Shaheed Rajguru College of Applied Sciences for Women
(University of Delhi)

SELF STUDY REPORT – MARCH 2015

FOR SUBMISSION TO:
National Assessment Accreditation Council (NAAC)

INDEX

PREFACE

"Quality is never an accident; it is always the result of intelligent effort"

John Ruskin

Shaheed Rajguru College of Applied Science for Women is an initiative by the University of Delhi and Government of NCT of Delhi to impart scientific and industrial skills to girl students imperative to make them socially and economically independent. Swami Vivekananda proclaimed that "Education is the manifestation of perfection already in man". Believing in this philosophy, the college imparts education to the young girls so that the veil of ignorance is removed and the students become self reliant enlightened global citizens.

Today there is a huge gap between education imparted in universities and what actually is required by the industries. It is therefore necessary that skills are imparted to help them being suitably employed. Studies suggest that girls receive less encouragement, experience and opportunities in the field of applied sciences, engineering and technology world wide as traditionally they are considered to be male dominated disciplines. Our college is trying to technically empower the girl students so that this gender disparity is removed. The aim of the college is not to make the girl students merely follow the trodden path but to make them leaders in society who can transform it with their in-depth knowledge, compassion and integrity. This will make the world a better place to live in. The College aims at providing holistic education to girls by working on four dimensions of Empowerment through formal and non-formal ways of learning namely, the cognitive, psychological, political and economic. The present educational environment of the College is beginning of an 'empowerment process' by expanding the knowledge, understanding, self-confidence and awareness of socio-economic and national value of young girls.

Dr. Payal Mago
OSD(Principal)

INTRODUCTION

Education of women in India has greatly contributed to women achieving economic freedom and bringing them at par with men in shaping the important polices of the country. Though women have had a strong voice in all the important decision making bodies of India right from historic times, today the roles are becoming very conspicuous as women are becoming not just followers but emerging as leaders. It has taken a 25 year journey to make women of Shaheed Rajguru College of Applied College for Women to stand on their own to carve a niche for themselves in the society. This has been achieved successfully by imparting technical training and education, which enables them to hone up their skills and expertise in their respwctive field so as to bring about change and have their say in the various policies regarding women in the corporate world.

Shaheed Rajguru College of Applied Sciences for Women was the initiative of University of Delhi in 1989 to offer degree programs to women in applied sciences. The College is fully funded by the Directorate of Higher Education, Government of NCT Delhi and is also recognized under (2f) and 12(B) of the University Grants Commission Act (UGC Act). The college was started with the view that women could gain high-level training in technical fields to contribute the skills acquired in various industries. Initially, three courses were started in the college, namely the Bachelor of Applied Science in Electronics, Instrumentation, and Food Technology with 60 students. The mandate was to have a curriculum that was multidisciplinary in nature and with hands-on training in cutting edge technologies. As a part of course curriculum, students had to undergo eight weeks industrial training in the second and third years of their degree programme. The idea was to give an insight of the functioning of an industry to the students. The industries were not accustomed to training students of this kind, therefore they had to be made aware of the importance of applied sciences and professional training for women. Gradually, the demand for our students rose in many industries.

In the past 25 years, the college has been able to train nearly 2,000 students who are now either occupying senior positions in the corporate sector, started their own enterprises, or are pursuing higher studies in India and abroad. Some of them have joined the education field as

assistant or associate professors or research scholars in colleges and universities in India and abroad.

In 2012, a new, modern college campus was completed on nine and a half acres of land at Vasundhara Enclave, with state of art laboratories, open air theatre, indoor auditorium, video conferencing room, seminar and conference rooms, three floored air-conditioned e-library, which is the first library in the University of Delhi to be RFID enabled and a hostel for nearly 105 students.

Today, the college is running in its new campus with five applied science courses, namely B.Sc. (Hons) Electronics, Instrumentation and Food Technology, Biomedical Science and Computer Science. The college has 760 students. More than 70% of the women come from lower middle class families, hence, do not have the soft skills required by the industry and are not confident speaking in a classroom setting. After studying in the college for three years, they emerge as confident young women all equipped to face the challenges before them. The college is thus working towards upliftment of girls from this section of the society as well.

The college attempts to keep them abreast of the modern trends by organizing workshops and seminars where industry and academic leaders come together to provide hands on training to the young students. Initially, only 16 companies trained the students, but today more than 200 companies are imparting training to the students and also providing placements to them. Faculty members of the college are also sent to the corporate sector in order to understand the needs of the industry so that curriculum can accordingly be frame which inturn benefits both the students and the industries, thus strengthening university-industry linkage.

In a span of twenty-five years, the college has developed international collaborations, which have helped students and faculty to understand how other institutes train women to acquire leadership qualities. The college in turn shared its experiences and leadership training model. It became clear that the college of applied sciences for women was a unique model in the world, when a paper was presented entitled *College of Applied Sciences for Women: A case study* in the 8th International Organization of Science Technology Education Symposium (IOSTE) at Alberta, Canada in 1996.

Two of our students represented the college at *Women's Education Worldwide* student leadership conference in 2008. Three of our assistant/associate professors participated in the international conference *Teaching Globally* in 2011. Both these conferences were organized by

Mount Holyoke and Smith Colleges under the banner of *Women's Education Worldwide*. The college is also a member of Women in Public Service Project (WPSP) an initiative started by Ms Hillary Clinton. This exposure has helped train young women to become leaders in society. Further, a weeklong International workshop was conducted on *New Frontiers in Global Learning and Communication,* which was organized for faculty from all over India by the college in collaboration with the faculty from University of Massachusetts, Boston. During the workshop, the faculty from University of Massachusetts, Boston conducted a mini workshop on career counseling for the students of the college, which helped our students to understand how they can work in a global environment.

The students working in the United Nations Framework Convention on Climate Change (UNFCCC) are carrying out the energy audit of the industries in India and abroad. An alumnus employed with Varian, USA is making a third generation quadruple mass spectrometer. One of the students employed with the Ministry of Women and Child Development is taking care of all aspects of nutrition of women and children in India. Additionally, one of our alumni is with the Indian Space Research Organization (ISRO) and is contributing towards policies in space research. Some alumni have started their own enterprises, and thus, they are generating employment for others.

Many students are placed in different food industries, as regulatory affairs executives, food auditors who check on food safety aspects of various food processing industries. One of our alumni is with the United Nations World Food Program and is framing policies with regard to food security in India and working in the area of Targeted Public Distribution System so that food reaches the right beneficiaries. One of the organizations looking after food safety in India, the Food Standards and Safety Authority of India (FSSAI), has employed some of our students, and a few of them are expert members in their panels. Additionally, some students are serving as information specialists with the United Department of Agriculture (USDA). Export of food is also an important aspect, and some of our students are working as Assistant Director at the Bureau of Indian Standards (BIS) and the Export Council of India (EIC), which is an apex body established by the government of India that advises the government on the measures to be taken for the enforcement of quality control and inspection of commodities intended for export.

Evidently, women in applied sciences are contributing by shaping policies in areas of health, nutrition, food, energy, space research, packaging, software development, export of commodities, and environmental concerns. The women are now entering into the mainstream of national development in the areas of pure and applied sciences. This shows that given the right kind of education and training in applied sciences, women scientists can secure top positions, become part of decision-making bodies, and shape policies at the national and global levels. However, many more colleges that can train women in applied sciences need to come up for the upliftment of women leading to their empowerment.

B. EXECUTIVE SUMMARY

Criterion I: Curricular Aspects

Universities and Colleges are an epitome of higher education and the curriculum of the programs are their reflection. The very existence and functioning of any institution rests on the curricular aspects. These aspects though considered as a whole, essentially are multilayered. The success of any program depends upon the design, adoption, delivery and evaluation of its curriculum. This responsibility of making a program successful is more when it is professional and job oriented. The objective then is to create ignited minds rather than educated brains. The gap between the academia and the industry needs to be bridged by making the graduates employable.

With this vision, our faculty has been involved in working at all levels of curricular aspects. As per the framework of University of Delhi colleges, the designing of curricula is taken up by the University itself. Since our college was started with the intention of uplifting the girls of weaker section of the society, hence initially we were given the liberty to be involved in the designing of the curriculum in consultation with the industry. Once designed, the University then adopted the curriculum formally through its academic and executive councils. Our ex-Principal has been a member of the academic and executive councils. Our faculty members have been part of the departmental committees of courses and have actively participated in drafting the syallabi.

We offer five undergraduate programs in Science at honors level. The students are given a B.Sc. (Hons.) degree at the completion of the course after three years. Under the Four Year Undergrduate Program (FYUP) introduced by University of Delhi in 2013-14, students of four of our courses, namely, Computer Science, Electronics, Food-Technology and Instrumentation can obtain a B.Tech. degree pending AICTE approval.

Criterion II: Teaching, Learning and Evaluation

Our faculty members understand the vision and mission of the college and believe in effective implementation of the designed curricula. The college has 21 permanent and 22 ad-hoc teachers. We follow the guidelines laid down by University of Delhi while appointing our faculty. Apart from having a strong academic background, the teachers also have research experience. With

this experience they are able to apprise the students about the latest developments in their area of expertise. The teachers have also undergone various orientation and refresher courses organized either by Academic Staff Colleges of University Grants Commission or in reputed industries. Five of our teachers have received *Meritorious Teacher* award by Govt. of NCT of Delhi, one faculty member has been bestowed upon the *Instructor Service Excellence* award by CISCO and our librarian was awarded *Info Share Membership* award by American Society for Information Sciences and Technology. Reservation policy as laid down by University Grants Commission ensures that our classrooms are fairly diverse and all-encompassing. A teacher-pupil ratio of 1:18 ensures that the teaching learning process is interactive where engagement of learner is paramount. Assignments, project, presentations/seminars and regular class tests are an integral part of our teaching process. We also engage remedial classes wherever and whenever required.

Each department regularly organizes talks by eminent scientists and scholars. The students are encouraged to undergo training and internships during their semester breaks. In order to make the students appreciate the theoretical knowledge imparted to them, educational trips and industrial visits are organized. Conferences/Seminars/Workshops are also held from time-to-time in the concerned disciplines and also on sensitive issues such as Gender Sensitization, Environment, and Women safety. We organize self defense classes for girls in the college. We believe in holistic development of a woman and hence talks/lectures on moral ethical values are delivered by eminent speakers from Ramakrishna Mission.

The admission policy adopted by the college is very transparent. The college prospectus contains detailed information on the admission criterion and eligibility. The same information is put up on the college notice board, website and published in newspapers.

Attendance of the students after every month is also put up on the college notice board and website. Letters are posted for those students who fall short of attendance and their parents are also called. Internal assessment marks are also put up on the departmental notice boards and a copy of the marks duly signed by the students is kept for records.

Our college campus and the hostel are disabled friendly and needs of the physically disabled students are taken care of. For an advanced learner the college extends all possible support. The students of Food-Technology prepare novel food products, the students of electronics,

instumentation and computer science have joined the Robotics club. Creative skills of the students are also nurtured by means of various societies in the college such as dramatics, dance, music and literary societies.

Criterion III: Research, Consultancy and Extension

Our faculty is incessantly involved in research activities with one of the faculty having a publication in *Nature*. Around 60 students and 11 faculty members have been involved in ongoing and completed innovative projects funded by University of Delhi. Three of our faculty members have completed research projects funded by University Grants Commission and Department of Science and Technology.

The college has well equipped laboratories and a research centre to promote research amongst the faculty and the students. The college has recently received grant under the Star College Scheme funded by Department of Biotechnology, Government of India, which it plans to use in creating avenues for emerging areas of research.

Consultancy was provided by the Department of Food Technology to Paharpur Industries by way of analyzing the sanitation aspect of industry. The analysis was done by the students and a faculty member. However no revenue was generated as the University does not permit the same.

Our efforts in extension programs are appreciable. Our students are associated in literacy mission by associating with Teach India Program and Young Association. The college has adopted a village and a market under the Swachhta Abhiyan. The ex-Principal of the college got the Lifetime Achievement Award from WOW (Well being of Women) for the contribution of our college to community development. We have recently started National Service Scheme (NSS) program in the college. The students will surely accomplish more and move forward in the times to come.

Criterion IV: Infrastructure and Learning Resources

The college has an aesthetic campus spread over 9.5 acres of land in Vasundhra Enclave. We have state of the art infrastructure with 17 lecture rooms, 3 seminar rooms and one conference room. All the rooms are fitted with LCD projectors and screens. The Food Technology department has 7 laboratories and two Pilot Plants, the Instrumentation department has 5

laboratories, the Electronics department has 8 laboratories, the Bio-medical Science department has 4 laboratories, the Computer Science department has 4 well equipped ICT enabled laboratories, Maths department has one and the Physics and Biology department have 2 laboratories each, the Biochemistry department has one, and the Chemistry department has three well equipped laboratories. All the labs have state-of-the art equipments and facilities.

The college has a hygienic and spacious canteen and a common room for the students. We have a hostel to accommodate 105 girls. The rooms are spacious and well lit for the comfort of the girls. It has a clean mess where healthy meals are served. The hostel also has a recreation room with television for the students.

The college has a three floored library for a seating capacity of 221 students. Ours is the only RFID enabled library in Delhi University. There are 16,000 books and 31 journals and magazines in the library. We have 66 computers and 3 printers in the library where the students can use e-resource sharing through Information and Library Network (INFLIBNET) and Delhi University Library System (DULS) - University of Delhi (Delhi).

The college campus is Wi-Fi enabled. Computer and Internet facility is provided to all the students and faculty members. A number of licensed software and customized packages are used for teaching and management purposes. The college ensures that all the facilities are well maintained and function smoothly.

Criterion V: Student Support and Progression

Every year, before admitting a new batch, the college publishes its prospectus providing information on diverse aspects of college life. It enlists all the information essential for the new entrants. The college is empathetic towards the needs of students belonging to all strata of society. Every student is assigned a mentor faculty. The students are free to discuss their problems related to academic or personal with their mentor. The college campus and the hostel are disabled friendly. Financial assistance is provided to the students from economically weaker section of the society by providing full fee concession for the course fee and a substantial concession in hostel fee. The Equal Opportunity Cell of the college works towards empowering students belonging to SC/ST/OBC categories. Some departments have book banks to help the needy students by providing them with books. For slow learners remedial classes are held.

A full time nurse is available in the hostel medical room for minor ailments. A doctor is available on call in case required. Extracurricular activities are encouraged and full support is provided to the students by the college. The students have won many prizes in various inter college competitions. The college brings out its annual magazine "Akriti". Many departments also publish their annual newsletter. The laboratories of the college have published their safety manuals to avoid accidents. The college believes in a democratic environment and has a student council under the guidance of a faculty member that works towards the development of the college and in the process their personality is also groomed.

The college has a sexual harassment committee now renamed as Internal Complaints Committee, an Anti-ragging Committee, an Alumni Association, a Career Counseling and Placement Cell that works diligently for the placement of our students in industries.

Category VI: Governance, Leadership and Management

The college has a vision to establish itself as a seat of entrepreneurial oriented education besides imbibing strong ethical values. The governance of the college ensures that the college is able to meet its vision with a culture of participative management. The college is governed by a Governing Body of ten nominees of the Government of National Capital Territory of Delhi, two teachers of the college, one non-teaching member as a special invitee and Principal as its member secretary. The Governing Body is vested with the powers and responsibility of governance i.e imparting direction, ratifying decisions and general facilitation towards the pursuit for excellence.

The college has a Provident Fund Committee for the benefit of staff members. The Staff Council of the college chaired by the Principal charters and organizes the academic and co-curricular activities of the college. Each department has a teacher-in-charge changed every two years on rotation basis. The college enhances the professional development of its teaching and non-teaching staff by encouraging them to undergo orientation/refresher courses and training programmes. The college has also organized motivational workshops for the staff members. As a welfare measure, wards of the staff members are given admission on supernumerary seats. The accounts are audited by internal as well as external auditor every year. Recently an Internal

Quality Assurance System (IQAS) has been constituted and we are in the process of framing the policies.

Category VII: Innovation and Best Practices

The college has an amply green and eco friendly campus with a robust water harvesting system. The solar energy is used in the hostel for water heating. The lights in the toilets are sensor controlled and save a lot of electricity. The air conditioning in the campus is by VRF system that is economical and eco friendly. For the management of e-waste, the college follows the policy of Government of NCT of Delhi.

The college has state of the art infrastructure and gives extensive hands on training to the students on sophisticated instruments. The college believes in developing scientific temper in students. The college believes in providing open and free environment and active interaction between the teaching, non-teaching staff and the students. The college has a RFID enabled library. Every student and staff member has been issued a smart identity card that can be used for the issue and return of books. No separate library cards are required. We believe in imparting high quality education to women and empowering them to be economically independent for the betterment of the society.

C. PROFILE OF THE COLLEGE

1. Profile of the Constituent College

1. Name and Address of the College:

Name:	Shaheed Rajguru College of Applied Science for Women, University of Delhi	
Address:	Vasundhara Enclave	
City:	**Pin:**110096	**State:** Delhi
Website:	www.rajgurucollege.com	

2. For Communication:

Designation	Name	Telephone With STD code	Mobile	Fax	Email
OSD (Principal)	Dr. Payal Mago	O:011-22623503	9013089089	22623504	payal500@gmail.com
Steering Committee Coordinator	Dr. Punita Saxena	O:011-22623503	9810221483	-	punita.saxena@rajguru.du.ac.in

3. Status of the Institution:

Constituent College

4. Type of Institution:

a. By Gender

i.	For Men	
ii.	For Women	√
iii.	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 Any other

7. **a. Date of establishment of the college**: 06/11/1989 (dd/mm/yyyy)
b. University to which the college is affiliated/or 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)	21.05.1996	
ii.12(B)	21.05.1996	

(Enclose the Certificate of recognition u/s 2(f) and 12(B) of the UGC Act) **(Annexure-I I)**

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

Under Section/ Claus e	Recognition/Approval details Institution/Departme nt Programme	Day, Month and Year (dd-mm-yyyy)	Validity	Remarks
i.	N.A.			
ii.				
iii.				
iv.				

(Enclose 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……and

Date of recognition :……(dd/mm/yyyy)

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

Location*	Vasundhara Enclave, Delhi -110096
Campus area in sq. mts.	35000.00 Sq mts.
Built up area in sq.mts.	19250.00 Sq. mts.

(*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 in case 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/seminar complex with infrastructural facilities:**

Three Seminar rooms with seating capacity of 300 each, equipped with audio visual facilities (wall mounted LCD projectors and screen) and central air-conditioning.

One Conference hall with seating capacity of 60 equipped with audio visual facilities (wall mounted LCD projectors, mikes for participants on each table, screen etc.) and central air-conditioning. An Auditorium with seating capacity of 590 persons equipped with push back chairs, carpets, sound system, stage lighting, electric curtains, video projects and central air-conditioning.

- **Sports facilities**
  - Playground - Yes
  - Swimming pool - None
  - Gymnasium: Functional

- **Hostel**

Boys' hostel - Nil

i. Number of hostels - Nil

ii. Number of inmates - Nil

iii. Facilities (mention available facilities) - Nil

Girls' hostel

i. Number of hostels - One

ii. Number of inmates - 107

iii. Facilities (mention available facilities) - Mess, First Aid & (on call), Cable TV, Guest room Etc.

Working women's hostel

i. Number of inmates } N. A.

iii. Facilities (mention available facilities) }

- **Residential facilities for teaching and non-teaching staff (give numbers available—cadre wise)** Yes
  Teaching Staff (Group – A) - 3
  Non-Teaching Staff (Group – C)-9
  Non- Teaching Staff (Group D)-3

- **Cafeteria**— Available

- **Health centre**– Doctor on call

  First aid, in patient, out-patient, Emergency care facility, Ambulance, Health centre staff– None

  Qualified doctor Fulltime ☐ Part-time ☐

  Qualified Nurse Fulltime ☐ Part-time ☐

- **Facilities like banking post office book shops** – None but on call facility by bank

- **Transport facilities to cater to the needs of students and staff** : None

- **Animal house** : None

- **Biological waste disposal:** STP (Sewage Treatment Plan) facility are avaliable
- **Generator or other facility for management/regulation of electricity and voltage:** YES, two generators of 250 KVA and one of 160 KVA
- **Solid waste management facility**
- **Waste water management**

} Sewage Treatment Plan (STP)

- **Water harvesting :** Yes

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

Programme Level	Name of the Programme/ Course	Duration	Entry Qualification	Medium of instruction	Sanctioned/ approved Student strength	No. of students admitted
Under-Graduate B.Sc.(H)	Electronics Instrumentation Food Technology Computer Science Biomedical Science	3 yrs	10+2	English	32 32 32 46 32	40 35 56 81 54
Post-Graduate	-	-	-	-	-	-
Integrated Programmes PG	-	-	-	-	-	-
Ph.D.	-	-	-	-	-	-
M.Phil.	-	-	-	-	-	-
Ph.D	-	-	-	-	-	-
Certificate courses	-	-	-	-	-	-
UG Diploma	-	-	-	-	-	-
PG Diploma	-	-	-	-	-	-
Any Other (specify and provide	Cisco Certified Network Associate (CCNA)	2 yrs	10th	English	30	-

13. Does the college offer self-financed Programmes? Yes, One (CCNA)

14. New programmes introduced in the college during the last five years if any? None

Yes		No		Number	

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	Electronics	Yes	-	Yes
	Instrumentation	Yes	-	
	Food Technology	Yes	-	
	Computer Science	Yes	-	
	Biomedical Science	Yes	-	
	Physics	Yes	-	
	Chemistry	Yes	-	
	Biochemistry	Yes	-	
	Mathematics	Yes	-	
	Biology	Yes	-	

16. Number of Programmes offered under (Programme means a degree course like BA, BSc, MA, M.Com) Five

a. annual system

b. semester system √

c. trimester system

17. Number of Programmes with

a. Choice Based Credit System

b. Inter/ Multidisciplinary Approach : 5

c. Any other (specify and provide details)

18. Does the college offer UG and/or PG programmes in Teacher Education? No

If yes,

a. Year of Introduction of the programme(s)……(dd/mm/yyyy)
and number of batches that completed the programme

b. NCTE recognition details (if applicable)
Notification No.:……Date:
……(dd/mm/yyyy)
Validity:……..

c. Is the institution opting for assessment and accreditation of Teacher Education Programme separately? No

19. Does the college offer UG or PG programme in Physical Education? No

If yes,

a. Year of Introduction of the programme(s)……..(dd/mm/yyyy) and number of batches that completed the programme

b. NCTE recognition details (if applicable)

Notification No.:……
Date: ……(dd/mm/yyyy)
Validity:……

c. Is the institution opting for assessment and accreditation of Physical Education Programme separately? No

20. Number of teaching and non-teaching positions in the Institution

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 Govt.	*Total*	-	-	-	-	-	44	26	2	45	4
	Recruited	-	-	-	-	1	20	22	2	17	4
	Yet to recruit	-	-	-	-	23*		4		28	
Sanctioned by the Management/ society or other authorized bodies *Recruited*											
Yet to recruit											

***M-Male*F-Female**
*** At present working on ad-hoc basis.**

21. Qualifications of the teaching staff:

Highest qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent teachers							
D.Sc./D.Litt.	-	-	-				
Ph.D.	-	-	-	8	1	7	16
M. Phil.	-	-	-	2		1	3
PG	-	-	-	-		2	2
Temporary teachers							
Ph.D.	-	-	-	-	-	-	-
M. Phil.	-	-	-	-	-	-	-
PG	-	-	-	-	-	-	-
Part-time teachers							
Ph.D.							
M. Phil.							
PG							

22. Number of Visiting Faculty/Guest Faculty engaged with the College. 9

23. Furnish the number of the students admitted to the college during the last four academic years.

Categories	Year1 2014-15		Year2 2013-14		Year3 2012-13		Year4 2011-12	
	Male	Female	Male	Female	Male	Female	Male	Female
SC	-	25		21	-	26	-	14
ST	-	5		4	-	-	-	1
OBC	-	72		40	-	45	-	29
General	-	139		200		174	-	163
Others	-	2PH	-	1	-	-	-	

24. Details on students enrollment in the college during the current academic year:

Type of students	UG	PG	M. Phil.	Ph.D.	Total
Students from the same State where the college is located	122	-	--	-	-
Students from other states of India	121	-	-	-	-
NRI students					
Foreign students	-	-	-	-	-
Total	243				

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

UG 20.5 % **PG** -

26. Unit Cost of Education

(Unit cost=total annual recurring expenditure (actual) divided by total number of students enrolled) (2013-14)

a. Including the salary component: Rs 108770

b. Excluding the salary component : Rs 29900

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

Yes [ ] No [√]

If yes,

a) Is it a registered centre for offering distance education programmes of another Universiy

Yes ☐ No ☐

b) Name of the University which has granted such registration.

Indira Gandhi National Open University (IGNOU)

c) Number of programmes offered: 03

d) Programmes carry the recognition of the Distance Education Council.

✓ Yes ☐ No ☐

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

1:12 (Sanctioned intake of students)

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)

Cycle1:……(dd/mm/yyyy) Accreditation Outcome/Result……Cycle2: ……(dd/mm/yyyy) Accreditation Outcome/Result……Cycle3:…… (dd/mm/yyyy) Accreditation Outcome/Result……

Kindly enclose copy of accreditation certificate(s) and peer team report(s)as an annexure.

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

245

32. Number of teaching days during the last academic year

(Teaching days means days on which lectures were engaged excluding the examination days)

201

33. Date of establishment of Internal Quality Assurance Cell (IQAC) IQAC

30/06/2014 (dd/mm/yyyy)

34. Details regarding submission of Annual Quality Assurance Reports (AQAR) to NAAC. None

AQAR (i) ……(dd/mm/yyyy) AQAR (ii)

……(dd/mm/yyyy)AQAR

(iii)……(dd/mm/yyyy)AQAR (iv)

……(dd/mm/yyyy)

35. Any other relevant data (not covered above) the college would like to include. (Do not include explanatory/descriptive information)

CRITERION I: CURRICULAR ASPECTS

1.1 Curriculum planning & implementation

1.1.1 State the vision, mission and objective of the institution and describe how these are communicated to the students, teachers, staff and other stakeholders.

Vision:

Around twenty five years back, Delhi University developed a vision for empowering the girls, particularly belonging to weaker sections of the society by imparting certain skills set to them thereby enhancing their job prospects. In this endeavour young girls, after passing out from school in science subjects keen to pursue the job oriented courses along with industrial training are the target group. Today, when the college has first celebrated its silver jubilee the focus of entire celebrations has been technical, entrepreneurial, moral and social enlightenment of young but highly impressionable minds to make them good citizens of India.

Mission: To achieve the aforesaid vision the college was started as 'College of Applied Sciences for Women' in December 1989, later renamed as "Shaheed Rajguru College of Applied Sciences for Women". Under the able guidance of our founder and ex-principal who herself is an epitome of women education, women empowerment, women rights, gender equality and similar issues, we are constantly striving to achieve our mission, which is:

- To develop interest and engagement in applied sciences through innovative teaching and practical methods.
- To give them a continuous industrial exposure by inviting professionals from industry for special lectures, interactive sessions and organizing 1-2 months industrial training during summer breaks.
- To educate them about their health issues, self defence, moral values, social responsibilities so as to shape them into better citizens of India.

Objectives: The specific objectives of the college can be laid down as:

- To educate girls in five major thrust areas of applied sciences viz Electronics, Instrumentation, Food Technology, Computer Science and Biomedical Sciences by

providing them with state of art infrastructure, dedicated teachers and healthy atmosphere for learning.

- To equip them with all the practical and industrial aspects of their course of study so that they are ready to face the challenges of the corporate world. This is done by excellent practical training by qualified teachers and lab staff, organizing workshops and seminars in the college, encouraging students to go for industrial training twice in the curriculum i.e. after second and third year of their program.
- To encourage and assist them in choosing area of higher education as per their interest and aptitude. The teachers counsel them periodically and departments have a good networking with alumni, to help them and give suggestions for their future course of study.
- To continuously reach out to the organizations and individuals associated with women health, women empowerment, women rights, skill development etc. This is done by organizing seminars/ workshops/ training programs within the college or by sending students and teachers to attend/ participate in such programs. Women Education Worldwide (WEW) is one such international forum in the United States where the faculty and students have been invited to participate. The ex-principal being an active member of this forum has visited many countries like U.S.A, Dubai, China, Italy and shared her experiences with colleges in these countries. Faculty and students have also been to U.S.A. invited by WEW to participate and share their inputs. Well Being of Women (WOW- India) is another such organization associated with physical and mental health as well as social, financial and spiritual aspects of women related to their well being. The ex- principal being the president of this organization has encouraged students to participate in their various activities. This year the annual function of WOW-India was held in college auditorium in December'14.
- To conduct programs/projects related to adolescent and college girls such as premarital sex education, health issues and anemia problems in college girls. One such innovation project on anemia in college girls is running very successfully at present and receiving accolades from other institutions.
- To provide entrepreneurial/ skill development programs to students as well as to women from outside the college. The food preservation/ bakery related programs are

noteworthy. Also skill development programs have been conducted by National Skill Development Corporation (NSDC) under National Skill Qualification Framework (NSQF) of MHRD.

1.1.2 How does the institute develop and deploy action plans for effective implementation of the curriculum. Give details of the process and substantiate their specific examples.

Since the college has been a front runner to start with most of the applied courses, it is actively involved in the designing and development of curriculum time to time. The teachers being active members of committee of courses and other bodies in the university also owe a moral responsibility to ensure its effective implementation. To fulfill this college has made following provisions:

(a) Academic Development Committee (ADC):

It is a representative body of five members to reflect upon and develop the needs and suggestions of the faculties with respect to curricular, personnel and other matters related to academics in the college. It creates a proactive and positive learning atmosphere. Implementation of the policies in pursuit of academic excellence are also looked into by ADC. Further, it supports and facilitates effective implementation of the curriculum and suggest improvisation in teacher's teaching efficacy.

Details of Process:

Each department is required to give its workload which is based on specific papers offered in the curriculum for that semester. The committee ensures that all the papers are duly covered along with practical components and requirement of visiting faculty. Based on the workload it decides the number of ad hoc/guest teachers and works out the best possible way striking a balance between academic requirements and financial implications. This finally ensures that all components of curriculum are covered and also the teachers are taking the workload as per the university norms. The committee also looks into the number of batches being made to cover a specific practical paper keeping in mind lab infrastructures, number of students and nature of practical.

Example:

Based on nature of practicals individual/ group performance is decided and accordingly workload and infrastructure is created.

(b) Industrial training procedure:

The students are encouraged to go for industrial training preferably during the summer breaks after the completion of 2nd and 3rd year. However, recently it is observed that they are also keen to go for short term programs during winter breaks. Also the first year students show keen interest in such internships. As the courses are industry oriented, the students find the training programs very useful and relevant.

- It offers a unique opportunity to the students to have hands on experience with industry while still in college.
- These are major aids in seeking employment after graduation.
- It exposes students to industry environment and work culture, making it easier for them to transit from students to professionals.
- It also provides an opportunity to the college to make necessary changes in the curriculum as per the demands of industry. The students act as a industry-academia interface in this.

How it is done: The technical staff of each department has developed a database pertaining to the industries in and around Delhi that can offer internship programs. The strong alumni network also helps in this as many of alumni are now occupying senior positions in these industries. So, the students need to apply for industrial training in the department giving three-four choices during the month of February-March and once all the applications are received the training letters duly signed by Head of Department/ Principal are issued to them. Therefore, each student gets an opportunity to get trained in the industry of her choice. The confidential report of the training is also obtained in the prescribed format towards the end of training. Finally, a training report and completion certificate is submitted by the student.

(c) Feedback Committee:

Each department has a two member committee of senior teachers which takes a written feedback from students on various aspects of teaching such as:

- Teacher's communication skills.
- Syllabus completion.
- Teacher-student rapport.
- Other required activities as presentations, assignments and projects by students.

Therefore, it is ensured that teacher is actually involved with curriculum completion along with some other activities as students presentation, assignments etc. In case of adverse remarks the case is referred to principal who takes the required necessary action.

(d) Time Frame:

- Since the courses are running in semester mode there is a strict time frame for all actions. Example: the workloads for next semester are taken at the end of previous semester to allow sufficient time for ADC to work upon.
- The process of applying for industrial training is started at least two months in advance to ensure that all students get industrial internships.

(e) Funds Allocation:

- Every year the budget is given by each department to the 'Purchase Committee' of the college.
- The budget is primarily relating to consumables/non-consumables/fixed assets etc.
- This ensures a sufficient recurring and non-recurring grant to each department so that the curriculum is effectively implemented and no practical suffers due to lack of funds/equipment/reagents etc.
- The college has always been following set of procedures and guidelines to ensure funds allocation for past 25 years. There has not been a single incident of any discrepancy, unfair practices and personal favours till date. The curriculum planning and implementation has never suffered due to funds problem. The college is proud to have

well equipped and advanced laboratories in all major disciplines as well as supporting departments of Biology, Mathematics, Biochemistry, Chemistry and Physics.

