • Member of Operational Research Society of India
    Dr. CHAMAN SINGH
    • Life member of the Association for Advancement in Combinatorial Sciences.

    • Vice-President of the Association for Advancement in Combinatorial Sciences.
    • Life member of the Operational Research Society of India.
    • Vice-President of the Meerut Chapter of the Operational Research Society of India.
    DR. SARITA AGARWAL
    • Life member of Ramanujan Mathematical Society.
    • Life member of Society of Mathematical Sciences,University of Delhi.
    (b) International - Nil
    (c) Editorial Boards- Nil

22. Student projects

　　a) **Percentage of students who have done in-house projects including interdepartmental/ programme:**

　　　• Aakansha Saini, Nidhi Yadav, Chhama Aggarwal, Pinki Sharma (B.Sc (H) Mathematics Part III) and Sarita Agarwal (Faculty) (2013).
　　　 Hydrogen Sulphide (H_2S) and ammonia gas (NH_3) emanated by the Yamuna are poisoning the air .

　　　• Neha Chandra (B.Sc (H) Mathematics Part III) and Sarita Agarwal(Faculty) (2014)
　　　 A study of the fluctuation in the stock market.

　　　• Shreyak Chakraborty,Salil Batabyal and Sarita Agarwal(Faculty)(2014)
　　　 Modelling and Simulation of Crowds.

　　b) **Percentage of students placed for projects in organizations outside the institution i.e. in Research laboratories/Industry/ other agencies :** Nil

23. Awards/Recognitions received by faculty and students:

　　　FACULTY
　　　DR. CHAMAN SINGH

　• Worked as the Coordinator for the E-Content creation for FYUP courses in Mathematics at Institute of Lifelong Learning, University of Delhi.(2013-2014)

　• Working as the Coordinator for the E-Content creation in Mathematics for the National Mission on Education A project of UGC.

　• Won the first prize for the best paper presentation in the national conference on Role of Management Science in Decision Making organized by Institute of Management Technology, Nagpur, February 13-14, 2009.
　　　STUDENT

　• **NIKITA AHUJA** (B.Sc (H) Mathematics, Part III, 2010-11) was selected by the Ministry of Sports and Youth Affairs, Government of India to represent India in a five-member delegation at an important and prestigious international event –the SAARC Youth Summit held in Islamabad between 28-30 September 2010.

24. List of eminent academicians and scientists /visitors to the department: (Data of last 5 years only)

　• Dr. S.C. Arora : Head, Department of Mathematics, University of Delhi, delivered a lecture on Boolean Algebra, 2009

　• Dr. K.B. Bhatnagar : Director , Centre for Fundamental Research in Space Dynamics and Celestial Mechanics, Delhi. In his talk on Dec 3 , 2009 he explained the intricate nature of the space, the origin of black holes, obscurity of galaxies and behavioural aspects of our solar system.

　• Dr. L.M. Saha : Professor, Shiv Nadar University, Dadri, conducted workshop on Mathematica in March 2013.

　• Dr. Aparna Mehra : IIT Delhi. She delivered a talk on " Time Value of Money" on March 21, 2014.

　• Dr. G.S. Tuteja : Deputy Director, Student Welfare, University of Delhi. He conducted workshop on Maxima software in 2013.

25. Seminars/Conferences/Workshops organized & the source of funding

　a) **National: At college level**

　1) One day workshop on Free and Open Source software MAXIMA, organized by ANDC (Aug 17, 2012).

　Organizing Members: Dr.Laxmi Narain, Dr.Roopesh Tehri, Mr.Gurudatt RaoAmbedkar

　2) One day workshop on Applications of MATHEMATICA software in partial differential equation, organized by ANDC (March 1, 2013).

　Organizing Members: Dr.Laxmi Narain, Dr. Sadanand Prasad, Dr.Chaman Singh,

b)International: Nil

26. Student profile programme / course wise:

Name of the Course/programme(refer question no. 4)	Applications received	Selected	Enrolled		Pass percentage
			*M	*F	
BSc(H)Mathematics	52289(Central Applications received by University of Delhi)	91	72	19	93.33
M.Sc.(Mathematics)	16	16	04	12	93.75

*M=Male *F=Female

27. Diversity of Students:

Nameofthe Course	%of students fromthe same state	%ofstudents fromother States	%of students from abroad
BSc(H)Mathematics	45.32	54.68	0.00
M.Sc.(Mathematics)	55.00	45.00	0.00

28.How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?

Data not maintained.

29. Student progression: Data not maintained.

Student progression	Against % enrolled
UG to PG	
PG to M.Phil.	
PG to Ph.D.	
Ph.D. to Post-Doctoral	
Employed •Campus selection •Other than campus recruitment	
Entrepreneurship/Self-employment	

30. Details of Infrastructural facilities

 a) **Library:** We have centralized   fully air conditioned library for all departments.

 b) **Internet facilities for Staff & Students:** The college web centre has high speed Wi-Fi internet connectivity provided by the University of Delhi. The college premises are 100% Wi-Fi enabled.

c) Class rooms with ICT facility. Each classroom is equipped with LCD projectors.

d)   Laboratories: Shared computer lab.

31. Number of students receiving financial assistance from college, university, government or other agencies:

S.NO	NAME	CLASS	NAME OF SCHOLARSHIP	DETAIL
1.	Deepak Gangwar (2009-10)	B.Sc (H) Mathematics Part I	Subodh Chander Amiya Banerjee Book Grant	600 /-p.a
2.	Devashish Kumar Singh (2012-13)	B.Sc (H) Mathematics Sem II	Shree Uggersain Memorial Endowment Memorial Book Grant	1200/- p.a, for three years

The college has benevolent scheme SAKSHAM earlier known as Student Aid Fund, with a sole objective to empower inclusive education for the needy and deserving students. Following students were supported under this scheme:

• Pinki Sharma, B.Sc (H) Mathematics, part I, II, III. (2010-13)
• Raman Kumar,B.Sc (H) Mathematics, part II, III.(2010-12)
• Nidhi Yadav,B.Sc (H) Mathematics, part I, II, III.(2010-13)
• Krishna Pal Singh, B.Sc (H) Mathematics, part I.(2010-11)
• Sanyam Gupta,B.Sc (H) Mathematics, part III.(2010-11)
• Chandan Raj, B.Sc (H) Mathematics, part II. (2010-11)
• Chhama Aggarwal, B.Sc (H) Mathematics, part II, III. (2011-12)
• Jitender Kumar, B.Sc (H) Mathematics, part II. (2011-12)
• Ashish Gautam, B.Sc (H) Mathematics, part I, II. (2012-14)
• Mayank Kumar Yadav, B.Sc (H) Mathematics, part I. (2012-13)
• Faizal Ali, B.Sc (H) Mathematics, part I, II. (2012-14)
• Devender Kant Maurya, B.Sc (H) Mathematics, part I, II. (2012-14)
• Shivpal Singh Jadaun, B.Sc (H) Mathematics, part I. (2013-14)
• Abhishek Kumar Verma, B.Sc (H) Mathematics, part I. (2013-14)
• Dinesh Kumar, B.Sc (H) Mathematics, part I. (2013-14)

32. Details on student enrichment programmes (special lectures /workshops /seminar) with external experts:
  • Eminent Speakers are invited for special lectures and to interact with students (details in point 24).
  • Excursions:
    1) An excursion to Jim Corbett and Nanital was organized for 26 part IIstudents from March 7-10, 2013.
    2) Another excursion to Kullu Manali was organized from March 22-25, 2014.

33. Teaching methods adopted to improve student learning:
  • Usage of projectors in classrooms,
  • Practicals are done using softwares - Mathematica, Matlab, Excel, Maxima, C++
  • Regular assignments and tests.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities:
  • Teachers of Mathematics Department participate in Institutional Social Responsibilities (ISR) by being members of various committees like sports, NSS, Environmental Committee, Theatre Society, Proctorial Committee
  • Excursions

35. SWOC analysis of the department and Future plans :

STRENGTH:

i) 5 out of 8 permanent faculties are Ph.D.

ii) Most of the faculty members are involved in research, book writing, and innovation projects.

WEAKNESS :

The department is capable of delivering its best to students however, there are certain limitations in terms of infrastructure.

OPPORTUNITY:

Opportunity to have hands on experience by doing project works like ELITE ; 'Education in Lively, Innovative Training Environment', summer projects. After doing B.Sc. (Maths), the students can opt for M.Sc., MBA, B.Ed., Research, and MCA.

CHALLENGES:

To involve more students in projects and to give them exposure to research.

Evaluative Report of Department of Physics

1. Name of the Department: **Department of Physics**
2. Year of Establishment: **1992**
3. Names of Programmes/ Courses offered (UG,PG,M.Phil.,Ph.D., Integrated Masters; Integrated Ph.D.,etc.) :

>   **B. Sc. (H) Physics**
>
>   **B. Sc. Physical Sciences**

4. **Names of Interdisciplinary courses and the departments/ units involved:**

Interdisciplinarycourse	Departments involved
B. Sc. Physical Sciences with Chemistry	Chemistry, Mathematics
B. Sc. Physical Sciences with Electronics	Electronics, Mathematics
B. Sc. Physical Sciences with Computer Science	Computer Science, Mathematics

5. **Annual/semester/choice based credit system (programmewise)**

>   All Courses are in Semester System.

6. **Participation of the department in the courses offered by other departments**

>   (a) Department participates in teaching of physics papers of B. Sc. Physical Sciences with Department of Chemistry and Department of Computer Sciences.
>
>   (b) Department offers credit courses to students of B. Sc. (H) Mathematics

7. **Courses in collaboration with other universities, industries, foreign institutions, etc.:**   **Nil**

8. **Details of courses / programmes discontinued (ifany) withreasons:**

>   B.Sc.(H)Physics in annual mode and Four Year Undergraduate Programme Bachelor with Honours Physics were discontinued by University.