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

The college believes in the ideology that young people need to be developed as well chiselled, resilient individuals with their own interests and passions. This is achievable for all youngsters if given right support, teaching and learning opportunities. In order to translate the curriculum and improve teaching practices the various support systems can be highlighted as:

- College is proud of its library which is completely automated and Radio Frequency Identification (RFID) enabled. The college believes that in this age of fast communication and information science a completely automated library is vital to effectively implement the curriculum. The books recommended by teachers are purchased on priority. There are e-reading rooms with many computer terminal and full time internet accesses where students can surf the latest of scientific and technical literature. The university provides internet facility as well as college also maintains its own system. There is a full time Network Administrator to help in this regard.
- The classrooms and seminar rooms are well equipped with LCD projectors and laptops to enable a computer based teaching. It is noteworthy to mention that college invites experts to enlighten the teachers and students on various aspects of learning and communication. In recent past, a lecture on 'Cloud Computing' was organized. The college has organized a one week International Workshop on "New Frontiers in Global Learning and Communications" in December 2013. Experts from University of Massachusetts were invited and teachers from this college and many other colleges in and around Delhi were trained.
- Formative assessment is an integral component of the curriculum and university and college administration provides full support in the compilation and communication of the same to the university exanimation branch. This is a completely computerized system and a good co-ordination exists between teachers, college office and university

administration. Internal assessments in the form of seminars, presentations, assignments, projects, develops confidence, innovations skills, broader understanding of the subjects.

- University rules have a provision of 'Academic Supervisory Committee' to look into all aspects of effective implementation of syllabus. Primarily, the committee physically examines that all the teachers are taking the classes on time and regularly. In our institution, Principal is the head of this committee and is personally involved in the supervision. The time table is displayed on the door of each classroom as well as laboratories and principal may anytime check the classroom or the laboratory. This is all covered under 'Good Teaching Practices' enforced by the university and is effectively implemented in the college.
- To improve teaching practices it is encouraged that teaching faculty attends workshops/seminars/conferences to update themselves on the latest aspects in their area of specialization. Also, experts are invited from time to time by the department or as a part of Shaheed Rajguru lecture series to enlighten them on current trends.
- It is always encouraged by college that students undergo industrial training. The feedback provided by student after training helps teachers to incorporate many new and relevant aspects in the curriculum. Thus students play an important role in Industry-Academia interface.

1.1.4 Specify the initiations taken up or contributions made by the institution for effective curriculum delivery and transaction on the curriculum provided by the affiliating university or other statutory agency.

The principal and faculty of college constantly interacts with university and concerned authorities related to curriculum designing and implementation. Many of the faculty members are directly involved in syllabus making as members of *Committee of Courses* or give their inputs to their respective university departments. The college makes every possible attempt for effective delivery and transaction of the curriculum.

College has well qualified and experienced teaching faculty to ensure effective curriculum delivery. There is continous interaction between faculty members. The Principal regularly interacts with the students for a feedback. Information and Communication Technology (ICT) is effectively used for the same. All the classrooms are fitted with LCD projectors and teachers

can make presentations for better understanding about the concepts of the subjects. Use of audio visual aids like CDs, video films through Youtube is imperative in curriculum. As the college is Wi-Fi enabled, the online information in the form of films is also very effective in curriculum transaction. For example, Food Technology students find it very interesting to see the process of wine-making, starting right from vineyards. Similarly, film on robotics greatly interests Electronics, Instrumentation and Computer Science students. The Chemistry department is also active in introducing greener chemistries. Students are made aware of the hazardous chemicals being used in laboratory and to find their alternatives; hereby cutting down on energy requirement and usage of hazardous chemicals. College has a full-fledged robotics lab where, students develop and display robots performing various activities. New products development by Food Technology students is a hands-on approach to the curriculum. Some interesting projects on alternate energy sources done by Instrumentation and Computer Science students are note worthy.

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

The courses offered here are either industry oriented or those which provide an opportunity to the students for higher studies. Therefore, a continuous interaction with such beneficiaries is necessary for growth and improvement in academics. This is being achieved in following ways:

- The strong alumni network is a continuous source of information relating to latest developments in industry, research and development and other areas. The college is always open for them to share their views with students and faculty either in person or through electronic means. There is a formal alumni meet also and the technical staff of each department has a database to continuously interact with them and vice versa. The alumni visit the college to interact with the students.

- College has been organizing seminars earlier on *University-Industry Interaction* wherein experts from industries in the field of Electronics, Instrumentation, Food Technology and Computer Science were invited. The main focus of these interactions was to build upon the curriculum and fill major gap areas. In 2007, *Lyceum Technorati* was organized wherein main focus was to modify the syllabus as per industry demand or as per the

current thrust areas in that field. The experts shared their views and panel discussions were held separately for each course. The views expressed by the industry were communicated to the University authorities to incorporate changes in the curriculum.

- The college always encourages students to go for internships in the industry or an advanced research lab. This helps to build a industry-academia interface.

- The college has recently been included in *DBT- Star College Grant* list of prestigious colleges. This is given to three deparments Instrumentation, Food Technology and Biomedical Science for three years initially. The grant supports purchase of fixed equipments and consumables, conduct of seminars and workshops in emerging areas, industrial trips outside Delhi and teachers training in new areas. The grant of Rs. 35 Lakh would enable us to conduct praticals more efficiently as resources would be procured easily. Also other related aspects of effecrive curriculum operationalisation can also be taken care of.

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, Stakeholders feedback provided, specific suggestions etc.)

Since the inception of the college in 1989 the teachers have been actively involved in curriculum development. In courses, like Food Technology, Instrumentation and Biomedical Sciences the college staff is front runner in designing and modifying the syllabus because very few colleges are offering these courses. In others like Electronics and Computer Science it is majorly done by the departments but college faculty is always involved to give inputs. Some major points can be highlighted as:

- The faculty members are, currently or have been in the past, members of committee of courses of University of Delhi.
- Student feedback is recorded by a *Feedback Committee* in each department consisting of two senior members of same department and it is noted in each semester. The feedback is then discussed with the Principal and necessary steps are taken.

- The upgraded and contemporary information from internet, industry (feedback), alumni, and academic peers is incorporated by persuading the concerned authorities.

1.1.7 Does the institution develop curriculum for any of the courses offered (other than those under the purview of affiliating university) by it?

No, the college offers only those courses that have been granted by the University of Delhi. The curriculum followed has been designed and approved by the University.

1.1.8 How does institution analyze/ensure that the stated objectives of curriculum are achieved in the course of implementation?

At the beginning of an academic year, all the teachers ensure that students have a copy of syllabus. The various aspects of syllabus are planned, discussed and conveyed to the students; the presentations/assignment/test scheduled is given and each component of syllabus is justified. Class quizzes and tests are conducted periodically to ensure the understanding of subject by the students. Student feedback is taken in the middle of each semester by the senior teachers of respective department and problem areas are discussed with concerned teacher and principal, if required. A written feedback from each student, about each teacher who has taught them in that year is taken in written format, confidentially, to be submiited to the principal finally. The problem areas if any, are discussed by Principal, teacher- in-charge and the concerned teacher.

1.2 Academic Flexibility

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

Apart from five undergraduate honours degree programmes, the institution offers following programs:

- **Bachelor in Library Science (B.L.Sc.):** It's a one year program offered by Indira Gandhi National Open University (IGNOU). The eligibility is graduation. It is a professional course

for library housekeeping operation and has job prospects in academic, public and research library.

- **Masters in Library & Information Science (M.L.I.S):-** It's a one year advanced professional course on library science for research libraries and higher academic institutes. The eligibility is graduation in library science (BLIS).
- **Post Graduate diploma in Library Automation and Networking:** It's a one year specific course on library automation and networking, the eligibility being graduation in library science. The prospects are to become an expert for creating digital library.
- **Cisco Certified Networking Academy (CCNA):** It's a globally accepted CISCO certified course. The undergraduate students of Electronics, Instrumentation and Computer Science are the ones who undertake this programme. The college is the only CISCO Netspace Academy in Delhi University running the CCNA program. It improves job prospects in computer networking field.
- **Skill Development course by NSDC (National Skill Development Cooperation)** has been organised for students with specialization in Information Technology and retail sector.

1.2.2 Does the institution offer programs that facilitate twinning/ dual degree. If 'yes' give details.

No, at present the college does not offer such courses.

1.2.3 Give details on the various institutional provisions with reference to academic flexibility and how it has been useful to students in terms of skill development academic mobility, progression to higher studies and improved potential for employability.

Since the objectives of the course are to make the students competent for the job market therefore the core courses are aimed towards skill development. The college tries to provide them with extra skills to make them suitable for employment or for higher education.

These are:

- Helping the students to go for industrial internships in summer and winter breaks.
- They are encouraged to carry out a project with industry and develop innovative skills.

- Projects within the college such as new product development in Food Technology department, Robotics project in Electronics department, Solar Energy projects in Instrumentation department and complete website development by Computer Science department are encouraged.
- Technical fests, seminars and conferences are organised inviting experts from industry as well as academics.
- Departments organize workshops to give hands-on training to students. For example, Food Safety workshops and workshop on Bioinformatics were held recently
- Personality Development classes are organized from time to time for a holistic development of students.

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 qualification, salary etc.

No, the college does not offer self financed programmes.

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

No, at present no such courses are offered.

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 provision for the benefit of students?

The University of Delhi does not provide such flexibility. However, the concept of virtual classroom has recently been introduced by the University. The college has a well equipped conference room to conduct such a class.

1.3 Curriculum Enrichment

1.3.1 Describe the efforts made by institute to supplement University curriculum to ensure that academic program and institution goals and objective are integrated.

- The teachers are involved in the process of curriculum designing and development. Here, the primary objective of providing hands-on training through practical and industrial training is always achieved by bringing in the suitable changes time to time, as per the demand of the market. The curriculum is in close parity with institution goals.
- The curriculum is effectively implemented and use of Information and Communication Technology is made.
- Experts from academics, industry and other relevant areas are invited and lectures are organized.
- Students participate in co-curricular and extra-curricular activities of the college.

1.3.2 What are the efforts made by 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?

Industry-academia seminar and workshops are organized time to time. Also skill development workshops and entrepreneurship development programs are organized. For example Bakery and Confectionary training, Food safety management workshops, national skill development corporation (NSDC) programmes on IT and retail sector etc.

1.3.3 Enumerate the efforts made by the institution to integrate the cross cutting issues such as gender, climate change, environmental educate, human rights, ICT etc.

Gender issues, environmental education and ICT are the integral components of the curriculum. Being a women college the gender equality is in the forefront and students are given all possible exposure through expert lectures, NGO activities and awareness through Nukkad Natak etc. Girl students are sensitized of the good nutrition to keep away anemia and other deficiency diseases. There is also continuous monitoring of students for anemia through a university innovation project funded by University of Delhi. The issues of internet safety and cyber crimes are also dealt with by way of lectures.

- EVS paper is now a part of curriculum. It creates awareness about issues of conservation, biodiversity, pollution problem, utilization of natural resources, sustainability etc. Also the students carry out projects related to these issues.
- **Eco club:** Various activities are carried out by the eco club of the college such as best out of waste, environment realted projects, innovative ideas to make a college eco-friendly. The club is working to create awareness and to sensitize the students about environmental concerns.
- **ICT:** College has been organizing seminars in collaboration with CISCO Networking Academy of the college to celebrate women in IT sector. Event is organised annually, since 2014. Renowned women scientists and administrators are invited for panel discussions and girls from Delhi and NCR region are invited to participate in discussion.
- **Gender sensitization committee:** College has a two member committee named as *Internal Complaints Committee* (by University of Delhi). The committee in collaboration with District Legal Services Authority (DLSA- Karkardooma Courts) organizes lectures on "Gender Issues related to women" by eminent lawyers and judges. These are interactive sessions. Also DLSA has taken the initiative of *Self Defence* demonstration conducted by *Delhi Police* wherein the DCP of East Delhi also came to witness the event and interacted with students. It's a periodic activity.
- The National Service Scheme (NSS) unit of college organizes community programs and blood donation drives. NSS unit has taken *Teach India* initiative under Times of India group. Under this program, the students weak in English language are taught by their peers, everyday in the morning hours.
- NSS is also involved in *Computer Literacy* for girls of economically weaker sections of society. It is done by Self Employed Women's Association (SEWA) group using the college resources and infrastructure.
- NSS also organizes visits to nearby orphanage, old age homes, blind schools and slums for social service by the students of the college.
- From time to time, the *Swachchta Abhiyan Committee* is very active in promoting the importance of cleanliness in the neighborhood areas. The rallies, Shramdaan, Nukkad Natak are done and a neighborhood market is adopted to carry out this drive.

- Mukhauta, the drama society of college performs street plays taking up issues like *Women Empowerment*, *Say no to begging* and *Sex Education*. They bagged many prizes in past and also were invited to perform at National School of Drama (NSD- Mandi house-New Delhi)
- There is a herbal garden and a vermicomposting project is being done by students in the college campus.

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

- To inculcate moral and ethical values, lectures are organized annually, inviting scholars from Rama Krishna Mission. The college believes in the ideology of *Swami Vivekananda* and his picture and famous quotes are depicted through art work in the college building.
- The life skills are taught through self-defence training programs.
- Lectures of public interest like Cyber security and Cyber crime, Cloud Computing and Enterprenuership are organized to make the students aware about present day issues.

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

The college continuously interacts with its alumni, industry people, and academic world to get a feedback on curriculum. Few such examples are:

- The holding of alumni meet time to time and taking their views on curriculum.
- The industries that employ our students are encouraged to give feedback on curriculum.
- Industry academia seminars are organized to develop curriculum. One such seminar *Lyceum Technorati* dealt only with curriculum development and modification on the changing scenario of industrial world.

1.3.6 How does the institute monitor and evaluate the quality of its enrichment programs?

The biggest enrichment program of the college is students training in the industry during summer and winter breaks. To streamline the whole process the teachers-in-charge are assigned to students yearwise and each component from application process to industry

feedback report is well documented. For final year students, it is preferred to carry out a project with industry and reports are submitted to the teacher in-charge. All the students undergoing training program are required to submit a final report and a confidential report from their trainer in industry. The students are given marks to be included in internal assessment.

1.4 Feedback system:

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

- Since college is pioneer in starting all these courses, therefore the teachers are involved with curriculum preparation.
- The curriculum is designed and developed by *Committee of courses* of each department and teachers are members of this committee.

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

There is no formal mechanism to obtain feedback from the students. However, it is obtained informally in following ways:

- Feedback from academic peers when they come as examiners.
- Feedback from industry experts when they come as expert speakers, delegates in the workshops/seminars etc.
- Feedback from our own alumni who are occupying senior positions in industry or academics.

1.4.3 How many new programmes / courses were introduced by the institution during the last four years? What was the rational for introducing new courses/ programmes?

No new course has been introduced.

CRITERION II: TEACHING – LEARNING AND EVALUATION

2.1 Student Enrollment and Profile

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

College admission process is purely transparent and clearly stated and publicized through the following measures:

- Details of admission process are given in college prospectus as well as uploaded on college website.
- Every year college advertisement is also printed in newspaper before the admission process begins.
- Cut-off percentage for each course and for each category are uploaded on college website, University of Delhi website and also published in newspapers.
- Cut-off percentage is also displayed at college notice boards for the admission seekers.

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.

Admission to all the courses running in college is on merit basis i.e. class 12^{th} marks. Different criteria like PCM, PCB, PCME are considered for different courses as decided by university.

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.

CUT-OFF 2014-2015

B.Sc. (H) Electronics (13 colleges)								
	Gen		OBC		SC		ST	
	Max	Min	Max	Min	Max	Min	Max	Min
Acharya Narendra Dev College	95	89	92	85	85	76	75	55
Atma Ram Sanatan Dharam College	98	88-88.67	96	85-85.67	94	71.67-72	94	60
Bhaskaracharya College of Applied Sciences	96.33	88	95	82	94.66	70	93	50
Deen Dayal Upadhayay College	96	88	90	84	90	69	80	61
Hans Raj College	98	94.66	97	91.33	96	82	94	70
Keshav Mahavidyalaya College	95	89	90	85	85	75	70	55
Maharaja Agrasen College	94	87	93	84	92	71	91	60
Rajdhani College	90	88.3	86	86	78	70	70	62
Shaheed Rajguru College of Applied Sciences For Women	**94**	**80**	**90**	**74**	**85**	**60**	**80**	**55**
S.G.T.B. Khalsa College	97.66	93	-	-	92	83	90	84
Sri Aurobindo College	90	86.33	87	84	85	72	85	71
Sri Venkateswara College	96.67	90.66	96	89	93	81.33	91	62
Zakir Husain College	94	90-93.9	89	86-88.9	89	80-88.9	84	74-74.9

B.Sc. (H) Computer science (14 Colleges)								
College	Gen		OBC		SC		ST	
	Max	Min	Max	Min	Max	Min	Max	Min
ANDC	95-100	93-98	91-96	88-93	88-93	77.33-82.33	80-85	63-62
ARSD	98-100	91-96	97-99	85-92.67	93-95	73-78	92-94	64-69
Bhaskaracharya College of Applied Sciences	98.5-99	92-97	99-99.5	86.25-91.25	97-97.5	71-76	96-97	60-65
College of Voc. Studies	96	94	93	89.25	91	78	91	78
Deen Dayal Upadhayaya	96	92	95	86	93	72	85	63
Hans Raj College	98.33-99.33	96.66-97.66	97-98	95-96	95-96	91-92	94-95	79-80
I.P. College	95	93-98	94	85-90	90	73.5-78.5	90	63-68
Kalindi	91-96	87-92	87-92	83-88	85-90	67-72	85-90	65-70
Keshav Mahavidyalaya	96-98	94-98	94-96	88-92	87-90	83-87	85-87	58-63
Maharaja Agrasen College	89	89	85	84	83	80	83	80
Maitreyi College	87	85	84	82	80	78	80	78
P.G.D.A.V.	93-98	90-95	88-93	87-92	83-88	81-86	73-78	70-75
Ram Lal Anand	94-99	89-94	92-97	87.67-92.67	91-96	74-79	91-96	70-75
Shaheed Sukhdev College of Business Studies	98	92	97	84	97	76	96	74
Shaheed Rajguru College of Applied Sciences For Women	**94-99**	**85**	**90-95**	**73-78**	**85-90**	**62-67**	**80-85**	**55-60**
S.G.G.S. Coll. Of Commerce	94	92.66-97.66	-	-	92	73	87	65
Shyama Prasad Mukherjee College	97-100	86-91	92.25-95	78-83	92.25-95	74	92.25-95	71.5-76.5

B.Sc. (H) Food Technology (2 Colleges)								
College	Gen		OBC		SC		ST	
	Max	Min	Max	Min	Max	Min	Max	Min
Bhaskaracharya College ofApplied Sciences	95	88	94	83	93	74	90	58
Shaheed Rajguru College of Applied Sciences For Women	**94**	**84**	**90**	**76**	**85**	**78**	**80**	**58**

B.Sc. (H) Biomedical sciences (3 Colleges)								
College	Gen		OBC		SC		ST	
	Max	Min	Max	Min	Max	Min	Max	Min
Acharya Narendra Dev College	95	89	90	83	88	80.66	80	64
Bhaskaracharya College of Applied Sciences	95	90	94.67	81	94	74	92	68
Shaheed Rajguru College of Applied Science For Women	**94**	**88.6**	**90**	**80**	**88**	**79**	**80**	**78**

B.Sc. (H) Instrumentation (2 Colleges)								
College	Gen		OBC		SC		ST	
	Max	Min	Max	Min	Max	Min	Max	Min
Bhaskaracharya College of Applied Sciences College	95	82	94	78	92	65	90	45
Shaheed Rajguru College of Applied Sciences For Women College	**91**	**70**	**87**	**65.6**	**82**	**58**	**80**	**55**

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?

Every year Admission Committee is constituted in college by the Staff Council. Convener of this committee with all its members, in consultation with the Principal and all teacher in-charges decide upon the cut-off for each course keeping in view the previous years patterns for example number of students who drop out.

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

College adheres to the reservation policy stated by Central Government with regard to the admissions of SC, ST, OBC, differently-abled, defense personals, War widows, Kashmiri Migrants and foreign nationals as implemented by the University of Delhi.

During admission process, help desks are arranged to assist reserved category students where our own college students voluntarily help and counsel the admission seekers regarding admission related queries and filling up the admission forms.

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.

University has centralized registration form for the admissions to undergraduate courses. Through that common admission form, a candidate can apply in any number of courses and colleges too. So, the demand ratio here is exorbitantly high. Below listed table gives the brief idea about the demand ratio for all the courses run by college:

UNDER GRADUATE-PROGRAMME

Course	Year	No. of Applications	No. of students admitted	Demand ratio
Bio Medical Science	2011-2012	NA	29	-
	2012-2013	NA	34	-
	2013-2014	NA	50	-
	2014-2015	15213	39	390:1
Computer Science	2011-2012	NA	58	-
	2012-2013	NA	62	-
	2013-2014	NA	81	-
	2014-2015	20186	60	336:1
Electronics	2011-2012	NA	36	-
	2012-2013	NA	50	-
	2013-2014	NA	39	-
	2014-2015	15949	38	409:1
Food Technology	2011-2012	NA	46	-
	2012-2013	NA	46	-
	2013-2014	NA	56	-
	2014-2015	16384	45	364:1
Instrumentation	2011-2012	NA	30	-
	2012-2013	NA	48	-
	2013-2014	NA	35	-
	2014-2015	8693	59	153:1

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?

College conforms to the policy set by the Government of India to reserve 3 % seats for differently-abled students.

Keeping this in mind, ramps, lifts and toilets are constructed to assist orthopedically disabled students. Preferably classes are also scheduled on for these students on ground floor only.

For visually disabled students, library provides Braille books, laptops with Libreoffice software installed on them. This software supports tools like screen magnification, screen readers and onscreen keyboards. Screen magnification software allows students with low vision to work with LibreOffice. On-screen keyboards enable students to perform all data input and commands with the help of mouse. Screen readers allow visually impaired users to access LibreOffice with text-to-speech and Braille displays.

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

To impart sufficient knowledge about the course and its prospects, college organizes every year an *Open Day* for the admission seekers and their parents. On that particular day, all teachers are available to counsel and guide them about the courses before the actual admission process commences.

The very first day of the new session is marked as an *Orientation Day*. This session begins with the Principal's address, in which new entrants are acquainted about the college, courses, infrastructure, library usage, placements, industrial trainings, student internships, examination pattern and extracurricular activities. Followed by this, each department also organises their departmental orientation program to acquaint them about their specific course, departmental activities, internal assessments formats, and attendance criteria. This is an interactive session where in the students introduce themselves and also enlighten about their potentials and

specific interest in extracurricular activities. Old students are also called to share their experiences with the newly admitted students.

College also organizes Fresher's party for the newly admitted students to showcase their talent. College has various student societies like dance society, music society, fashion society, photography club, fine arts society and literary society. In addition they can enroll themselves for various activities under NSS. To further boost up and nurture their talent, college makes arrangement for choreographers and instructors. Each society is guided by a team of two teachers who take care of special requirement for the students. This further enhances their talent and grooms them for various competitive events.

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?

Every year college organizes remedial classes in English and Mathematics for slow learners to help them compete with others class students.

Other than the scheduled classes in the time-table, all faculty members declare their office hours (minimum 5 hrs a day). Weak students can meet their respective subject teachers during that time to clear their doubts and concepts. Thus, the students get personal attention from the teachers.

This year, college is running Teach India Programme, a Times of India initiative. It is a noble cause to abreast weak and poor students to enhance their communication skills.

College also conducts various workshops on personality development and soft skill improvements.

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

- College has an active Women Development Cell whose prime agenda is to disseminate knowledge about rights and laws related to women. Time to time, workshops are organized to strengthen the mindset on these issues and to enhance the self-esteem and self-

confidence of girl students. This cell also organizes talks from gynecologists to steer girl students about their health issues.

- With regard to the Supreme Court judgment and guidelines, college has an Internal Complaints committee to prevent discrimination and sexual harassment against women, by promoting gender harmony among students and employees. Its primary objective is to sensitize staff and students on gender related issues

- College also has a Gender Sensitization committee. This year an awareness programme on Gender Sensitization was conducted in college by Secretary, Delhi Legal Services Authority (DLSA) East and Legal Aid Council.

- Self defense workshops in martial arts are organized for students in association with Delhi Police.
- Eco club also strongly involves the students to make projects and models on title like 'How to reduce college waste', eco friendly homes, genratting power from traffic, multilevel agriculture, trickle irrigation and date expired antibiotics as fertilizers etc. Students also organize competitions like Best out of waste and are also involved in projects like vermi-composting and maintaining medicinal garden.

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

Advanced learners are identified during class room teaching and interactive periods. Those students are involved and occupied in various innovation projects, internship projects and various other UGC and DBT-DST projects under the supreme guidance of college teachers. Some of the project details are as listed:

Project Title	Description
8051 Microcontroller Programming and Architecture	The students learned the assembly language and tried to generate waves using different timers on board. They had also generated the interrupts in different modes and displayed the data using seven segment display.
Social Network Analysis	In recent years, social network analysis tools have been employed to predict human behavior, disease transmission, and even routing networks. Social network analysis is a method by which we can predict how the people are related or connected to one another. In this project we study the parameters affecting friendship among adolescent girls. The analysis is done using Gephi, an open source network analysis tool.
People counter (Application variation)	The People Counter determines the number of people within a specific area and detects their direction of movement. In this students have studied about models of people counter. They have studied the different blocks of module. Two models were studied using IC 555 timer and LDR with decoders and counters. One model was being designed on Multisim first and then followed by hardware. This project is still going on as other models have to be designed on hardware.
Communication Systems	In this project, students we studied about the various types of analog communication systems and analyzed their spectrum response. A circuit was designed for voice mixer, FM transmitter and receiver using Multisim as a platform for this.
To study the effect of Optical Activity on Photorefractive Materials	The project was performed on the platform of octave. In this project, the student has studied about the concept of wave interference, polarization and its types, and the photorefractive effect. In Interference, she observed the interference pattern by the method of division of wave front. In Polarization, she observed its three types by changing its phase difference.

	In Photorefractive Materials, she learnt about how the photorefractive crystal behaves with respect to the properties of the crystal like optical rotatory power, coupling coefficient, etc. The project was successfully completed in time.
To study the effect of coupling on Photorefractive material.	In this project, the effect of coupling coefficient was studied on optically active photorefractive crystal. As the coupling increases, the energy transfer from pump to signal beam increases which can be used for the application of amplification of optical signals. Also basics of wave interference, polarisation and its types are studied on the platform of octave.
To Understand immune response evoked mycobacterium indicus prani	This project explored the potential of mycobacterium indicus prani as an agent in vaccination against Tuberclosis.
Understanding the medical lab techniques	Herein, various diagnostic and chemical tests were performed. This involved both biochemical and molecular biology approaches.

Industry Academia Interaction programmes are also organized to bridge the gaps in these two spheres. Industry personnels guide and train the students about desired skill sets which industries are looking for.

Special workshops are also organized to impart such technical familiarity. Department of electronics and computer science have been organizing such workshop in the area of Robotics, Android operating system, PHP and Java Script, Cloud computing etc for the students.

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 the society, physically challenged, slow learners, economically weaker sections etc. who may discontinue their studies if some sort of support is not provided)?

College has a grievance committee for the redressal of such cases.

Above that, college teachers also mentor the students which give the sense of care for those disadvantaged group of students. Strong bond is developed between the mentor and students. This bestows a lot of potential and strength to the students in dealing their day-to-day challenges.

College has a fee concession committee as well. Deserving students from economically weaker section present their evidences for their entitlement. Teachers also share their personal copies of books with these needy students. Concessions are given to the students for hostel accommodations. Ex-Principal, teachers and employees have contributed monetarily for the disadvantaged students.

2.3 Teaching-Learning Process

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

Academic calendar for under graduate courses are notified by University of Delhi and the college necessarily comply with that calendar.

Each department plans teacher-wise workload much before the actual semester commences. This is further authenticated by Academic Development Committee. Time-table is prepared and then displayed on college and departmental notice boards. Laboratory and individual lecture theatre timetables are also exhibited. A copy of the same is also uploaded on college website. This whole exercise is done during vacation time, much before the start of semester.

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

At present we are in the process of devising the joint frame work for academic activities. We are trying to establish the policies to maintain the uniformity and quality in teaching learning process.

2.3.3 How is learning 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?

Students are actively involved in project work which is an extension to the course and curriculum bounds. Students are encouraged to join various innovation projects, research and internship projects. Special invitees are also called to tutor students about latest trends prevaling in the industries.

Computers and laptops are also issued to teachers with Wi-Fi connectivity to help students for these projects. For regular class room teaching and presentations, lecture theatres are equipped with LCD projectors, screens and sound system facilities.

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?

All the departments of the college are actively involved in organizing workshops, conferences, and talks by experts, departmental technical festivals like Tech Melange, World Food Day, Plexus, and Electromania. This inculcates the scientific temper in the students.

Various inter-college cultural competitions like creative writing, slogan competition, extempore, photography, quiz, rangoli, poster-making, graffiti, face painting, music, dance, fashion and drama are also organized which further showcases the talent of the students.

Students are also encouraged to contribute for their college magazine *Akriti*. Departments also come out with their annual newsletter like *ENIAC Times* and *Chimera* that gives a brief idea about the innovations and progression in technological arenas.

Time-to-time quizzes are also organized by various societies which focuses the right attitude for learning.

Students having scientific thrust are also involved in Innovation projects, UGC, DBT, DST funded projects to further give impetus to their scientific temper.

Career counseling sessions are also organized to address student needs about career options and those with specialized and specific career goals.

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 (NMEICT), open educational resources, mobile education, etc.

Department of electronics along with IIT-Mumbai carried out a project wherein students used virtual labs to get training on Computer language C and C++.

Free online softwares like Strawberry Prolog, Scilab, Matlab, Mathematica, PHYLIP and CLUSTAL, GeneRunner are available at Delhi University Computer Centre (DUCC).

Library has the facility of e-resources of UGC-Infonet. There are around 43000 e-journals available in different databases. Besides this the library designs databases of open resources for each subject taught in the college. Through the database links one can choose the best links of the concerned topic, the database can also be searched through border term as well as specific terms.

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

College organized a 6 days International Workshop on *New Frontiers in Global Learning and Communications* (NFGLC) in 2013-14. The objective of this workshop was to equip teachers in the field of Information and Communications Technology (ICT) in order to facilitate and enhance the learning process at their respective institution.

This training helped teachers and students learn the use of multimedia, mobile devices, and other digital resources to make learning more interactive, comprehensible, and applicable to the large body of knowledge.

Teachers are always encouraged to attend various national / international conferences and workshops to abreast themselves with the latest trends in technology.

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 advice) provided to students?

Graduation is a turning point in a student's life and the decision to choose the right field is tricky and challenging. To make an informed career choice, student should be equipped with professional guidance on how to strike a balance between their interests and market demands. Computer science department organized a panel discussion on *Exploring career opportunities* that brought together professionals and academicians from diverse fields to help in evaluating various career paths giving right academic advice.

Added to this, all teachers stipulate their contact hours in the time-table. Disadvantaged students can meet and get guidance and counseling from their respective mentors in those time slots. All the students get the benefit of such advice.

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

College organized a 6 days International Workshop on *New Frontiers in Global Learning and Communications* (NFGLC) in 2013-14 in collaboration with University of Massachusetts, Boston, USA. The objective of this workshop was to equip teachers in the field of Information and Communications Technology (ICT) in order to facilitate and enhance the learning process at their respective institution. This training helped teachers and students to learn the use of multimedia, mobile devices, and other digital resources to make learning more interactive, comprehensible and applicable to the large body of knowledge present in today's world.

Industry technical experts are also called to practically demonstrate the use of each mechanical, electrical and electronic components of instrument.

Students are also taken for various industrial trips and field visits to places like Yakult Danone India, Sonipat; Nestle India, Goa; Godrej Hershey, Mandideep (M.P.); H.P. Cooperative Fruit and Vegetable Processing Solan (H.P.); RCDF Dairy. Jaipur; Paharpur Industries, Sahibabad; Indian Metrological Department (IMD) Delhi; Himachal Futuristic Communications Ltd. (HFCL), Goa; Institute of Microbial Technology, Chandigarh; Jubiliant Organosys Limited, Delhi, Azilent Technology, Gurgaon.

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

The students and faculty keep pace with recent developments in the subject through books, journals and the net availability. There are around 75 computers available in the three different e-libraries of the college library, around 43000 e-journals are accessible through IP address and it provides seamless accessibility of the above journals. Apart from that, periodically separate orientation program also conducted for the e-resources accessibility. The library also has different citation sources i.e. Science citation, web of sciences. Besides this SDI (Selective Dissemination of Information) and CAS (Current awareness service) are also provided on demand.

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.

Mostly courses are completed in the stipulated time frames as marked in Academic Calendar of University of Delhi. Keeping in view these time frames, following are the steps taken by the college

- Workshops are organized in semester break or on Saturdays and Sundays if the semester is running.
- If some teacher is on long leave then replacement is done by appointing some guest or ad-hoc faculty.

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

College has a Departmental Feedback mechanism, wherein mix of students, comprising of average, below average and outstanding students, give qualitative feedback about subject teachers, library books availability, infrastructure facilities provided by their departments in

general. This information is duly recorded and used for the progressive improvement in quality of teaching learning.

Moreover, as directed by Government of Delhi, quantitative feedback form comprising of 5 scale criteria on 20 parameters is also filled by every student for all the teachers. This is done in order to improve the quality of teaching and create a conducive learning environment. All these feedbacks are pooled together and averages are computed to draw inferences in fine tuning teaching learning.

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.

Highest	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent Teachers							
D.Sc./D.Litt	-	-	-	-	-	-	-
Ph.D.	-	-	-	8	1	7	16
M.Phil.	-	-	-	2	-	2	4
PG	-	-	-	-	-	1	1
Temporary Teachers (Ad hoc)							
Ph.D.	-	-	-	-	1	2	3
M.Phil.	-	-	-	-	-	3	3
PG	-	-	-	-	2	14	16
Part-Time Teachers							
Ph.D.	-	-	-	-	-	-	-
M.Phil.	-	-	-	-	-	-	-
PG	-	-	-	-	-	-	-

New teaching positions are created due to revisions in existing courses, introduction of new courses, teachers taking leaves for various reasons and OBC expansion in the recent past.

Newly created positions are advertised in leading national newspapers and are also posted on University of Delhi and college website. Candidates meeting minimum eligibility criteria are called for interviews. Selection of qualified and competent teachers is done by a duly constituted selection committee comprising of Chairperson of the Governing body, Principal, three subject experts, Vice Chancellor nominee, one senior subject teacher of the college and an OBC observer.

Most of the teachers are retained. Two teachers resigned to take job in corporate sector. Two resigned due to personal reasons.

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.

Faculty members are encouraged to attend subject meetings, workshops and training programmes organized by their parent departments related to the new papers if introduced in the curriculum. The same practice is followed if there is any change in guidelines of any subject.

Specialized IT training was taken by college teachers organized by Institute of Life Long Learning (University of Delhi) during summer break on 2013. This was a distinctive foundation paper added in FYUP curriculum. It was organised for all foundation courses.

Teachers are also encouraged to attend various faculty development programmmes organized by various universities to apprise them about the recent developments in their teaching domain.

Some college teachers have taken practical training in industries and institutions like Central Pollution Control Board, Nirula's, Ranbaxy, Mother Dairy, ESI Hospital, Centre for Development of Imaging Technology, GTB hospital, International Centre for Gentic Engineering And Biotechnology And Western Regional Instrumentation Centre etc.

Invited talks on emerging domains on various subjects are also organized by individual departments. Renowned academicians and industry experts are invited to share their expertise with faculty and students.

College frequently organizes Industry-Academia Interface to bridge up the gap between the two.

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.

(a) Nomination to staff development programmes

College encourages and supports its faculty members to participate in various staff development programmes. In the last four years, the details of such workshops/ courses are:

Refresher Course: 5

Orientation Courses: 2

National / International Conferences: 18

Summer/ Winter School / Workshops: 1

Any other training programme (conducted by University of Delhi or any other) : 2

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

- **Teaching learning methods/ approaches**
- **Handling new curriculum**
- **Content/knowledge management**
- **Selection, development and use of enrichment materials**
- **Assessment**
- **Cross cutting issues**
- **Audio Visual Aids/ multimedia**
- **OER's**
- **Teaching learning material development, selection and use**

College organized a 6 days International Workshop on *New Frontiers in Global Learning and Communications* (NFGLC) in 2013-14 in collaboration with University of Massachusetts, Boston, USA. The objective of this workshop was to equip teachers in the field of Information and Communications Technology (ICT) in order to facilitate and enhance the learning process at

their respective institution. This training helped teachers and students to learn the use of multimedia, mobile devices, and other digital resources to make learning more interactive, comprehensible and applicable to the large body of knowledge present in today's world.

Recent Trends in Instrumentation and Electronics (RTIE-2015) was the first National Conference organized jointly by the Department of Electronics and the Department of Instrumentation. This conference provided a platform for the exchange of knowledge and sharing of recent research and innovations in the fields of electronics, instrumentation and allied engineering fields. The mission was to promote research awareness and compatibility through an interaction of ideas and discussions.

National Conference on *Understanding the Mechanism and Challenges of Complex Diseases* (UMCCD-2014) was organized by department of Bio-Medical science of the college in Dec 2014. The conference provided a platform for discussion on complex human diseases such as diabetes, tuberculosis, cardiovascular and neuro-degenerative disorders, thereby fostering the emergence of the new experimental and conceptual paradigm in understanding complex diseases. Talks deliverd by eminent doctors/ scientists further gave an insight about various diseases.

Workshop on Bioinformatics: An interdisciplinary applied science workshop was organized by the Department of Biomedical Science in Febuary 2015. This workshop introduced the participants to the basic concepts and tools in bioinformatics. The basic aim was to give them an insight into the various aspects of this field. Lectures by eminent researchers in this field were delivered and practical sessions were also held to give the students hands-on training.

(c) Percentage of faculty

- **Invited as resource persons in Workshops/Seminars/Conferences/organized by external professional agencies:** 70 %

- **Participated in external Workshops/Seminars/Conferences recognized by national/international professional bodies:** 85%
- **Presented papers in Workshops/Seminars/ Conferences conducted or recognized by professional agencies:** 80%

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

College enthuses the faculty members to be actively involved in research projects, research activities and industrial tie ups. For this to happen, college grants study leave, extra ordinary leave and any other option available within the framework of the University.

College grants these leaves to the teachers as per the rules stated by university of Delhi.

As of now 4 teachers have availed study leave to pursue their Ph.D. or post doctoral study.

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

Five teachers (Dr. Radhika Bakshi, Dr. Jasjeet Kaur, Dr. Punita Saxena, Dr. Ranjana Singh, Dr. Deepa Joshi) of our college have been awarded *Meritorious Teachers Award* by Delhi Government and Directorate of Higher Education and also given recognition for their laurels in the college.

Dr. Amita Kapoor received Instructor Service Excellence award by CISCO.

Dr. Projes Roy, Librarian, was awarded Info share Membership Award in 2014 by American Society for Information Sciences and Technology, Special Interest Group for International Information Issues (***SIG/III***).

The faculty is always given freedom to carry out further research.

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?

College has a Departmental Feedback mechanism where in mix of students comprising of average, below average and outstanding students give qualitative feedbacks about subject teachers, library books availability, infrastructural facilities provided by their department in general. This information if duly recorded and used for the progressive improvement in the quality of teaching learning process.

Moreover, as directed by Government of Delhi, in order to improve the quality of teaching and create a learning environment, quantitative feedback comprising of 5 scale criteria on 20 parameters. The feedback is pooled together and averages are computed to draw inferences in fine tuning 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?

Evaluation process of the college is very transparent and details are clearly mentioned on college website and university website. Further, college follows the schedule as per university academic calendar. Students are also apprised of various assessment components regarding distribution of marks on very first working day of the college (orientation day).

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?

Following reforms have been introduced by University of Delhi in recent past. They are as follows:

Internal assessment process was introduced in 2003-2004.

Annual system was replaced by semester system in 2010-11 wherein, in-house examination was replaced by class test.

In 2013-14, Four Year Undergraduate Programme (FYUP) was started where in the structure of internal assessments was revamped.

In 2014-15, Four Year Undergraduate Programme (FYUP) was rolled back and semester scheme was reintroduced.

Mid term examination was initiated by the college in 2001, which was essentially the same as started by University in 2004. However, now this practice has been discontinued by the University.

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?

College has moderation and monitoring committee to ensure effective implementation of evaluation reforms.

Students' attendance record is uploaded on college website on monthly basis to make them aware of their attendance status.

Further, we have a proctorial board which closely monitors attendance of students having less than 60% on monthly basis. Parents of these students are formally informed by college and called for a meeting to discuss the concerned issue.

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

The goal of our college formative assessment is to *monitor student learning* to provide ongoing feedback that can be used by teachers to improve their teaching and by students to improve their learning. This helps our students to identify their strengths and weaknesses and target areas for improvements. For formative assessments students are given assignments, case studies and projects related to their subject. Different activities like quizzes, crosswords and presentations are planned that further clear their concepts. Minor projects are taken up by students to get more clarity about the subjects. Some of the projects undertaken are digital security system, rain water harvesting, waste water treatment plant, eco friendly house, magnetic stirrer with hot plate from waste material, multilevel agriculture, automatic irrigation system, energy from busy roads and moisture alarm, energy from cactus and other wastes,

autoclave, security sensors, magnetic extensometer, automatic power controller, IR based light control and robot irrigator and auto ploughing, website management etc.

In summative assessment we evaluate student learning via class tests, class viva, open book tests etc.

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 behavioral aspects, independent learning communication skills etc.)

Internal Assessment process followed in college is a completely transparent process consisting of three components namely, attendance, class test, projects and presentations. Practical examinations take care of the fact whether a student has performed the practicals by herself or not.

Attendance: 5 marks are reserved for student's attendance record. Students having

- Greater than or equal to 85% are awarded 5 marks
- Greater than or equal to 80% are awarded 4 marks
- Greater than or equal to 75% are awarded 3 marks
- Greater than or equal to 70% are awarded 2 marks
- Greater than or equal to 67% are awarded 1 mark

Monthly attendance record of students is also uploaded on college website for student's reference. A separate committee called Proctorial board also looks after short attendance cases.

Assignment/project/presentation: 10 marks are reserved for assignment/ project/ presentation. Students are encouraged for timely submission.

Class Test: 10 marks are reserved for house examination/class test. Answer scripts are shown to students for their reference as well as for any correction, if required. These scripts are also preserved for stipulated time frame.

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?

Graduate attributes are the skills, qualities, and learning of students which they develop during their time with the institution. These attributes include their overall development as a social agent parallel with their disciplinary expertise and technical knowledge. Different activities are planned and managed by student teams for their learning. Projects are assigned to teams of students with different capabilities so that they can learn team work. Students are exposed to many opportunities where they can showcase as well as polish their individual skills. We are keen that the students graduating become enlightened global citizens therefore we conduct seminars and workshops on value based education.

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

Mechanism for redressal of grievances with reference to evaluation both at college and University level is as follows:

- Any discrepancy in internal assessment is first handled by concerned teacher. If required it is then handled at departmental level. Finally there is an Internal Assessment Monitoring Committee which scrutinizes the overall process for all the departments.
- University also has its evaluation scheme which is being formed for effective evaluation leading to reduced number of student grievances.

- For the University evaluation redressals, students apply directly to the University in a prescribed format forwarded by the Principal of the college.

2.6 Student performances 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?

Yes, the college has clearly stated the learning outcomes which particularly include the analysis and application of theory and concepts learnt. Students are made aware of this as their respective teachers discuss and motivate them for this especially during the interactive classes. Principal of the college too is in constant interaction with the teaching staff and ensures that the learning outcomes as specified are achieved. Further, learning outcomes of each course are specified in their respective syllabus/course structure and are easily available in the college library as hard copy and also on University's and College's website for both students and staff.

Apart from academic outcomes, learning outcomes also include inculcation of moral values in students, communication skills and their overall personality development. The vision and the motto of the college is a clear indication of this.

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

Students are monitored through tests and assignments at regular basis. Particularly, challenging assignments that requites high order thinking skills (HOTS) are allotted to students during the mid semester break. This compels the students to apply concepts learnt in class and thus enhances their critical thinking.

Monthly student attendance is submitted by the faculty and is uploaded on the college website.

Tests and assignments are reviewed by the faculty and returned to the students. Also the criteria of evaluation and the key solution set is either discussed or communicated to them.

Internal assessment of each paper is computed taking into account student's attendance, test marks, assignments evaluated and is shown to the students. If any discrepancy is reported by the students, rectification is done by the faculty before final signatures of students are taken. Finally the internal assessment is displayed on the college notice board and the website.

Results analysis is an interdepartmental activity and student's progress is appraised periodically. University rank holder students are applauded and their names are written on college notice boards as well as college website. Such students are given an award on the annual day of the college.

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

TEACHING: Initially, teachers put in their best efforts to make the teaching process highly productive for the students. For this they make a good blend of all multimedia tools for better demonstration. E-study materials are also shared for further understanding and elaboration.

LEARNING: To make teaching-learning process more fruitful, teachers take tests and assign assignment questions to the students. This ensures independent learning. Projects involving application of concepts learnt and higher degree of thinking skills are also allotted to the students in groups to ensure group learning. People from industries areinvited for practical demonstrations about the techniques used in clinical field, molecular biology and other biotechnology related processes. Also, service engineers from different industries are invited to open instruments and apprise the students about design, troubleshooting and fabrication aspects of that instrument.

ASSESSMENT: Tests, assignments, projects are evaluated and the final assessments are communicated to the students. Finally, students appear for centralized end semester exams for which question papers are set and answer sheets are marked at University level.

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 a number of measures/initiatives to enhance the social and economic relevance of the courses offered. A placement and career counseling cell has been set up by the college. The cell publishes a placement brochure annually which outlines the course content and gives an insight about skill-set learnt by students during rigorous hands on training in the state-of-art college laboratories. The cell is also in constant interaction with various companies and invites them for pre placement talks, discuss the salary package being offered and further study options available for the students while working with them. These placement cells have a liaison with Central Placement Cell of University of Delhi and inform the students about any placement drive initiative.

Industrial visits have been organized by the college such as Yakult Danone India, Sonipat,; Nestle India, Goa; Godrej Hershey, Mandideep (M.P.); H.P. Cooperative Fruit and Vegetable Processing, Solan(H.P.); RCDF Dairy, Jaipur; Paharpur Industries, Sahibabad; Indian Metrological Department(IMD), Delhi; Himachal Futuristics Communications Ltd. (HFCL) Goa; Institute of Microbial Technology, Chandigarh; Jubiliant Organosys Limited, Delhi and Azilent Technologies, Gurgaon.

Students are motivated to take up entrepreneurship as a career so that they can generate employment for others. To meet this objective, workshops and seminars are conducted for the information of students. Recently, college organized a one day inter college certificate workshop on *Entrepreneurship Development Programme* in collaboration with National Institute for Entrepreneurship and Small Business Development (NIESBUD), a premier organization of Ministry of Micro, Small and Medium Enterprises ,Govt. of India .

Students are encouraged to take up summer internships/training in various science laboratories and industries which not only give them exposure to their functioning but also get hands on training experience.

College has invited renowned academicians and industry experts to motivate and acquaint students with latest research problems and areas in their respective domains.

A Career Counseling Cell has also been setup in the college which provides information to students regarding opportunities of further study in their respective domains.

College also has entreprenuership cell.

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

The college collects and analyzes student performance data at two levels, internal assessment and end semester results. Internal assessment is compiled by all faculty members taking into account parameters such as student attendance, class tests, presentations, assignments, projects etc. and thus reflects the outcome of continuous or comprehensive performance of a student. This data is discussed and analyzed by the internal assessment moderation and monitoring committee. The committee also recommends for any remedial classes or a need for improvements (if any) in the teaching learning process.

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

The institution monitors and ensures the outcomes of learning process through internal assessment and end semester result evaluation and comparison, feedback from students, suggestions from alumni, placement record of the college, data about students enrolled in programs of higher studies, number of students clearing national level competitive exams such as NET, SLET, GATE, UPSC and industry response where our students are placed. Apart from this, learning outcomes also involve development of speaking/communication skills of students, inculcation of moral values, and overall personality development.

2.6.7 Does 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 college does not have a predefined process which it follows for this but in a broader sense assessment/evaluation outcomes are used for academic planning.

CRITERION III: RESEARCH, CONSULTANCY AND EXTENSION

3.1 Promotion of Research

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

There is no recognized research centre in the institution.

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.

A research committee has been formed in the college.Its composition is:

- Dr. Alka Vohra Kunar, Associate Professor in Physics.
- Dr. Ranjana Singh, Associate Professor in Food Technology.
- Dr. Jasjeet Kaur, Associate Professor in Chemistry.
- Dr. Shruti Banswal, Assitant Professor in Biomedical Science.
- Dr. Aakanksha, Assistant Professor in Computer Science.
- Dr. Sneha Kabra, Assitant Professor in Instrumentation.

Some of the recommendations of the committee are:

- The Research Committee of the college aims to encourage, motivate and create environment where faculty and students can carry out research activities with requisite infrastructural support from the college
- To apprise the faculty members about agencies funding research projects at undergraduate level .
- To screen the research project proposals which faculty members wish to submit to funding agencies.
- To start an annual research journal of interdisciplinary nature monitored by duly constituted editorial board.
- Conduction of workshops by faculty members with students from within and outside the college on regular basis.

- To screen the proposals submitted by faculty members to the College for availing travel grant for attending conferences, seminars, symposia and workshops within India

The committee recommended two projects submitted to UGC, by the faculty. The committee encourages the faculty to participate in seminars/conferences and engage in research projects.

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

- Autonomy to Principal Investigator
- Timely availability or release of resources
- Adequate infrastructure and human resource
- Time-off, reduced teaching load, special leave etc. to teachers
- Support in terms of technology and information needs
- Facilitate timely auditing and submission of utilization certificate to the funding authority

Any other

The institution provides complete autonomy to the Principal Investigator in terms of expenditure incurred for procurement of equipment, travel, stationery, contingency etc. Infrastructure is made available to facilitate smooth progress. Administrative and technical support is provided as needed. Periodic progress reports are monitored by the Principal and forwarded to the funding agency as per their requirement.

A bank account is opened in the name of the Project and grants received from the funding agency are transferred to the same. Auditing is carried out at the completion of the project by a qualified Chartered Accountant and utilization certificate duly signed by the head of the institution submitted to the funding authority

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

About 60 students from various departments have been involved in ongoing and completed Innovation Projects funded by University of Delhi.

The college encourages the students to participate in seminars, conferences and competitions held by the University and its constituent colleges.

Students of all the courses are taken for educational trips every year, where they get a chance to observe real-time aspects of production processes and latest research infrastructure in various institutes and industries.

In the annual mode of evaluation, prior to introduction of semester system in University of Delhi, summer training followed by project evaluation formed part of the curriculum. Since 2011, although summer training is no longer part of curriculum, students are encouraged to undertake summer training so as to acquire information/ knowledge other than additional campus learning.

One student of B.Sc. (H) Electronics went to France for two months summer training in June 2014 at ENSSM, Besancon.

Students are encouraged to undertake projects which help them in developing scientific temper. Some of the projects made by the student are:

Pacemaker model, rain water harvesting system using solar panels, digital security system, rain water harvesting, waste water treatment plant, eco friendly house, magnetic stirrer with hot plate from waste material, multilevel agriculture, automatic irrigation system, energy from busy roads, moisture alarm energy from cactus and waste, autoclave, security sensors; magnetic extensometer, automatic power controller, IR based light control and robot irrigator and auto ploughing.

New Product Development (NPD) is taken up as a project in the final year of Food Technology program to create scientific temper and to enhance creative and analytical skills of students. Some of the developed novel food products are Tamarind Panna concentrate, Bittergourd Chips, Papaya Nectar, Kiwi Jam and Gluten free biscuits.

College set up a Robotics Lab, *Abhimanyu Bot* on 11th April 2014. It was inaugurated by Shri Praveen Prakash, Joint Secretary (TEL) and Mission Director through webcast at IIT Mumbai. This lab has been established under the joint initiative of E-yantra, IIT Mumbai and Cluster Innovation Centre (CIC), University of Delhi with an aim to motivate students to learn and

experiment in the field of robotics, the technology of coming age. It aims to make learning fun, using problem based learning approach.

A team of dedicated faculty members and students are actively engaged in this initiative. The students are encouraged to participate in competitions held throughout the country.

In 2014, the College received Star College Grant by the Department of Biotechnology, Government of India.The grant is being utilized to add new equipment to strengthen the departmental infrastructure. To enhance the research culture, experiments are conducted that are not part of syllabus and are specifically designed to create interest in science . Besides this, workshops, seminars and lecture series organized under the Star College Scheme help in developing research aptitude amongst the students.

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.)

Faculty members are involved in guiding research, leading Research Projects and engaged in individual/ collaborative research activity.

Dr. Amita Kapoor, Associate Professor, Department of Electronics, is guiding a research student for Ph.D. degree as Joint Supervisor since 2014.

Dr. Deepa Joshi, Associate Professor, Department of Food Technology, is guiding a research student for Ph.D. degree as Joint Supervisor

Dr. Ranjana Singh, Associate Professor, Department of Food Technology, is guiding a research student for Ph.D. degree as Joint Supervisor

Dr. Alka Vora Kunar, Associate Professor, Department of Physics, was sanctioned Minor Research Project in1999 by UGC, *Characterization and Optimization of semiconductor optical components for application in high power pulsed 1.06 um lasers* Grant amount: Rs. 40,000

Dr. Punita Saxena, Associate Professor, Department of Mathematics, was sanctioned Research Project in 2011 by UGC for *Evaluating Efficiencies of the Delhi University Colleges using Data Envelopment Analysis* Grant amount: Rs.1, 40,000.

She has guided one M. Phil. dissertation submitted to Vinayak Mission University in Mathematics.

Ms. Para Dholakia, Assistant Professor, Department of Food Technology, has guided three M.Sc. dissertations submitted to IGNOU, in the field of dietetics and food service management.

Dr. Jasjeet Kaur, Associate Professor, Department of Chemistry, has been sanctioned the following research projects.

- *Biological stains for detecting latent fingermarks on various surfaces*, sanctioned by the Department of Science and Technology, under Scheme for Young Scientists, from November 1, 2000 to March 31, 2003. Grant amount: Rs. 3, 27,540
- *Studies on fingerprint patterns of siblings*, sanctioned by the University Grants Commission, from April 1, 2005 to March 31, 2007. Grant amount: Rs. 33,000
- *Small particle reagents for detection of latent fingerprints*, sanctioned by the University Grants Commission, under Research Award Scheme, from January 20, 2012 to January 19, 2015. Grant amount: Rs. 3.0 Lakh

Following members are involved in **Innovation Projects** sanctioned by University of Delhi.

Completed

- **Dr. Jasjeet Kaur**, Associate Professor, Department of Chemistry, **Dr. Ranjana Singh,** Associate Professor, Department of Food Technology and **Ms. Daya Bhardwaj**, Assistant Professor, Department of Instrumentation, worked on a project entitled, *An assessment of consumer's exposure to pesticides in conventional vegetables and vegetables sold with the 'organic' tag in Delhi-NCR region, India* from May 14, 2012 to May 13, 2013. Grant amount: Rs. 10 lakh.
- **Dr. Punita Saxena,** Associate Professor, Department of Mathematics, **Dr. Sadhna Jain**, Associate Professor, Department of Biochemistry and **Ms. Daya Bhardwaj**, Assistant Professor, Department of Instrumentation are working on project titled, *Effect of anemia*

on academic performance of students of east Delhi colleges, from November 1, 2013 to March 1, 2015. Grant amount: Rs.4.5 lakh

- **Dr. Amita Kapoor,** Associate Professor, Department of Electronics, **Dr. Sneha Kabra,** Assistant Professor, Department of Instrumentation, **Ms. Himani Dua**, Assistant Professor, Department of Instrumentation, are working on a project entitled, *Development of e-resources on standard procedure of operation and applications of important electronic devices used by undergraduate science students,* from November 1, 2013 to March 1, 2015. Grant amount: Rs.5 Lakh

- **Dr. Deepa Joshi**, Associate Professor, Department of Food Technology, **Dr. Jasjeet Kaur**, Associate Professor, Department of Chemistry and **Dr. Indu Arora**, Assistant Professor, Department of Biomedical Sciences, are working on a project entitled, *Antimicrobial studies of size dependent silver nanoparticles on microbes responsible for food decay* from November 1, 2013 to March 1, 2015. Grant amount: Rs.7.5 Lakh

- **Dr. Radhika Bakhshi**, Assistant Professor, Department of Biomedical Sciences**, Dr.M. Saquib Ansari**, Assistant Professor, Department of Biomedical Sciences, **Dr. Safdar Ali**, Assistant Professor, Department of Biomedical Sciences, **Ms. Tanu Bhardwaj**, Assistant Professor, Department of Instrumentation are working on a project entitled, *Mutation Analysis of PPAR, ABCCS, KCNJ11 and CALPNIO genes in diabetes patients in India,* from November 1, 2013 to March 1, 2015. Grant amount: Rs.7 lakh

- **Dr. Varsha Mehra**, Assistant Professor, Department of Biomedical Sciences**, Dr.Rekha Mehrotra**, Associate Professor, Department of Biology, **Dr.Manisha Khatri**, Assistant Professor, Department of Biomedical Sciences, are working on a project entitled, *Antimicrobial and Phytochemical studies on Indian spices against multidrug resistant human pathogens,* from November 1, 2013 to March 1, 2015. Grant amount: Rs.4.5 lakh

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.

We have organized the following workshops/ special training programmes for imbibing research culture among staff members and students.

Department of Biomedical Sciences

- Organized a workshop on Bioinformatics in collaboration with the Centre for Entreprenuership and Career Oriented Programmme (CECOP), Delhi and NIIT, Delhi (Oct 2008).
- A two day workshop on '*Bioinformatics: An Interdisciplinary Applied Science'* was organized in Feb 2015. This workshop was organized under aegis of Star College Scheme.
- Two day, national conference on *Understanding the Mechanism and Challenges of Complex Diseases:* UMCCD-2014 was organized in December 2014. It was a content driven event where renowned scientists and medical professionals highlighted current thrust topics. There was a section devoted only for student researchers to showcase their research by way of presenting posters.

Department of Computer Science

- Lecture Series on theme *A Conclave on new trends in IT* was organized on 14th March 2014, to enlighten students with upcoming technological advancements. Eminent speakers from diverse fields illuminated students by sharing their knowledge and experience.
- A workshop on .Net 2.0 was organized in collaboration with HCL Technologies for duration of 80 hours to equip students with latest technology, in December 2009.
- The Department organizes an annual technical festival *Tech Melange*. This technical extravaganza is the perfect confluence of technology, creativity and fun. It is a perfect platform for technocrats to interact and compete spiritedly.
- In association with Department of Electronics and in collaboration with ARK Technosolutions, Mumbai two days *Robotics Workshop* has been organized annually since

2013. These workshops aim to introduce students to the interesting field of robotics and automation. Students learn about various kinds of robots, such as line following robot, wall following robot, wall repelling robot, object following robot, object repelling robot, fire fighting robot, sound sensing robot, light sensing robot and a lot more.

Department of Electronics

- Organized a one day workshop on *Optics* on 3rd March 2011.
- Organized a two day workshop entitled *Mobipreneur* in association with Nurture Talent Academy and Entrepreneur Development Cell, IIT Delhi on 8th and 9th September 2013. The workshop aimed at introducing students to the fantastic field of mobile app development and converting their idea to business.
- Lecture on *Introduction to Optical Communication by* eminent international speakers was organised on 16th December 2013.
- A talk was organized on Cloud *Computing - the hype, reality and future* on 30th October 2014. The talk covered the fascinating topic of Cloud Computing, where we are now, what the long term future is, and where are the jobs.
- In association with the Department of Instrumentation first UGC sponsored National Conference on *Recent Trends in Instrumentation and Electronics,* (RTIE-2015) was organized on 5th and 6th January 2015. The conference provided a platform for researchers and academicians to present their latest research in the fields of Instrumentation and Electronics.
- Organized a workshop on**,** *An open source circuit simulator software* (OSCAD) for the faculty in Electronics and Instrumentation Department of the college in collaboration with Spoken Tutorial, IIT Mumbai on 5th June 2014.
- Organized a workshop on *C and C++ language* for the students along with Department of Instrumentation of the college in collaboration with Spoken Tutorial, IIT Mumbai on 22-23 May 2014.

Department of Food Technology

- Organized a National seminar on *Achieving Food Security in Times of Crisis* – the theme of World Food Day on 16th October 2009
- Organized a National seminar on the theme of World Food Day *United Against hunger* on 16th October 2010
- National seminar on *Food prices - from crisis to stability* the theme of World Food Day was organized on 16th October 2011
- Organized a National seminar on *Agricultural Cooperatives – Key to feeding the world* in collaboration with NCUI and AFST (Delhi), the theme of World Food Day, on 16.10.2012
- National seminar on *Sustainable food systems for food security and nutrition* was organized on 16th October 2013
- Workshop on *Food safety in International Trade*, in collaboration with Export Inspection Council of India and AFST (Delhi), was organized on 4-6 April 2013
- National seminar on *Family Farming: Feeding the World, Caring for the Earth* the theme of World Food Day was organized on 16th October 2014

Department of Instrumentation

- Technical festival of Instrumentation Department, *Technexus* is held every year in which eminent scientists, academicians and experts from industry are invited to interact with the students.
- Department had organized two day lecture series on *Innovation in Analytical Techniques* in 2009.
- The Instrumentation Department in collaboration with Electronics Department organized a two days workshop on *Basic Electronics and Instrumentation Electronics* in October 2013, for the teaching and non teaching faculty members
- Organized a seminar on *Role of Analytical Instrumentation in Industries in* August, 2013.
- Workshop was held by M/s Toshvin Analytical Private Ltd on the fundamentals of UV, FTIR, GC and GC-MS techniques in October 2013.
- Lectures under the series *Vyakhyan* was held in March 2014 in which our eminent alumni were invited to interact with the students.

- A lecture was organized on *Biomedical Instruments for persons in special need* in 2014.
- The *First National Conference on Recent Trends in Instrumentation and Electronics* (RTIE-2015) was held on 5th and 6th January 2015. It was jointly organized by Department of Electronics and Department of Instrumentation of the College. This conference was supported by IEEE EDS, Delhi Chapter and sponsored by UGC.

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

Various staff members are working in their own research fields, some of which are listed below:

- Photonics
- Artificial intelligence, Robotics
- Deep belief networks
- Neurosynaptic Chips
- Forensic chemistry
- Soyabean processing and technology
- Mutagenesis of microbial cells
- Immunology
- Plant tissue culture and microbiology
- Electrochemistry
- Nanochemistry
- Modeling and simulation of semiconductor devices
- Bacterial pathogenesis
- Enzymology
- Cancer molecular biology
- Dairy biochemistry and microbiology
- Mathematical programming
- Data envelopment analysis
- Chemical Fingerprinting
- Library Sciences
- Green Chemistry

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

Many workshops, conferences and seminars are organized in the college where staff and students get an opportunity to interact with the researchers of eminence. Assistance for this

has been provided by UGC, CSIR, IEEE EDS-Delhi Chapter, DBT and Centre for Entrepreneurship and Career Oriented Program, Export Inspection Council and AIBTM from time to time. More than 70 eminent speakers have visited our college and interacted with our staff and students.

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 at the level of Associate Professor has been made by the university from August, 2013 only. However, four teachers have availed study leave for Ph.D. or post doctoral study.

3.1.10 Provide details of 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)

An innovation project entitled, *An assessment of consumer's exposure to pesticides in conventional vegetables and vegetables sold with the 'organic' tag in Delhi-NCR region*, India was sanctioned by the University of Delhi. Its aim was to ascertain the nature and concentration of the pesticides being commonly used for growing vegetables. Based on the survey, it was found that farmers across Delhi-NCR region are using chemical herbicides, fungicides and insecticides like cypermethrin, profenos, endosulfan, butachlor etc, despite the fact they were aware of the adverse effects caused by these synthetic chemicals. They advocated that the government support in providing the awareness, education and related inputs for farming was lacking. Further, the usage of organic vegetables across Delhi-NCR region was not found to be very popular. Even the availability of organic vegetables which comply by the government norms was sparse. Nevertheless, after analysis, pesticides and their residues were not found on targeted vegetables.

Another innovation project sanctioned by the University of Delhi, *Effect of anemia on academic performance of undergraduate students of East Delhi colleges,* aimed to make students aware of causes and consequences of anemia, identify anemic individuals and give them proper guidance regarding their dietary and nutritional intake. The study was done on 752

undergraduate students (ages 17-20 years) which included 178 (23.7%) males and 574 (76.3%) females. Data on general information, socio-economic status, academic performance in the previous examinations and medical history of family and feeding habits of subjects were obtained through a structured questionnaire. The statistical analysis revealed that 47.7% of our volunteers belonged to the income group of Rs. 1-2 lakhs, 25.5% from Rs. 2-3 lakhs, 19.4% from Rs.5-7 lakhs and only 7.29% belonged to the income group of more than Rs. 8 lakhs per annum. Out of 752 students, 222(29.5%) were found to be anemic and 530 (70.5%) turned out to be non anemic.

3.2 Resource Mobilization for Research

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

The college receives UGC grant for attending conferences/seminars within the country. It covers up to 100% of registration charges and travel expenses.

There is no provision for budget being earmarked for research. Individual teachers apply for grants to various funding agencies for research purposes, as well as for travel grants for attending international conferences.

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 funding for research activities is provided by UGC, DST, FSIT, CSIR, DBT University of Delhi, ICSSR and other agencies. The need for seed money has not arisen so far, although college can provide for the same if the situation demands.

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

Student research projects are presently being funded by University of Delhi under Innovation Project scheme. Besides that, students are provided financial assistance for making the projects and travel assistance in case they participate in any competition.

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

Staff of the college is engaged under Innovation Projects Scheme funded by University of Delhi. Three staff members from different disciplines and ten students of various departments are part of each project. This composition ensures interdisciplinary research activities. One such project has been completed and five are ongoing.