9. **Number of Teaching posts**

	Sanctioned	Filled
Professors	Nil	Nil
Associate Professors	Nil	8 (promoted under CAS)
Asst. Professors	16	4+4* *Posts Filled as Adhoc Assistant Professors

10. **Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt./Ph.D./M.Phil.etc.,)**

Name of teacher	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students Guided for the last 4 years
Dr. Mamta Bhatia	M. Phil, Ph.D.	Associate Professor	Reactor Physics	26	NIL
Dr. Sanjeeta Rani	Ph.D.	Associate Professor	Solid State Physics	21.5 years	NIL
Dr. Manisha Verma	Ph.D.	Associate Professor	Advanced Solid State and Super conductivity	21.5 years	NIL
Dr. Shalu Dhanda	Ph.D	Associate Professor	Electronics, Classical Mechanics	19 years and 9 months	NIL
Dr. Pankaj Tyagi	Ph.D	Associate Professor	Optics, Thermal Physics, Thin films,Electronics, Innovation, Optical Properties	19 years	NIL
Dr. Meenu Mohil	Ph.D.	Associate Professor	High Energy Theoretical physics	16.5 years	NIL
Dr. Arijit Chowdhuri	Ph.D.	Assistant Professor	Experimental Material Science	11 years	NIL
Dr. Priti Goyal	Ph.D.	Associate Professor	Electronics	13 years	NIL
Dr. Ranjeet Singh	Ph.D.	Assistant Professor	Optics	8.5 years	NIL
Dr. Subhash Kumar	Ph.D.	Assistant Professor	Astrophysical Plasma Physics	13.5 years	NIL
Dr. Rachna Joshi	Ph. D.	Associate Professor	Electronics	14 years	NIL
Mr. Pawan Kumar	M. Phil	Assistant Professor	Electronics	7.5 years	NIL

11. List of senior visiting faculty: **Nil**
12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty:

50% of lectures delivered and practical classes for all the Programmes are handled by temporary faculty.

13. Student-Teacher Ratio (programmewise) :   **19.72 : 1**
14. Number of academic support staff (technical) and administrative staff; sanctioned and filled :

	Sanctioned	Filled
Technical Staff	**7**	**7**

15. Qualifications of teaching faculty with DSc/D.Litt/Ph.D/MPhil/PG:

Qualifications of teaching faculty*	Number
Ph. D.	11
M. Phil. / M. Tech.	1
PG	None

* Details as Given in Column. No 10

16. **Numberoffacultywithongoingprojectsfroma)Nationalb)Internationalfunding agencies and grants received**

a)National :

Number of faculty with ongoing projects*	Number of On Going Projects	Grants received
2	3	INR 14.3 Lakhs

*The details are as follows :
1**. Dr. Arijit Chowdhuri**
   DU Innovation Project 2013 - 14, Code: ANDC – 204, Grant : INR 5.0 L
2. **Dr. Subhash Kumar**
   DU Innovation Project 2013 - 14, Code ANDC – 203 Grant : INR 4.5 L
3. **Dr. Subhash Kumar**
   SERC DST Analysis of light curves of variable stars. Grant: INR 4.80 L

b)International: **NIL**

17. Departmental projects funded by DST-FIST;UGC, DBT, ICSSR, etc. and total grants received:
      Number of Projects: **4**
      Total grants received: **INR 11.35 L (ANNRXURE-1)**

18. Research Centre/ facility recognized by the University: **None**

19. **Publications:**
      a) Publication per faculty: **60/ 12 = 5.0**

b)Number of papers published inpeer reviewed journals (national   /international)   by faculty and students :   **60**

    By Faculty :   **60**

Details of Publications of Physics Faculty:

Name of Teacher	Papers in International Journals	Papers in National Journals	Papers in International Conferences	Papers in National Conferences	Chapters in Books
Dr. Mamta Bhatia	2	-	2	1	
Dr. Sanjeeta Rani	-	3	-	-	-
Dr. Manisha Verma	2	-	-	1	-
Dr. Shalu Dhanda	1	-	-	-	-
Dr. Pankaj Tyagi	12	-	2	13	-
Dr. Meenu Mohil	2	3	-	-	-
Dr. Arijit Chowdhuri	13	-	18	9	-
Dr. Priti Goyal	3	-	1	-	3 Reviewed Chapters
Dr. Ranjeet Singh	6	-	-	-	-
Dr. Subhash Kumar	5	-	-	-	-
Dr. Rachna Joshi	6	2	2	-	2
Mr. Pawan Kumar	-	-	-	-	1

BookswithISBN/ISSNnumberswithdetailsofpublishers : 22

CitationIndex
SNIP   :   39.75 (Cumulative)
SJR   :   39.976 (Cumulative)
Impactfactor   :   71.928 (Cumulative)

20.Areas of consultancy and income generated: **Nil**

21. **Faculty as members in:**

  a) National committees:

Sl. No.	Name of Faculty	Membership
1	**Dr. Pankaj Tyagi**	Lifetime membership of "Society for Technologically Advanced Materials of India" (STAMI- Regd. No. MH/589/07) from 2008.
2	**Dr. Arijit Chowdhuri**	Life member of Indian Association of Physics Teachers (IAPT, India). Life member of PSSI (Plasma Science Society of India)
3	**Dr. Subhash Kumar**	Life member of PSSI (Plasma Science Society of India)
4	**Dr. Rachna Kundliya Joshi**	Life member of Indian Association of Physics Teachers (IAPT, India)
5	**Mr. Pawan Kumar**	Life member of PSSI (Plasma Science Society of India).

b)International Committees:

Sl. No.	Name of Faculty	Membership
1	**Dr. Pankaj Tyagi**	Honorary appointment as member of the Research Board of Advisors, The American Biographical Institute (ABI), North Carolina, USA since 2003
2	**Dr. Arijit Chowdhuri**	Member of Institute of Electrical and Electronics Engineers (IEEE), USA

c)Editorial Boards….

Sl. No.	Name of Faculty	Name of journal
2	**Dr. Arijit Chowdhuri**	International Journal 'Sensors and Transducers'

22. **Student projects**

a) **Percentageofstudentswhohavedonein-houseprojectsincludinginterdepartmental/programme:**

Sl. No.	No. of students	Project	Duration
1	10	DU Innovation Project ANDC – 204	Nov. 2013-Nov. 2014
2	10	DU Innovation Project ANDC – 203	Nov. 2013-Nov. 2014

3	10	DU Innovation Project ANDC – 101	June 2012-June 2013
4	10	DU Innovation Project ANDC – 102	June 2012-June 2013
5	02	ELITE scheme	2013
6	Mrityunjay K. Singh of B. Sc. Physical Science (Electronics) Part-III	"Development of sensor module for gas sensing applications" under IEDC	2012-2013
6	All Students of B. Sc. Physical Science VI Semester	Project under Curriculum of Physics Lab	Every Year

b)Percentage of students placed for projects inorganizations outside the institution i.e. in Research laboratories/Industry/ other agencies:

Data not available.

23. **Awards/Recognitions received by faculty and students**

By Faculty:

Dr. Pankaj Tyagi

1. Nominated for "The 2006 Man of The Year's Commemorative Medal" by Board of International Research of the American Biographical Institute (ABI), North Carolina, USA.

2. Nominated for "The 2005 Man of The Year's Commemorative Medal" by Board of International Research of the American Biographical Institute (ABI), North Carolina, USA.

Dr. Arijit Chowdhuri

1. **Best Poster award at the 27th PSSI National Symposium on Plasma Science and Technology (PLASMA 2012) held at Pondicherry University, Puducherry, INDIA from 10 – 13 December 2012**

2. **Best Poster award at the Third International Conference on Sensing Technology (ICST 2008) held at Tainan, Taiwan from 30 Nov. – 3 Dec. 2008**

Dr. Manisha Verma

Dr. Manisha Verma received the Women's Achievement Awards, on International Women's Day celebration, at New Delhi, 8th March, 2008, organized by Court of Governors of Women International Network and its Departments.

By Students:

The following are the details of awards won by students:

Sl. No.	Name of Student	Course	Award won	Award Given by	Year	Amount In INR
1	Priya	B.Sc. Physical Science(PME)	Meritorious Scholarship	Govt. NCT of Delhi	2013-14	10,000
2	Srijan Sagar	B.Sc. Physical Science(PME)	Meritorious Scholarship	Govt. NCT of Delhi	2013-14	10,000
3	Nishant Singla	B. Sc. (H) Physics Semester-VI	Science Meritorious Award	University of Delhi	2012-13	10,000
4	Nishant Singla	B. Sc. (H) Physics Semester-VI	Meritorious Scholarship	Govt. NCT of Delhi	2012-13	10,000
5	Sanam Thakur	B. Sc. (H) Phy III Year	Board Scholarship	H.P. Board of School, Education	2011-12	4,830
6	Dhruv Goel	B. Sc. (H) Phy Sem IV	Awakening India' Essay Competition	Ramakrish-na Mission New Delhi	2011-12	500
7	Vipin Kumar Gupta	B. Sc. (H) Physics Semester I	Scholarship	Dr. B. K. Anand Benevolent Trust	2010-11	5,000
8	Poonam Shandhu	B. Sc. (H) Phy III Year	Post Matriculation Scholarship to Minority students	Govt. of NCT of Delhi	2008-09	4,850

Positions in Delhi University (DU) and University of Delhi South Campus (UDSC)

The following are the details of positions obtained by our students in Delhi university (DU) and University of Delhi South Campus (UDSC) :

Sl. No.	Name of Student	Course	Position Obtained	DU / UDSC	Year
1	Nishant Singla	B. Sc. (H) Physics Semester-IV	II	DU	2011-12
2	Nikhil Kumar	B.Sc. Physical Science (PME) Semester I	III	UDSC	2012-13
3	Priya	B. Sc. Physical Science (PME) Semester II	III	UDSC	2012-13
4	Sunil Kambhoj	B. Sc. Physical Science	III	UDSC	2012-13

		(PME) Semester III			
5	Srijan Sagar	B. Sc. Physical Science (PME) Semester III	I	UDSC	2011-12
6	Srijan Sagar	B. Sc. Physical Science (PME) Semester IV	I	UDSC	2011-12
7	Nishant Singla	B. Sc. (H) Physics Semester-IV	I	UDSC	2011-12
8	Sunil Kambhoj	B.Sc. Physical Science (PME) Semester I	I	UDSC	2011-12
9	Srijan Sagar	B.Sc. Physical Science (PME) Semester I	II	UDSC	2011-12
10	Jai Kumar	B.Sc. Physical Science (PME) Semester I	III	UDSC	2011-12

Other Achievements:

1. Mr. Avinash Kumar Shudhanshu B.Sc. Physical Science (PME) Semester II got award for best presentation at '7th National Level Science Symposium-2014' on "Recent Trends in Science and Technology" sponsored by 'Gujarat Council of Science and Technology' at Christ College, Rajkot on February 23, 2014.

2. Ms. Phalguni Mathur of B.Sc. (H) Physics, Part-III attended Optical Engineering + Applications (SPIE Optics + Photonics) conference held from August 12-16, 2012 at San Diego Convention Center, San Diego, California, USA and presented a paper on 'Development of low cost optical fiber kit to promote Fiber-Optics at the school level' in the conference and participated in Optics Outreach Olympiad.

3. Ms. Phalguni Mathur, along with some other students and teachers, also presented a paper on 'Initiatives taken by undergraduates in promoting science at the school level' at Academic Congress; Enabling the Young: Redefining Education, University of Delhi held from September 6 - 7, 2012.