It is challenging to find a common slot in the timetable for engaging students of different disciplines together.

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 possesses very well equipped laboratories and they are available to all staff members and students for research work. Some of the departments have their own research laboratories which have been equipped from grants sanctioned to their projects. After completion of the project staff and students are free to use the facilities as and when required.

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

Department of Food Technology received grant of Rs. 50 lakhs from Ministry of Food Processing in 2006-2008; for upgrading the labs with state-of-art equipment, such as high performance liquid chromatograph, atomic absorption spectrophotometer, texture analyzer, rancimat and high grade water purifier.

The College received *Star College Grant* from the Department of Biotechnology, Government of India in 2014. An amount of Rs. 22 lakhs was sanctioned for the first academic year to be utilized by the three participating departments: Biomedical Science, Food Technology and Instrumentation. The grant is being put to optimum use by conducting interdisciplinary activities like industrial trips, workshops etc.. Some new equipment is being added to strengthen the departmental infrastructure and to conduct new experiments, in addition to those prescribed in the curriculum.

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.

The college provides all possible facilities for carrying out research work sanctioned to the faculty under schemes of various funding agencies. Following is the list of ongoing and completed projects sanctioned during the past four years.

Nature of Project	Duration	Title	Funding Agency	Grant Sanctioned
Research Award	2012-15	Small particle reagents for detection of latent fingerprints.	UGC	3.0 lakh
Major	2013-14	Commercial production of bijasal (*Pterocarpus marsupium*) – an endangered species.	ICMR	Rs 17,14,186
Minor	2011-12	Evaluating Efficiencies of the Delhi University Colleges using Data Envelopment Analysis	UGC	1.4 lakh
Minor	2014- 15	Didactic education of computer and communication techniques	CISCO	Rs. 50000
Innovation	2012-13	An assessment of consumer's exposure to pesticides in conventional vegetables and vegetables sold with the 'organic' tag in Delhi-NCR region, India.	University of Delhi	10.0 lakh
Innovation	2013-15	Mutation analysis of $PPAR_7$, ABCC8, KCNJ11 and CALPN10 genes in type 2 diabetes patients in India.	University of Delhi	7.0 lakh
Innovation	2013-15	Phytochemical and antimicrobial studies of Indian spices on multi drug resistant pathogens	University of Delhi	4.5 lakh
Innovation	2013-15	Antimicrobial studies of size and shape dependent silver nanoparticles on microbes responsible for food decay.	University of Delhi	Rs. 7.5 lakh
Innovation	2013-15	Effect of anemia on academic	University	4.5 lakh

		performance of under graduate students of East Delhi Colleges	of Delhi	
Innovation	2013-15	Development of e-resources on standard procedure of operation and applications of important electronic devices used by undergraduate science students	University of Delhi	5 lakh

3.3 Research Facilities

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

Biomedical Sciences

The Biomedical Science department has many sophisticated instruments which the department utilizes for conducting experiments in practical classes. All the four laboratories of the department are well equipped. High speed refrigerated centrifuges, PCR machine, ELISA reader, Students Bio-Pac, microtomes, horizontal and vertical gel assemblies with power packs etc. are some of the highlights along with the routine instruments like the microscopes, refrigerators, microwave ovens, heat blocks, water baths, etc.

Computer Science

Four well equipped ICT enabled labs with about 150 computers with latest computer configuration Intel corei7 – 3.4 GHz processors with 4 GB RAM, 64 bit operating System, 3 High-end HP servers with a good combination of Licensed Software and Free/Open Source Software to enrich student practical experience, 4 color laser printer, 20 laser printers and 10 scanners.

Electronics

The department has fully equipped seven laboratories and a research laboratory. There are two electronic simulation labs that house the latest open source and proprietary software to train students in the fields of embedded systems, robotics and micro-controllers. The department has a high end server. There is a digital and microprocessor lab with 8086 kits and supported accessories. The department also possesses 8051 and Atmega 2560 micro-

controller boards and kits. The Analog and communication lab is fully equipped with DSO, multimeters, function generators and communication trainer kits.

Food Technology

Food Technology department has the following Nine laboratories and plants that include two Analytical laboratories, Food Microbiology laboratory with culture lab, Instrumentation laboratory, Food and Nutrition Laboratory, Food Engineering Laboratory, Sensory Laboratory, and two Pilot Plants.

Equipments available in these laboratories are laminar air flow, bright field microscopes. Digital microscope with LCD screen, Millipore assembly for coliforms, air sampler, digital colony counters, autoclaves, incubators spectrophotometers, Lovibond tintometer, texture analyser, penetrometer, atomic absorption spectrophotometer, Rancimat, planetary mixer, spiral mixer, proover, dough sheeter, ice cream batch freezer, homogenizer, bakery oven, kitchen aid mixers, Kjeltec unit, polarimeter, BOD incubator, moisturometer, Abbe's refractometer , hand refractometer, chromatography chambers , vacuum oven, vacuum pump, Brookfield rotational viscometer, milk fat tester, deep freezer tray drier, fluidized bed freezer, can reformer, can flanger, can double seamer, bottle filler, pouch filling machine and bursting strength tester.

Instrumentation

The Department has developed modern research facility and infrastructure to support the teaching and research activities. The Department has six major laboratories based on curriculum namely, Analytical lab with wet lab, Biomedical Laboratory, Industrial Laboratory, Analog Electronics lab, Electronic Instrumentation and Electrical Machine lab, Microprocessor lab.

The labs are equipped with various sophisticated instruments:

Industrial lab is equipped with instruments like level measurement, orifice meter, ultrasonic flowmeter, DC/AC calibration meter, EM flowmeter, ratio controller, dead weight pressure gauge, circular chart recorder, RTD, thermocouple, conductivity meter etc. Analog Electronics lab and Electronic Instrumentation lab are equipped with CRO, DSO, power supplies, diodes, transistor, ICS, Carey foster bridge, solar cells, Anderson Bridge, de-sauty's bridge etc.

Electrical machine lab has DC series motor, DC parallel motor, single phase induction motor, three phase induction motor, SCR based DC motor etc. Biomedical lab is equipped with Biopotential measurement system for ECG. EEG, respiration, pulse measurement etc. The lab also has ultrasound machine, biochemical analyser, PCR machine, ELISA reader, Blood cell counter, respiration rate monitor, pulse rate monitor, pacemaker trainer, sphygmomanometer, glucometer etc. Analytical lab has instruments like gas chromatograph (Nucon and Shimadzu models), high performance liquid chromatograph, flame photometer, analog and digital colorimeter, Karl-Fisher titrator, FTIR spectrophotometer, UV-Vis spectrophotometer, pH meter, conductivity meter, vacuum rotary evaporator, analytical balances etc. Microprocessor lab has microprocessor kit 8085 with interfacing kits and microcontroller kits 8051 for training and research in programming.

Chemistry

Department has 3 well equipped laboratories one of them being research lab. Synthesis and characterization of compounds and complexes as well as titremetric analysis can be carried out using facilities such as rotary vaccum pump, centrifuge, magnetic stirrer with hot plate, vortex shaker, digital and electric meting point apparatus, hot air oven, electronic balances besides electric bunsen and microwave oven.

Biochemistry

The laboratory is provided with BOD incubator, fraction collector, centrifuges, UV-visible spectrophotometer, lyophilizer, vaccum dessictor, electrophoretic apparatus, chromatographic chamber, electric tissue grinder and pH meter.

Biology

Department has two laboratories. The laboratories are well equipped with basic as well as sophisticated equipments viz. compound microscopes, inverted microscopes electrophoresis units, various types of centrifuges, shakers, incubators, ovens, microwave ovens electronic weighing balance, pH meters, autoclaves, PCR, ELISA reader, biochemistry analyzer set up for histochemistry etc. The department also has tissue culture facility.

Mathematics

Department has one ICT enabled laboratory, well equipped with 40 computers of latest configuration, one high end server, licensed mathematical and statistical softwares, 2 printers and laptops.

Physics

Department has equipments like He-Ne lasers, polarimeter, vacuum coating unit, electrical bridges etc. and sufficient number of oscilloscope, resistance meters, function generators, power supplies, optical benchers etc.

3.3.2 What are 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 college has recently received grant under Star College Scheme funded by Department of Biotechnology (DBT), which it plans to use in building new facilities and create avenues for emerging areas of research.

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?

A total of six Innovation Projects have been sanctioned by the University of Delhi since 2012. In addition, individual faculty members too have been sanctioned research projects by different funding agencies. These endeavors have helped build up infrastructure and research facilities in the institution such as centrifuges, vortex, magnetic stirrers, micropipettes, deepfreeze, autoclave, gas chromatography columns, rotary evaporator, ultra violet chamber, condenser, desktops, laptop, printer etc.

The college has recently received grant under Star College Scheme funded by DBT which it plans to use in building new facilities to cater to interdisciplinary research and project work. It is proposed that latest equipments be purchased for conducting practicals, in addition to those prescribed in the curriculum.

The faculty has been sanctioned various Research Awards, Major and Minor Projects in the last four years by different government funding agencies. These projects have helped in developing the research facilities of the college. Equipment added in the laboratories were latent fingerprint kit and Blumax rechargeable forensic light

3.3.4 What are the research facilities made available to the students and research scholars outside the campus/ other research laboratories?

University of Delhi has very well equipped University Science Instrumentation Centre (USIC) which provides facilities for advanced research purposes. It is accessible to all college teachers and students. Besides this, students can use facilities available at IARI, AIIMS, DRDO, INMAS, SSPL and other institutions such as Jamia Hamdard.

Library facilities of the University can also be used on request.

Innovation Project students have utilized the expertise available at AIIMS and Jamia Hamdard.

3.3.5 Provide details on the library/ information resource centre or any other facilities available specifically for the researchers.

The College Library has subscribed to five peer reviewed research journals, out of which three are based on food technology and two on natural sciences. The electronic library consists of 65 computers which are linked to DULS/UGC-Infonet. Library has subscribed approximately forty three thousands electronic journals of different subjects. Most of the journals are peer reviewed. Besides this, library has the facilities of electronic thesis, citation analysis like science citation, web of science and abstracting databases. In addition, library provides on demand service like SDI (Selective Dissemination of Information) Current Awareness Service and bibliography service.

3.3.6 What are the collaborative research facilities developed/ created by the research institutes in the college eg. laboratories, library, instruments, computers, new technology etc.

University of Delhi has provided 80 Computers, a server, UPS and Wi-Fi equipment which have been helpful in setting up e- library. It is used both by staff and students for accessing e-journals and other study material.

3.4 Research Publications and Awards

3.4.1 Highlight the main achievements of the staff and students in terms of

- **Patents obtained and filed (process and product)**

Dr. Jasjeet Kaur

Patents Granted

- A process for the preparation of a composition used for the detection of latent fingerprints, *Indian Patent*, No. 191277, February 16, 2004.
- A finger print powder composition and a process thereof, *Indian Patent*, No. 213743, January 11, 2008.
- A process for the preparation of a novel fingerprint mixture, *Indian Patent*, No. 216552, March 14, 2008.
- Fingerprint developing composition and method thereof, *Indian Patent* No. 258569, January 21, 2014.

Patents Filed

- Detection of latent fingerprints on moist, non-porous surfaces, *Indian Patent,* Filed on January 9, 2009.
- A spray formulation for detecting latent fingerprints on glossy papers, *Indian Patent*, Filed on March 9, 2009.
- A spray formulation for detecting latent fingerprints on moist, non-porous surfaces and a method of preparation of the same, *Indian Patent*, Filed on July 28, 2010

- **Original research contributing to product improvement**

  Developed novel chemical products and techniques to detect latent fingerprints on a host of crime scene evidence.

- **Research studies or surveys benefitting the community or improving services**

  The research focused on developing techniques for combating crime.

- **Research inputs contributing to new initiative and social development**

  The research represented advancement in the field of applied chemistry by innovating novel methods of processing crime scene evidence.

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

At present, the college does not publish or partner in publications of research journals.

3.4.3 Give details of publications by the faculty and students.

	Publication per faculty [= (A+ C+D+E+F)/Total permanent faculty members]	8.5
A.	Number of papers published by faculty and students in peer reviewed journals (National/International)	187
B.	Number of publications listed in International Database	144
C.	Monograph	Nil
D.	Chapters in books	2
E.	Books edited	1
F.	Books with ISBN/ISSN numbers and details of publishers	2

3.4.4 Provide details (if any) of

- **Research awards received by faculty**

Dr. Jasjeet Kaur

- Recipient of the ***Young Scientist Award-1997***, presented by *Indian Science Congress Association*, during its 84th Session, held in Delhi on January 3-8, 1997, for the paper entitled, *Use of a Phase Transfer Catalyst for developing Latent Fingerprints on unusual surfaces.*

- Received ***National Technology Day*** *Award* for the innovation entitled, *Novel spray formulations based on xanthen dyes for detecting latent fingerprints,* Presented by *National Research Development Corporation, New Delhi on May 11, 2000.*
- Received ***WIPO-2001 International Award*** for the innovation, *Novel spray formulations based on xanthen dyes for detecting latent fingerprints*, judged as the best innovation for the year 2001, by *World Intellectual Property Organization, Geneva,* a UNO subsidiary, and presented on its behalf by *National Research Development Corporation, New Delhi* on May 11, 2002.

Dr. Amita Kapoor

- Awarded prestigious ***DAAD (Deutsche Academic Exchange Service) Sandwich Model Scholarship***, to pursue a part of her research at Germany for the year 2008-2009
- Awarded ***Best Student Presentation*** for the oral presentation at an International conference Photonics 2008.
- Received ***Instructor Year of Service Award*** for 10 years of active participation and service in the CISCO Networking Academy Program.

Dr. Projes Roy

Awarded ***Infoshare Membership Award*** in 2014 from American Society for Information Sciences and Technology. Special Interest Group for International Information Issues (*SIG/III*)

- **Recognition received by the faculty from reputed professional bodies and agencies, nationally and internationally**

Dr. Punita Saxena

Received the ***Meritorious Teacher Award-2013*****, presented** by Directorate of Higher Education, Govt. of NCT of Delhi.

Dr. Ranjana Singh

Received the ***Meritorious Teacher Award-2014*****, presented** by Directorate of Higher Education, Govt. of NCT of Delhi.

Dr. Jasjeet Kaur

- Received Certificate of Appreciation and 2nd prize under the ***Ideaz category of Anveshan – National Search for Innovation***, organized by *Centre for Innovation, Incubation and Entrepreneurship,* Indian Institute of Management, Ahmedabad on April 8, 2006.
- Demonstrated a novel method of fingerprint detection on moist surfaces to the staff and scientists of the ***Fingerprint Bureau, Punjab Police Academy*****,** Phillaur on March 27, 2009. The bureau certified that the method has the potential to assist in casework investigations.
- Received the ***Meritorious Teacher Award-2012*****,** presented by Directorate of Higher Education, Govt. of NCT of Delhi.

Dr. Radhika Bakhshi

Received the **Meritorious Teacher Award-2011,** presented by Directorate of Higher Education, Govt. of NCT of Delhi.

Dr. Deepa Joshi

Received the **Meritorious Teacher Award-2015,** presented by Directorate of Higher Education, Govt. of NCT of Delhi.

- **Incentives given to faculty for receiving state, national and international recognitions for research contributions**

The achievements and recognitions of the faculty for their research contributions are acknowledged in the Annual Report of the college and the same is announced by the Principal on Annual Day of the college. This annual report is then communicated to be included in the report of University of Delhi.

3.5 Consultancy

3.5.1 Give details of the systems and strategies for establishing institute-industry interface?

College takes care to establish institute-industry interface by adopting following measures:

- Student interning with industry
- Industry-academia seminars
- Special lectures by professionals from industry
- Our alumni are placed with industry and help in providing feedback

3.5.2 What is the stated policy of the institution to promote consultancy/ How is the available expertise advocated and publicized?

There is no well drawn policy for giving consultancy and it is usually given informally. University does not allow any monetary benefit through consultancy (as its a constituent college of University of Delhi)

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

The College encourages the staff to use their expertise. However, since monetory benefits are not allowed as per rules, therefore there are limitations, especially, when cost intensive techniques are required to be used.

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

Department of Food Technology provided consultancy to Paharpur Industries from 2006-2011 by way of analyzing the sanitation aspect of the industry. This industry involved with manufacture of fine packaging material and as per ISO norms they had to be assessed for *Personal Sanitation, Packaging Material Sanitation* and *Equipment Sanitation* by *Swab-Rinse Technique of Surface Sanitation Assessment.* The analysis was done by third year students under the guidance of subject teacher. Samples were collected from factory and analyzed at college laboratories.

No revenue generation is permitted by the University. However, the money was given in the form of sponsorship to celebrate World Food Day on 16th October each year (2006-2011).

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

Income generation through consultancy is not permitted under University of Delhi rules.

3.6 Extension Activities and Institutional Social Responsibility (ISR)

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

The college believes in holistic development of students and involves the students in community service programs. Some of the endeavours are listed here:

- Innovation Project, *Effect of anemia on academic performance of under graduate students of East Delhi Colleges* has made students conscious of their health and dietary habits
- Women's Development Cell organizes lectures for students on how to safe guard themselves and also hold self defense classes.
- College has invited East Delhi Gynecologist forum to deliver special lectures for educating students regarding good hygiene for women.
- College students are actively involved in *Swachhta Abhiyan,* cleanliness drive. A nearby DDA market has been adopted by the college for cleanliness drive.
- Students are encouraged to participate for various competitions and programs at Ramakrishna Mission, Delhi.
- Various lectures by eminent personalities from Chinmaya Mission and Vivekananda Kendra are organized from time to time for holistic development of students.
- Under NSS, our students work with the visually challenged students in blind school and clubs such as Blind Young Association. They teach the underprivileged children in nearby slums and orphanages. They also visit old age homes and celebrate festivals with elderly and homeless. Material and money collection is also done from time to time, for distribution amongst the needy.

- College organized a blood donation camp in February 2015.
- The *Teach India Initiative* of Times of India is an attempt at strengthening the confidence and communication skills of the under-privileged. Students have been involved in teaching in slums as well taking classes for the students from weaker sections of society in the college.
- Students have enrolled themselves for *Young Association* and *Leaders for Tomorrow*, which undertakes teaching assignments for children in orphanages and slums as well as other social activities.
- Students are sensitised for upkeep of clean and green environment. We have vermi-composting plant and herbal garden which are taken care of by students.

Our ex-Principal, Dr. S. Lakshmi Devi has been active member of the following organizations:

- ***WOW India* (*Wellbeing of Women)*** which works for the health and well being of females. Dr. S. Lakshmi Devi got life time achievement Award for her contribution to its services. The annual function of WOW, 2014 was organized in our college which was attended by staff and students.
- **Vatsalya Vocational Training program,** works for training of girls from slums in computer awareness and Tally. They are also trained in setting up a beauty parlour, in stitching and English speaking etc.
- **Adolescent health workshop**, wherein the doctors and the educationists went to schools and talked to the students about body structure, sex education, HIV /AIDS and also on time management. Various schools in east Delhi were covered. Training was imparted to school teachers too.
- **All India Women's Conference -** They have a community college and our ex-Principal is a member of their governing body.

3.6.2 What is the institutional mechanism to track students' involvement in various social movements/ activities which promote citizenship role?

Attendance record of the students who are contributing towards social causes under NSS is being maintained. Coordinators of the various activities track student's involvement which is

monitored by Program Officer of NSS. Students are also expected to get a certificate for their contributions from the various bodies with which they have been involved for social causes.

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

The college organizes *Open Day* for the students who wish to take admission in our college. Mostly they are accompanied by their parents and we are able to get feedback about their perception. Career counseling sessions are carried out in college, at University level and in schools wherein we have direct interaction with the stakeholders.

Each student in the college has been assigned a Mentor, to whom they are free to address their opinions and problems. Every year, Principal takes assessment of the teaching staff on various aspects of teaching-learning process from the students.

Our alumni are very well placed in India and abroad which speaks for the overall performance and quality of the institution. Some of the institutions prefer giving admission to our students, based on curricula design and quality of education imparted.

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

Our college along with SEWA (Self employed Women's Association, based in Gujarat) has taken an initiative in organizing the services that help poor women in achieving their goals of attaining employment and self-reliance.

At present around 20 girls are being trained in TALLY software so that they are skilled to be employed. In addition to this, they are also being trained to develop good communication skills. The girls of nearby slum were mobilized to enroll for this course. The study material was prepared in consultation with NIIT. A trained instructor takes regular classes. We plan to encourage our students to take up this initiative in due course of time. A dedicated lab has been assigned for this purpose. The objective of this project is to make these girls self reliant and to impart skills to them so that they can be suitably employed.

A nominal amount is being charged from the girls who have enrolled themselves. The college is being paid Rs 40,000/ annum for the infrastructure use.

The College, through the financial support of United Nations and Development fund for Women (UNIFEM) and Cisco systems established a **Cisco Networking Academy** (CNA) in the year 2002. Two staff members from the college underwent 21 days instructor training at Amity University. Since then, CNA has trained more than 500 students in the field of networking.

CNA organized a special training programme for CBI officials which was highly appreciated.

From time to time CNA organizes special workshops to train students in soft skills. Besides this, for last two years CNA in collaboration with Cisco systems has been organizing a panel discussion with eminent women scientists, academicians and industry professionals working in the field of IT to motivate girls to have career in this field.

CNA has organized following activities in last few years:

- CNA in collaboration with Cisco Systems celebrated *Girls in ICT* day, on 9th January 2014. Many eminent speakers and more than 800 girls from institutes in NCR Delhi participated in the event. The event was sponsored by Cisco Systems.
- CNA in collaboration with CISCO systems, organized *Women Rock IT* event on 5th February 2015. The panel discussion aimed to popularize IT as a career option for girls and to reduce digital divide. Again the event incurring an expenditure of Rs 1,00,000, was sponsored by Cisco Systems.
- The CNA is also running a project funded by CISCO Systems entitled: *Didactic education of computer and communication techniques*. This project aims to make IT technology easy for blind. The entire project for Rs 1,00,000, is being sponsored by Cisco Systems.

The **Teach India Initiative** of Times of India in association with our college started in 2014, with an attempts to strengthen and raise the weaker and under-privileged strata of the society. Times of India Group bear the financial burden of this program while the college provides mentors. Students of the college got a chance to teach learners of the age-group 18-50 for 90 days. This helped in building the communication skills of the learners, hence strengthening their job prospects and confidence.

These mentors were also given an opportunity to help their fellow college mates and non-teaching staff in acquiring a better grip over spoken English.

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

Various NSS activities were initiated with effect from the current academic session (2014-2015). The students have been actively working with various NGOs for the underprivileged, orphans, physically challenged and elderly persons. Students and faculty are motivated to participate in several governmental schemes, such as Sarva Shiksha Abhiyan and Swachhta Abhiyan. The students are given certificates of appreciation for their participation in these activities.

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

The College undertakes the following programs for the empowerment of underprivileged and vulnerable sections of the society.

- **Teach India Initiative** of Times of India in association with our college attempts to strengthen and raise the weaker and under-privileged strata of the society. This program helped in building the communication skills of the learners, hence strengthening their job prospects and confidence.
- **SEWA** (Self employed Women's Association, based in Gujarat) along with our college has taken an initiative in organizing the services that help poor women in achieving their goals of being employed and self-reliance.
- **Young Association,** an NGO has collaborated with our college to undertake the teaching assignments for children in orphanages and slums. Our students visit the localities and homes assigned to them to assist these children.
- One of our students had carried out a social survey on living conditions of eunuchs.

In addition, the students regularly visit old age homes and blind schools to work for the vulnerable sections of society.

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

Such activities impart confidence amongst the students and sensitize them to cater to the needs of underprivileged sections of society. On long term basis, participation in such programs develops leadership qualities in students and shapes their personality. They also feel a sense of achievement and understand the importance of team work.

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 community participation in its activities.

The NSS volunteers identify the problems faced by neighbourhood community and encourages them to participate in the out-reach programs of the college. The *Swachhta Abhiyan* was carried out with the cooperation of shopkeepers of neighbouring DDA market. The slum dwellers and orphanages regularly provide inputs on how their living conditions can be improved.

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.

Our college has collaborated with following organizations for various extension activities:

- Vatsalya Vocational Training Centre, which works for training of girls from slums in computer awareness and Tally. They are also trained in setting up a beauty parlour, in stitching and English speaking etc.
- Cisco systems in collaboration with our college established a Cisco Networking Academy (CNA). CNA has trained more than 500 students in the field of networking.
- *WOW India* (*Wellbeing of Women)* which works for the health and well being of women.
- The Times of India Group's *Teach India Initiative* attempts to strengthen and uplift the weaker and under-privileged strata of the society.
- SEWA (Self employed Women's Association, based in Gujarat) in collabration with our college has taken an initiative in organizing the services that help poor women in achieving their goals of being employed.
- Delhi Police has been helping our college in organizing self defense class for students. These sessions have instilled confidence in students with regard to their safety.

- East Delhi Gynecologist Forum apprise students on health-related issues.
- *Young Association* and *Leaders for Tomorrow* NGOs have collaborated with our college, wherein students have taken initiative to teach at orphanages in various parts of Delhi, besides addressing other social issues.

3.6.10 Give details of awards received by the institution for extension activities and/ contributions to the social/ community development during the last four years.

Our ex-Principal, Dr. S. Lakshmi Devi was conferred upon the *Lifetime Achievement Award from WOW India (Well being of Women)* for contribution of the college to community development.

3.7 Collaboration

3.7.1How does the institution collaborate and interact with research laboratories, institutions and industry for research activities? Cite examples and benefits accrued of the initiatives- collaborative research, staff exchange, sharing facilities and equipment, research scholarships etc.

- The ongoing and completed Innovation Projects sanctioned by University of Delhi have a mandatory requirement of assigning a Mentor from another scientific organization. The Mentors from various fields and organizations such as TERI, Jamia Hamdard, CSIR, AIIMS and Max Hospital have been guiding the students for successful completion of these projects.
- Amarjyoti – School for the handicapped children, sent two of their employees to be trained in the field of bakery at our college and now they have set up their own bakery.
- Students from GTB hospital, Lady Irwin College, Delhi University and Deen Dayal Upadhaya College, Delhi University have used our equipment for their research work.
- Two students from Jamia Hamdard University, New Delhi undertook summer training for two months in our college.
- Educational Trips to various research laboratories (such as Institute of Microbial Technology, Central Scientific Instrumentation Organization, Ranbaxy Research Laboratories) and industrial establishments (viz Paharpur Industries, Yakult Danone

India, Agilent Technologies, Shimadzu, Mother Dairy) are organized in every academic session.

- Several workshops have been organized at the College by Departments of Biology, Chemistry, Food Technology, Instrumentation and Library under the aegis of Centre for Entrepreneurship and Career Oriented Programmes (CECOP).
- The faculty members have undertaken training courses from time to time at different organizations, such as Central Pollution Control Board, Ranbaxy Research Laboratories, Jawaharlal Nehru University, Center for Electronic Design and Technology, US Soybean Export Council and Shimadzu Ltd. GTB hospital International centre for Genetic Engineering and Biotechnology, Western Regional Instrumentation Centre.
- A workshop on Baking Technology of Various Foods in collaboration with Assocom Institute of Bakery Technology and Management, Greater Noida was organized on 17-18 July and 7 Sept 2013. It was attended by the members of Governing Body, students and staff of the college and members of All India Women's Conference.

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.

No such collaborative arrangement has been made by the college.

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.

The college through the financial support of UNIFEM and Cisco Systems established a Cisco networking academy (CNA) in 2002. Two staff members from the college underwent a 21 days Instructor training at Amity University. Since then, CNA has trained more than 500 students in the field of networking. From time to time CNA organizes special workshops to train students in soft skills. Our students get an opportunity to get trained for industry certification in the college itself.

Department of Food Technology received grant of Rs. 50 lakhs from Ministry of Food Processing in 2006-2008, for upgrading the labs with state-of-art equipment, such as high performance liquid chromatograph, atomic absorption spectrophotometer, texture analyzer, rancimat and high grade water purifier. These equipments have been in regular use by students since then, for conducting experiments from the curricula as well as for research purposes.

Some of our faculty are members of Professional bodies like Institution of Electronic and Electrical Engineers (IEEE), USA, Indian Society of Analytical Scientists (ISAS) etc.

The college collaborates with these organizations to organize seminars.

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.

International Workshop

1) ***International Workshop on New Frontiers in Global Learning and Communications,*** organized jointly by our College and University of Massachusetts, Boston, held in our college from December 28, 2013 to January 2, 2014.

Following eminent scientists contributed for the same:

- Dr. Tara Devi S. Ashok, Faculty, Department of Biology and Anthropology, University of Massachusetts Boston.
- Mr. Apurva Mehta, Interim Vice Provost for Technology and CIO, University of Massachusetts Boston.
- Dr. Denise Patmon, Director, Center for Innovative Teaching, Faculty, College of Education and Human Development, University of Massachusetts Boston.
- Dr. Nishikant Sonwalkar, Adjunct Faculty, Department of Physics, University of Massachusetts, Boston. Editor-in-Chief, MOOCs FORUM; Co-Chairman, EdTech Circle, MIT Enterprise Forum, Massachusetts Institute of Technology.
- Ms. Irene Yukhananov, Senior Instructional Designer/E-Learning Consultant, Adjunct Faculty, College of Advancing and Professional Studies, University of Massachusetts Boston.

National Conferences

1) **National Conference on Understanding the Mechanism and Challenges of Complex Diseases**, held from December 29 to 30, 2014.

Some of the eminent scientists and medical professionals who delivered the lectures are:

- Dr. Anoop Mishra, Director, Fortis Diabetes Centre
- Dr. Shiv Kumar Sarin, Director, Institute of Liver and Biliary Sciences, Delhi
- Prof. G.P.Talwar, Director, Talwar Foundation
- Prof.K.Natarajan, Director, Dr. B.R. Ambedkar Centre for Biomedical Research, University of Delhi
- Prof. Daman Saluja, Dr. B.R. Ambedkar Centre for Biomedical Research, University of Delhi
- Prof. Vani Brahmachari , Dr. B.R. Ambedkar centre for Biomedical Research, University of Delhi

2) **National Conference on Recent Trends in Instrumentation and Electronics**, held from January 5 to 6, 2015. This conference was supported by IEEE EDS, Delhi Chapter.

The following eminent academicians and people from various industries addressed the gathering:

- Prof. S.S. Aggarwal, Director General, KIIT Group of Colleges.
- Prof. Ajoy Ghatak, Emeritus Professor, IIT Delhi.
- Prof. Sneh Anand, Centre for Biomedical Engineering, IIT Delhi
- Dr. Ashutosh Sharma, Associate Director, Analytical Research, Ranbaxy Research Labs Limited, Gurgaon
- Dr. Somenath Ganguly, Associate Director, Analytical Research, Ranbaxy Research Labs Limited, Gurgaon
- Mr. Ansuman Mahat, Agilent Technologies, Manesar, Haryana
- Mr. Lokesh Mehra, Edupreneur

Eminent scientists who visited various departments are:

Department of Biomedical Sciences

- Dr. Lal ji Singh, Formerly Director, CCMB, Hyderabad
- Dr. Shahid Jameel, ICGEB, New Delhi
- Dr. Madhulika Kabra, AIIMS, New Delhi
- Dr. Smita, Fortis Healthcare, New Delhi
- Dr. Russ Yukhananov, Precison Biotech, USA
- Dr. S Muralidhar, Department of Zoology, University of Delhi
- Dr. Roop Lal, Department of Zoology, University of Delhi
- Prof. S C Lakhotia, BHU, Varanasi
- Dr. Vani Brahmachari, ACBR, University of Delhi
- Dr. I C Verma, Director, Centre for Medical Genetics, Sir Ganga Ram Hospital, New Delhi
- Dr. Jitendra Khurana, Department of Plant Molecular Biology, UDSC, New Delhi
- Dr. Tara Devi S. Ashok, University of Massachusetts, USA
- Dr. Rita Singh, Professor, Zoology Department, University of Delhi
- Dr. Sanjay Kapoor, Department of Plant Molecular Biology, UDSC, New Delhi
- Dr. Pradeep Srivastava, Deputy Director, CDRI, Lucknow
- Dr. SPS Khanuja, Formerly Director, CIMAP, Lucknow
- Professor. Natrajan, Director, ACBR, DU, New Delhi
- Dr. Satayjit Rath, Scientist, NII, New Delhi
- Dr. Daman Saluja, Scientist, ACBR, New Delhi
- Dr. Anil Aggarwal, MAMC, New Delhi
- Dr. A C Banerjea, NII, New Delhi
- Dr. Sameer Bakhshi, AIIMS, New Delhi
- Dr. Mohd. Samim, Jamia Hamdard, New Delhi
- Dr. S V Eswaran, University of Delhi.
- Dr. Debasis Dash, IGIB (Institute of Genomics and Integrated Biology), New Delhi

Department of Electronics

- Dr. Sanjeev K. Kaushal, VP for Corporate Technology and Business Development at Tokyo Electron Limited (TEL), Minato, Tokoyo, Japan.
- Prof. Dr. Dr-ing Wolfgang Freude, (Extraordinary) Professor, Institute of Photonics and Quantum Electronics, Karlsruhe Institute of Technology, Karlsruhe, Germany.
- Mr. Rakesh Bhatnagar, Retd. ADGE Doordarshan, New Delhi.
- Prof. Ajoy K. Ghatak, Professor Emeritus, Physics Department of Indian Institute of Technology, New Delhi.
- Prof. Enakshi Khullar Sharma, Head and Professor, Department of Electronics Science, University of Delhi, South Campus, New Delhi.
- Prof D. S. Mehta, Professor, Department of Physics, Indian Institute of Technology, New Delhi.
- Dr. J. V. Chaudhary, Joint Director DRDO, Delhi
- Dr. Vikas Sahni**,** University of Ireland

Department of Computer Science

- Dr. R. K. Singh, Associate Professor & Head (IT Services)
- Mr. Nitin Rastogi**,** Project Manager, CSE Noida
- Dr. Saibal K Pal**,** Research Scientist,DRDO
- Dr. Vasudha Bhatnagar, Head, Deptt of Comp Sc, University of Delhi
- Mr. P.K. Hazra, Head, Deptt of Comp Sc, University of Delhi
- Dr. A. K. Garg, Additional Director,Innovation & IPR, Deity, Ministry of IT
- Ms. Subhasini Saxena, Associate Project Manager, Nucleus Software
- Mr. V. Ravindra Nath, Engg. Assistant AIR,Prasar Bharti
- Mr. Mukesh Jain, Entrepreneur,Founder-ST Websoft
- Ms. Bindu Batra, Sapient Consulting Limited
- Mr. Aditya Pancholi, Assistant Professor, Deptt. of Comp. Sc., DU
- Mr. Amit Bhardwaj, Software Developer,Leewayhertz Technologies
- Mr. Ankit Singhal, Senior Member Technical Staff, AGNITY Inc.