24. List of eminent academicians and scientists/ visitors to the department:

Sl. No.	Name of Speaker	Affiliation	Date of Visit	Purpose of Visit
1	Prof Anuj Dhawan	Department of Electrical Engineering, IIT Delhi	28 February 2014	Invited Lecture for function of "Physentrophy", the Physics Society of college
2	Prof. Vinay Gupta	Department of Physics and Astrophysics, University of Delhi	14th –15th October 2013	Visited in Two-day workshop on "Science and Technology of Sensors and E-
3	Dr. M. U. Sharma	Scientist – F, SSPL, Timarpur, Delhi – 110	14th –15th October	

		054	2013	nose" organized by "Physentrophy", the Physics Society of college
4	Dr. A. T. Nimal	Scientist – D, SSPL, Timarpur, Delhi – 110 054	14th –15th October 2013	
5	Dr. S. P. Singh	Scientist, NPL, New Delhi – 110 012	14th –15th October 2013	
6	Prof. T.R. Seshadhari	Department of Physics and Astrophysics, University of Delhi	17 August 2012	Invited Lecture for function of "Physentrophy", the Physics Society of college
7	Prof. N. Rathnasree	Director, Nehru Planetarium, New Delhi	22 August 2009	Invited Lecture for function of "Physentrophy", the Physics Society of college
8	Dr. Ashutosh Bharadwaj	of Physics and Astrophysics, University of Delhi	September 05, 2012	Invited Lecture for function of "Physentrophy", the Physics Society of college
9	Professor Vijaya S. Varma	Department of Physics and Astrophysics, University of Delhi	16 September 2008	Invited Lecture for function of "Physentrophy", the Physics Society of college

25. Seminars/Conferences/Workshops organized and the source of funding
a) National   **: Nil**
b)International   **: Nil**

26.   Student profile programme/ coursewise: (2013-14):

Name of the Course/programme (refer question no. 4)	Applications received	Selected	Enrolled		Pass percentage
			*M	*F	
Four Year Undergraduate Programme Bachelor with Honours Physics Sem - I	51174	104	94	10	95.83%

*M=Male *F=Female

27. **Diversity of Students:**

Name of the Course	%of students from the same state	% of students from other States	%of students from abroad
B. Sc. (H) Physics Sem - I (2014-15)	29.41	70.59	0.0
B. Sc. (H) Physics Sem - III (2014-15)	14.1	85.9	0.0
B. Sc. (H) Physics Sem - V (2014-15)	15.4	84.6	0.0

28. **How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?**

Data not available.

29. **Student progression:**

Student progression	Against % enrolled
UG to PG	
PG to M.Phil.	
PG to Ph.D.	
Ph.D. to Post-Doctoral	
Employed •**Campus selection** •**Other than campus recruitment**	33%
Entrepreneurship/Self-employment	

30. **Details of Infrastructural facilities**
    a) Library: The students use Central Library of the college.
    b) Internet facilities for Staff and Students: The college campus is Wi-Fi enabled. The Wi-Fi facility is provided to the faculty, students and non - teaching staff. The students also use centralized computational facilities provided by the college.

    c) Class rooms with ICT facility: All class rooms are ICT enabled with LCD projectors and Wi-Fi Access. All students of Four year undergraduate programme are given laptops by the University.

    d) Laboratories:
    The Department has five well equipped Laboratories. An Optics Laboratory

equipped with Michelson Interferometer, 10 second Spectrometers, He - Ne laser etc. An Electronics laboratory equipped with Digital Oscilloscopes, Arbitrary Function Generators and Advanced Trainer Digital Boards and Microprocessor kits. A K-yan for all multimedia needs.

31. Number of students receiving financial assistance from college, university, government or other agencies:

The details of students receiving financial assistance from college, university, government or other agencies are as follows :

Sl. No.	Name of Student	Course	Financial assistance received for	Funding Agency	Year	Amount In INR
1	Priya	B.Sc. Physical Science(PME)	Meritorious Scholarship	Govt. NCT of Delhi	2013-14	10,000
2	Srijan Sagar	B.Sc. Physical Science(PME)	Meritorious Scholarship	Govt. NCT of Delhi	2013-14	10,000
3	Nishant Singla	B. Sc. (H) Physics Semester-VI	Science Meritorious Award	University of Delhi	2012-13	10,000
4	Nishant Singla	B. Sc. (H) Physics Semester-VI	Meritorious Scholarship	Govt. NCT of Delhi	2012-13	10,000
5	Nishant Singla	B. Sc. (H) Physics Semester-VI	D. C. Arora Fellowship	Acharya Narendra Dev College	2012-13	6,000
6	Mahesh Kumar Yadav	B. Sc. (H) Physics Semester-IV	D. C. Arora Fellowship	Acharya Narendra Dev College	2012-13	6,000
7	Nishant Singla	B. Sc. (H) Physics Semester-IV	D. C. Arora Fellowship	Acharya Narendra Dev College	2011-12	6,000
8	Sanam Thakur	B. Sc. (H) Phy III Year	Board Scholarship	H.P. Board of School, Education	2011-12	4,830
9	Dharampal	B.Sc. Physical Science(PME)	D. C. Arora Fellowship	Acharya Narendra Dev College	2011-12	6,000
10	Vipin Kumar Gupta	B. Sc. (H) Physics Semester I	-	Dr. B. K. Anand Benevolent Trust	2010-11	5,000
11	Poonam Shandhu	B. Sc. (H) Phy III Year	Post Matriculation	Govt. of NCT of	2008-09	4,850

			Scholarship to Minority students	Delhi		

The college has a benevolent scheme SAKSHAM (erstwhile known as Student Aid Fund) in place, with a sole objective to empower inclusive education for the needy and deserving students. After a rigorous evaluation of the needs, selected students are supported in the following categories:

1 Full Fee Waiver (Except Security Deposit)

2 Rs. 800/- per month (Rs. 600/- per month till 2012-13) stipend for ten months.

3 Book Bank Aid

4 Stationary + Photostat up to Rs.3000/- for the whole academic year. All the students who have been recommended for SAF in any form are eligible to get book bank facility up to 05 books per semester. The following students were supported in one or more of the above categories under SAKSHAM:

Sl. No.	Name of Student	Course	Year
1	Avdhesh Gangwar	B. Sc. (H) Physics Sem. I	2013-14
2	Tejmani Kumar	B. Sc. (H) Physics Sem. I	2013-14
3	Deepak Kumar	B. Sc. (H) Physics Sem. I	2013-14
4	Amar Kujur	B. Sc. (H) Physics Sem. I	2013-14
5	Md. Azam	B. Sc. (H) Physics Sem. I	2013-14
6	Gaurav Kumar Dubey	B. Sc. (H) Physics Sem. I	2013-14
7	Vikram Singh	B. Sc. (H) Physics Sem. III	2013-14
8	Dharampal	B. Sc. Physical Science (Electronics) Sem -III	2012-13
9	Mukund Kumar Mishra	B. Sc. (H) Physics Sem. I	2012-13
10	Kaushal Kumar	B. Sc. (H) Physics Sem. V	2012-13
11	Vipin Kumar Gupta	B. Sc. (H) Physics Sem. V	2012-13
12	Amresh Kumar Chaturvedi	B. Sc. (H) Physics Sem. V	2012-13
13	Manish Kumar	B. Sc. (H) Physics Sem. V	2012-13
14	Rajesh	B. Sc. (H) Physics Sem. III	2012-13
15	Gauri Nagpal	B. Sc. (H) Physics Sem. III	2012-13
16	Imran	B. Sc. (H) Physics Sem. III	2012-13
17	Kaushal Kumar	B. Sc. (H) Physics Sem. IV	2011-12
18	Gauri Nagpal	B. Sc. (H) Physics Sem. IV	2011-12
19	Manish Kumar	B. Sc. (H) Physics Sem. IV	2011-12
20	Vipin Kumar Gupta	B. Sc. (H) Physics Sem. IV	2011-12
21	Amit Gangwar	B. Sc. (H) Physics Sem. II	2011-12
22	Chandan Kumar	B. Sc Physical Science (PME) Semester II	2011-12
23	Dhramendra Pali	B. Sc Physical Science (PME) Semester II	2011-12
24	Abhilasha	B. Sc Physical Science (PME) Semester IV	2011-12
25	Amresh Kumar Chaturvedi	B. Sc. (H) Physics Semester I	2010-11

26	Vipin Kumar Gupta	B. Sc. (H) Physics Semester I	2010-11
27	Navneet	B. Sc. (H) Physics Semester I	2010-11
28	Priyanshu Kumar Chauhan	B. Sc. (H) Physics Semester I	2010-11

32. Details of student enrichment programmes (special lectures/workshops/ seminar) with external experts:

The department organized "Scientists for Tomorrow" Lecture Series in which

an inaugural lecture was organized on August 17, 2012 on an interesting topic "Stars: Their structure and evolution" by Professor T. R. Seshadri, from Department of Physics and Astrophysics, University of Delhi. He is also the Co-ordinator of the IUCAA resource centre at the University of Delhi. Next in the series was a Lecture titled "Observation of the God Particle at Large Hadron Collider" by Dr. Ashutosh Bharadwaj from Department of Physics and Astrophysics, University of Delhi on 05 September 2012. He is associated with CMS experiment at CERN since 1998. He was involved in the R&D of Si sensors for LHC experiment at University of Delhi.

On the occasion of National Science Day on 28 February 2014, the Department organized a lecture on "Plasmonics and Nanophotonics" by Dr. Anuj Dhawan, Department of Electrical Engineeiring, IIT Delhi.

The Department of Physics took "Space and Astronomy" as the theme for the year 2009 as it was declared as "International Year of Astronomy" by UNSECO and International Astronomical Union (IAU).   Therefore the Physics Society Physentropy organized an informative lecture by Dr. N. Rathnasree, Director, Nehru Planetarium, Delhi on 22 August 2009. In her talk Dr. Rathnasree gave an overview of what space science entails discussing at length astronomical phenomena like eclipses, formation of galaxies, supernovas, heavenly bodies and even red-shift. After the motivational talk the students participated in a seminar at the Nehru Planetarium on 4 September 2009. In the seminar they were exposed to the problem of different types of light pollution, and ways of prevention in different cities in order to make the study of astronomy easier.

The Department of Physics organized its society function 'Physentropy-2008' on 16 September 2008. Professor Vijaya S. Varma from the Department of Physics and Astrophysics, University of Delhi delivered a very informative and thought provoking talk titled "What is this thing called science?" This talk besides throwing light on the history of development of science with special emphasis on Physics also underlined the philosophy of science.

33. Teaching methods adopted to improve student learning:

The teaching pedagogy undertaken in the department is a judicious mix of Theoretical teaching and its Practical applications.
The Lectures are taken in ICT enabled classrooms with LCD Projectors and   Wi-Fi Access. The concepts are explained via presentations by both the   faculty   and the students.

The Department regularly organizes Lectures / Talks by eminent Scientists   for enhanced learning of students and faculty members.

The teaching is further improved via group discussions in small groups for   better understanding of the topics. The background concepts for understanding of a topic are explained before the main topic.

The students are continuously evaluated via class tests, group discussions   etc. for their better assessment.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities.

The students participate actively in NSS unit and Eco club of the college which organizes Diwali mela, Blood donation camps and Cleanliness drive etc. The students help create awareness rally in and around the college campus in which common people, residents, shopkeepers around the college are explained the maintenance of cleanliness in and around their house and streets and the citizen's duty to dispose wastes in the proper place maintained by the MCD.

35. SWOC analysis of the department and Future plans:

Strengths: Highly motivated and young faculty.
Integrating teaching and research.
Strong mentoring of students for their overall development.

Weaknesses: Lack of space.

Opportunities: Opportunities for Physics students are excellent. Many of our graduates go on to postgraduate departments in Physics or a related area like Astronomy and Engineering. After completing postgraduate studies students typically find employment in Industry, Government Laboratories and in Universities.

Challenges :   To increase working space in terms of Laboratories.
To upgrade our teaching learning methods keeping pace with the changes in higher education system.

Evaluative Report of the Department of Zoology

1. Name of the department: **Zoology**
2. Year of Establishment   **1994**
3. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)
   UG - B.Sc. (H) Zoology, Ph.D. in Zoology
4. Names of Interdisciplinary courses and the departments/units involved

Interdisciplinary courses	Departments involved
B. Sc. Life Sciences	**Chemistry, Zoology**

5. Annual/ semester/choice based credit system (programme wise)
   Semester
6. Participation of the department in the courses offered by other departments

Course	Paper
B.Sc. (H) Chemistry	Biology-II
B.Sc. Physical Science	Biology- I
B.Sc. (H) Chemistry	Environment Science
B.Sc. (H) Physics	Environment Science
B.Sc. (H) Electronics	Environment Science
B.Sc. (H) Computer Science	Environment Science
B.Sc. (H) Biomedical Science	Developmental Biology
B.Sc. Life Science	Food, Nutrition and Health, Biodiversity-II "Animals", Introduction to Medical Diagnostics, Bioinformatics, Biochemistry and Immunology, Applied Biology and Biotechnology, Developmental Biology and Physiology-Animals.
B.Sc. (H) Botany	Evolutionary Biology

7. Courses in collaboration with other universities, industries, foreign institutions, etc.
   Nil
8. Details of courses/programmes discontinued (if any) with reasons
   B.Sc.(H) Zoology in Annual mode , Four year Undergraduate programme-Bachelor in Zoology and B.Sc (G) Sericulture were discontinued by University
9. Number of teaching post:

	Sanctioned	Filled
Assistant Professor	11	01+04 (adhoc)
Associate Professor	-	06 Promoted under CAS
Professor	-	-

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D. / M. Phil. etc.,)

S.No	Name	Qualification	Designation	Specialization	Experience	No. of Ph.D. Students Guided for the last4years
1	Dr. Poonam A Kant	Ph.D.	Associate Professor	Reproductive Endocrinology	Teaching : 20	-
2	Dr. Sarita Kumar	Ph.D.	Associate Professor	Entomology, Insecticide Toxicology and Vector Control	Teaching: 23 Research: 12	Two Ph. D Two M. Phil.
3	Dr Monisha Khanna	Ph.D.	Associate Professor	Molecular Biology	18	Two Ph.D
4	Dr. Ravi Toteja	M.Phil., Ph.D.	Associate Professor	Molecular Parasitology	14	-
5	Dr. Monica Misra	M.Phil., Ph.D.	Associate Professor	Reproductive Endocrinology	15	-
6	Dr. Seema Makhija	Ph.D.	Associate Professor	Cell Biology	17	-
7	Mr. Ravinder Kumar Sagar	M.Sc.	Assistant Professor	Physiology	9.5	-

11. List of senior visiting faculty
   Nil
12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty
   50%
  Student -Teacher Ratio   **10.27 : 1**
   13. Number of academic support staff (technical) and administrative staff; sanctioned and filled

	Sanctioned	Filled
Technical Staff	**10**	**10**

 14. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D./ MPhil / PG.

S.No	Qualification of Faculty	No.of Teachers
1	Ph.D.	6
2.	M.Sc.	1

15. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received:

Number of faculty with ongoing projects*	Number of On Going Projects	Grants received
4	5	INR 45.79 lakhs

Project Details

No. of Projects	Funding Agency	Amount Sanctioned(Rs.)
Two Major projects	UGC	9.42 lakhs and 9.72 lakhs
One	DST	21 lakhs
One	University of Delhi under scheme of innovation projects	5 lakhs
One	Innovation and Entrepreneurship Development Centre, Department of Science and Technology, India	0.65

16. Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received:
Total Funded projects (On going and completed projects): 13
Grants Received **: 98.29 lakhs**

17. Research Centre /facility recognized by the University

Research Laboratory of Dr. Monisha Khanna and Dr. Sarita Kumar have been approved and registered under University of Delhi for guiding students for doctoral degree.

18. Publications:

- Publication per faculty**: 66 /6= 11**

- Number of papers published in peer reviewed journals (national / international) by faculty and students **66**

- Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database-International Social Sciences Directory, EBSCO host, etc.)
  - Monographs : **Nil**

  - Conference Publication: **89**

- Chapter in Books :   **19**

- Books Edited   :   **03**

- Books with ISBN/ISSN numbers with details of publishers : 16

- SNIP   :   **As under**

- SJR   :   **As under**

- Impact factor   :   **As under**

S. No.	Authors	Journal	IF	SNIP	SJR
1	Poonam A Kant and RN Saxena	Indian Journal of Experimental Biology	1.1	0.996	0.450 0.202
2	Poonam A Kant, Monica Misra and RN Saxena	Rec. Prog. in Mol. Comp. Endocrinology		N.A.	N.A.
3	Anita Thomas, Sarita Kumar and M. K. K. Pillai (1991)	*Entomon*, 16:1-10	?	N.A.	N.A.
4	Sarita Kumar, Anita Thomas and M. K. K. Pillai (1991)	*Indian Journal of Experimental Biology*, 29: 379-384	1.195	0.996	0.451 0.202
5	Arunima Sahgal, Sarita Kumar and M. K. K. Pillai (1994)	*Journal of Biosciences*, 19: 193-199	1.888	0.773	0.515
6	Sarita Kumar, Thomas, A., Sahgal, A., Verma, A., Samuel, T. and Pillai, M. K. K. (2002).	*Archives of Insect Biochemistry and Physiology*, 50: 1-8	1.515	0.651	0.572
7	Sarita Kumar, Thomas, A., Sahgal, A., Verma, A., Samuel, T. and Pillai, M. K. K. (2004)	*Annals of Tropical Medicine and Parasitology*, 98: 861-871.	1.37	N.A.	N.A.
8	Sarita Kumar, Thomas, A., Samuel, T., Sahgal, A., Verma, A. and Pillai, M. K. K. (2004)	*Journal of Parasitic Diseases*, 28:102-114.	0.64	0.323	0.199
9	Sarita Kumar, Thomas, A., Samuel, T., Sahgal, A., Verma, A. and Pillai, M. K. K. (2009)	*Tropical Biomedicine,* 24: 155-164.	0.921	0.733	0.378
10	Radhika Warikoo, Naim Wahab and Sarita Kumar (2010)	*Acta Entomologica Sinica*, 54(7): 793-798.	0.896	N.A.	N.A.

11	Sarita Kumar, Radhika Warikoo and Naim Wahab (2010)	*Parasitology Research*, 107: 901-907.	2.856	1.318	0.992
12	Kumar S. and Pillai M.K.K. (2010)	*ActaEntomologica Sinica* 53: 1111-1118.	0.896	N.A.	N.A.
13	Kumar S. and Pillai M.K.K. (2011)	*Bulletin of Entomological research*. 101: 25-31.	1.987	1.170	0.801
14	Sarita Kumar, Abhay Pratap Singh, Gokul Nair, Sahil Batra, Anubha Seth, Naim Wahab and Radhika Warikoo (2011)	*Parasitology Research* 108: 853-859	2.856	1.318	0.992
15	Sarita Kumar, Naim Wahab and Radhika Warikoo (2011)	*Asia Pacific Journal of Tropical Biomedicine,* 2: 90-93.	0.5	N.A.	N.A.
16	Radhika Warikoo, Naim Wahab and Sarita Kumar (2011)	*Parasitology Research*, 109:1125–1131	2.856	1.318	0.992
17	Sarita Kumar, Anita Thomas and MKK Pillai (2011)	*Asia Pacific Journal of Tropical Medicine*, 4(6): 430-435	0.502	N.A.	N.A.
18	Sarita Kumar, Radhika Warikoo and Naim Wahab (2011)	*Journal of Entomological Research Society*, 13(2): 27-36.	0.63	N.A.	N.A.
19	Sarita Kumar, Radhika Warikoo, Monika Mishra, Anubha Seth and Naim Wahab (2011)	*Parasitology Research* (DOI: 10.1007/s00436-011-2814-5)	2.856	1.318	0.992
20	Sarita Kumar, Ankita Ray, Jasdeep Kaur, Roopa Samal, Naim Wahab and Radhika Warikoo (2012)	*Asia Pacific Journal of Tropical Biomedicine,* 3(2): 152-155.	0.5	N.A.	N.A.
21	Sarita Kumar, Naim Wahab, Monika Mishra, Radhika Warikoo (2012)	*Frontiers in Physiology;* 3(104), 1-6	New Open access Journal	0.645	0.671
22	Sarita Kumar, Gokul Nair, Abhay Pratap Singh, Sahil Batra, Naim Wahab and Radhika Warikoo (2011)	*Asian Pacific Journal of Tropical Diseases* 2(5): 395-400.	0.546	N.A.	N.A.
23	Sarita Kumar and Ravi Toteja (2012)	*Procedia - Social and Behavioral Sciences;* 67: 553 – 560.	Not eligible for IF	0.213	0.237
24	Ravi Toteja and Sarita Kumar (2012)	*Procedia - Social and Behavioral Sciences;*	Not eligibl	0.213	0.237

		67: 538 – 544.	e for IF		
25	Radhika Warikoo and Sarita Kumar (2013)	*Parasitology Research*, Doi: 10.1007/s00436-013-3528-7.	2.856	1.318	0.992
26	Sarita Kumar and Ravi Toteja (2012)	*Procedia - Social and Behavioral Sciences;* 67: 553 – 560.	Not eligibl e for IF	0.213	0.237
27	Ravi Toteja and Sarita Kumar (2012)	*Procedia - Social and Behavioral Sciences;* 67: 538 – 544.	Not eligibl e for IF	0.213	0.237
28 .	Radhika Warikoo and **Sarita Kumar** (2014)	Oviposition altering and Ovicidal Efficacy of Root extracts of *Argemone mexicana* against Dengue Vector, *Aedes aegypti* (Diptera: Culicidae).	*Journa l of Entom ology and Zoolog y Studie s,* 2: 11-17. ISSN: 2320-7078.	NA	NA
28	**Sarita Kumar**, Monika Mishra, Naim Wahab and Radhika Warikoo (2014)	Larvicidal, repellent and irritant potential of the seed-derived essential oil of *Apium graveolens* against Dengue Vector, *Aedes aegypti* L. (Diptera: Culicidae).	*Fronti ers in Public Health* , 2: 1-7. DOI: 10.338 9/fpub h.2014 .00147	N.A.	N.A.
29	Radhika Warikoo and **Sarita Kumar** (2014)	Impact of the *Argemone mexicana* stem extracts on the reproductive fitness and behaviour of adult dengue vector, *Aedes aegypti* L. (Diptera: Culicidae).	*Intern ational Journa l of Insect Scienc e,* 6: 71-78. doi:	N.A.	N.A.