Department of Instrumentation

- Prof. P. K. Bhatnagar, Former Head, Department of Electronic Science, Delhi University
- Dr. Saleem Javed, Associate Professor, Jamia Hamdard University
- Ms. Sangeeta Mehta, Senior Analyst, Agilent Technologies India Pvt. Ltd.
- Dr. Deeksha Katyal, Associate Professor, USEM, Guru Gobind Singh Indraprastha University
- Dr. Kusum Lata, Program officer, UNFCCC, Germany
- Ms. Preeti Dhingra Thakkar, Neuroelectrophysiologist, G. B. Pant Hospital
- Prof. D.T. Sahani , Instrument design and development center, IIT
- Prof. Sneh Anand, IIT-Delhi
- Dr. Vinod Sharma, Consultant Cardiologist , National Heart Institute, Delhi
- Dr. Chandrashekher, Assistant Director, Analytical Divison, Ranbaxy Laboratory
- Dr. M.K. Ganesh, Medical Physicist , AIIMS Delhi
- Colonel Tripathi, Head of NMR division, Institute of Nuclear Medicine and Allied Sciences Delhi
- Mr. RK Vishwanathan, Manger Instrumentation, Ranbaxy Research Laboratories. .
- Dr. Dilip Chenoy, Sr. Director, Confederation of Indian Industries
- Mr. S. A. Kumar, Additional Director, Minister of Information and Technology, Govt. of India
- Mr. R. S. Maini, Principal System Analyst, Internet Division, National Informatics Center, Govt. of India
- Mr. Umesh Gulla, Lecturer, School of management studies, IP University
- Mr. Vivek Mehrotra, Consultant Paediatrician, Sir Ganga Ram Hospital, Delhi.
- Mr. R. K. Aggarwal, L&T (Medical equipment section)
- Prof. Amrik Singh, Former V.C., Patiala University
- Prof. S. S. Islam, Jamia Milia Islamia, Delhi
- Dr. Suresh Chandra, DRDO.

Department of Food Technology

- Prof. Deepak Pental, Vice-Chancellor, University of Delhi.
- Mr. Daniel, Mr. C. 19:1Gefain Assistant Country Director , Dr. Nirupa Sen, Safety Coordinator, U.S. Food and Drug Administration(FDA)
- Ms. Parina Garg Deputy Manager, NPD, GSK Consumer health care.
- Mr. Shaminder Pal Singh R&D and Scientific and Regularity Affair Pepsico India.
- Ms. Anita Makhijani, Assistant technical adviser ministry of Woman and Child.
- Director, Assocom Institute of Bakery Technology and Management (AIBTM).
- Ms. Renu Kohli Vice President Nutrition and Health Policy PepsiCo India.
- Mr. Anand Gulati Training and Development manager,
- Dr. Sujata Pandit head R&D FRAC Speakers:
- Dr. S Dave, Chairperson , Codex Alimentarius Commission
- Dr. Anil Jauhri, CEO , National Accreditation Board for Certification Bodies, Quality Council Of India
- Dr. John T. Sproul, Assistant Director (Foods)US Embassy, New Delhi
- Ms. Seema Shukla, Assistant Director, Export Inspection Council of India
- Mr. Pramod Siwach, Assistant Director, Export Inspection Council of India
- Mr. Anand Kishore, Consultant (Technical), Export Inspection Council of India
- Ms. Praveen Gangahar, Consultant (Food Safety)
- K.L. Radhakrishnan, Former M.D., Modern Food Industries (I) Ltd.) and Chief Editor, Indian Food Packer, AIFPA
- Dr. Ruchi Srivastava, Consultant (Food Technology)
- Dr. Arvind Kumar, Vice-Chancellor, RLBC Agricultural University
- Dr. Neeraj Sharma, Agricultural Economist and Consultant (Food and Agriculture)

Library

- Dr. Andrea Harckova, Research Assistant, University of Comenius, Bratislava, Slovakia
- Ms. Sybille Deselaer, Chief Librarian, MaxmullarBhawan, New Delhi.
- Dr. Shailendra Kumar, Head of TheDepartment, University of Delhi, Delhi
- Dr. AnjanaChattapadhya, Director General, Delhi Public Library, Delhi

- Dr. P.R. Goswami, Director Library, Indira Gandhi National Center for Arts, Delhi.
- Dr. GulabJha, Regional Director, IGNOU Regional Center-1, Delhi
- Dr. Hema Pant, Regional Director, IGNOU Regional Center, Delhi
- Dr. ParamjeetKaurWalia, Former Head of the Department, Department of Library and Information Sciences, University of Delhi, Delhi
- Dr. Nareander Kumar, Former Librarian , IIT Delhi
- Dr. Santanu Ganguly, Fellow, TERI, Delhi

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
b) Internship/ on-the-job training
c) Summer placement
d) Faculty exchange and professional development
e) Research
f) Consultancy
g) Extension
h) Publication
i) Student Placement
j) Twinning programmes
k) Introduction of new courses
l) Student exchange
m) Any other

None

3.7.6 Detail on the systemic efforts of the institution in planning, establishing and implementing the initiatives of the linkages/ collaborations.

N.A.

CRITERION IV: INFRASTUCTURE 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 policy of the Institution is to plan in advance and take necessary steps as and when given an opportunity.

For instance, we designed developmental plans for our newly constructed building wherein the College shifted in 2012 keeping in view OBC expansion. The college procured new equipment in view of the revision of syllabi and got updated its laboratories.

The college provides air-conditioned labs through VRF system so that the efficiency is not affected due to extreme weather conditions. The college has two generators of 250 KVA each and one of 160 KVA to ensure uninterrupted power supply for smooth functioning of practical classes. The college campus is disabled friendly with appropriate ramps and toilets.

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 research etc.

The college has the following facilities for curricular and co-curricular activities:

- 17 lecture rooms, 3 air-conditioned seminar rooms with LCD projectors fitted in them.
- An air-conditioned Committee room.
- An air-conditioned conference hall with fitted with audio- visual aids.
- 04 labs for Department of Biomedical Science.
- 08 labs for Department of Electronics department including one research lab.
- 05 labs for Department of Computer Science.
- 01 lab for Department of Mathematics.

- 2 labs for Department of Chemistry.
- 01 lab for Department of Biochemistry.
- 6 labs for Department of Food Technology and 02 Pilot plants.
- 5 labs for Department of Instrumentation.
- 02 Labs for Department of Physics.
- 02 labs for Department of Biology.
- 3 floored Library with 80 computers.
- One gymnasium, girls common room and a cafeteria
- A botanical garden.

The campus is Wi-Fi enabled and each user has been provided with user Id and password. The major equipments in the laboratories are:

DETAILS OF MAJOR EQUIPMENTS AVAILABLE WITH ALL DEPARTMENTS

Department: Biomedical Science

The department of Biomedical Science has four well equipped state of the art laboratories. There are many sophisticated instruments which the department employs on a day- to- day basis for teaching various practical and experiments to its pupils such as high speed refrigerated centrifuges, PCR machine, ELISA reader, Students Bio-Pac, microtomes, horizontal and vertical gel assemblies with power packs etc. are some of the highlights along with the routine instruments like the microscopes, refrigerators, microwave ovens, heat blocks, water baths, etc.

Department: Computer Sciences

The departmnet of Computer Science has 4 Well equipped ICT enabled labs with about 150 computers with latest computer configuration: Intel corei7 – 3.4 GHz processors with 4 GB RAM, 64 bit operating System, 3 High-end HP servers, a good combination of licensed software and free/open source software to enrich student practical experience, 4 color laser printer, 20 laser printers and 10 scanners. In addition, the lab also has legal applicaton softwares such as Oracle 10 g, Visual Studio 2008, Adobe Pagemaker 7.02, 3D Magix, Smart Draw 2010, Video

Studio Express, Acrobat Professional ver.8 WIN AOO License, Adobe Photoshop CS4 11 WIN AOO License and Adobe Dreamweaver CS4 10 WIN AOO License.

Department: Electronics

The department has fully equipped seven laboratories and a research center. The simulation labs have the latest open source and proprietary softwares to train students in the fields of embedded systems, robotics and micro-controllers. The department has about 40 systems and a high end server for circuit simulation and microcontroller programming. There is a digital and Microprocessor lab with 8086 kits and supported accessories. Department has 8051 and Atmega kits. The Analog and communication lab is fully equipped with DSO, Multimeters, function generators and communication trainer kits. These equipments are needed for conducting praticals listed in the curriculum.

In addition to this, department has newly established robotics laboratory with ATMEGA 2560 microcontroller based research platform. It also has raspberry pi, other ardino boards with gripper and sensor accessories so that students can design new robots and their applications. There are five Spartan 3E FPGA research platforms to encourage students experiment and design various digital and analog embedded systems.

Department: Food Technology

The department has 7 Laboratories namely analytical laboratory I, analytical laboratory II, food microbiology laboratory with culture lab, instrumentation laboratory, food & nutrition laboratory, food engineering laboratory, sensory laboratory and two pilot plants. Major equipments in the department are dehydrator, moisture balance infrared, refractometer hand, penetrometer, abbe refractometer, refractometer hand, conductivity meter, orsetappratus, polarimeter, bomb calorimeter, vacuum rotary evoporator, seamer, reformer, hand flangeer, sealer, brookfield viscometer, tintometer, digital thermometer, shaker incubator, microscope HB, microscope KH, colony counter, moisture balance, deep freezer, pH meter, refractometer digital, vortex shaker, vacuum filling machine, planetary mixer, chromatography chamber, fludized bed freezer, incubator, corcking machine, kjeltec nitrogen analyser, soxhtec solvent extraction unit, spectrophotometer, commercial

refrigerator, fume hood, vacuum packaging machine, crude fibre estimation assembly, viscometer.

Department : Instrumentation

- Department is well equipped with analytical instrumentation, biomedical instrumentation, electronic instrumentation and industrial instrumentation laboratories
- Analytical instrumentation laboratory is well equipped with sophisticated instruments like HPLC, GC, FTIR, UV-Vis spectrophotometer, autotitrator, colorimeter, flame photometer etc. which is not available in any other college of University of Delhi.
- Biomedical instrumentation laboratory is equipped with instruments like blood cell counter, ultrasound machine, ELISA reader, BIOPAC students Kit for ECG, EEG, pulse rate, respiration rate measurement, BP Machines, glucometer,
- Electronic instrumentation laboratory has instruments like series and parallel DC motors, induction motors, digital storage oscilloscopes, cathode ray oscilloscopes.
- Industrial instrumentation lab has instruments namely ratio control measurement, level measurement, orifice meter, DC calibration machine, thermocouple, circular chart recorder, RTD kit, ultrasonic flow meter, dead weight tester, electromagnetic flow meter etc.

Department: Biochemistry

The Lab is well equipped with various basic and sophisticated equipments which enable students to carry out various experiments listed in the curriculum. The equipments can be used for designing advanced experiments as well. Some of the major equipments available in the lab are tissue grinder, spectrophotometer model-110d, fraction collector, single pan balance, vortex shaker, magnetic stirrer with hot plate, chromatography chamber, vaccum pump, TLC kit with applicator, magnetic stirrer, horizontal electrophoresis(mini), sartorius electronic balance, chromatography chamber, vertical electrophoreses, transfer pette 20-100ul, ultra violet lamp, visible spectrophotometer, microscope (pzm-20), UV-spectrophotometer.

Department : Biology

The biology laboratories are well equipped with instruments such as biochemistry analyzer, high speed centrifuge, autoclave, various heating systems, tissue culture trollies, magnetic stirrer, microscopes, electronic balance, pH meter, water heater, spin win centrifuge, PCR machine, tissue flotation bath, microtome, vortex, electrophoretic apparatus and orbital shaker. The department also has tissue culture facility.

Department : Chemistry

The Chemistry laboratories are well equipped with instruments such as analytical balance, electronic analytical balance , single pan balance, electric bunsen, hot air oven, distillation apparatus, chromatography chamber, horizontal electrophoresis, gradient marker, quartz distillation apparatus, digital melting point apparatus, rotary vacuum pump and fuming hood.

Department : Mathematics

The department has 20 computers with latest configuration, one high end HP server and one printer. The systems are installed with mathematical and statistical softwares to assist statistical, numerical and scientific computation and programming such as SPSS, scilab, mathematica, octave and matlab**.**

Department : Physics

The Physics laboratories are well equipped with instruments such as function generators, digital multimeters, CROs, hall effect apparatus, bartons apparatus, Lee Charlton apparatus, polarimeter, spectrometer, optical bench, and searles apparatus to name a few.

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.

College has sufficient space for sports and extra-curricular activities:

- There is a spacious playground for all outdoor games including cricket, football, badminton and athletics. There is a mini-gymnasium.
- For extra-curricular activities there is a multi-purpose room which is used for dance practice and choreography. The same room is used for organizing yoga classes and any other activity requiring the use of floor. There is an assigned space dedicated space in the basement for the practice of dramatics.
- College has an open air theatre with capacity of over 500 students and an air-conditioned auditorium with state of art facilities for 531 people.
- The students are provided help for street play and dance by hiring services of professionals in these fields.
- College has started NSS from year 2015. As of now, about 75 students are enrolled for NSS, they conduct various common extension activities like teaching in slum area, creativity awareness for cleaniness drive, etc.
- Soft skill workshops are organized as and when required for students.

4.1.3 How does the institution plan and ensure that the available infrastructure is in line with its academic growth and is optimally utilized? Give specific examples of the facilities developed/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).

The college shifted to the new building in year 2012. In last two decades the college has been expanding the infrastructure and creating facilities as per the need of its academic growth.

The open air theatre, seminar rooms, auditorium are used by all the departments for organizing their activities.

All students use the computer laboratories/computer centre for accessing internet and providing uninterrupted power supply was essential for optimal use of all the equipment. Hence, a full power back-up has been ensured through a generator sets, in addition to the UPS in each lab.

As per the needs of the time the entire campus has been made Wi-Fi enabled and all the computers of the college are networked with a common server through optical fiber link which in turn is connected to Delhi University server through optical fibers.

The following infrastructure facilities have been created in the last four years:-

S.No.	Name of Building	Type of Structure	Plinth Area(Sqm.)
1	Administrative Block	Framed structure (G+2)	3008.47
2	Academic Block	Framed structure (Basement+G+3)	12706.94
3	Hostel Block	Framed structure (Stilt+G+3)	2563.28+640.82(stilt)
4	Staff Quarters	Framed structure (Stilt+G+3)	506.80+126.70(stilt)
5	Principal residence	Framed structure (G+1)	191.46
6	Electric Substation	Semi permanent (G+0)	249.75

- The new building has state of art facilities.
- WI-FI facility has been provided in the whole campus.
- Power back up has also been made available in all blocks including hostel.
- The college library has been the first in the region to be RFID enabled.
- Necessary infrastructure has been created in laboratories to have optimum utilization. Auditorium, conference rooms, seminar rooms etc. have all been equipped with ultra modern facilities.
- The college has ramps and toilets for differently-able students.

The amount spent on development of various infrastructure facilities during the last four years is given below:

S.No.	Items	2010-11	2011-12	2012-13	2013-14
1	Furniture/Equipments/IT/Books etc.	5844837	5246949	12764549	18711776
	Total	**5844837**	**5246949**	**12764549**	**18711776**

Initially for construction of building an amount of Rs. 40,22,00,000 was sanctioned to PWD vide letter no. DHE-14(2)/CB/2007-08/9319-30 dated 15th October 2007 by Govt. of NCT of Delhi. Additionally an amount of Rs. 11.88 crores was sanctioned to PWD for supplementary civil and electrical works for ancillary functional requirements of the college vide letter no. DHE-14(2)/CB/2007-08/Vol.I/3211-24 dated 3rd January 2012.

4.1.4 How does the institution ensure that the infrastructure facilities meet the requirements of students with physical disabilities?

The college is sensitive about the requirements of the students with physical disabilities. Ramps and toilets have been constructed for the orthopedically challenged and signages have been displayed.

4.1.5 Give details on the residential facility and various provisions available within them:

- **Hostel Facility – Accommodation available.**
- **Recreational facilities, gymnasium, yoga center, etc.**
- **Computer facility including access to internet in hostel**
- **Facilities for medical emergencies:**
- **Library facility in the hostels:**
- **Internet and Wi-Fi facility**
- **Recreational facility-common room with audio-visual equipments**
- **Available residential facility for the staff and occupancy**
- **Constant supply of safe drinking water**
- **Security**

- Hostel facility has been made available for 107 students and all the rooms are occupied.
- Recreational facilities like mess, cable tv, and guest room etc. have been made available.
- Computer facility has been made available in the office room of warden.
- For medical emergencies, first aid room and doctor on call have been arranged.
- Internet and WI-FI facility is being made available to the students. Quotations have been invited and very soon the facility should be made available.
- A common room with television and cable connection has been created.
- Residential facility for four faculty members has been created (including warden). Three of these have been occupied.
- There is constant and enough supply of safe drinking water.
- Requisite securities including women security, guards have been provided.

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?

Off-campus: Health provision for staff includes reimbursement of hospitalization and treatment expenses from authorized medical attendant of DU panel.

On campus: membership of WUS is available to staff and students. Further, within college premises, there is provision of first-aid and the college also provides medical facility through medical doctor on call in case of medical emergency.

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, Counselling and Career Guidance, Placement Unit, Health Centre, Canteen, recreational spaces for staff and students, safe drinking water facility, auditorium, etc.

College has common facilities such as staff room for teachers, girl's common room for students, safe drinking water facility at three places for students and one for teachers in staff room. The college also has a spacious canteen with extension in the open area. There is enough space for special units like IQAC, grievance redrassal unit, women development cell, counseling and

career guidance cell, placement cell but presently for above cells/units and committee meetings, a common committee room is being used for holding meetings.

4.2 Library Resource Center

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, the Library has an advisory committee consisting of teacher in-charge of all departments as its member.

Significant initiatives taken up by the advisory committee are:

- Library hours have extended up to 7.00 p.m. before the examination.
- The book bank initiative has been taken by the committee, which is under process.
- In order to prevent the theft and damaged to library books, the library committee has recommended installation of CCTV cameras in every corner of the library, which is partially done.
- Easy return of books and self-circulation is also recommended by the committee, which is already implemented in the library through RFID technology.
- Easy stock staking has also recommended by the committee, which has been implemented in the library through portable RFID scanner.
- Automated book identification also recommended by the committee, which is also implemented in the library, any book can be traced through the identification device.

4.2.2 Provide details of the following:

Detail of the library:-

S. No.		
1.	**Total Area of the library (in Sq. Mts.)**	585.80 sq. mtr.
2.	**Total Seating Capacity**	221
3.	**Working hours** **on Working days (Monday to Saturday),** **during examination days**	 9.00 a.m. to 5.30 p.m. 9.00 a.m. to 7.00.p.m.

4.2.3 How does the library ensure purchase and use of current titles, print and e-journals and other reading material? Specify the amount spent on procuring new books, journals and e-resources during the last four years.

The library ensures the availability of current titles by consulting publisher's catalogue, book reviews and publishers websites. A sub–committee is formed for purchasing general books. The new arrival are duly notified and prominently displayed. The amounts spent in the last four years under different heads are follows:-

Library holdings	2009-2010		2010-2011	
	Number	Total Cost (Rs.)	Number	Total Cost (Rs.)
Text Books	314	324597.00	1365	1374251.00
Reference Books	2	138195.88	6	121354.72

Library holdings	2011-2012		2012-2013	
	Number	Total Cost (Rs.)	Number	Total Cost (Rs.)
Text Books	1397	1224237.00	942	1245890.00
Reference Books	9	767140.00	16	970623.40

Library holdings	2013-2014	
	Number	Total Cost (Rs.)
Text Books	1468	836866.00
Reference Books	Nil	Nil

Library holdings	2009-2010		2010-2011	
	Number	Total Cost (Rs.)	Number	Total Cost (Rs.)
Journals/ Periodicals	11	56275.00	9	29839.00
Magazine	18	11227.00	18	13168.00
e-resources	40241 (UGC INFONET & DULS)	-	41106 (UGC INFONET & DULS)	-
Newspapers	9	11890.00	9	13152.00

Library holdings	2011-2012		2012-2013	
	Number	Total Cost (Rs.)	Number	Total Cost (Rs.)
Journals/ Periodicals	10	72082.00	9	5690.00
Magazine	18	14629.00	18	15914.00
e-resources	43270 (UGC INFONET & DULS)	-	43270 (UGC INFONET & DULS)	-
Newspapers	9	114469.50	9	17763.00

Library holdings	2013-2014	
	Number	Total Cost (Rs.)
Journals/ Periodicals	4	40762.00
Magazine	19	20590.00
e-resources	43270 (UGC INFONET & DULS)	-
Newspapers	10	23064.50

4.2.4 Provide details on the ICT and other tools deployed to provide maximum access to the library collection?

OPAC	Yes (Any computer in the campus) web OPAC in process.
Electronic Resource Management package for e-journals	Online research databases navigation tools (in-house developed software) and DULS http://crl.du.ac.in/atozn/index.php is available in the library.
Federated searching tools to search articles in multiple databases	As provided by UGC-INFONET & DULS i.e. JCCC and KNIMBUS
Library Website	Webpage linked with college website.
In-house/remote access to e-publications	Yes, through campus wide Wi-Fi connectivity as well as LAN connectivity.
Library Automation	Yes: Library Uses Capslib from 1999, Liberty & Sanelib has introduced in 2014 with RFID application.
Total number of computers for students access	66
Total numbers of printers for students access	3
Internet bandwidth/speed	95-100 Mbps
Institutional Repository	Yes, All the new product development, project report, question paper & syllabus has been digitized and connected with retrieval software.
Content management system for e-learning	Integrated with library automation software.
Participation in Resource sharing networks/consortia (like Inflibnet)	Yes, INFLIBNET & DULS

4.2.5 Provide details on the following items.

Average number of walk-ins	Approx. 300-400
Average number of books issued/returned	Approx. 86 per day
Ratio of library books to students enrolled	22
Average Number of books added during last three years	1277
Average number of login to opac (OPAC)	50-60
Average number of login to e-resources	Approx. 400 -425 per day.
Average number of e-resources downloaded/printed	5000 pages per year – 25 per day.
Number of information literacy trainings organized	Several. Movies on different tutorials have also been recorded for quick understanding the accessibility of e-resources. This is continuous demonstrating almost eight hours per day.
Details of "weeding out" of books and other materials	No. of Book weeded out in the respective years: 1989 to 1994=36 1995 to 1996=20 1996 to 1997=14 1997 to 1998=11 1998 to 1999=08 1999 to 2000=09 2000 to 2001=05 The rest of the untraceable books from the 2002 onward are in the process of weeding-out.

4.2.6 Give details of the specialized services provided by the library.

Manuscripts	Nil
Reference	Service provided to the faculty, students and staff. Short range and long range both.
Reprography	Yes, photocopy, video recording etc
ILL (Inter Library Loan Service)	Yes. In specific requirement the books from the DULS is taken as a loan.
Information deployment and notification (Information Deployment and Notification)	New arrival through e-mail, library software and notice.
Download	Yes
Printing	Yes, 25 per day
Reading list/Bibliography compilation	Depending on the specific requirement of the users. The bibliography can be taken out in different criteria.
In-house/remote access to e-resources	YES, access to DULS & UGC-INFONET e-resources is available through intranet.
User Orientation and awareness	Several, on demand, as well as first year first day of the college library, through class teaching. Movies on different tutorials have also been recorded for quick understanding the accessibility of e-resources. They are demonstrated almost eight hours per day.
Assistance in searching Databases	Yes, trained manpower has been appointed, who are specialized in online database searching. Beside this the library created movies on *How to search Databases*.
INFLIBNET/IUC facilities	UGC-INFONET service of INFLIBNET and DULS are availed by the library through fiber optic connectivity.

4.2.7 Enumerate on the support provided by the Library staff to the students and teachers of the college.

- **To help in locating books, periodicals etc.**

  Yes, portable RFID detector is used for detaching of books, besides this the library is Dewey decimal classification based library which is very helpful for locating books and Journals. *May I help you* corner of the library is helping the reader to locate the books and periodicals.

- **Printing,/ Scanning, Database Search and Downloading**

  Yes, the printing and scanning of documents, database search and downloading done by the library users. The facilities are extended to the library users.

- **Reference Service**

  Service provided to the faculty, students and staff. Short range and long range both.

- **New Arrival**

  Information for the new arrival is informed by the library through e-mail, library software and notice.

- **Bibliography**

  The library databases are designed in a manner keeping in view the specific requirement of the user. The bibliography can be taken out on the basis of different criteria. The said bibliography can be disseminating in printed form as well as electronic form.

- **News E-mail Alert.**

  The e-mail alert service is ad-on feature of the current software, which intimate borrower the issue of books , due date, due date alert and return of the books, besides this library has facility of SMS service which help users to get instant information as cited above.

4.2.8 What are the special facilities offered by the library to the visually/physically challenged persons? Give details.

- **Audio CDs and Braille books for visually challenged**

  The audio CDs, Books are available with the library, besides this library has three brail computers with updated software.

- **Reference Service**

  The reference service for the Braille is available in the library, there are different CDs available, and these CDs can be used in the DVD/ CD player with integrated high quality microphone.

4.2.9 Does the library get the feedback from its users? If yes, how is it analyzed and used for improving the library services. (What strategies are deployed by the Library to collect feedback from users? How is the feedback analyzed and used for further improvement of the library services?)

There is no formal method for feedback. However, feedback is taken informally through interaction with students at the time of return of books, while passing out at the time of clearance and indirectly through suggestion box.

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 292 Desktop PCs; 286 Laptops, 04 Servers and software as per details given below:

Softwares:

IBM SPSS PASW 18

Maple 13 AE*

Sigma XL AE*

MCafee Internet Security*

Office Prof. 2007*

Minitab Single User*

Lingo AE Single User*

Adobe Pagemaker 7.02

Windows 7 Professional

3d Magix

Smart Draw 2010

Video Studio Express

Acrobat Professional Ver 8 WIN Aoo

Adobe Photoshop CS 4.11 WIN Aoo

Adobe Dreamweaver CS 4 WIN

Mcafee Internet Security (15)*

Smart Draw 2009*

Office Prof. 2007

Visual Studio 2008

Windows Vista*

MS Office (5 user) & Professional Plus kit*

MS Visual Sudiio Professional 2005*

Fortran Compiler 9.1*

Symantec Antivirus (25 users) and media kit*

Borland Turbo C++*

Oracle 10 (15 user)

MS Office 2007

Mathematica (V 5.0)*

Windows XP Professional*

Windows XP Office Prof*

Electronic Workbench

HPLC software

Oracle Workgroup Server*

Developer 2000*

Windows NT 4.0 Server*

Windows NT 4.0 Workstation*

Novell Intra Netware 4.11 (25 users)

MS Office 97

Lotus Smartsuit 97

Dr. Solomon antivirus Toolkit

MS Visual C++

Turbo c++

Enclyclopedia of Science

Electronic Workbench Ver 3.0

Lotus Smartsuite

Wordstar V 7.0

SCO Unix V 4.2 (16 user)

Lotus Improv*

MS Dos 6*

Dbase IV*

MS Windows 3.1

Antivirus

MS Fortran

Word Perfect

Lotus 1-2-3 Rel 3.1

Dbase IV+

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.

IT Infrastructure

The college is a part of Railtel Corporation's fibre optic network through University of Delhi with Internet speed of 100 Mbps.

- ISP – Railtel Corporation Ltd. (Govt. Of India Enterprise)
- Servers - 4 (Admin Block- Server Room)
- 2 Acer Server – AR380 F1
- Hardware- Intel ® XEON ® CPU E5620 @ 2.40 GHZ , 8 GB RAM,64-Bit,
- Software- Windows 2008 R2 Enterprise Server
- 1 HCL Server –Hardware Intel ® Xeon ® CPU E31330 @ 3.10 Ghz , RAM-16 GB, 64 Bit
- Software- Windows Server 2012 Standard
- 1 Acer Server- Hardware - Intel ® Core ™ i7-3770 CPU @ 3.40 GHz
- Software- Windows Server 2012 Standard.

Desktops – 292

DEPARTMENTS	
Library	
80 Acer Desktops	Hardware Configuration-AMD Phenom ™ II X4810 Processor 2.60 Ghz, 2 GB RAM , 32 bit Software Installed - Win-7, MS Office 7, Adobe, Symantec Antivirus
4 Acer Veritron Desktops	Intel ® Core ™ I 7 3770 CPU @ 3.40 Ghz, RAM 4 GB, 64 Bit
1 Dell All-in-one	8 GB RAM Intel Core I 7 -2600 3.4 Ghz, Quad Core 1 TB HDD
1 HCL	Intel Core 2 Duo CPU E 7400 @2.80 Ghz,2 GB RAM, 32 Bit
1 HP	Intel Core 2 Duo CPU Q9550 @2.83 Ghz, 4 GB RAM 32 Bit,Win 8 Pro
Electronics Lab	
Desktops-46	Manufacturer – DELL Model No. 0000J3 Hardware- RAM – 4GB, Operating System – 64 bit Software- Adobe Acrobat 9 Pro, McAfee Security Center, Microsoft Office Professional Plus 2007, Windows 7 Professional

Computer Science Department	
Desktops – 159	**DELL** Hardware configuration: Intel core Quad CPU, 2.83 GHz, 4 GB RAM,64-bit operating system Software- McAfee Security Center, Microsoft Office Professional Plus 2007, Windows 7 Professional **ACER** Hardware configuration: Intel core Quad CPU, 3.4 GHz, 4 GB RAM,64-bit operating system Software- McAfee Security Center, Microsoft Office Professional Plus 2007, Windows 7 Professional
Software	Windows 7 , Windows XP, MS Office Professional, Oracle 10 g , Visual Studio 2008, Adobe Pagemaker 7.02, Windows 7 Profesional 3D Magix, Smart Draw 2010, Video Studio Express, Acrobat Professional Ver.8 WIN A00 License, Adobe Dreamweaver CS4 10 WIN AOO License, IBM SPSS PASW 18
4 Servers	HPML 350 G8 Tower Model

LAPTOPS -286

HP Laptops - 272	Model- HP Probook -445- G1 Hardware Configuration – Processor AMD A6 -5350 M APU with Radeon™ Graphics X2, 64 Bit, RAM-8 GB Software Configuration – Ubuntu 12.04 LTS
Library – 3	Lenovo – AMDE1 100 APW with Radeon ™ HD Graphics 1.40 GHz,4 GB RAM, 32 Bit Operating System Software-MS Windows 7 Professional, MS Office 2007
Food Tech – 1	DELL LATITUDE Configuration – ® core ™ 2 Duo CPU T7250 @ 200 Ghz , 1 GB RAM 32 bit Operating System, Win 7 Ultimate
Computer Sciences – 2	DELL LATITUDE Intel Centrino Dual intel Core 2 D uo ,1.83 Ghz,1 GB

	RAM,80 GB HDD, Windows Vista E6410 laptop – Configuration – Core i7, 4 GB RAM 2.66 GHZ , 250 GB HDD, Windows 7
BMS- 1	HP – Model No –HP Elite Book 6930P Windows vista, Intel ® Core™ 2 Duo CPU T9400 @ 2.53 GHz, RAM-2 GB, 32 bit
Bio Chemistry- 1	HP – Model No –HP Elite Book 6930P Windows vista, Intel ® Core™ 2 Duo CPU T9400 @ 2.53 GHz, RAM-2 GB, 32 bit
Electronics – 5	4 Dell Laptop Dell X18-82081,4 GB ,64 Bit, Windows 7 1 Dell Laptop 39KT5BS,1 GB RAM, 64 Bit OS, Windows 7
Instrumentation -1	HP 1.8 Ghz ,1 GB RAM, 80 GB HDD, Windows Vista

Students and faculty members avail computing & Internet facility within their departmental labs as well as in common facility such as computer labs and e-Libraries.

Every department is a part of centralized LAN besides having their own departmental network. The entire campus is Wi-Fi enabled. Students and faculty have been provided with Wi-Fi authenticated User ID & Password for Internet access through their devices (mobiles, laptops etc.)

The college is a part of NKN‘s fiber optic gigabit network through University of Delhi with present speed of 90-95 Mbps scalable to 1 Gbps.

4.3.3 What are the institutional plans and strategies for deploying and upgrading the IT infrastructure and associated facilities?

Time to time the college upgrades the common IT Infrastructure facilities as well as ICT Infrastructure in the departments as per the need of the curriculum.

In the year 1990, the college was the first one to have insisted on starting with LAN and it 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 center equipped with servers, printers, desktop machines, laptops, LCD projectors, and scanners of latest configuration. The college library as well as administrative

offices is also running automated operations. Every financial year requirement for purchase of new ICT equipments are invited from the all the departments which are reviewed and then sent to Govt. of NCT of Delhi for seeking grants and approval of purchases. The regular upkeep, maintenance, deployment and upgradation work is being carried out independently as well as through personnel of computer center.

4.3.4 Provide details on the provision made in the annual budget for procurement, upgradation, deployment and maintenance of the computers and their accessories in the institution (Year wise for last four years).

Department-wise provisions made in the annual budget for procurement, up-gradation, deployment and maintenance of computers & their accessories in the institution for the last 4 years between 2010 and 2014 is as given below:

S.No.	Year	Department	Proposed Expenditure (in Rs.)
1	**2010-11**		
	I	Office	345000
	Ii	Chemistry	160000
	Iii	Bio-Chemistry	0
	Iv	Electronics	265000
	V	Biology	50000
	Vi	Instrumentation	0
	Vii	Food Technology	215000
	Viii	Physics	0
	Ix	Computer	300000
	X	Mathematics	1000000
	Xi	Library	40000
	Xii	Biomedical Science	80000
		Total	**2455000**

2	**2011-12**		
	I	Office	640000
	Ii	Chemistry	0
	Iii	Bio-Chemistry	0
	Iv	Electronics	3050000
	V	Biology	110000
	Vi	Instrumentation	150000
	Vii	Food Technology	10000
	Viii	Physics	0
	Ix	Computer	6575000
	X	Mathematics	1150000
	Xi	Library	305000
	Xii	Biomedical Science	0
		Total	**11990000**
3	**2012-13**		
	I	Office	225000
	Ii	Chemistry	75000
	Iii	Bio-Chemistry	0
	Iv	Electronics	0
	V	Biology	750000
	Vi	Instrumentation	450000
	Vii	Food Technology	170000
	Viii	Physics	0
	Ix	Computer	2500000
	X	Mathematics	960000
	Xi	Library	45000

	Xii	Biomedical Science	199000
		Total	**5374000**
4	**2013-14**		
	I	Office	360000
	Ii	Chemistry	0
	Iii	Bio-Chemistry	0
	Iv	Electronics	2700000
	V	Biology	0
	Vi	Instrumentation	700000
	Vii	Food Technology	0
	Viii	Physics	150000
	Ix	Computer	6400000
	X	Mathematics	760000
	Xi	Library	90000
	Xii	Biomedical Science	235000
		Total	**11395000**

4.3.5 How does the institution facilitate extensive use of ICT resources including development and use of computer-aided teaching/learning materials by its staff and students?

The institution 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 computer centre and computer hub in the library. These ICT facilities are adequately staffed so as to optimise 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 student and faculty. Teacher are encouraged to use LCD projectors for their lecture in the internet enabled audio-video class rooms. Students also use projectors for their presentations.

Computer aided teaching is imparted using different licensed software packages such on Tally 9.0, Mathematica, MS Visual Studio, Adobe Illustrator CS Version 12.0, Macro Media Director, Macro Media Flash Pro, Adobe PhotoShop CS 2.9.0, MS Project 2010, MS Visio 2010, Adobe CS5 etc.

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 of teaching-learning process and render the role of a facilitator for the teacher.

Learning activities revolve 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, 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.

ICT enabled class-rooms, computer centre, library and library computer hub are the learning spaces through which teachers facilitate student centred learning. Teachers too are encouraged, promoted and facilitated to use ICT equipments. Both faculty & students have been provided with individual Laptops for better teaching-learning process.

4.3.7 Does the Institution avail of 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 Connectivity through the parent University. There are various services that are being availed using NKN backbone namely:

- Delhi university wide area network (WAN)
- College local area network (LAN)
- Access to scholarly content of UGC-Infonet digital library consortium
- Local resource sharing services of Delhi University library system

- Internet services through dedicated fibre optic network presently with 100 Mbps speed scalable till 1 Gbps.
- 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)?

Amount spent on purchase of various items (in Rs.)					
S.No.	**Items**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
1	Furniture/Equipments	1794577.00	3255572.00	10548036.00	7625794.00
2	Books	1495606.00	1991377.00	2216513.00	836916.00
3	IT Items	2554654.00	0	0	10249066.00
	Total	**5844837.00**	**5246949.00**	**12764549.00**	**18711776.00**

Amount spent for Maintenance work (in Rs.)					
S.No.	**Items**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
1	Building Exp.	0.00	0.00	0.00	0.00
2	Lab Exp.	1204319.00	1827718.00	2756371.50	1020543.02
3	Vehicle Repair & Man.	45377.00	81701.00	49394.00	69544.00
4	Vehicle Petrol	85900.00	107750.00	102550.00	102000.00
5	Repair & maintenance-other	214656.00	189097.00	2463408.00	487099.00
	Total	**1550252.00**	**2206266.00**	**5371723.50**	**1679186.02**

***The repair/maintenance work of building is done by the PWD**

4.4.2 What are the institutional mechanisms for maintenance and upkeep of the infrastructure, facilities and equipment of the college?

College building is maintained by Delhi govt. through PWD. College has adequate trained personnel (1 system administrator, 1 scientific assistant, 6 technical assistants, and 12 laboratory assistants) to look after the routine maintenance of equipment, networking and computers. Many of the major equipment like generator sets, 5-10 KVA UPS, RO machine, the EPABX system, and Xerox machines are kept under warranty or 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?

Being a college believing in application of science, a large number of practicals are conducted with many of the sensitive electronic instruments such as digital storage oscilloscope, function generators, microscopes and PC interfaceable multi-meters are calibrated annually from the manufacturer. The other equipment is 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 full power back up and three phase electric supply; voltage stabilizers and on/off Line UPS.

For constant supply of water, college stores water in over head tanks and also has provision for underground water with RO installed.

CRITERION V: STUDENT SUPPORT AND PROGRESSION

5.1 Student Mentoring and Support

All the students of Shaheed Rajguru College of Applied Sciences for Women are mentored by the Principal, respective department heads and teachers during their entire graduation span in the college and even thereafter. Students not only get guidance about their area of specialization, job prospects, summer training/internship, but also about life-skills and social responsibilities. This not only enables them to make right choices about their choices about their career but also grooms their overall personality so that they realize their full potential. This is definitely possible because of guidance they get during their class room teaching, availability of world class facility and psychological mentoring outside the class room. Earnest efforts have been made to ensure that students are trained in such a way that they become capable of achieving their optimum potential.

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?

Every year before admitting the new batch, the admission committee of the college release college prospectus. The prospectus enlists all the information pertaining about the college, courses offered with number of seats allotted to various courses, profile of each major department highlighting their infrastructure, course content; research and innovation work.

The prospectus includes all the rules and regulations governed by the University of Delhi including the discipline in the college. The important dates of admission procedure and instruction of proceeding during the admission process is also incorporated in the prospectus. Fee structure of various courses and information regarding various committees like admission grievance committee, special category admission committee, sexual harassment committee and contact details of public information officer of the college is also mentioned in the prospectus.

All the above details, regular updates, circulars and notices are also made available online at the college web site (www.rajgurucollege.com).

5.1.2 Specify the type, number and amount of institutional scholarships / free ships given to the Students during the last four years and whether the financial aid was available and disbursed on time?

The college is fully funded by the Government of NCT of Delhi. Every year a fee concession committee is being constituted. The information about the fee concession is given in the prospectus of college also. At the time of admission each case or enquiry regarding the fee concession is taken up by the admission committee and referred to the fee concession committee. At the beginning of new academic session in July, notice inviting the students of different courses for availing the fee concession is put on main and departmental notice boards. Each case is being reviewed by the fee concession committee and accordingly granted full or half fee concession. During the last four years following number of students have been given full/half fee concession:

S. No	Year	Amount of fee waived off	
		Full fee concession	Half fee concession
1	2010-2011	5	10
2	2011-2012	13	1
3	2012-2013	18	6
4	2013-2014	17	3

During the current financial year (2014-2015), 14 students received full fee concession, 2 got 75 %, 16 availed 50 % and 5 students received 25 % fee concession.

The committee and administration take adequate measures for the proper and timely disbursement of cheques to the selected students.

One student of department of Food technology received POSCO (Pohang Iron and steel company) scholarship. Students are also encouraged to work in the innovation projects mentored by faculty members. Each student registered for the project is given the stipend of

Rs. 1000/ per month for one year. During 2012-2013 and 2013-2014 total 60 students of different departments were selected for these projects and given the stipend.

5.1.3 What percentage of students receives financial assistance from state government, central Government and other national?

As the college gets its full financial support from Delhi administration, major financial assistance to students has been given by Delhi government. The financial assistance available from other funding authorities has been availed by students as and when they get to know about it. Institute support them by providing necessary documents.

5.1.4 What are the specific support services /facilities available?

Students from SC/ST, OBC and economically weaker sections

The college has unit of the equal opportunity cell of the University for the empowerment of students belonging to SC, ST, and OBC and to give them equal opportunities in higher education as also to encourage them to participate in various activities of the University.

Students with physical disabilities

The infrastructure of the college is disabled friendly with ramps and elevator to facilitate the movements of such students. Special provision is available in hostel to allot room/s at the ground floor. The classmates and faculty of these students extend maximum support. Special quota is followed in the process of admission as per the University of Delhi norms. Special single desk facility is extended with the support of students volunteers during the time of admission for such students. The college is also in the process of making the website of the college accessible to differently abled students. The library of the College has three accessible computers with assistive software.

Overseas student

The college receives applications from the foreign students through University of Delhi. No overseas student has been admitted to the college in last 25 years.

Students to participate in various competitions/National and International

The college inspires students to participate in various national and international events and conferences. Any students attending or presenting paper in conference is supported with

financial assistance through various funding schemes like DBT star college scheme, innovation project grant or departmental grant allocated for such events.

Students participating in various cultural and sports events at national or international level are sponsored and supported by the college. One of our students who has represented at national level in Gymnastics has been extended monetary support and necessary academic help.

Medical assistance to student health centre, health insurance etc.

A full time nurse is available at the hostel medical room to provide first aid. Medical doctor is available on call as and when required and students are taken to nearby hospitals in case of any medical emergencies.

Organizing coaching classes for competitive exams

NA

Skill development (spoken English, computer literacy, etc.,)

Every year college organizes remedial classes in English for students to help them to compete with other class students. Computer training is the integral part of the college curriculum. Apart from this extra time slots are available for students to practice on computers. Trained technical staff is deputed in all the departmental labs where students can practice and solve their problems related to basic and advance learning of computer. In fact our college library has specially designated three rooms with computers exclusively for students.

This year college is running Teach India programme, a Times of India initiative. It is a noble cause to help weak and poor students to enhance their communication skills. College also conducts various workshops on personality development and soft skill improvements

Support for "slow learners"

Slow learners / students who are at risk of failure and dropouts are given due care by the concerned department through tutorial system. Remedial classes are taken for these students after the college hours. Their progress is monitored regularly by the concerned teachers.

Exposures of students to other institution of higher Learning/corporate/business house etc.

All five courses run by the college are industry oriented professional courses hence; students are encouraged to undergo summer and winter internship/training in their respective field in some industry or research organization. Regular interaction sessions have been organized by the eminent speakers from industries and institutions of higher learning. Industrial exposure is provided by routine visits to that organization.

Publication of student magazines

The students of our college have been regularly bringing out the magazines and newsletters. We currently have various magazines from the different departments of our college. *ENIAC* from computer science department is one such magazine. Similarly, biomedical science department brings out its own magazine. This includes achievements from their respective fields, innovations, upcoming sectors and other details from their fields. The students contribute to the magazine through their write-ups and current information.

We also have a common newsletter *Inner Voice* in which all the events held and organized in the college are well highlighted. The college also organizes *The Literary Fest- Eloquentia*, in which a number of competitions have been held which witnesses the participation of a number of students from different colleges. The winning entries in the creative writing competition are published in the annual magazine of our college *Aakriti*, which gives glimpse of the college, its achievements, events, campus, students and contributions from the students. Our college holds active participation in many other competitions and seminars like the one on Thalassemia and anti-ragging, where experts were invited to the college who shared information with us on the respective issues.

5.1.5 Describe the efforts made by the institution to facilitate entrepreneurial skills, among the students and the impact of the efforts.

To inculcate the entrepreneurial skills amongst the students the college EDP cell organizes various skill based courses like bakery, vegetable and fruit preservation etc. Students are also

encouraged to get training in marketing skills by trained professionals. They are encouraged to put up stalls during the college festival and cultural activities.

5.1.6 Enumerate the policies and strategies of the institution which promote participation of students in extracurricular and co-curricular activities such as sports, games, Quiz Competitions, debate and discussions, cultural activities etc.

- **additional academic support, flexibility in examinations**
- **special dietary requirements, sports uniform and materials**
- **any other**

College promotes and supports co-curricular activities among the students. College has made students societies viz. dance, drama, music, literary, fine arts, robotics and environment society. Fund is allocated to each society. Assistance is provided to the society members in the form of resource persons like choreographer, theater director, music teacher etc. Musical instruments like electronic table, tanpura, drums and dresses etc. are also provided for their performances. Each student taking part in any of these ECA competitions or practice sessions have been allotted a log book which maintains the record of their participation. Students are given attendance for the classes they miss due to ECA on the basis of their log book entries dually signed by the society coordinator. Special dates are announced for internal tests and assignments, if they have missed earlier.

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, Defense, Civil Services, etc. NA

5.1.8 What type of counselling services are made available to the students (academic, personal, career, psycho-social etc?)

The college allots a teacher who mentors a group of about 10 students. The teacher is assigned responsibility to provide counseling to students in various aspects. Regular meetings have been organized by the teacher with students. A student can contact her mentor in case of any emergency or some other requirement.

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 college has a career counseling and placement cell. To enable students to search for suitable jobs, the placement cell invites companies for seminars or pre placement talks. The cell also maintains database of their final year students to enable those companies to come for placement. The students register online with the company for off-campus placements under intimation to the convener of placement cell. The cell also organizes seminars and workshops and invites experts from various industries/organizations. This helps students to prepare for interviews and understand various aspects of global market. The following table lists the compiled last four year data for number of students placed through placement cell of university and college:

Year	No. of students enrolled for CPC	No. of Students who received placement offers	% of students selected during placement drive
2010-2011	80	20	25%
2011-2012	87	30	34%
2012-2013	90	35	39%
2013-2014	110	45	40.9%
2014-2015	130	55	42.3%

Following are the companies that visited for placements:

- Igate Patni
- Infosys
- TCS
- Wipro Technologies
- Ranbaxy Laboratories
- HCL Technologies
- GE Capital

- Nestle India
- Cocacola
- Haldirams
- Escort Heart Institute
- Hindustan Liver limited
- Oberoi Chain of Hotels
- National Heart Institute
- Jubiliant Organosys
- Mother Dairy
- Tech Mahindra
- Genpact

5.1.10 Does the institution have student grievance Redressal cell? If yes, list (if any) the Grievances reported and redressed during the list four years.

For the welfare of the students and to address their grievances, a grievance committee is being constituted under the recommendation of University Grants Commission. The cell consists of college Principal, teaching staff of various departments. The students who have grievances (personal, physical and psychological grievances) can meet any member of the cell. The members of the special cell provide proper guidance and help.

5.1.11 What are the institutional provisions for resolving issues pertaining to sexual harassment?

The college has an *internal complaint committee* duly constituted as per the directives of an honourable supreme court of India and University of Delhi. It involves representation of two teachers, two members of non teaching staff, student representatives and two members from the outside the college having experience of working on women issues.

5.1.12 Is there an anti- ragging committee? How many instances (if any) have been reported? During the list four years and what action has been taken on these?

Yes, the college has an anti ragging committee constituted at the beginning of each academic session. Strict rules have been formed by the committee. All new entrants are asked to submit an anti ragging affidavit in the name of student and the parent or the guardian. Name and contact numbers of committee members are available in the college prospectus. Proper

counseling is given to all students and expert's lectures on legal implications of ragging have also been arranged.

No cases of ragging have been reported during the 25 years in the history of the college.

5.1.13 Enumerate the welfare schemes made available to students by the institution.

Various welfare schemes have been made available to the students in following ways:

- The college extends financial help to needy students by giving full or partially fee concession to economically weaker section students.
- The equal opportunity cell takes care of physically challenged students. Special attention is given to such students by the teachers and staff through mentoring.
- Proper counseling is given to slow learners. Special arrangements have been done by arranging remedial classes and language or computer literacy classes for such students.
- The college provides concessional photocopy and canteen / mess facility in the campus to its day boarding and hostel students. The food committee regularly monitors the price and quality of food provided by the canteen.
- The book bank facility is also available for students at department level. The pass out students are encouraged to donate books to the book bank.

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?

Though the college has strong alumni and Alumni meet one regularly held, its registration is in process.

5.2 Student Progression

5.2.1 Provide the percentage of students progressing to higher education or employment (For the last four batches) highlight the trends observes.

Ours is an undergraduate college offering only Bachelor of Science programmes. Hence, we are not in a position to monitor student progression accurately. However, approximately 70% to 90% of the students to pursue post graduation in their respective fields and 10% to 20% are employeed after graduation either through campus selection or off campus recruitment.

5.2.2 Provide details of the programme wise pass percentage and completion rate for the last four Years (course –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 college of the affiliating university within the city/district.

Course	Pass Percentage			
	2008-2011	**2009-2012**	**2010-2013**	**2011-2014**
Biomedical Science	100	100	100	83.33
Computer Science	75	96.29	96.77	90.19
Electronics	60	96.87	78.12	93.94
Food Technology	95.83	96.43	100	93.48
Instrumentation	58.82	100	100	100

5.2.3 How does the institution facilitate student progression to higher level of education and /or towards employment?

The college facilitates the student's progression to higher education by arranging interaction sessions with old students who are either in industry or have gone for higher studies and also speakers from various academic institutions. They have been exposed to their prospective place of employment by arranging industrial visits and encouraging them to undergo internship in various industries and institutes.

5.2.4 Enumerate the special support provided to students who are at risk of failure and drop out?

Slow learners / students who are at risk of failure and dropouts are given due care by the concerned department through tutorial system. Remedial classes are taken for these students after the college hours. Their progress is monitored continuously.

5.3 Student Participation and Activities

5.3.1 List the range of sports, games, cultural and details of participation and program calendar.

At SRCASW we try to maintain equal balance between academics and co-curricular activities. Students participate in various extracurricular activities like sports and cultural programs.

The college organizes sports day where in the students, faculty as well as non teaching staff of the college participate in various games like kho-kho, athletic race, cycling race etc. Other than sports day students use the badminton court on daily basis for playing badminton. The college is in process to have basketball court developed near the hostel area wherein the students from hostel too can indulge in such games.

The college organizes various cultural events like fresher's party on the beginning of the academic session every year and farewell to seniors at the end of the year. The inter college festival called *Karvaan* is organized during mid of either odd semester or even semester. The karvaan is organized on colossal scale wherein there are various cultural competition like solo dance, group dance, group singing, fashion show, dramatics etc. for students to participate.

Each department organizes their own departmental technical fest like World Food Day, Technexus, Plexus, Electromania and Techmelange wherein the students participate in various technical competitions.

Various cultural societies developed in college like dance society, drama society, fashion society, music society regularly participate and win prizes in cultural events happening outside the college.

Every year our students participate and win various prizes in cultural programs like dance, rangoli making and flower shows in the annual cultural festival *Antardwani* organized by University of Delhi.

Special occasions like Rajguru Day, Independence Day, and Founder's day have been celebrated regularly. The hostel students celebrate Holi, Diwali and Janmasthami etc. with lots of cultural programmes.

Every two years the college organizes alumni meet where alumni come to the college and along with teachers and current batch of students participate not only in some technical discussion but also in fun activities like musical chair, tambola, singing, dance etc.

Year 2014 was the silver jubilee year for our college. Series of cultural activities were organized with lot of enthusiasm. The inauguration of college auditorium was done by renowned classical dancer and choreographer Dr. Sonal Mansingh. The founder day of college was also celebrated. The first batch of student's reunion was marked with recollecting the memories associated with college along with the felicitation of founder Principal. The internal bonds of college students and staff with the founder principal were showcased on her retirement with heart touching cultural performances by students, teaching and non teaching staff.

The program calendar in general for a particular session is as follows:

Month (changes as per staff council decision)	Program
July-Aug.	Fresher's party
Aug.	Independence day
Sept.-Oct.	Elections of student council
Oct.	Rajguru day
Nov.- Dec.	Sports day
Dec.- Jan	Alumni meet
Jan.- Feb.	Karvaan (inter college festival)
Jan.- Feb.	Technical fest departmental
Feb.	Antardwanni (University of Delhi cultural fest and flower show)
March-April	Farewell party
May-June	Open day

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.

The students at SRACW participate in various cultural and sports activities throughout the year with great enthusiasm and win prizes and bring laurels to the college.

The details of major achievements of students are given below:

UNIVERSITY LEVEL

Year 2014-2015

- Members of Fashion Society secured First position in Sri Aurobindo College.
- Members of Fashion Society won First Prize in IIIT, Gwalior.
- Members of Fashion Society secured Second Position in Fortune Institute of International Business.
- Members of Fashion Society secured Third Prize in Bhagini Nivedita College.
- Members of Fashion Society secured Best design in IIIT Delhi and IIIT Gwalior.
- Member of Fashion Society secured Best Revlon model in IGDTU.
- Member of Fashion Society secured Best Model in IIIT Delhi and Gwalior.
- Fine art society won Firsst prize in the card making competition at lady Irwin College.
- Members of Drama society won First prize in Antardhwani.
- Members of Drama society won First prize at Laxmi Bai College.
- Members of Drama society won First prize at IIIT Delhi.
- Members of Drama society won Second prize at Delhi school of business.
- Members of Drama society won Second prize at Bhartiya Vidyapeeth University.
- Members of Drama society won Third prize at AMITY UNIVERSITY.
- Members of music society won Third Prize at DDUC for the song Vandae Mataram.
- Taniya Seth and Rupa Rani Members of music society won First Prize for duet singing at Bhim Rao Ambedkar College.

Year 2013-2014

- Members of Drama society won Second prize in VIPS intercollege festival.
- Members of Dance society won Second runner up prize at PGDAV inter college festival.
- Members of Music society won Second prize in inter college festival of karvaan.
- Members of Fashion society won First prize in Sri Aurobindo college and Second prize in fortune institute of international Business

- Ms. Divya Sharma of B.Sc. (H) Comp Sc 2nd year and Ms Jyoti and Ms Anjali B.Sc. (H) BMS won Third prize in annual flower show. Ms. Divya and Ms. Babita of B.Sc. (H) BMS 2nd year received a highly commended award at flower show.

Year 2012-2013

- Members of Dance society won Second runner prize at western dance competition of Miranda House.
- Members of Dance and drama society presented a dance drama *Dasta –e- Damini* in Miranda House which not only bagged Third prize but also was published in Times of India.
- Students of our college participated and won various prizes in different events in Karvaan festival.
- Ms. Deepika Sharma B.Sc (H) Computer Science 3rd year student received First prize and Daulat Ram Trophy for floral display.
- Ms. Divya Sharma B.Sc (H) Computer Science 2nd year student received Second prize in marriage decoration.
- Sangeeta Behura B.Sc. (H) Intrumentation 3rd year student won Third prize in rangoli
- Purnima B.Sc (H) Food technology 3rd year student won Third prize in Rose arrangement.
- Divya singh B.Sc (H) Food technology 3rd year won highly commended prize in Rangoli.

Year 2011-2012

- Students participated and won prizes in various events in intra college festival.
- Music choir of college this year stood Second in cultural festival of LIC and SSCBS.
- Dance society won Second prize in FIB and First prize in Shyam Lal College.

5.3.3 How does the college seek and use date and feedback from its graduates and employers, to improve the performance and quality of the institutional provisions?

The college has a strong alumni well placed in various industries. A feedback from them is taken through invited talks and discussions.

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 has a magazine committee and literary society which invites articles from students. The editorial board having students and teachers publish the selected articles in the college magazine. The students involved in the research are guided and encouraged to write and publish their articles and papers in journals. In the last academic sessions students of computer science brought out magazine *ENIAC*. The college magazine *Aakriti* has been published regularly. The summer and winter internship reports have been submitted by the students and deposited for reference in the college library.

5.3.5 Does the college have a Student Council or any similar body? Give details on its selection, Constitution, activities and funding.

The student council is a group of enthusiastic students working towards the excellence of the college. Alternately council helps students develop their leadership skills.

Yes, SRCASW has a student council elected every year. The council is made through proper election in the college campus.

The Lyngdoh committee rules are followed for the election.

To conduct peaceful and fair elections, the college, its departments initiate a system of student representation based on nominations. College calls up for nomination for various posts. Eligibility Criteria for under graduate students is followed which says the student must be between the ages of 17 and 22 may contest elections. Although, the Lyngdoh Committee refrain from prescribing any particular minimum marks to be attained by the candidate, the candidate should in no event have any academic arrears in the year of contesting the election. The candidate should have attained the minimum percentage of attendance as prescribed by the university or 75% attendance, whichever is higher. Both these rules are properly checked for every candidate filling the nomination. Then out of those selected eligible for elections start their campaigning. During the election campaigning period the candidates hold processions

and meetings keeping in mind that they do not disturb the classes and other academic and co curricular activities of the college. Then on final day elections are conducted with proper ballot boxes and ballot slips with separate rooms allotted to all years. The election is conducted with teachers as the election members. After election counting process initiates, after which student advisor finally discloses the result of the council constituted.

The student council elected comprises of President, Vice president, Treasurer, Cultural Secretary, Joint Secretary and Class Representatives.

The council under the guidance of student advisor and cultural secretary works for college-wide activities, including fresher's party, inter-college festival *Karvaan*, farewell to the senior batch, social events, community projects etc. This year Swatch Bharat Abhiyan was also coordinated by student council. The student council consists of extremely dedicated and dynamic students. The student council gives them a platform to share their ideas, interests, and concerns with teachers and Principal.

The fund for student council is received from student at the time of admission as a part of fees.

5.3.6 Give details of various academic and administrative bodies that have student representatives on them.

Student representatives are part of sexual harassment committee and student feedback committee.

5.3.7 How does the institution network and collaborate with the alumni and former faculty of the Institution.

Since SRCASW is a women college we feel proud using the term **alumna** (feminine, plural **alumnae**) instead of **alumnus** (masculine, plural **alumni**). An **alumnae association** is an association of former students passed out of college. At SRACSW we have strong relation and affinity with our alumnae. Every alternate year, alumnae meet is organized to enable present batch of students to interact with their alumnae. This also keeps alive the bond between teachers and students. There is an alumni organizing committee which works for this event called BLEND. The name of event was kept keeping in mind signifying blending of present and previous batches.

Apart fro the biyearly meet, all the departments keep inviting their alumnae for various lectures and talks thereby continuing the interaction further. Instrumentation department has VYAKHYAN, as a series, where alumnae are called in each semester to interact with faculty as well as students.

A dedicated email-id (blend.rcaps@gmail.com) is used to keep in touch with alumni. Furthermore networking sites like facebook is used where alumnae group is made where all meet at one platform and share views and experiences.

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.?

Vision: To establish the college as a seat of high learning for jobs / entrepreneurial oriented education imbibing strong ethical values with the aim of empowerment and self reliance in young women and to make them enlightened citizens of tomorrow.

The college translates its vision statement through the following steps:

- Orientation programme for the students
- Systematic planning for each semester
- Regular monitoring and evaluation
- Interaction with the community through NSS schemes.
- Encouraging students to participate actively in co-curricular events.
- Endowment
- Scholarships and Freeships
- Preference to the disadvantaged students in admissions (through reservations)

Mission:

- We strive to provide and maintain academic environment for acquiring knowledge and learning to produce competent professionals. We also aim at achieving this through transparent academic and administrative policies in the college. We intend to provide conductive atmosphere for research, development and consultancy services to our faculty at national and international levels.
- To provide specialized training to women in different fields to help them secure suitable employment.

- To train young personnel and make them employable in electronics and communication industry since women constitute a major work force in these industries
- To prepare women in the field of instrumentation so that they are capable of fabricating, operating, installing, maintaining and repairing instruments. They are trained in biomedical/clinical techniques so that they get employed in pharmaceutical industry, hospitals and research institutes.
- To groom women as food technologists, production manager, food microbiologist and quality control executives in various hotels, food processing industries, airlines and restaurants.
- To educate women by giving specialized training in the field of computer science and making them capable of handling hardware as well as software.
- To prepare students to pursue higher education (Master's and Doctoral programmes) or directly enter the job market. The course provides excellent ground work for careers in medical research and entry into academic programmes related to paramedical, health and biotechnology sectors.

6.1.2 What is the role of top management, Principal and Faculty in design and implementation of its quality policy and plans?

The Management i.e, the governing body has ensured improvement in quality of staff by encouraging them to attend seminars, conferences and workshops. The college has provision for professional development fund. Whenever support is not available from government agencies, the governing body provides traveling allowance and registration fees. The governing body has also ensured improvement in infrastructure at all levels by periodic repairs and updating of laboratories and classrooms. At present the college has shifted into a new building and all the classroom furniture and lab furniture has been newly acquired. Governing body has taken into confidence every stakeholder and has given freehand to the faculty in organizing various activities.

6.1.3 what is the involvement of the leadership in ensuring –

- **the policy statements and action plans for fulfilment of the stated mission.**
- **formulation of action plans for all operations and incorporation of the same into the instutional 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 organisational change.**

Whenever a new course is to be started, for which no department exists in the college, the proposal comes to the staff council through academic development committee.

If it is recommended by the staff council the issue is placed before the governing body for approval. Only after their approval of the governing body it is sent to the University and the government for necessary sanctions.

In this manner, involvement of all teachers in making the policy is ensured and its implementation becomes hassle free.

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?

Following are the procedures adopted by the institution to monitor and evaluate policies and plans of the institution for effective implementation improvement from time to time:

- The Governing Body supports the active participation of the faculty and staff in the process of decision-making.
- The policy and plans of the institution are discussed in the departmental meetings with all faculty members.
- Details of activities to be organized, syllabus completion and performance of students in academics and various other activities are discussed periodically and necessary amendments made if required.

- The requirement of equipment for laboratories which needs to be purchased is also reviewed and discussed as per requirement.
- In statutory bodies such as Governing Body, experts from various fields are members and they contribute towards the development of the institution.

6.1.5 Give details of the academic leadership provided to the faculty by the top management?

We have a number of eminent academicians as members in our Governing Body who are ever enthusiastic to share their expertise and pass on the benefits of their exposure and knowledge to the faculty. We would like to make a special mention of the academic leadership provided by Professor Charan Wadhwa, Member Governing Body during 2006-07. Prof. Wadhwa is a renowned economist, former faculty at IIM-Ahmedabad and Director, Centre for Policy Research. On 22nd August 2006, he delivered a special lecture entitled 'World Trade Organization; Past, Present and Future'. He also graced our one-day programme entitled 'Opportunities for India in the global economy' on 8th December 2006 as seminar chairperson. He backed up our initiative on 'Conscientious Commerce' on April 1, 2011.

6.1.6 How does the college groom leadership at various levels?

The college grooms the leadership at all levels of administration, among faculty, staff and the students. Teaching and non-teaching staff are allowed to organize various training programmes to enhance leadership qualities. The Governing Body is always encouraging and supporting the involvement of the staff in the improvement of the effectiveness and efficiency of the institutional process. Through the Principalof the college, the management involves the faculty and staff members in various activities related to the development of the colleges. Every department further has various committees to facilitate involvement and grooming of faculty to take on leadership positions. Apart from that the college runs Anti-Tobacco campaign, Blood Donation Camp, Technical competitions, Awareness on Morals and Virtues, Career Guidance Programmes, etc. by focusing on constant improvement in the leadership qualities of the students.

The Governing Body always encourages and supports the involvement of the faculty and staff through their representation on the various committees and bodies for effectiveness, efficiency and improvement of the institutional processes. Regarding faculty / staff development, the constant improvement in the working conditions with well defined and transparent policies have lead to a high degree of self esteem, involvement and contribution by all. Faculty development has been promoted through introduction of department libraries, subscription to e-journals, organizing departmental seminars, awards for presentation/publication of paper in conferences / seminars / journals etc.