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30	Monika Mishra and **Sarita Kumar** (2014)	Impact of stem extracts of yellow oleander, *Thevetia neriifolia* (Apocynaceae) on the feeding potential of IV Instars of Gram Pod Borer, *Helicoverpa armigera* Hübner (Lepidoptera: Noctuidae).	*International Journal of Advanced Life Sciences* (In Press)	0.969	0.755
31	M Khanna, M Dua, and R Lal (1998)	*Microbiological Research,* 153: 205-211.	1.993	1.144	0.682
32	D Tuteja, M Dua, R Khanna, N Dhingra, M Khanna, H Kaur, D M Saxena, and R Lal.(2000)	Plasmid. 43(1): 1-11	1.276	0.626	0.642
33	R Lal, S Jit, M Verma, M Dadhwal, A Singh, O Prakash, P Sharma and M Khanna (2006)	Indian Journal of Microbiology 46(4).	0.457	N.A.	N.A.
34	O Prakash, M Verma, P Sharma, M Kumar, K Kumari, A Singh, H Kumari, S Jit, S K Gupta, M Khanna and R. Lal (2007)	Indian Journal of Microbiology, 47:98-108	0.457	N.A.	N.A.
35	R Solanki, M Khanna and R Lal (2008) Indian	Indian Journal of Microbiology, 48: 410-431	0.457	N.A.	N.A.
36	R Solanki, R Lal and M Khanna (2011)	Indian Journal of Microbial World, 13 (2): 233-240	0.457	N.A.	N.A.
37	M Khanna , R Solanki and R Lal (2011)	International Journal of advanced Biotechnology and Research, 2 (3): 357-375	1.506		
38	M Khanna and R Solanki (2012)	Indian Journal of Microbiology 52 (4): 605-611	0.457	N.A.	N.A.
39	M Khanna, R Solanki and P Das (2013)	International Journal of Advanced Biotechnology and Research, 4 (4): 444-459	1.506	N.A.	N.A.

40	M Khanna, R Solanki and P Das (2014)	International Journal of Advanced Biotechnology and Research, 5(3): 438-451.	1.506	N.A.	N.A.
38	Ravi Toteja, Lathika Nair, VK Bhasin (2001).	Memoris do Instiuto Oswaldo Cruz, 96(3): 427-433	1.36	N.A.	N.A.
39	Monica Misra and R N Saxena	Recent advances in Comparative Endocrinology		N.A.	N.A.
40	Seema Arora, Renu Gupta, Swati Machwe and Gulshan Rai Sapra	European Journal of Protistology. 35, 281-289		0.677	0.430
41	Seema Arora Renu Gupta, Komal Kamra, and Gulshan Rai Sapra (1999)	Acta Protozoologica. 38, 133-144	1.317	0.446	0.258
42	Renu Gupta Seema Arora, Komal Kamra, and Gulshan Rai Sapra (1999)	Acta Protozoologica. 40, 75-82	1.317	0.446	0.258
43	Swati Machwe, Seema Arora Renu Gupta, Komal Kamra, and Gulshan Rai Sapra (2001)	Cell Biology International. 25 (11), 1131-1138	1.017	0.648	0.599
44	Seema Arora Renu Gupta, Komal Kamra, and Gulshan Rai Sapra (2002)	The Jap. Journ. Of Protozoology, Vol. 35 (suppl.)42		N.A.	N.A.
45	Renu Gupta,Seema Arora Komal Kamra, and Gulshan Rai Sapra(2002)	The Jap. Journ. Of Protozoology, Vol. 35 (suppl.)42		N.A.	N.A.
46	Renu Gupta, Komal Kamra, Seema Arora and Gulshan Rai Sapra (2003)	Euro.J.Protistol. 39, 275-285.	1.080	N.A.	N.A.
47	M. Lata, J. Prasad, S. Singh, R. Kumar, L. Singh, P. Chaudhary, R. Arora, R. Chawla, S. Tyagi, N.L. Soni, R.K. Sagar, M. Devi, R.K. Sharma, S.C. Puri and R.P. Tripathi (2009)	Phytomedicine	3.268	N.A.	N.A.
48	Arora R, Shikha Singh, Sagar RK, Chawla R, Kumar R, Puri SC, Surender S, Prasad J, Gupta ML, Krishna B, Siddiqui MS, Sharma AK, Tripathi RP, Qazi GN, Sharma RK (2008)	Journal Of Dietary Supplements	0.0	0.148	0.131
49	Raman Chawla, Rajesh Arora, Shikha Singh, Ravinder K. Sagar, Rakesh Kumar Sharma, Raj Kumar, Ashok Sharma, Manju L. Gupta, Surender Singh, Jagdish Prasad, Haider A. Khan, Anand	JOURNAL OF Medicinal Food	1.642	0.778	0.540

	Swaroopa, A.K. Sinha, AK Gupta, Rajender P. Tripathi and PS Ahuja (2007)				
50	Rajesh Arora, Ravinder Sagar, Shikha Singh, Raj Kumar, AK Sharma, Jagdish Prasad, Surender Singh, ML Gupta, Rakesh Kumar Sharma, Satish Chandra Puri, Bal Krishan, MS Siddiqui, SS Lahiri, RP Tripathi and GN Qazi (2007)	Integrative Cancer Therapies	2.354	0.934	0.584
51	S Singh , R Ahmed , R K Sagar , B Krishana (2006)	Indian J Med Res	1.837	1.126	0.513
52	Shalini Singh, Riyaz Ahmad, Deepti, Ravinder Kumar Sagar (2006)	Indian Journal of Exp. Biol.	1.2	0.996	0.451
53	Raman Chawla, Rajesh Arora, Shikha Singh, R. K. Sagar, Rakesh Kumar Sharma, R. Kumar, A. Sharma, RP Tripathi, S. C. Puri, H. A. Khan, A.S. Shawl, P. Sultan, Tej Krishan, and G.N. Qazi (2006)	Evidence Based Complementary and Alternative Medicine	1.72	0.300	0.194
54	Satish Chandra Puri, Asiya Nazir, Raman Chawla, Rajesh Arora, S. Riyaz-ul-Hasan, Touseef Amnaa, Bilal Ahmed, Vijeshwar Verma, Shikha Singh, Ravinder Sagar, Ashok Sharma, Raj Kumar, Rakesh Kumar Sharma and Ghulam Nabi Qazi (2006)	Journal of Biotechnology	3.183	1.286	1.073
55	Satish Chandra Puri, Asiya Nazir, Raman Chawla, Rajesh Arora, S. Riyaz-ul-Hasan, Touseef Amnaa, Bilal Ahmed, Vijeshwar Verma, Shikha Singh, Ravinder Sagar, Ashok Sharma, Raj Kumar, Rakesh Kumar Sharma and Ghulam Nabi Qazi (2006)	Planta Medica	2.35	1.115	0.667
56	Arora R, Chawla R, Puri S.C., Sagar R, Singh S, Kumar R, Sharma A. K., Prasad J, Singh S, Kaur G, Chaudhary P, Quazi G. N., Sharma R.K (2005)	Journal of Environmental Pathology Toxicology and Oncology	0.92	0.346	0.297
57	R. Ahmad, S. Singh, R.K. Sagar and B. Krishana (2005)	Biomedicine	-	0.057	0.104
58	Chawla Raman, Arora R, Sagar RK, Singh S, Puri SC, Kumar R, Singh S, Sharma AK, Prasad J, Khan HA, Sharma RK, Nazir A,	Z. Naturforschung	0.64	N.A.	N.A.

	Dhar KL, Spiteller M and Qazi GN (2005)				
59	Arora R, Gupta D, Chawla R, J Prasad, S Singh, AK Sharma, R Kumar, RK Sagar, N Samanta, RK Sharma (2005)	Phytotherapy Research	2.07	1.159	0.718
60	Rajesh Arora, Raman Chawla, Ravinder Sagar, Jagdish Prasad, Surender Singh, Raj Kumar, Ashok Sharma, Shikha Singh and Rakesh Kumar Sharma (2005)	Molecular and Cellular Biochemistry	2.329	0.805	0.799
61	Rajesh Arora, Raman Chawla, Ravinder Sagar, Jagdish Prasad, Surender Singh, Raj Kumar, Ashok Sharma, Shikha Singh and Rakesh Kumar Sharma (2005)	Molecular and Cellular Biochemistry	2.329	0.805	0.799
62	Raj Kumar, Pankaj Kumar Singh, Ashok Sharma, Jagdish Prasad, Ravinder Sagar, Surender Singh, Rajesh Arora, Rakesh Kumar Sharma (2005)	Biotechnology and Applied Biochemistry	3.689	0.679	0.424
63	Raj Kumar, Pankaj Kumar Singh, Ashok Sharma, Jagdish Prasad, Ravinder Sagar, Surender Singh, Rajesh Arora, Rakesh Kumar Sharma (2005)	Environmental Toxicolgy and Pharmacology	2.005	0.944	0.604
64	Harish Chandra GOEL*Jagdish PRASAD, Surender SINGH, Ravinder Kumar SAGAR, Paban Kumar AGRAWALA, Arun Kumar SINHA# Ruchi DOGRA (2004)	J. Radiat. Res., 45: 61-68	1.447	0.783	0.494
65	H.C.Goel*, J. Prasad, S.Singh, R.K.Sagar, I. Prem kumar, P.K. Agrawal And A.K. Sinha (2002)	PHYTOMEDICINE 9:15-25	2.972	N.A.	N.A.
66	H.C. Goel*, J. Prasad, S.Singh, R.K. Sagar, I.Prem Kumar, P.K. Agrawal And A.K. Sinha (2001)	Proceedings of International Workshop on Seabuckthorn (V.Singh and R.K. Khosla, Eds.): 205-211, New Delhi	N.A.	N.A.	N.A.