The students have the freedom to elect/select the office bearers of their stream and other societies. They have the freedom to organize and manage different programmmes.

Similarly, there is also a teacher convener who guides the students and acts as a link between the students and the college administration in each society/activity.

6.1.7 How does the college delegate authority and provide operational autonomy to the departments/ units of the institution and work towards decentralised governance system?

We have a healthy culture of democratized decision making. Every department has a teacher in-charge to coordinate its activities for a period of two years. The appointment is made by rotation in order of seniority. The functioning of the college (organization of admissions, examination, extra-curricular activities and sports etc.) is through different committee constituted by the staff council. Each committee selects/elects its own convener. The convener plan the activities and events within the budget allocated to them.

The Principal is the administrative head of the College. However certain administrative functions are delegated to the teacher in-charges of the Departments and various functionary committees to ensure a decentralized governance system. Various committees are constituted involving staff members that perform an advisory role in matters within their designated sphere of activity and also help in the execution of administrative decisions.

6.1.8 Does the college promote a culture of participative management? If 'yes', indicate the levels of participative management.

Yes, the college promotes a culture of participative management. The management of the college rests with its Governing Body, whose members are appointed in accordance with the guidelines provided by Delhi government. The Principal is the academic and administrative head of the Institution and also the member secretary of the governing body. The teacher in-charges of Departments are responsible for the day-to-day administration of the departments and report directly to the principal. Additionally, every department delegates various duties among faculty members which play an important role in various institutional functions. These duties are discussed in departmental meetings and the minutes of these meetings are recorded.

- The provident fund committee constituted by the governing body also has representation of two elected subscriber's nominees.
- Besides there is representation of teachers in the finance committee, leave advisory committee and the functional committees for hiring of external agencies for housekeeping and security work.
- All important decisions pertaining to student activities, time table, purchases in library and laboratories are taken by the staff council.
- Appointment of canteen contractor is done through a canteen committee which consists of teachers, non-teaching staff and student representative.
- All purchases in the college are done through the purchase committee which again is a committee consisting of teachers and one member from the administration. All recommendations of the purchase committee are accepted by the governing body.
- Academic development committee for all academic matters.
- The building committee for the new campus of the college also has teacher representatives on it.
- Students under supervision of student activity board and proctorial board, plan and execute extra-curricular activities throughout the year.

6.2 Strategy Development and Deployment

6.2.1 Does the institution have formally stated quality policy? How is it developed, driven, deployed and reviewed?

The institute has made an internal quality assurance committee. The committee members make the decision, communicate it to stake holders and keep a check.

6.2.2 Does the institution have perspective plan for development? If so, give the aspects considered for inclusion in the plan.

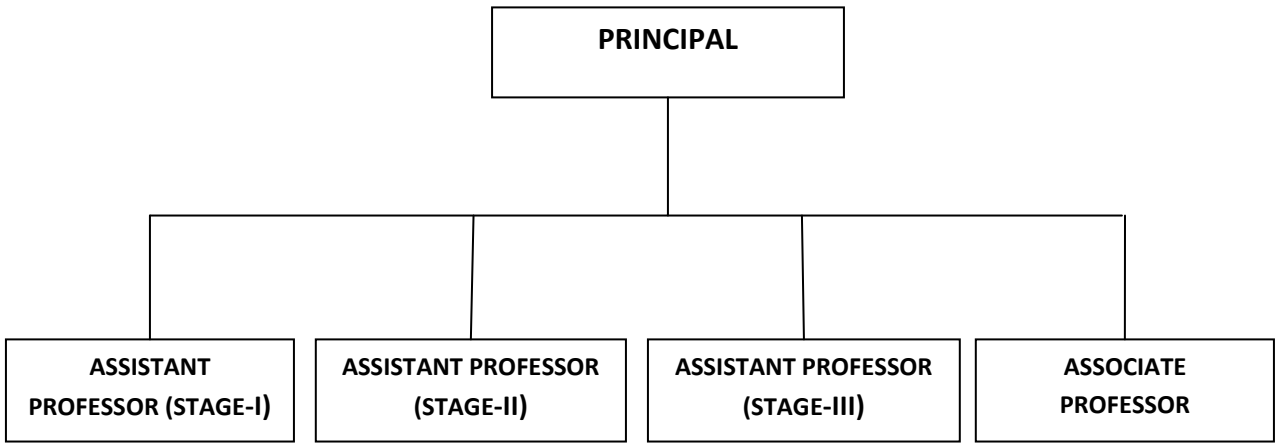
Yes, the college has a perspective plan of development. The most important aspects which have been included in plan are promotion of research culture and greater involvement in extension activities. For meeting these objectives, infrastructure needs to be augmented. Accordingly, in the new building, independent cubicles for staff, earmarked space for each activity, dedicated research laboratory for each department and a language laboratory to improve communication skills of students have been included.

6.2.3 Describe the internal organizational structure and decision making process.

Principal is the chief executive and academic officer of the college. She is responsible for administration and organization of teaching and extra-curricular activities in the college.

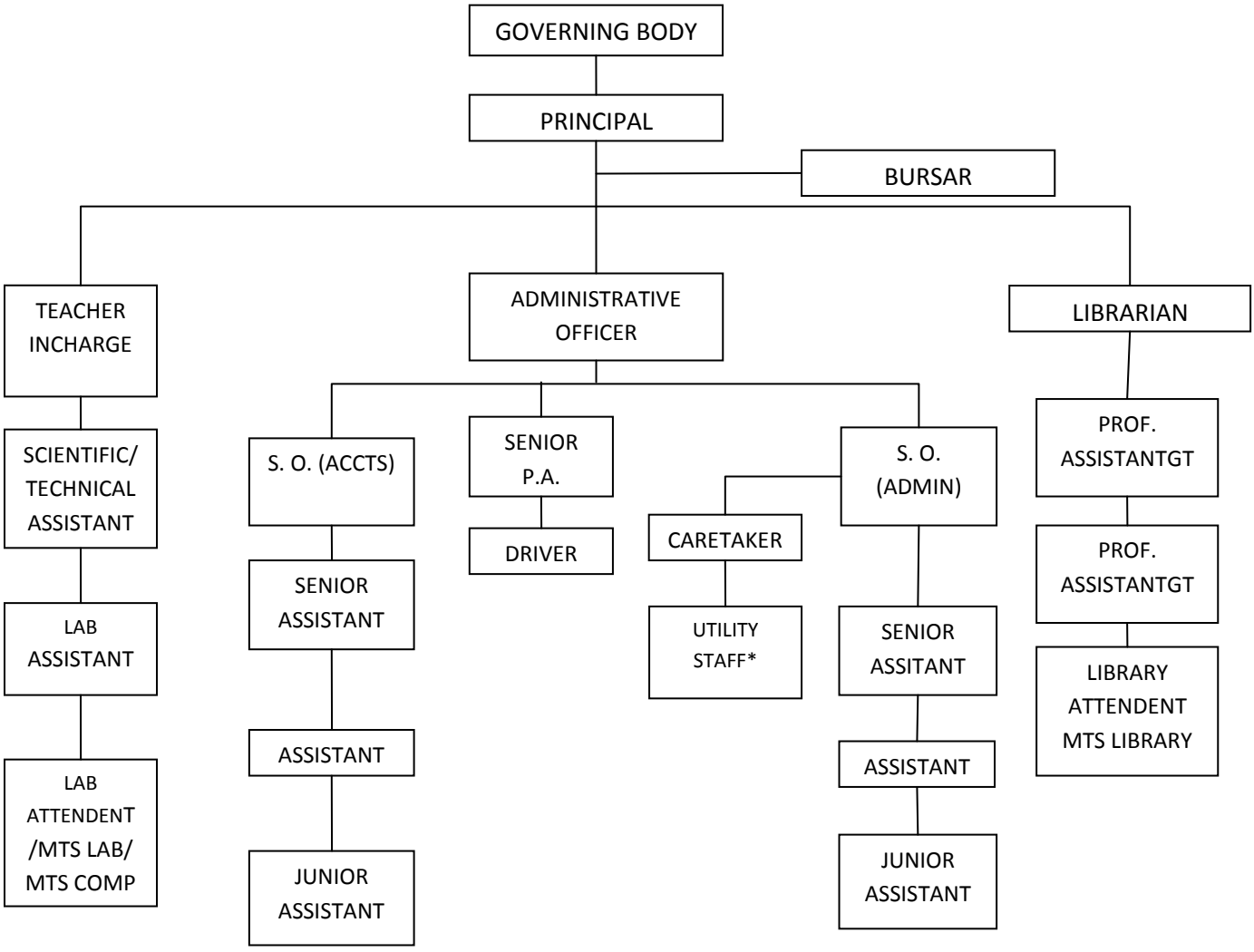
Internal organizational structure in respect of teaching and administrative staff is given below:

ORGANIZATIONAL CHART OF THE TEACHING STAFF



Decisions in matters of organizing admissions, sports, extra-curricular activities, preparation of college time table, allocation of extra-curricular work of teachers, not involving payment of remuneration and laying guidelines for purchase of library books and laboratory equipment are taken by the staff council, subject to the provisions of the act, statutes and ordinances of the University of Delhi.

ORGANIZATIONAL CHART OF THE ADMINISTRATION



*MULTI-TASKING STAFF (GENERATOR OPERATOR/ DAFTRY/ OFFICE

The college functions under the general supervision and control of the governing body. The powers and duties of the governing body and other authorities are as per statute 30 and ordinance XVIII of the University of Delhi. The decisions regarding institution, suspension or abolition of teaching and non-teaching posts is taken by the governing body.

6.2.4 Give a broad description of the quality improvement strategies of the institution for each of the following –

- **Teaching and Learning**
- **Research and Development**
- **Community Engagement**
- **Human resource management**
- **Industry Interaction**

The quality improvement strategy of the institution involves creation of ICT facility which is blended with the chalk and talk method to improve teaching and learning process. For research and development, the faculty is being encouraged to attend/ organize seminars, conferences and workshops for which financial aid is provided. They are also encouraged to submit projects to various funding agencies. Community engagement is through the NSS and industry interaction is through the career counseling and placement cell.

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 stakeholders, to review the activities of the institution?

Head of the institution reports to the Governing Body about the following:

- Faculty requirement for each department after approval of the same through academic development committee.
- Purchases made by individual departments.
- Audit report of the college.
- Result of the students.
- Activities organized by the college as per reports submitted by individual conveners and/or departments.
- Recommendations of provident fund committee, leave advisory committee and finance committee.

The governing body after due deliberation takes decision on various issues.

6.2.6 How does the management encourage and supports involvement of the staff in improving the effectiveness and efficiency of the institutional process?

The governing body allows autonomy of the staff members for taking initiatives in improving the efficiency of institutional processes. It also encourages the staff members by cash awards and letters of appreciation for any exemplary work which they may have done.

6.2.7 Enumerate the resolutions made by the Management Council in the last year and the status of implementation of such resolutions.

The college made a resolution that as it was the silver jubilee year of the college, we will initiate an international workshop for teachers from all over India and also have various activities throughout the year starting from Nov 2014 to 2015. We carried out various activities as part of silver jublie celebration.

A 6 days International Workshop on New Frontiers in Global Learning and Communications (NFGLC) in year 2013-14 was organized.

College also started robotics lab as a part of silver jublieee celebration under the scheme E-yantra of IIT Mumbai, Cluster Innovation Centre, University of Delhi (Delhi)

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

6.2.9 How does the Institution ensure that grievances/ complaints are promptly attended to and resolved effectively? Is there a mechanism to analyse the nature of grievances for promoting better stakeholder relationship?

The college follows an open door policy. The principal and the Chairperson of Governing Body is accessible to stakeholders. The principal also keeps interacting with the staff in the staff room and with the students in their classrooms quite frequently. Whenever, there are some under-currents, the issues are sensed and resolved before they become grievances. Still, there is a grievance redressal committee constituted for addressing individual grievances. Fortunately, there have been no serious grievances of any individual in the last five years. Various grievances of the students regarding facilities provided in college were addressed to, as mentioned above in 5.1.10.

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?

In the last four years there is one case filed against University of Delhi where the college has also been made a party. The case is still pending in the High Court of Delhi. (Civil. Misc. Petition No. 1605/2014 & WP (C) No. 803/2014 Delhi University SC/ST/OBC Teachers Forum and another Vs. University of Delhi and others).

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?

Every department takes a feedback from the students about the difficulties faced by them in college every semester. That is reported to the principal who takes necessary action if there are some problems faced by the students

We also generally take an informal feedback from the students who are either leaving the college or the alumni. The outcome is that the students feel that there is no such institution like ours with regard to infrastructure and teaching.

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 following steps are taken by the college to enhance the professional development of its teaching and non-teaching staff.

- We allow the permanent faculty members to attend orientation and refresher courses as and when due.
- We encourage the permanent as well as temporary teachers to attend short term training programmes in specialized areas.
- We provide financial support through University Grants Commission/ Department of Science and Technology/ Council for Scientific & Industrial Research/ University of Delhi for attending international seminars/ conferences/ workshops etc.
- We reimburse out-station travel expenses and 80% of registration charges for attending other conferences/seminars/workshops.
- We depute the non-teaching staff for various computer training/finance/administration skill enhancement programmes organized by Delhi University/Delhi Govt.

The institution sends the various employees from the office and laboratories for training to Delhi University and the ones organized by the Govt. of NCT of Delhi. On job training for students' management system and other software is also provided as and when needed.

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 sends various employees from the office and laboratories in the training programs organized by Delhi University and by the Govt. of NCT of Delhi. On job training for student management system and other software's is also provided as and when needed.

6.3.3 Provide details on the performance appraisal system of the staff to evaluate and ensure that the information on multiple activities is appropriately captured and considered for better appraisal.

The performance appraisal performa has been designed for getting information on the following activities:

- Teaching and related academic activities.
- Upgrading of knowledge/or skills including research activities.

- Extension work / community services.
- Contribution to administrative work and co-curricular activities.
- Participation in examination and evaluation process.

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 are evaluated and if there is a point of difference on any parameter that is communicated to the staff member in writing within a month.

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?

College has several welfare schemes for its faculty and non-teaching staff members like group insurance scheme (GIS), credit and thrift society to provide loans, children education allowance, medical reimbursement and leave travel concession.

Washing allowance and uniform allowance is provided to class-IV staff.

Besides the sons and daughters of staff members get preference in admission on supernumerary seats. They are also given full fee concession.

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. Whenever a vacancy arises, it is advertised in national dailies and interviews are conducted by a selection committee as per the ordinances of the University of Delhi. Ad-hoc appointments are made through interviews after displaying the vacancies on the college and Delhi University website for at least a week before the interview. The appointments are purely on merit.

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?

Every year, stock verification for all departments takes place for an updated record. The non-serviceable items are written off and disposed of every year after following due procedure.

For monitoring effective and efficient use of available financial resources, college asks for the requirements from various departments along with their estimated cost and justification, right in the beginning of the year. These requirements are discussed in the academic development committee and priorities fixed as per the finances available. Purchases are done through departmental purchases committee and college purchase committee.

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.

The internal audit is conducted but the statutory auditor (Charted Accountant) is appointed by the governing body after approval from the University of Delhi every year. The external audit is also conducted annually by an audit party of the finance department of the Govt. of NCT of Delhi. The last audit has been done in October.

6.4.3 What are the major sources of institutional receipts/ funding and expenditure statement of academic and administrative activities of the previous four years and the reserve fund/corpus available with institutions, if any.

The college gets 100% grants (plan and non-plan) from the Govt. of NCT of Delhi towards expenses on account of salary and equipment. The running expenses are met through fees collected from students and any deficiency is then made up good by the government. The expenses on account of student activities are made out of the fees collected from the students in the student society fund. The plan development grants of the UGC under 2(f) and 12(b) are also available. The audited income and expenditure statements of the last four year, which reflect the reserve fund, are given in the appendices.

College has received funds from University Grants commission under merged scheme as well as plan development grants and has utilized the same.

6.4.4 Give details on the efforts made by the institution in securing additional funding and the utilization of the same (if any).

College has received funds from University Grants Commission under merged scheme as well as plan development grant and has utilized the same.

6.5 Internal Quality Assurance system (IQAS)

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?

Yes, the college IQAC has been established in July 2014. The cell members have meetings regularly to frame various policies and manuals as a part of its internal quality assurance system. The following quality policy has been framed by the cell to achieve the mission of the institution.

Quality Policy

To educate, equip and empower (EEE) girls with the recent technological developments through continuous interaction with eminent scientists, academicians, industry and alumina of the institute by following the best practices for multidimensional growth of the students, faculty and staff.

Mission of the Institute

- To develop girl's interest and involvement in applied sciences through innovative teaching and practical methods.
- To give them a continuous industrial exposure by inviting industry people for special lectures, interactive sessions and organizing training.
- To educate them about health issues, self-defense, moral values, social responsibilities so that they can lead a healthy life, be successful professionally and have an integrity of character.

b. How many decisions of the IQAC have been approved by the management/ authorities for implementation and how many of them were actually implemented?

During the course of its meetings, the cell decided to take various steps for framing the good academic and good laboratory practices. Following decisions have been taken by the cell:

All departments have been requested to prepare a quality manual for good laboratory practices in consultation with the experts in their respective field.

For the time being all departments have been instructed to start with maintaining the Log books for each instrument in all labs.

A list of equipment with the name of person in-charge , its date of purchase, company and model, contact number of service person, operational standard operating procedure (SOP) instructions and its calibration status(if applicable) should be compiled and displayed.

The list of hazardous chemicals with CAS(Chemical abstract service) registry number and hazardous effects used and their safety guidelines should be displayed in all labs. A manual on CAS number of chemicals with their potential hazardous effects was prepared by ILLL. A photocopy can be maintained in each department.

c. Does the IQAC have external members on its committee? If so, mention any significant contribution made by them.

No

d. How do students and alumni contribute to the effective functioning of the IQAC?

The alumni, who are presently working in the industry and follow quality system, interact with the students from time to time. Various talks and training programs are organized for students and staff related to quality assurance.

Students visit industries like, Mother Dairy, Nestle, Yakult to know their policies, the production/manufacture process and quality control.

e. How does the IQAC communicate and engage staff from different constituents of the institutions?

NA

6.5.2 Does the institution have an integrated framework for Quality assurance of the academic and administrative activities? If 'yes', give details on its operationalization.

At present we are in the process of devising the joint frame work for academic and administrative activities.

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.

Yes. Various talks, workshops and training programs are held for staff related to quality assurance. Some of the programs are listed below:

- Workshop on *Food safety in International Trade*, with Export Inspection Council (EIC) India and Advancing Food Safety (AFS) in April '13

- An Internal auditor course in 2006-2007 with Det Norske Veritas (DNV).
- A Five day course on Lead auditor in ISO 22000FSMS (Food Safety Management System) in April 2008 with SAI GLOBAL
- Workshop on Maintenance of lab instruments in 2003
- A talk by Dr. Kusum Lata Jain, Energy Auditor for environment management system – April '14

6.5.4 Does the institution undertake Academic Audit or other external review of the academic provisions? If ýes', how are the outcomes used to improve the institutional activities?

No

6.5.5 How is the internal quality assurance mechanisms aligned with the requirements of the relevant external quality assurance agencies/ regulatory authorities?

NA

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?

The college has an academic supervisory committee which looks into these aspects.

6.5.7 How does the institution communicate its quality assurance policies, mechanisms and outcomes to the various internal and external stakeholders?

The institute communicates its policies by placing them in staff council meeting and circulating it thereafter through notices to all concerned persons.

CRITERION VII: INNOVATIONS AND BEST PRACTICES

7.1 Environment Consciousness

7.1.1 Does the institute conduct a green audit of its campus and facilities?

Although we do not have an audit for it formally, but we have an amply green and eco-friendly campus with robust water harvesting systems. The dustbins are carefully kept strategically around college to keep it litter free as well as to raise awareness about degradable and non biodegradable wastes. We encourage shedding plastics in favor of reusable eco friendly substitutes. We also have light sensors in washrooms, by which we ensure that lights are off when nobody is there in the washrooms. We use solar heating system and solar street lights as well as we have VRF for Air conditioners.

7.1.2 What are the initiatives taken by the college to make the college eco-friendly?

The campus is eco-friendly as is evident from the plush greenery around which has come about ever since the college moved to its new campus. The area surrounding the college is residential from one side and industrial from its rear. The place was barren with no greenery at all and the college has an active garden society with concrete plans to take up development in a phased manner to enhance the ecology of the college in near future. The E-waste is disposed as per the norms of the government of NCT of Delhi. We take pride in having a network of well connected solar panels for lighting the campus.

7.2 Innovations

7.2.1 Give details of Innovations introduced during the last four years that have created a positive impact on the functioning of the college.

Innovations that have had a positive impact on the functioning of the college are:

- Since ours is an applied sciences college, all the departments try to inculcate involvement of industry to enrich their practical experience about the subjects taught as well as to encourage industry-academia interactions to keep abreast with the latest industrial requirement of human resource. A lot of industrial trips are organized by various

departments to make students enthusiastic about the research and development going on in the industries.

- One of the best practices of the college is that we undertake practical that stress on extensive hands-on training to all the students individually. In addition, various upcoming new technologies are demonstrated to them through experiments which may not necessarily be outline in the syllabus. This further imbibes a spirit to explore new and challenging aspects of a given problem.
- All the courses being interdisciplinary put our students and faculty at an advantage over others because our students have knowledge beyond their core field and are adept at handling problems in the industry.
- The college has one of the strongest and latest infrastructural facilities, both in terms of well equipped laboratories and space requirement to do experiments.
- We have the capabilities to run inter college research projects and be one of the front runners in building R&D hub among the Delhi University Colleges. In-house summer training projects are conducted for the students by the faculty themselves. This enriches both the students and the faculty in innovating solution oriented approach to scientific problems.
- ICT enabled teaching by faculty is our hallmark. There is an active exchange of ideas in the class room and teaching is primarily conducted via interactive computer and LCD enabled presentations along with the conventional chalk and board method.
- Workshops, which enable the students to get a bird's eye view on various software and working of sophisticated instruments are conducted regularly. There is a tradition of organizing seminars/ talks and discussions by experts in various fields by different departments in the college.
- Additional programmes and certificate courses which are job oriented and serve as value addition to the students curricula like Cisco Networking Academy, library sciences, are being run exclusively in the college.
- The departments and societies in the college, bring out their annual magazines and newsletters highlighting the latest noteworthy activities of the department as well as college.

- An active women development cell ensures enough gender sensitization and our students are equipped to raise voice freely whenever required outside their campus life.
- We take pride in having one of the best equipped libraries in Delhi University. It is the first RFID enabled library in Delhi University. Our library has active connection with 46270 e-journals available in the library with three Wi-Fi computer laboratories consisting of 66 computers i.e. e-Library-1, e-Library-2 and e-Library-3, provided by the University and open sourced. It has additional space and set up of computers to let students surf the internet for their subject. Latest library database design allowing easy access to various books and journals according to the need of students belonging to the various science streams in the college.
- Colorful and varied cultural and extracurricular calendar of the college is interspersed with events which are both scientifically stimulating and the ones which are exclusively fun filled. These events are invigorating to the mind and ignite cognitive skills in our students to enable them to face the world with confidence.
- There is provision of fee concession to students belonging to economically weaker sections by a well constituted committee which screens the needy students. This ensures education to all students irrespective of their economic status.
- Regular industrial visits, picnics, excursions etc for the students as well as the faculty keeps the students and the faculty members recharged throughout the year.

7.3 Best Practices:

7.3.1 Elaborate on any two best practices on the given format on Page 98, which have contributed to the achievements of the Institutional objectives and/ or contributed to quality improvement of the core activities of the college.

An educational institution is the one that imparts not only the basic knowledge of the subject concerned, but one that contributes to the holistic development of the students. Our college, being the only Applied Science College for Women, is proudly doing this over the last twenty five years, since its inception. Many of our students belong to lower middle class and middle class families, a marked difference in their personality is noticed at the time of joining the college and when they pass out.

The following is a brief description of some of our best practices in the college. We list the following two, as they stand out for their effective output and significant overall improvement.

BEST PRACTICE- I

State of the art infrastructure and Extensive hands- on training to students on sophisticated Instruments

The following captures the essence of our best practice:

Context

- Science has concepts and their proof intricately joined together as one. To prove, one needs to show by way of demonstrating it. Since the college is a science college, an adequate stress is laid on understanding a concept through performance of experiments. This leads to inculcation of 'questioning mind set' in students. This development of 'scientific temper' is essential for the students of science if they are to understand and solve tomorrow's problems.
- Women in science should be empowered with a knowledge base keeping up with the latest trends in their area of specialization to match with the best in the world. In today's time of globalization, if women are to be truly empowered then educational empowerment is perhaps the first step towards it. This would enable them to be self reliant in all aspects.

Goals

- To establish the college as a centre of excellence in science. The well equipped laboratories in all departments and sound infrastructure, can be the first step in establishing centre of excellence.
- To help the students understand the concept through experiments and demonstrations in the practical class. Robust infrastructure facilitates quick and wider exposure in respective areas which is much needed attribute in present day scenario.
- While working in laboratories or in any industry, safety aspect is of paramount importance. It becomes imperative to give students exposure in this area too. Fire,

electrical, chemical, biomedical and radioactive safety are some of the concerns which are taught to them. Laboratory manual prepared by students includes this aspect.

- Working on any instrument to achieve precison and reproducibility of results requires thorough understanding of design, working principle and its components. This aspect is stressed upon in the practical classes and incorporated in the manual prepared by the students, offering added advantage to them when they work in industry.
- Extensive hands-on training for quick adaptation in any industrial and research and development set-up. A lot of high end practicals and projects that need sophisticated instruments could be carried out in the college campus.
- To be positively inclined towards a career in science. The well trained faculty understands and quickly adapt to the changing educational norms and policies to help students adjust to the changing educational and industrial scenario.
- To develop a hub for inter-college and inter–university research and development projects between the faculty and students.
- Regular workshops and trainings for faculty/students and technical staff to apprise them about the latest advances in their respective fields.

Practice

- The well equipped laboratories are a centre for conducting experiments which are first taught as concepts in the conventional class room teaching. This way the concepts become more clear and always get registered in the mind. The infrastructure is further strengthened by the qualified teaching faculty, who take up the task to familiarize and train students on the sophisticated instruments.

- Additional practical which may not be outline in the syllabus, are also sometimes carried out by the faculty to excite the students about the limitless possibilities of science. As is evident from the departmental activities, each course is designed in a manner to equip the students for a career in industry as well as research. Workshops and seminars along with conferences add to all round development of students. The success of recently held conferences *Understanding the Mechanism and Challenges of Complex Diseases* (UMCCD-2014) and *Recent Trends in Electronics and Instrumentation* (RTIE-2015), by the

Departments of Biomedical Sciences and Electronics and Instrumentation respectively has paved way for research and academic institutes, which are coming forward to engage our students in their training programs.

- In-house projects undertaken by faculty during academic session breaks, act as a catalyst to students to hone their practical skills.

Contribution to Institutional Objectives

- The placement of students in industries right after their graduation.
- The placement of students in research institutes of repute based on entrance examination and interview.
- Internship and university industry interactions.

All departments make efforts to invite renowned scientists and industrialists to interact with students. They apprise students about the demands and challenges that are being faced in their respective field. This is essential to arouse interest in students about their field of study. Whether the workshop is about robotics, bioinformatics, applications of biomedical techniques and analytical instrumentation, the students as well as faculty are actively involved in spite of their regular curriculum work. Industry-academia interactions have enabled many of our students to get jobs and many of them have turned entrepreneurs and have successful careers. in the process, they generate employment for others as well.

BEST PRACTICE-II

Open and free environment and active interaction between the teaching, non- teaching staff and students

The following gives a brief account of our second effective best practice:

Context

- Rote learning in today's cut throat competitive world is not sufficient without cognitive skill development along side. The college lays stress on this aspect as well.

- Emphasis on all-round development. It has been clearly demonstrated by success stories of people who made it big in this world that formal education is not the only factor that contributed to their success. In present time, acquiring a fomal degree may not be sufficient. Developing overall personality of a student has always been our focus. This has given us great results both in terms of better academic performance and extracurricular achievements. This, in turn improves their job prospects.
- Encouraging team work.
- Preparing students to quickly adapt to the changing academic and industrial scenarios to face the upcoming challenges.

Goals

- Holistic development of the students. An important goal for the college is to ensure a holistic development. A need to constantly hone the soft skills of the students in addition to providing them formal education is realized, to enable them to live up to the challenges of the outside world.
- Acquiring soft skills alongwith the formal educational qualification. Personality development and allround grooming of the students at the undergraduate level ensures better academic performance as well as extracurricular achievements leading them to become leaders of tomorrow.
- Being competitive in the true spirit and adapt to changing industry and Research and Development scenario.
- Creation of a positive environment where the idea is to help an individual grow.
- Adequate stress on co- and extra-curricular activities and encouragement for such activities by the supporting staff.
- Development of critical thinking in the students and use of scientific knowledge to practical use to enable them to see both the pros and cons of the problem and effectively tackle it.

Practice

- There is active feedback taken from the students in teaching and other extracurricular activities of the college. This feedback is formally recorded and appropriate discussion on

the difficulties faced by students is carried. This leads to an effective solution to their problems.

- There is an active interaction and inclusion of administrative staff during admissions and record maintenance of the students. Student admissions as well as attendance etc. are maintained by an active faculty interaction with the supporting staff of the college. The staff is friendly and has extended help to not only students presently studying but also to ex-students whenever required. The administrative staff works in conjunction with the academia and ensures smooth and timely help in all spheres as and when required for smooth functioning of the college.
- Our students have been achieving top University positions in their respective areas of specialization and our academic results are evidence to this. This ease of accessibility, and free and open environment has paid us rich dividends in terms of both administration and academic achievements of the college. There is strict regulation with regard to presentations and seminars to be conducted by the students. This practice gives them a confidence in public speaking and infuses them with winning attitude when they give interviews or join group discussions in their jobs and career.
- Non-academic prizes are also recognized in annual day function of the college along with the academic achievements. Meritorious students in various activities like participation in flower shows, photography, dance, drama, music etc. are felicitated. The students are encouraged to participate in both intra and inter- college events across the country. This is further strengthened by formation of various societies and clubs which are formed by students and coordinated by faculty, that cater to different events, like the dance, drama, music, literary societies and eco club. The entire college environment sets the tone for greater learning capability and therefore better academic performance.

Contribution to Institutional Objectives

- Being true to the essence of an institute imparting holistic education to women.
- Educated, independent, groomed and confident women with entrepreneurial and other helpful skill sets to enable them to contribute effectively to society.

- The ease of accessibility and extra effort being put in by our dedicated faculty in addition to their regular teaching load. Thus active and timely help extended to the students and between the staff enables creation of an institution which becomes a model institution.

One of the statements in the college preamble is to impart high quality education to women and helping in contributing towards the betterment of society. We hope to fulfill our goal of educating women to be self reliant in all spheres of life, leading to their empowerment. Many of our alumni are well placed all over the world. We try to communicate their achievements and challenges faced by them by inviting them during alumni meets. This gives them a platform to share their experiences with the faculty and students. We create an environment which is conducible for many success stories to be created. We firmly believe that educated, independent, groomed and confident women with entrepreneurial and other related skill sets can contribute effectively to the society. We continue to strive to achieve this during the years to come, so that every girl feels proud to be a woman.

EVALUATIVE REPORT OF THE DEPARTMENTS

EVALUATIVE REPORT OF DEPARTMENT OF BIOMEDICAL SCIENCES

1. **Name of the department** : **Biomedical Sciences**
2. **Year of Establishment** : 2005
3. **Names of Programmes / Courses offered** : Bachelor with honours in Biomedical Sciences (Three years)

4. **Names of Interdisciplinary courses and the departments/units involved**

   Departments of Biochemistry, Chemistry, Mathematics and Computer Science are involved.

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:**

   The department participates in teaching of B.Sc. (Hons) programmes of Food Technology and Instrumentation
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.**

   Not Applicable
8. **Details of courses/programmes discontinued (if any) with reasons:** Nil
9. **Number of Teaching posts :**

	Sanctioned	Appointed
Professors	-	-
Associate Professors	-	-
Asst. Professors	08	5(Permanent) 2(Adhoc) 1(Guest)

10. Faculty Profile

S No	Name	Qualification	Designation	Specialization	Years of Experience
1	Dr. Radhika Bakhshi	Ph.D	Asst. Professor	Biochemistry	3 years Post Doctoral Research,10 years teaching
2	Dr. Shruti Banswal	Ph.D	Asst. Professor	Molecular Biology & Biotechnology	16 years
3	Dr. Varsha Mehra	Ph.D	Asst. Professor	Molecular Biotechnology	10 years
4	Dr. Mohd Saquib Ansari	Ph.D	Asst. Professor	Biochemistry	8 years
5	Dr. Indu Arora	Ph.D	Asst. Professor	Organic Chemistry	>9years

11. List of senior visiting faculty:

- Dr. O P Rajoura, Associate Professor, UCMS, University of Delhi
- Dr. S K Bhasin, Professor, UCMS, University of Delhi
- Dr. Pragati Chhabra, Professor, UCMS, University of Delhi
- Dr. A K Sharma, Professor, UCMS, University of Delhi
- Dr. Amir Khan, Assistant Professor, UCMS, University of Delhi

12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty : 25~30%

13. Student -Teacher Ratio (program wise) : 15:1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled :

Lab Assistant : 02

Lab Attendant : 02 (contractual)

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil/PG.: Details given in clause 10.