Name	No of Research papers	No of Conference Publications	Chapters/e-chapters	Books
Dr. Poonam A Kant	2		1	1
Dr Sarita Kumar	27	24	11	14

Dr Monisha Khanna	14	20	2	-
Dr. Ravi Toteja	3	10	3	1
Dr Monica Misra	2	3	-	-
Dr Seema Makhija	7	24	1	-
Mr. Ravinder Kumar Sagar	20	17	1	-

19. Areas of consultancy and income generated During running of MOEF sponsored research project by Monisha Khanna entitled "Isolation and characterization of Actinomycetes and analysis of their antibacterial potential", bacterial cultures isolated were submitted to M/s Nicholas Piramal Research Centre, Mumbai, who used high through-put screens for the discovery of new bio-molecules with anti-cancer, anti-tumour, anti-fungal, anti-bacterial, anti-inflammatory and anti-diuretic potential.

No income was generated.

20. Faculty as members in
a) National committees b) International Committees c) Editorial Boards….

Name of the Faculty	National committees b) International Committees c) Editorial Boards….
Dr. Sarita Kumar	**National Committees** • Life member of ATBS (Association of Teachers in Biological Sciences), HBCSE, TIFR, Mumbai • Life member of Indian Science Congress, Delhi Chapter • Life member of National Academy of Vector Borne Diseases, Bhubaneswar • Life member of Indian Society of Parasitology, Lucknow **a) International Committees:** • Local coordinator of India on the OER4D Project - Research on OER for development - funded by IDRC (International Development Research Centre), Canada • Member of Scientific Advisory Board, Virginia, USA • Member of WikiEducator Community, India (www.wikieducator.org/User:Saritasanjay) **b) Editorial Boards:** • On the **editorial board** of International Journals – Journal of Applied and Natural Sciences, Asian Pacific Journal of Tropical Biomedicine, The Open Access Journal of Science and Technology (UK).

Dr. Monisha Khanna	**National Committee**
	Life Member of Microbiologists Society, India
	Life Member of AMI (Association of Microbiologists of India)
	Life Member of Association of Teachers in Biological Sciences
	Editorial Boards
	Referee / Reviewer for the Indian Journal of Microbiology"

21. Student projects
    ◊ Percentage of students who have done in-house projects including inter departmental/programme : **In the past 5 years, more than 100 students have been trained during the summer projects and workshops organized by the faculty of the Department.**
    ◊ Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/ other agencies : **Nil**

22. Awards / Recognitions received by faculty and students

Faculty:

Name of the Faculty	*Awards*
Dr. Sarita Kumar	• Conferred **K S Krishnan Teacher Fellow Award** from HBCSE, TIFR, Mumbai, 2014. • Winner of Wikieducator **User Page Expo Award** for the month of February, 2013 - by Wikieducator Community • One of the '**Open Access Competition Winners**' amongst the ten worldwide by the International Network for the Availability of Scientific Publications (INASP), United Kingdom, to celebrate the Open Access Week – by INASP, UNESCO (November, 2012). • **Meritorious Teacher Award** - by Govt. of NCT of Delhi (May, 2011) • **Shiksha Rattan Puraskar** - by IIFS, New Delhi (August, 2011) • **Distinguished Teacher Award** - by University of Delhi (September, 2009) • Selected as **Featured WE** on India Page for the month of August, 2009 - by Wikieducator Community
Dr. Monisha Khanna	• Won the best poster presentation award for the research paper titled Rifamycins- Strain Improvement Program", M Khanna, H Kaur, N Srivastava, S Lal and R LaI; at the 35th Annual Conference of Association of Microbiologists of India, held at Mysore, India (Nov. 1994). • Won consolation prize for the research paper "Screening of soil actinomycetes for antimicrobial compounds" at National Conference on "Redefining Science teaching: Future of education" held at South Campus, Delhi University, March 7-9, 2013.

Dr. Seema Makhija	• Honoured and presented with "DISTINGUISHED TEACHER AWARD" by University of Delhi (2009).
	• Awarded the best oral presentation for the research paper Inferring Phylogenetic Position of an Indian Isolate *Tetmemena* sp. (Ciliophora, Oxytrichidae) Using Morphological, Morphogenetic and Molecular Markers" in 2nd Asian congress of Protistology and Ninth Asian Conference on Ciliate Biology organized by Kalyani University, Kalyani, India (2014)
Mr. Ravinder Kumar Sagar	• LABORATORY TECHNOLOGY GROUP AWARD 2001 Dr. Rajesh Arora, Dr. Vandana Pathania, Jagdih Prasad, Surender Singh, Ashok Kumar Sharma, R.K. Sagar, N. Samanta, I. Prem Kumar, D. Gupta, P.K. Agarwala, H. Prakash

Students:

Name of Students	Award
Ms. Swati Gupta (2007-08)	First Prize for a live model of paper recycling organized by Department of Environment. Govt NCT Delhi
Ms. Jeeva Susan Abraham	Science Meritorious Award, University of Delhi (2008), 3rd Position in UDSC (2008), Udayan Shalini Fellowship from the year 2007-10.
Ms. Payal Das (2008)	Science Meritorious Award, University of Delhi
Ms. Ankita Ray (2009)	Science Meritorious Award, University of Delhi
Ashish Choudhary (2014)	Science Meritorious Award, University of Delhi
Veer Singh (2013)	Consolation prize for the oral presentation at National Conference on "Redefining Science teaching: Future of education"
Nitin and Abhay Partap Singh (2010)	BUDDING CHEMICAL BIOLOGIST AWARD for their posterpresented in the National Symposium on "Chemistry in Biology: The future of Life Sciences" held at India International Centre
Raghvendra and Abhay Pratap Singh	3rdprize in Posterpresentation in National Symposium on "Biodiversity, biotechnology and man: Interdependence and future challenges" held at Lansdowne, Uttarakhand
Afreen Nishan	Post Matric Scholarship (central) of Ministry of Minority Affairs, Govt. of India (2010-11)
Keerti Kaumundee Dixit	Second position in UDSC (2011-12), D C Arora Fellowship.
Anubha Seth, Radhika Warikoo and Monika Misra	First Prize in poster presentation entitled "Larvicidal and irritant potential of Citrus peel wastes against Indian strains of malaria vector *Anopheles stephensi*
Preeti Verma	Udayan Shalini Fellowship from the year 2006-09

Radhika Warikoo	**First prize for Oral Presentation and Budding Chemical Biologist Award,** A Laboratory Study on the Larvicidal Properties of Three Peppercorns Against an Indian strain of Dengue Fever Mosquito, *Aedes aegypti* L. (Diptera: Culicidae). Oral Presentation at *National Symposium; Chemistry in Biology: The Future of Life Sciences,* 12-13 Feb, 2010, New Delhi, India
Mahak Juneja and Rahul Khewadia	**Encouragement Award in Poster Presentation:** Delayed and abnormal development of Red Cotton Bug, *Dysdercus cingulatus* (Hemiptera: Pyrrhocoridae) reared on *Aloe vera* aqueous leaf extract-treated diet. *National Conference on 'Redefining Science Teaching: Future of Education'* organized by Acharya Narendra Dev College at University of Delhi South Campus, March 7-9, 2013.
Radhika Warikoo	**First Prize – Oral Presentation and Young Scientist Award;** Laboratory evaluation of the larvicidal efficiency of *Parthenium* sp.against an Indian strain of *Aedes aegypti*. Paper presented at the *3rdInternational Conference onParthenium,* IARI, New Delhi, 8-10 December, 2010.

23. List of eminent academicians and scientists / visitors to the department

i) **Dr. Sher Ali** scientist from the **National Institute of Immunology**, **New Delhi** on September 6,2013 delivered lecture titled "**Advances in Science and Technology**" where he focused on the use of techniques like Real Time qPCR (Quantitative Polymerase Chain Reaction) and FISH (Fluorescence *in-situ* Hybridization) to elucidate the etiology of infertility in men.

ii) **Professor Alan Warren**, President of Life Science Department and Microbial Biodiversity Division, **Natural History Museum, London** on March 3,2014 delivered an enchanting lecture on "**The Three Domains of Life**", where he explained the new three domain classification of organisms based on phylogenetic tree 16S rRNA gene.

iii) **Dr. Pawan Malhotra**, ICGEB, New Delhi; delievered a talk on "Plasmodium falciparum cysteine proteases- Targets of New Drug Development" on October 13, 2014; where he shared the latest findings in the field of anti-malarial drugs and discussed various techniques using which novel drugs can be prepared against any pathogenic organisms.

26. Seminars/ Conferences/Workshops organized & the source of funding
   a) National
   b) International

S.No	Details of seminars/Conference/ Workshops	Resource Person	National/International	Source of funding
1.	One-day workshop on "**Think Lab – Cube Interactive Meet**"	Sarita Kumar and Ravi Toteja	National	ANDC

2.	One-day workshop on "**Collaborative Undergraduate Biology Education, CUBE-2014**	Sarita Kumar and Ravi Toteja	National	ANDC
3.	National Conference '**Redefining Teaching Science: Future of Education**' held at Conference Room, UDSC, March 7-9, 2013. Organized by Acharya Narendra Dev College	Sarita Kumar and Ravi Toteja	National	UGC
5.	National Seminar on '**Teaching Redefined: Open Access to Education**' held at AND College on Nov. 1, 2011;	Sarita Kumar and Ravi Toteja	National	UNESCO
7.	National Symposium on "**Chemistry in Biology: The Future of Life Sciences**", Feb 12-13, 2010, New Delhi, India; Organized by Acharya Narendra Dev College, Univ. of Delhi at India International Center, Lodhi Road.	Sarita Kumar, Ravi Toteja, Monica Misra and Seema Makhija	National	UGC, DST, CSIR, ICMR
8.	Four day **Biology Laboratory Course Workshop**, B.Sc. Programme LS III, organized by Institute of Life Long Learning, University of Delhi and Acharya Narendra Dev College (2008).	Ravi Toteja, Poonam A Kant, Sarita Kumar, Monisha Khanna, Monica Misra and Seema Makhija andRK Sagar	National	ILLL, DU
9.	**Wikied-08 and Wikied-09** – A workshop on **Open Educational Resources** for College teachers and students, organized by Acharya	Sarita Kumar and Ravi Toteja	National	COL and CEMCA

	Narendra Dev College and Commonwealth of Learning, Vancouver, Canada,			
9.	Parallel workshops LC42 and LC43 on '**WikiEducator**' for College teachers, organized by Acharya Narendra Dev College and supported by Commonwealth of Learning, Vancouver, on April 13-17, 2009.	Sarita Kumar and Ravi Toteja	National	COL and CEMCA
10.	Parallel workshops LC42 and LC43 on '**WikiEducator**' for College teachers, organized by Acharya Narendra Dev College and supported by Commonwealth of Learning, Vancouver, on April 13-17, 2009.	Sarita Kumar and Ravi Toteja	National	COL and CEMCA
11.	Parallel workshops LC44 and LC45 on '**Open Educational Resources**' for College teachers and students, organized by Acharya Narendra Dev College and supported by Commonwealth of Learning, Vancouver, on May 12-15, 2009. COL and CEMCA	Sarita Kumar and Ravi Toteja	National	COL and CEMCA
12.	Workshop LC46 on '**Open Educational Resources**' for School teachers, organized by Acharya Narendra Dev College held at Sri Ram School, Vasant Vihar on May 16-18, 2009 and May 27-29, 2009.	Sarita Kumar and Ravi Toteja	National	COL and CEMCA
13.	Workshop on '**WikiEducator**' for the faculty of CIET, NCERT, held on June 29, 2009. **Workshop 'Wikied-08'**	Sarita Kumar and Ravi Toteja	National	CIET

14.	A workshop on Open Educational Resources for College teachers and students, organized by Acharya Narendra Dev College and Gandhi Bhavan, University of Delhi on October 3,4 & 6, 2008.	Sarita Kumar	National	COL and CEMCA
15.	National Symposium on "**Biotechnology: Expanding Horizons**", 2003; Conducted by Acharya Narendra Dev College, University of Delhi at INSA Auditorium.	Monisha Khanna, Sarita Kumar Ravi Toteja and Seema Makhija	National	DST, UGC, CSIR, DBT
16.	International Conference on "**Open Paradigms in EducatioN – OPEN 2011**" held from 31st January to 2nd February, 2011, Organized by Acharya Narendra Dev College at India International Center, New Delhi.	Sarita Kumar and Ravi Toteja	International	UGC, DST, CSIR, DIT, IIT Bombay
17.	Workshop for B.Sc (H) Zoology Part III students on "Basic Techniques in Molecular Biology" held at ANDC from June 1st to 30th 2008.	Monisha Khanna	National	ANDC
18.	Summer Training Workshop for B.Sc (H) Zoology Parts II & III students on Biology and Biotechnology of Actinomycetes" held at ANDC from June 8th to 30th June 2009.	Monisha Khanna	National	ANDC
19.	Workshop for students on "Polyphasic characterization of actinomycetes and	Monisha Khanna	National	ANDC

	analysis of their antimicrobial potential" held at ANDC from May 15th to August 10th 2010.			
20.	Hands-on-Training on "Molecular Phylogenetics: Understanding Evolutionary Histories" organized by Acharya Narendra Dev College, University of Delhi, held on June 15-16, 2011.	Monisha Khanna, Ravi Toteja and Seema Makhija	National	ANDC
21.	Summer Training Workshop for students on "Isolation of antimicrobial compounds from soil actinomycetes" held at ANDC from 22nd June to 19th July, 2011.	Monisha Khanna	National	ANDC
22.	Workshop on "Experimental Procedures of Cell and Molecular Biology" for Botany Teachers held at Zoology Department ANDCon 9th September, 2011.	Monisha Khanna	National	ANDC
23.	Ten days workshop on **"Understanding complexities of life from molecules to system: Concepts and tools"** for undergraduate students of Biology held in the college from 12th to 23rd May, 2008.	Ravi Toteja, Monisha Khanna, Sarita Kumar. Monica Misra and Seema Makhija	National	ANDC
25.	2nd Asian congress of Protistology and Ninth Asian Conference on Ciliate Biology organized by Kalyani University, Kalyani, India (2014)	Seema Makhija and Ravi Toteja	International	DST, DBT, CSIR, UGC and ICMR

27. Student profileprogramme/coursewise: (2013-14)

Nameofthe Course/programme (refer question no. 4)	Applications received (Central Application Form of University)	Selected	Enrolled		Pass percentage
			*M	*F	
B.Sc(H) Zoology	59800	43	15	28	97.56

*M=Male *F=Female

27. Diversityof Students: (2014-15)

Name of the Course	%of students from the same state	% of students from other States	%of students from abroad
B.Sc(H) Zoology Sem I	35.71	64.29	0.00
B.Sc(H) Zoology Sem II	35.00	65.00	0.00
B.Sc(H) Zoology Sem III	33.30	66.70	0.00

28. How many students have cleared national and state competitive examinations such as NET,SLET,GATE, Civilservices, Defenseservices,etc.?
Data is not available

Student progression: **Data is not available**

Studentprogression	Against%enrolled
UGtoPG	
PGtoM.Phil.	
PGtoPh.D..	
Ph.D..toPost-Doctoral	
Employed ☛Campusselection ☛Other than campus recruitment	
Entrepreneurship/Self-employment	

30. Details of Infrastructural facilities
- **Library**: A departmental library, rich in books, frequently   required by students of the departmen has been set up.

- **Internet facilities for Staff & Students**
  Internet facility is available through DU Wifi at the speed 100Mbps

- **Class rooms with ICT facility**
  All class rooms have LCD Projectors and Laptops are issued to the Teachers by the college
- **Laboratories**
  The Department of Zoology consists of 3 well equiped laboratories.   The following tables briefs the physical facilities in each of these laboratories.

Lab No.	Sitting Capacity	Sqaure Feet Area
1	30	20x24
2	30	20x24
3	30	20x24

Total Area of the Department: 1840 sq feet

Instruments in the Department:

LCD Projecter	Rotary Microtome	Binocular Microscope with camera
Kyan Data Projector	Rheostats	Binocular Microscopes
Over head Projector	Slide Warming Plate	Dissecting Microscope
Hybridization Oven	Vortex Shaker	Magnetic stirrer with speed regulator
Centrifuge	Water Bath	BOD Cooling Incubator
Colorimeter	PCR Machine	Orbital Shaking Incubators
Distillation Unit	Sphygmomanometer	Computer Pentium IV
Digital pH Meter-LI 127	Stethoscope	Electroblotter
Refrigerators	Electrophoresis Apparatus (Horizontal and Vertical) with power supply	Conductivity Meter
Kymographs	Laminar flow hood	Microtome
Microwave Oven	Autoclave	
Centrifuge	Dry Water Bath	
Micro-Centrifuge	UV-Transilluminator	

RESEARCH LABORATORIES

Department provide the infrastructure needed by the students for research. It provides the instruments and chemicals required by students to carry out their work. Beside the infrastructure present in zoology labs, students get additional facilities present in three research labs associated

with zoology department i.e. Ciliate biology lab, Microbial Technology Lab and Insect Pest & Vector Lab.

31. Number of students receiving financial assistance from college, University, Government or other agencies: **27**

32. Details on student enrichment programmes (special lectures/workshops/ seminar) with external experts

Special Lectures

- **Dr. Sher Ali** scientist from the **National Institute of Immunology**, **New Delhi** on September 6,2013 delivered lecture titled "**Advances in Science and Technology**" where he focused on the use of techniques like Real Time qPCR (Quantitative Polymerase Chain Reaction) and FISH (Fluorescence *in-situ* Hybridization) to elucidate the etiology of infertility in men.

- **Professor Alan Warren**, President of Life Science Department and Microbial Biodiversity Division, **Natural History Museum, London** in 2014 delivered an enchanting lecture on "**The Three Domains of Life**", where he explained the new three domain classification of organisms based on phylogenetic tree 16s rRNA gene.

- **Prof. B. Jayaram** from **Department of Chemistry and Computing Facility for Bioinformatics and Computational Biology and School of Biological Sciences, Indian Institute of Technology, Delhi**on*"Genomes to Hits: The Emerging Assembly line in Silico"* The lecture was helpful for the students to understand structure based computational drug design method which uses *in silico* solution for personalized medicine (individual specific with no side effects). He provided in depth knowledge of Gene to drug software suite comprised of Genome analysis programs (Chemgenome), proten structure prediction program (Bhageerath) and computational tool for drug design (Sanjeevni).

- **Mr. N NandGopal**, Scientist in **National Institute of Biologicals, Ministry of Health and Family Welfare** was invited for the occasion. His area of research at the Instituteis biotherapeutic quality control and molecular diagnostics.

- Prof. B. D. Banerjee from Department of Biochemistry of University College of Medical Sciences & GTB Hospital on "GENE - ENVIRONMENTAL INTERACTIONS IN HEALTH AND DISEASES : BIOLOGICALLY VALID PATHWAY OR ARTIFACTS ? on August 29, 2012. The lecture was helpful for the students to understand how interaction of gene and environment are responsible in predisposition to several diseases

- Screening of informative documentaries (Prakriti) for students on weekly basis. These documentaries were chosen to develop critical thinking and exposing the students to latest research.

- A talk on the killer disease "Thalassemia" by Ms. Shobha Tuli, Secretary, Thalassemic India, a NGO and Vice President, Thalassemia Federation, Cyprus was organized for the students to understand the importance of the disease.

- Dr. Madhu Chopra from ACBR, University of Delhi was invited to deliver a lecture on role of computational biology in drug designing.

Workshops for students

- **"Understanding complexities of life from molecules to system: Concepts and tools"** for undergraduate students of Biology held in the college from 12th to 23rd May, 2008.

- "Basic Techniques in Molecular Biology" held at A.N.D.C from June 1st to 30th 2008. Anjali, Naseer, Aparna (Students of B.Sc (H), Zoo III year)

- Workshop for B.Sc (H) Zoology Parts II & III students on Biology and Biotechnology of Actinomycetes" held at A.N.D.C from June 8th to 30th June 2009

- Workshop on **Open Educational Resources and Easy Now** for college teachers and students, organized at Acharya Narendra Dev College from 12th May to 15th May, 2009.

- Workshop for students on "Polyphasic characterization of actinomycetes and analysis of their antimicrobial potential" held at A.N.D.C from May 15th to August 10th 2010

- Workshop for students on "Isolation of antimicrobial compounds from soil actinomycetes" held at A.N.D.C from 22nd June to 19th July, 2011.

- two days workshop on **Hands on Training,Molecular Phylogenetics: Understanding Evolutionary Histories**, (Workshop for Students) on 15, 16 June 2011

- On February 7, 2014 department of Zoology organized **CUBE (Collaborative Undergraduates Biology Education) workshop**, that observed participation from students&/or teachers from six colleges of university of Delhi besides ANDC. CUBE is a community initiative to promote collaborative education, research and outreach in biology. Its objective is to establish functional linkages across all spans (primary school to colleges to research centers) via poster competitions, seminars, workshops, collaborative research projects etc.

- Workshop on Enzyme Linked immunosorbent Assay (ELISA) by Mr. Vikas Sachdev from AIIMS, N. Delhi. This workshop provided hands on training to the undergraduate students for the better understanding of the technique and its application as diagnostic tool.

Seminar

- National Conference 'Redefining Teaching Science: Future of Education' to be held at Conference Room, UDSC, 7-9th March, 2013.

- National Symposium; **Chemistry in Biology: The Future of Life Sciences**, 12-13 Feb, 2010

> ➤ National Symposium on "Biotechnology: Expanding Horizons", 22-23 Nov., 2003;

33. Teaching methods adopted to improve student learning

- **Instructions:** Radical change in the method of instructions has been brought to align the students with the quality of student's input in the college.

- **Discussion sessions:** Interactive discussion sessions are conducted to inculcate the depth of understanding, knowledge and communication among the students. During the sessions, the inquisitive nature of the students is enriched by providing the extra and useful information about the biological sciences.

- **Presentations:** The habit of deep thinking is inculcated among the students by teaching them through presentations using LCD projectors. This enhances their understanding of the basic principles and concepts of biology in an interesting manner. It arouses interest of the students in the subject and also gives a better grasp of the subject.

- **Confidence built-up**: The students are encouraged to prepare their own presentations and present in front of the teachers and their peer group. This helps to built up their self confidence, broaden their horizon and prepares for future competitions.

- **Projects:** The students are involved in various projects to enhance their scientific aptitude and practical knowledge by providing them hands-on experience of the theoretical concepts.

- **Class tests:** The class tests and discussions are conducted after the completion of each topic for the clarity of concepts and better understanding of the next topic.

- **Exercises and Evaluation**: Extensive exercises are prepared to familiarize the students with the variety of questions they need to face in the examination. After the completion of exercises, the students are evaluated which helps them to perform better in the examinations.

- **Academic tours:** Academic tours to different institutes are arranged occasionally to acquaint them with the new innovations and upcoming techniques enabling them to survive and do excellent in the competitive world.

- **Group Discussions:** Group Discussion are held regularly where students get opportunity to think from different angles and incorporate all these points while writing answers in the exam. It not only inculcates team spirit but also improves their communication skills while sharing opinions and exchanging views with others, enables to think in divergent directions to generate more points and a good presentation of the topic and enhances analytical ability.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities

Extension activities

Two of the Zoology Faculty teachers were appointed as Jury member for National level exhibition & project competition (NLPEC-2013) under innovation in science persuit for INSPIRED Research (INSPIRE) program, Department of Science & Technology, From 8th to 10th october 2013.

The faculty of zoology department is involved in following extension activities:

Curriculum enrichment (syllabus, educational material, designing of new experiments etc.)

Name of the Faculty	*Curriculum Development*
Dr. Poonam A Kant	Member of the committee involved in the development of syllabus for DC-I Zoology papers (Fundamentals of Biochemistry, Metabolism) of FYUP. Member of committee for revision of syllabus for paper Developmental Biology 2010.
Dr. Sarita Kumar	Member of the committee constituted for the curriculum development for: • **Four year undergraduate programme** in **Honours courses for Zoology** at the undergraduate level, University of Delhi (2012-2013) • **Honours courses for Zoology** at the undergraduate level, University of Delhi (2010-2011) • **Zoology for Life Sciences courses** at the undergraduate level, University of Delhi (2010-2011) • **Zoology for Applied Life Sciences courses** at the undergraduate level, University of Delhi
Dr. Monisha Khanna	• Four year undergraduate programme in Honours courses for Zoology at the undergraduate level, University of Delhi (2012-2013) • Member of the Working Committee involved in framing of revised syllabi for the Semester courses in Zoology (2010-2011). • Member of the Committee of Genetics, Genomics and Biotechnology" for framing syllabus for B.Sc. (Hons.) Zoology (2006-2008) • Member of the Committee of Cell and Molecular Biology" for B.Sc. (Gen.) (2006-2008) • Co-Convenor of the Committee of Applied Zoology" also for B.Sc. (Gen.) courses (2006-2008). • Involved in restructuring the syllabus for B.Sc. Applied Life Sciences (Sericulture) Parts II and III, implemented from the academic year (2006-08)
Dr. Ravi Toteja	• Member of committee involved in restructuring the course contents of **Immunology** paper to be taught in B.Sc. Zoology (Hons); 2010. • Member of committee involved in restructuring the course contents of **Cell and Molecular Biology** paper to be taught in B.Sc. Zoology (Hons); 2010.

	• Member of committee involved in restructuring the course contents of **Cell and Molecular Biology** paper to be taught in B.Sc. Life Sciences; 2010. • Member of the committee constituted in 2007 for restructuring of Foundation and Life sciences Curriculum in University of Delhi. • Member of the committee constituted in 2006 for restructuring of Applied Life sciences (sericulture) curriculum. As a member of the committee, actively participated in various discussions and reframing of the syllabi •
Monica Misra	• Member of the committe involved in the syllabus of DC-I Zoology paper (Developmental Biology) of FYUP. • Participated as member of the Subcommittee for B.Sc. (Hons.) Zoology for the paper Developmental Biology and for the B.Sc. (Gen.Gr.B) for the paper Developmental Biology and Evolution and subsidiary for B.Sc. (Hons.) Botany for the paper Developmental Biology during revision of Undergraduate Syllabi in Zoology by Deptt. Of Zoology, University of Delhi, in 2003.

Invited Talks: Dr. Sarita Kumar

- **Invited for talk** on 'Counter-current Multiplier system in human body – clearing the doubts' Orientation programme entitled "Orientation of Master Trainers in Biology at the Higher Secondary Stage" DESM, NCERT, New Delhi, February, 21-24 2012.
- **Invited for talk** on 'Clearing the difficult concepts in Human Physiology' Orientation programme entitled "Orientation of Master Trainers in Biology at the Higher Secondary Stage" DESM, NCERT, New Delhi, February, 21-24 2012.
- **Invited for talk on** 'Concepts in Human Physiology' Training workshop of Post-Graduate Teachers teaching Classes IX to XIIin Army schools across the country, Army Welfare Educational Society (AWES) on June, 28, 2011.
- **Resource person** in the OER workshop held at Institute of Distance and Open Learning, Mumbai, from February, 24-26, 2011.
- Workshop on 'Open Educational Resources' Appejay Stya University, Sohna Palwal Road, April 26, 2013
- Resource person in the LC44 workshop on 'Open Educational Resources' for College teachers and students, organized by Acharya Narendra Dev College and supported by Commonwealth of Learning, Vancouver, May 12-15, 2009.
- Resource person in the LC45 workshop on 'Open Educational Resources' for College teachers and students, organized by Acharya Narendra Dev College and supported by Commonwealth of Learning, Vancouver, May 12-15, 2009.
- Resource person in the LC46 Workshop on 'Open Educational Resources' for School teachers, organized by Acharya Narendra Dev College held at Sri Ram School, Vasant Vihar on May 16-18, 2009.\

- Resource person in the LC46 Workshop on 'Open Educational Resources' for School teachers, organized by Acharya Narendra Dev College held at Sri Ram School, Vasant Vihar on May 27-29, 2009.\
- Resource person in the Workshop on 'WikiEducator' for the faculty of CIET, NCERT, held on 29th June, 2009.
- Resource person in the workshop entitled 'Orientation of master trainers in the laboratory techniques and practical work in biology at higher secondary stage' held at ANDC, organized by NCERT.
- Resource person in workshop on Biotechnology based on the Biology course of B.Sc. Life Sciences Part III for University teachers, organized by Acharya Narendra Dev College and Institute of Life Learning, University of Delhi, October 21-14, 2008.
- Resource person in the workshop 'Wikied-08' on Open Educational Resources for College teachers and students, organized by Acharya Narendra Dev College and Gandhi Bhavan, University of Delhi, October 3-6, 2008.
- Resource person in Bamboo & Rattan ODL Course development Workshop, organized by IGNOU July 21-23, 2006.

Deapartmental Society
The Departmental Society, Niche, fosters interactions of students with established scientists through lectures, workshops & seminars to expose the students to the intellectual breadth & skills necessary for rigorous research with an interdisciplinary approach. Over the last few years, eminent scientists including Prof. B. Jayram from IIT Delhi, Dr. B.D. Banerjee from UCMS, Dr. Sher Ali from NII and Dr. Madhu Chopra from ACBR to name a few, have graced the department with their presence & motivated the students towards pursuing scientific research.
Niche emphasizes on the overall personality development of the students by organizing events like Green Day, Skit Competition, Collage making competition, etc. The inter-departmental competitions receive enthusiastic participation from the students across the University.
Newsletter
Excursions
Excursions are a very important part of a student's life. These play a crucial role in learning as well as promoting personality development of the students. Keeping this in view, the Department has been actively organizing excursions to a variety of places like Udaipur, Nanital, Shimla, Manali, Pachmarhi to name a few. In addition to outstation excursions, we also plan visits to Yamuna Biodiversity Park and National Zoological Park in Delhi every year. The students also heartily participate in these excursions and visits which help develop qualities of resourcefulness, self- confidence, initiative and leadership among them.
Visit
Within the course curriculum students has visited Yamuna biodiversity park (Zoo-Ist sem for Perspective in Ecology), Delhi zoological garden (Zoo-V sem for Ecology), IARI Pusa, Delhi (Zoo-VI sem Applied Zoology & Zoo-II sem Diversity & Evolution of Non-Chordata-II).

35. SWOC analysis of the department and Future plans
Strength
The Zoology Faculty is dedicated to teaching and research. Teaching is a passion that is visible as two of the faculty members have received Distinguished Teacher Award by University of Delhi. Also one of the faculty member had received Meritorious Teacher Award by Govt. of NCT of Delhi. The dedication for research is remarkable as the first student who has completed her Ph.D. is from Zoology. Two of the faculty members have been recognized as registered

guides to supervise Ph.D.. students by University of Delhi. Research Oriented students is evident from the no. of research projects undertaken by the students of the Department. Non-Teaching Staff always wiiling to work and have a very congenial relation with each other. Library of the Department ensures that the books required in huge numbers are provided to the students.

Weakness

- Space Constraint: The laboratory space is limited and it has become very difficult to manage after the increase in work load because of the increase in number of students

Opportunities

- Deparment promotes the culture of hands-on training amongst undergraduate students, which has resulted students publishing and presenting their work in reputed journals andConferences.

- Department encourage students to take up small research projects either in the college or outside or undertake training and skill development in any field of their choice

- Acreative and interactive environment in theoryl and practical classes is provided to the students which help students confidence building and team work .

- Students have access to Wi-Fi system within the college premises round the clock

- Students of the Department are promoted for self-employment and to develop high quality entrepreneurship through the workshops organized by Innovation & Entrepre-neurship Development Centre (IEDC) sponsored by the National Science and Technology Entrepreneurship Development Board of the Department of Science &Technology .

Challenges

- To develop interest in the subjectand make them realize their hidden potentials
- To update them about the recent findings in the subject
- Students have to be trained in such a way that they are ready to face all challenges in their life