16. Number of faculty with ongoing projects from

a) National

No. of Projects : 03

No. of faculty involved : 04

Funding Agency : University of Delhi (Innovation Projects)

17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received:

Project Details

Project 1: *Mutation analysis of PPARγ, ABCC8, KCNJ11 and CALPN10 genes in type 2 diabetes patients in India*

Duration : One year

Funding Agency : University of Delhi (Innovation Projects)

Amount Sanctioned : Rs. 7 lakhs

Faculty : Dr. Saquib Ansari, Dr. Radhika Bakhshi

Project 2: *Phytochemical and Antimicrobial Studies of Indian Spices on Multi Drug Resistant Pathogens*

Duration : One year

Funding Agency : University of Delhi (Innovation Projects)

Amount Sanctioned : Rs. 4.5 lakhs

Faculty : Dr. Varsha Mehra

Project 3: *Antimicrobial studies of size and shape dependent silver nanoparticles on microbes responsible for food decay*

Duration : One year

Funding Agency : University of Delhi (Innovation Projects)

Amount Sanctioned : Rs. 7.5 lakhs

Faculty : Dr. Indu Arora

18. Research Centre /facility recognized by the University: Nil

19. Publications:

S No	Faculty Name	Publications in journal	Pub. Cited in web	Citation index
1	Dr. Radhika Bakhshi	7	5	H index=3
2	Dr. Shruti Banswal	2	1	H index=1
3	Dr. Varsha Mehra	3	3	H index=3
4	Dr. Mohd Saquib Ansari	3	1	H index=3
5	Dr. Indu Arora	4	2	H index=2

a) Publication per faculty

Number of publications : 19

Number of faculties : 05

Publication per faculty : 19/5=3.8

b) Chapter in Books : 1

- Arora S, Bakhshi R, Chauhan SS. Recombinant DNA Technology. Essentials of Biotechnology for students 1st Edition, Edited by Dr. S. N. Das, Peepee Publishers and Distributors.

Publication Details

S No	Journal	SJR	Article Influence TM Score
1	Hematology	0336	0.441
2	Pediatr Hematol Oncol.	0327	0.418
3	Cytometry B Clin Cytom.	0845	0.682
4	Pediatr Blood Cancer	0952	0.664
5	Br J Haematol.	1644	1.669
6	Gene	0895	0.868
7	Ind J Pediatr Surg	NA	NA
8	Journal of Plant Biochemistry and Biotechnology	0209	0.09
9	Journal of Biological Chemistry	2723	2.02
10	Biotechnology and Applied	0424	0.359

	Biochemistry		
11	PLoS ONE	1512	1.797
12	American Journal of Plant Physiology	0790	NA
13	International Journal of Nanomedicine	0902	0,928
14	J. Mater. Chem.	2382	1.571
15	Journal of Biomedical Nanotechnology	1440	0.481

20. Areas of consultancy and income generated: None

21. Faculty as members in

a) National committees b) International Committees c) Editorial Boards

None

22. Student projects

a) Percentage of students who have done in-house projects including inter departmental/programme

24 students are associated with innovation projects for a period of one year.

b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/other agencies: 100%

23. Awards/ Recognitions received by faculty and students

Faculty:

Dr. Radhika Bakhshi Received the Meritorious Teacher's Award of the Directorate of Higher Education, Govt. of NCT of Delhi for the year 2010-2011

Students:

Sakshi Mallik (2007-10) and Shristhi Gautam (2009-12) were KVPY Awardees.

The following students secured ranks in university exams

S No	Batch	University Rank		
		First	Second	Third
1	2009-12	Madeeha	Nidhi Gupta	Sneha Arora
2	2010-13		Ankita	

24 List of eminent academicians and scientists/ visitors to the department

- Dr. Lal ji Singh, Formerly Director, CCMB, Hyderabad
- Dr. Shahid Jameel, ICGEB, New Delhi
- Dr. Madhulika Kabra, AIIMS, New Delhi
- Dr. Smita, Fortis Healthcare, New Delhi
- Dr. Russ Yukhananov, Precison Biotech, USA
- Dr. S Muralidhar, Department of Zoology, University of Delhi
- Dr. Roop Lal, Department of Zoology, University of Delhi
- Professor S C Lakhotia, BHU, Varanasi
- Dr. Vani Brahmachari, ACBR, University of Delhi
- Dr. I C Verma, Director, Centre for Medical Genetics, Sir Ganga Ram Hospital, New Delhi
- Dr. Jitendra Khurana, Department of Plant Molecular Biology, UDSC, New Delhi
- Dr. Tara Devi, University of Massachusetts, USA
- Dr. Rita Singh, Professor, Zoology Department, University of Delhi
- Dr. Sanjay Kapoor, Department of Plant Molecular Biology, UDSC, New Delhi
- Dr. Pradeep Srivastava, Deputy Director, CDRI, Lucknow
- Dr. SPS Khanuja, Formerly Director, CIMAP, Lucknow
- Professor. Natrajan, Director, ACBR, DU, New Delhi
- Dr. Satayjit Rath, Scientist, NII, New Delhi
- Dr. Daman Saluja, Scientist, ACBR, New Delhi
- Dr. Anil Aggarwal, MAMC, New Delhi
- Dr. A C Banerjea, NII, New Delhi
- Dr. Sameer Bakhshi, AIIMS, New Delhi
- Dr. Mohd. Samim, Jamia Hamdard, New Delhi

- Dr. S V Eswaran, University of Delhi
- Professor Anil Grover, Department of Plant Molecular Biology, UDSC, New Delhi

25 Seminars/ Conferences/Workshops organized & the source of funding

- Organized a national conference on *Understanding the mechanism and challenges of complex diseases (UMCCD 2014)* on 29th and 30th December 2014. The conference was sponsored by DBT star college grant
- Organized a workshop *Bioinformatics for Biotechnology Students* for the students of B.Sc. (H) Biomedical Science, in collaboration with the CECOP, Delhi and NIIT, Delhi (Oct 2008). The workshop was funded by CECOP.
- Organized a Workshop on *Bioinformatics- An Interdisciplinary Applied Science* for the students of B.Sc. (H) Biomedical Science, B.Sc. (H) Instrumentation and B.Sc. (H) Food Technology under the aegis of Star College Scheme, Department of Biotechnology, Government of India on February 26-27, 2015.

26 Student profile programme/course wise:

Name of the Course/programme B. Sc (H) Biomedical Sciences	Applications received	Selected	Enrolled *M *F
2011-2012	-	29	F
2012-2013	-	34	F
2013-2014	-	50	F
2014-2015	15213	39	F

27 Diversity of Students

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad
BMS (2011)	74	26	Nil
BMS (2012)	65	35	Nil
BMS (2013)	68	32	Nil
BMS(2014)	46	54	Nil

28 How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc? None

29 Student progression: Ours is an undergraduate college. The college has no track of students pursuing higher studies after post graduation.

Student progression	Against % enrolled
UG to PG	95
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: Available

b) Internet facilities for Staff & Students: Available

c) Class rooms with ICT facility: All class rooms have ICT facility

d) Laboratories: Well equipped with sophisticated instruments.

31 Number of students receiving financial assistance from college, university, government or other agencies

- A total of 30 students are being given a monthly stipend of Rs. 1000/- each for a period of one year for being a part of the Innovation Projects (10 per project), the details of which are provided above.
- The details of number of students who have been given fees concession from the college has been summarized below.

S No	Session	Number of Students	
		Full Concession	Half Concession
1	2011-12	4	0
2	2012-13	3	4
3	2013-14	4	1
4	2014-15	2	2

32 Details on student enrichment programmes (special lectures / workshops / seminar) with external experts

Department of Biomedical Science organizes annual fest *Plexus* wherein we invite eminent scientists for lectures in the cutting edge research in the field of biomedical sciences. External experts included the people mentioned in 24.

33. Teaching methods adopted to improve student learning

ICT based teaching with interactive period including student presentation, group discussion, quizzes etc.

33 Participation in Institutional Social Responsibility (ISR) and Extension activities

- Organized an awareness lecture on “Blood Donation” in 2013
- Organized a awareness camp for “No smoking” in 2011

34 SWOC analysis of the department and Future plans

Strengths:

- Unique curriculum acting at the interface of academics and industry
- Well equipped and furnished labs.

- Consistence performance at the university level
- Faculty with interdisciplinary and diverse research interests enabling students a range of choices for in house projects.

Weakness:

- Industrial interaction avenues need to be developed.
- Relatively recent department hence a much greater scope for improvisations.

Opportunity:

- With an emphasis on research and development as a part of the curriculum, it provides a unique opportunity to orient the students towards research and develop the department's research infrastructure and profile.
- To provide a one on one attention to the students, catering to their personality development and molding them to better scientists and people.

Challenges:

- To develop infrastructure for undertaking research projects.
- To increase student employability and acceptance in industries.
- To prepare students for examinations for higher studies at reputed institutes

36. List of Research Publications

Dr. Radhika Bakhshi

- Sharawat SK, Raina V, Kumar L, Sharma A, Bakhshi R, Vishnubhatla S, Gupta R, Bakhshi S. 2014. Quantitative assessment of BAX transcript and flow cytometric expression in acute myeloid leukemia: A prospective study. Hematology Jan 3. [Epub ahead of print]
- Sharawat SK, Bakhshi R, Vishnubhatla S, Gupta R, Bakhshi S. 2014. FLT3-ITD mutation in relation to FLT3 expression in pediatric AML: a prospective study from India. Pediatr Hematol Oncol. 31(2):131-7.

- Sharawat SK, Gupta R, Raina V, Kumar L, Sharma A, Iqbal S, Bakhshi R, Vishnubhatla S, Bakhshi S. 2013. Increased coexpression of c-KIT and FLT3 receptors on myeloblasts: independent predictor of poor outcome in pediatric acute myeloid leukemia. Cytometry B Clin Cytom. 84(6):390-7.
- Sharawat SK, Bakhshi R, Vishnubhatla S, Gupta R, Bakhshi S. BAX/BCL2 RMFI ratio predicts better induction response in pediatric patients with acute myeloid leukemia. 2013. Pediatr Blood Cancer 60(8):E63-6.
- Sharawat SK, Bakhshi R, Vishnubhatla S, Bakhshi S. 2010. Mitochondrial D-loop variations in paediatric acute myeloid leukaemia: a potential prognostic marker. Br J Haematol. 149(3):391-8.
- Bakhshi R, Goel A, Seth P, Chhikara P, Chauhan SS. 2001. Cloning and characterization of human cathepsin L promoter. Gene 275(1):93-101.
- Bakhshi S, Bakhshi R. 2007. Genetics and management of retinoblastoma. Ind J Pediatr Surg12:109-115.

Dr. Shruti Banswal

- Neeru Jain, Shruti Gupta, Shashi B. Babbar. 1997. Isubgol as an alternative gelling agent for microbial culture media. Journal of Plant Biochemistry and Biotechnology Vol.6, 129-131
- Shruti Gupta, S.P.S. Khanuja, Akbal Singh & Nam Prakash. 1999. Studies on Symbiotic properties of purine auxotrophs of strain Rmd 201 of Rhizobium meliloti. 1999. Plant Biotechnology and In Vitro Biotechnology in 21st Century, Altman et al.(eds) 397-400 Kluwer Publications, Dordrecht.

Dr. Varsha Mehra

- Rosovitz M., Schuck P., Varughese M, Chopra A.P, Mehra V., Singh Y. McGinnis L.M,Leppla S.H. 2003 Alanine Scanning Mutations in Domain IV of Anthrax Toxin Protective Antigen Reveals Residues Important for Binding to the Cellular Receptor

andTo a Neutralising Monoclonal Antibody. Journal of Biological Chemistry Vol 278, 30936-44.

- Yogendra Singh, Hemant Khanna, Arun P. Chopra, Varsha Mehra. 2001. A Dominant Negative inhibitor of Anthrax Toxin Action in-vivo. Journal of Biological Chemistry Vol 276: 22090-094.
- Varsha Mehra, Hemant Khanna, Ramesh Chandra and Yogendra Singh. 2001. Anthrax toxin mediated delivery of a 19 kDa antigen of Mycobacterium tuberculosis into the cytosol of mammalian cells. Biotechnology and Applied Biochemistry Vol.33, 71-74.

Dr. Mohd. Saquib Ansari

- Zoheb Karim, Rohana Adnan, Mohd. Saquib Ansari. 2012 Low Concentration of Silver Nanoparticles Not Only Enhances the Activity of Horseradish Peroxidase but Alter the Structure Also. PLoS ONE 7(7): e41422.
- Mohd. Saquib Ansari and Neelam Misra. 2007. Miraculous role of salicylic acid in plant and animal system. American Journal of Plant Physiology 2(1):51-58.
- Neelam Misra, Mohd. Saquib Ansari and A.K. Gupta. 2006. Differential response of scavenging of reactive oxygen species in green gram genotype grown under salinity stress. American Journal of Plant Physiology 1(1):41-53.

Dr Indu Arora

- Mohd. Samim, C K Prashant, A K Dinda, Indu Arora, A N Maitra. 2011. Synthesis and Characterisation of gold nanorod and their application in photothermal therapy. International journal of Nanomedicine. International Journal of Nanomedicine 6 1825–1831
- Saba Naqvi, A. N. Maitra, M. Z. Abdin, Md. Akmal, Indu Arora, Md. Samim. 2012. Calcium phosphate nanoparticle mediated genetic transformation in plants. J. Mater. Chem. 22, 3500–3507.

- Shashi Kant Verma, Kalim Javed, Mohd Akhtar, Indu Arora, Mohammed Samim. 2013. Nanothymoquinone, a novel hepatotargeted delivery system for treating CCl4 mediated hepatotoxicity in rats J. Mater. Chem. B 1,2956-2966
- Shashi Kant Verma, Shweta Rastogi, Indu Arora, Kalim Javed, Mohd Akhtar, Mohd Samim. 2014. Nanoparticle based delivery of quercetin for the treatment of carbon tetrachloride mediated liver cirrhosis in rats. Journal of Biomedical Nanotechnology (in Press)

EVALUATIVE REPORT OF THE DEPARTMENT OF COMPUTER SCIENCE

1. Name of the department: Computer Science

2. Year of Establishment : 1998

3. Names of Programmes /Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.) : Bachelor with honours in Computer science (three years), B.Tech. computer sciences (four years).

4. Names of Interdisciplinary courses and the departments/units involved:

Department of Electronics is involved.

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:

Department participates in teaching of B.Sc. hons programmes of Electronics, Instrumentation, Biomedical Sciences and Food Technology.

7. Courses in collaboration with other universities, industries, foreign institutions, etc.-

CCNA (Cisco Networking Academy)

In collaboration with CISCO, the Cisco Networking Academy Program (CNAP) is done in the college since 2002. Through the program, students learn how to design, build and maintain computer networks. They develop practical computer networking knowledge and skills in hands-on environment. This further aid students in acquire the knowledge and skills needed to prepare them for the Cisco Certified Network Associate (CCNA). CISCO has agreed to make our college and all women CISCO Academy to run Cisco program**. Cisco has provided one set of CISCO Equipment required for running the program free of cost.**

8. Details of courses/programmes discontinued (if any) with reasons:

Bachelor of Information Science (BIS) has been discontinued by the University of Delhi and has been restructured as B.Sc. (Hons.) Computer Science

9. Number of teaching posts:

	Sanctioned	Filled
Professors		
Associate Professors		
Asst. Professors	9	3-Permanent 6- Adhoc

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
Dr. Suruchi Chawla	Ph.D.	Assistant Professor	Web Intelligence	11 years	---
Ms. Deepali Bajaj	MCA, M.Phil.	Assistant Professor	Hypercube: Parallel Architecture System	9 years	
Dr.Aakanksha	Ph.D.	Assistant Professor	Computer Networks and Unix Network Programming	15 years	----

11. List of senior visiting faculty:

- Ms. Deepti chadha, Scientist C grade, National Physics laboratory
- Prof. Sanjay Goel, Professor and Head (Department of Computer Science Engineering & Information Technology), Japyee Institute of Information Technology
- Dr. Sarika Jain, Faculty Member, National Institute Of Technology Kurukshetra, Computer Applications,

12. Percentage of lectures delivered and practical classes handled(programme wise) by temporary faculty: 58 %

13. **Student -Teacher Ratio (program wise):** 15 :1
14. **Number of academic support staff (technical) and administrative staff; sanctioned and filled :**

    Programmer: 01 (vacant)
    Technical Assistant: 01 (filled)
    Scientific Assistant: 01 (filled on adhoc basis)
    Lab Assistant: 04 (02-filled, 02-vacant)
    Lab Attendant – 03 (02-contactual, 01-vacant)

15. **Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil/PG.:** Details are given in clause 10

16. **Number of faculty with ongoing projects from a) National b) International funding agencies and grants received:** None
17. **Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received:** None
18. **Research Centre /facility recognized by the University:** None
19. **Publications:**
    a) **Publication per faculty:** 18/3=6

S.No.	Faculty Name	Publications in journal	Pub. Cited in web	Citation Index
1	Dr. Suruchi Chawla	7	7	H index=2
2	Dr. Aakanksha	8	8	H index=3
3	Ms. Deepali Bajaj	3	3	-

- **Number of papers published in peer reviewed 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**

- **Chapter in Books:** one

  Aakanksha, Bedi, P., "Trustworthy Communication in Ad-hoc Networks". Book chapter in Managing Trust in Cyberspace, CRC Press, Taylor & Francis Group. (ISBN: 1466568445, 9781466568440)

- **Books Edited**
- **Books with ISBN/ISSN numbers with details of publishers**
- **Citation Index**
- **SNIP**
- **SJR**
- **Impact factor**
- **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 inter departmental/programme Nil

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.

Every year 8 -10% of students of our department are admitted to M.Sc. Computer Science (University of Delhi) on merit basis.

24. List of eminent academicians and scientists/ visitors to the department:

- Dr. R. K. Singh, Associate Professor & Head (IT Services)
- Mr. Nitin Rastogi, Project Manager, CSE Noida
- Dr. Saibal K Pal, Research Scientist,DRDO
- Dr. Vasudha Bhatnagar, Head, Deptt of Comp Sc, University of Delhi

- Mr. P.K. Hazra, Head, Deptt of Comp Sc, University of Delhi
- Dr. A. K. Garg, Additional Director, Innovation & IPR, Deity, Ministry of IT
- Ms. Subhasini Saxena, Associate Project Manager, Nucleus Software
- Mr. V. Ravindra Nath, Engg. Assistant AIR,Prasar Bharti
- Mr. Mukesh Jain, Entrepreneur, Founder-ST Websoft
- Ms. Bindu Batra, Senoir Project Developer,Sapient Consulting Limited
- Mr. Aditya Pancholi, Assistant Professor, Deptt. of Comp. Sc., University of Delhi
- Mr. Amit Bhardwaj, Software Developer, Leewayhertz Technologies
- Mr. Ankit Singhal, Senior Member Technical Staff AGNITY Inc.
- Dr. Ajay Gupta, Director, Delhi University Computer Centre
- Mr. Rakshit Tondon, Consultant, Internet and Mobile Association of India (IAMAI)

25. Seminars/ Conferences/Workshops organized & the source of funding

a) National:

The college has Cisco Networking Academy (CNA) since year 2002. CNA has organised the following activities in last few years:

- CNA in collaboration with Cisco Systems celebrated *Girls in ICT day,* on 9th January 2014 in which eminent speakers and more than 800 girls were participated.
- CNA in collaboration with Cisco Systems organized *Women Rock IT on* 5th Febuary *2015.* The panel discussion aimed to popularize IT as a career option for females in which more than 900 girls were participated.

b) International : Nil

26. Student profile programme/course wise:

Name of the Course/programme (refer question no. 4)		Applications received	Selected	Enrolled *M *F
B.Sc. (H)	2011		58	F

Name of the Course/programme (refer question no. 4)		Applications received	Selected	Enrolled *M *F
Computer Science	2012		62	F
	2013		81	F
	2014	20186	60	F

*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) Computer Science	2011	No record	No record	Nil
	2012	58.07	41.93	Nil
	2013	39.51	60.49	Nil
	2014	53.33	46.66	Nil

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc. ? Not applicable.

29. Student progression

Student progression	Against % enrolled
UG to PG	65%
PG to M.Phil.	Nil
PG to Ph.D.	Nil
Ph.D. to Post-Doctoral	Nil
Employed (after graduation)	17.44%
• Campus selection	73.33%

Student progression	Against % enrolled
• Other than campus recruitment	26.66%
Entrepreneurship/Self-employment	Nil

30. Details of Infrastructural facilities

a) **Library:** Departmental Library has a collection of various references, texts and curriculum related books and other study material.

b) **Internet facilities for Staff & Students:** College campus is Wi-Fi enabled with 40 Access Points and 4 Wi-Fi switches providing maximum speed upto 94.8 Mbps.

c) **Class rooms with ICT facility**: All lecture theatres are well equipped with wall mounted projectors.

d) **Laboratories**: 4 Well equipped ICT enabled labs with

- about 150 computers with latest computer configuration : Intel corei7 – 3.4 GHz processors with 4 GB RAM, 64 bit operating System,
- 3 High-end HP servers,
- a good combination of Licensed Software and Free/Open Source Software to enrich student practical experience,
- 4 color laser printer, 20 laser printers and 10 scanners

31 Number of students receiving financial assistance from college, university, government or other agencies

Year	No. of Students
2011-2012	6
2012-2013	8
2013-2014	6
2014-2015	7

32 Details on student enrichment programmes (special lectures / workshops / seminar) with external experts

- Organized talk on Emerging Cyber Crime Threats and Cyber Security by renowned industry experts in January 2015.
- Organized four day workshop on PHP and Javascript in association with NIIT in October 2014.
- Panel Discussions on "Exploring Career Opportunities" where professionals and academicians from diverse fields were invited to help in evaluating various career paths for the students in March 2014.
- Organized an industrial visit to Indian Meteorological Department (IMD) for undergraduate B.Sc. Computer Science Students where students visited Satellite Communication Department, National Weather Forecasting Centre and also learnt about Global Telecommunication System Department in October 2011.
- A Lecture Series on "A Conclave on new trends in IT" was organized to enlighten students with upcoming technological advancements. Eminent speakers from diverse fields illuminated students by sharing their knowledge and experience in March 2014.
- A workshop on .Net 2.0 was organized by Computer Science Department collaboration with HCL Technologies for duration of 80 hours to equip students with latest technology in January 2010.
- A workshop "Communications Skill Builder Programme" was organized by department in collaboration with Anthem Academy for the overall personality development of students in October 2009.
- A "Robotics" workshop was organized in collaboration with IIT Bombay iSENCOBOTZ and SIXTHSENSE BOTZ, were two day workshops each where students learned about various kinds of robots such a line following robot, wall following , robot, wall repelling robot, object following robot, object repelling robot, fire fighting robot, sound sensing robot, Light sensing robot and a lot more in Febuary 2013 and March 2014.

33 Teaching methods adopted to improve student learning

- Peer Learning and Self Learning activities are carried out in the classes to improve the overall learning process of students.
- Use of ICT enabled classrooms and laboratories for showing animations, realistic video recordings, 3D diagrams, etc. especially in subjects like Computer Graphics (for e.g. Phong Shading, Morphing).

34 Participation in Institutional Social Responsibility (ISR) and Extension activities

- Students and teachers are actively involved in carrying out social service activities like blood donation camp, Thalassemia Awareness programme, collection drive etc. This will help students to connect to society and provide their contributions.

35 SWOC analysis of the department and Future plans

SWOC ANALYSIS

Strengths

Faculty:

- Department boasts of highly qualified faculty with expertise in varied CS areas.
- CS faculty is an amalgamation of members associated with quality research and professionals with industry experience.
- The faculty members complement each other and promote learning beyond classrooms.
- Faculty is flexible to constantly changing education requirements and devise innovative teaching methods
- Comprehensive Question Bank(s) for various subjects is in place and is constantly updated by our faculty members

Excellent Administrative and Technical Support:

CS Department derives its strength from the efficient administrative staff and prompt lab team to execute its activities. We have a Non-Teaching Team of 6 members who are well equipped with technical know-how to efficiently administer our labs.

Infrastructure:

We have a good computing environment and excellent lab facilities

- 4 Well equipped ICT enabled labs and CISCO Networking Lab
- A good combination of Licensed Software and Free/Open Source Software to enrich student practical experience
- 3 High-end HP servers
- Wi-Fi campus to explore beyond books

Students:

Our students are actively involved in both academic and extra-curricular activities.

- Our students have secured University level positions for B.Sc.(H) Computer Science
- More than 95 % pass percentage
- Organized various technical events in college; like Tech Melange which is an inter-university tech fest.
- Participated and won various inter-college events
- CS students form a strong base for the Students' Society and various other societies of college.
- Members of Google Club
- Well placed alumni in academics, research and corporate

Weakness:

- Need to drive students to participate and get involved in innovative projects
- We need to focus more on developing soft skills of our students
- Need to collaborate more with industry for planning job ready courses

Opportunities:

E-newsletter

- CS Department has introduced "ENIAC-Times" which serves as medium of information of various department activities and is an opportunity
- to plan more innovative activities
- to combine technical and creative skills of students
- keep them abreast of current trends in technology
- motivate them to learn and move beyond books

Hands-on Training Sessions

- To augment learning CS Department plans to organize Hands-On trainings and Workshops
- Since IT is a necessity today; basic sessions can be planned as inter-departmental activities
- Advanced sessions can be planned for CS students to go beyond the curriculum

Promote Research oriented major/minor projects funded by DST,UGC,DBT

We have a dedicated faculty with quality research background who can guide students to undertake Research oriented Projects. These projects can be a step to help solve some problems of our society.

Develop Inter-Disciplinary Projects

With the launch of FYUP; we can use DC-II and FC to explore joint inter-disciplinary projects with other departments

Challenges:

Faculty Strength

- With only 3 permanent faculty members; it's a challenge to mentor and navigate students with constant guidance
- Loss of experience through moving away of ad-hoc faculty
- Limited faculty strength also presents a challenge to balance teaching and research

Visibility and Outreach

- Being an emerging department of a young college we have a long way to go to make ourselves visible despite good performance in academics
- Being located in a far corner of the national capital; we face challenge in attracting young minds to join us in various activities; but making ourselves visible by updating our college website and promoting our activities on social media this problem can gradually be addressed.

36. List of Research Publications

Dr. Suruchi Chawla

- Improving Information Retrieval Precision using Query log mining and Information Scent, Information Technology Journal.
- Agent based Information Retrieval System using Information Scent, Journal of Artificial Intelligence, 2010, pp 1-19, Asian Network for Scientific Information.
- Personalized Web Search using Information Scent, Proc CISSE'07 - International Joint Conferences on Computer, Information and Systems Sciences, and Engineering, Technically Co-Sponsored by: Institute of Electrical & Electronics Engineers (IEEE), University of Bridgeport, 2007, published in LNCS (Springer), December 3-12
- Improving Information Retrieval Precision by Finding Related Queries with similar

Information need using Information Scent. Proc, ICETET'08 – The 1st International Conference on Emerging Trends in Engineering and Technology, (Proceedings published by IEEE Computer Society Press and Papers also available in IEEE Xplore),2008, pp.486-491, July 16-18

- Finding Hubs and authorities using Information scent to improve the Information Retrieval precision ,Proc. ICAI'08 -The 2008 International Conference on Artificial Intelligence,WORLDCOMP'08, 2008,July 14-17

- Query Expansion using Information Scent , Proc ITSIM 08- The International Symposium on Information Technology, Kuala Lampur , Malyasia,2008, Co-Sponsored by :Institute of Electrical & Electronics Engineers(IEEE)

- Fuzzy Rough Attribute Reduction for High Scent Web Page Recommendation, Twelfth International Conference on Rough Sets, Fuzzy Sets, Data Mining and Granular Computing, Indian Institute of Technology, Delhi, India, published in LNCS (Springer), Dec. 15-18, 2009

Dr. Aakanksha

- *Trust and context view-based knowledge sharing in MANets*, International Journal of Trust Management in Computing and Communications, ISSN online: 2048-8386, Inderscience Publishers, vol. 1, No. 1, 2012, pp. 85-103.
- *Trusted and load-balanced Ant-based Routing in Mobile Ad-hoc Networks*, International Journal of Artificial and Soft Computing 4(2/3): 195-211 (2014)
- *Mobile Process Groups based Device/Service Discovery and Interoperability in MANets* in International Conference on Intelligent Systems Design and Applications (ISDA 2012), pp. 466-471. (Indexed in DBLP, Google Scholar)
- *MPG_AbTR: Ant Based Trusted Routing in MANets Using Mobile Process Groups*, in Proceedings of the International Conference on Soft Computing for Problem Solving

(SocProS 2011), AISC (Springer), vol. 130, pp. 367-376. (Indexed in DBLP, Google Scholar)

- *MPG-STAR: Mobile Process Groups Based Secured and Trusted Routing for MANets*, International Conference on Computational Intelligence and Communication Networks (CICN 2011), pp.549-553. (INSPEC Accession Number: 12461740, DOI: 10.1109/CICN.2011.118)
- *MPG-TAR: Mobile Process Groups Based Trust Aware Routing Protocol for MANETs*, International Conference on Advances in Recent Technologies in Communication and Computing (ARTCom 2010), pp.131-135. (INSPEC Accession Number: 11679392, DOI: 10.1109/ARTCom.2010.18)
- *A Self-organizing Self-healing On-demand Loop-free Path Routing Protocol Using Mobile Process Groups for Mobile Ad-hoc Networks*, International Conference on Advances in Recent Technologies in Communication and Computing, 2009. (ARTCom 2009), pp.396-400. (DBLP, Google Scholar)
- *Load Balancing on Dynamic Network Using Mobile Process Groups*, International Conference on Advanced Computing and Communications, (ADCOM 2007), pp.553-558. (ACM Digital Library) DOI:10.1109/ADCOM.2007.27

Ms. Deepali Bajaj

- *Credit Based Collaborative Filtering Approach: An Improvement in Recommender Systems*, International Journal of Computer Trends and Technology Vol 9 Number 7, ISSN : 2231 – 2803
- A Review of Multi-Protocol Label Switching: Protocol for Traffic Engineering on Internet, International Journal of Computer Trends and Technology (IJCTT) – volume 11 number 3 – May 2014, ISSN: 2231-2803
- Regression Test Suite Minimization using Set Theory, International Journal of Advanced Research in Computer Science and Software Engineering , Volume 4, Issue 5, May 2014 ISSN: 2277 128X

EVALUATIVE REPORT OF THE DEPARTMENT OF ELECTRONICS

1. **Name of the department** : **ELECTRONICS**
2. **Year of Establishment** : 1989
3. **Names of Programmes / Courses offered:** Bachelor with honours in Electronics (three years) and B. Tech. in Electronics. (four years)
4. **Names of Interdisciplinary courses and the departments/units involved: -** Departments of Physics, Mathematics are involved.
5. **Annual/ semester/choice based credit system (programme wise) : Semester**

   All courses are in semester system.
6. **Participation of the department in the courses offered by other departments:**

   The department participates in teaching of B.Sc. (hons.) programmes of Computer Science and Instrumentation.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.:** Nil
8. **Details of courses/programmes discontinued (if any) with reasons :** Nil
9. **Number of Teaching posts:**

	Sanctioned	Filled
Professors	Nil	Nil
Associate Professors	Nil	Nil
Assistant Professors	8	3-permanent (Promoted to Associate Professor through CAS/MPS) 5 –adhoc

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 Venika Gupta	M.Phil.	Associate Professor	Microwaves and Communication	*22*	NIL
Ms Preeti Singhal	M.Phil.	Associate Professor	Microprocessors	*22*	*NIL*
Dr Amita Kapoor	PhD	Associate Professor	Photonics and Machine Learning	*18*	*NIL*

11. **List of senior visiting faculty**: Nil
12. **Percentage of lectures delivered and practical classes handled(programme wise) by temporary faculty:** 63% (Approx)
13. **Student -Teacher Ratio (program wise):** 16:1
14. **Number of academic support staff (technical) and administrative staff; sanctioned and filled :**

    Technical Assistant: 01 (filled on adhoc basis)

    Lab Assistant- 01 (permanent)

    Lab Attendent- 02 (contractual)

15. **Qualifications of teaching faculty with D.Sc/ D.Litt/ Ph.D/ Mphil/PG.:** Details given in clause 10.
16. **Number of faculty with ongoing projects from a) National b) International funding agencies and grants received**:

    a) National project

    Title: Development of e-resources on standard procedure of operation and applications of important electronic devices used by undergraduate science students (joint project of three faculty members).

    Funding Agency: CISCO Systems

    Grants Received: 50,000/-

b) International project

Title: Didactic education of computer and communication techniques

Funding Agency: University of Delhi

Grants Received: 5,00,000/-

17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received:

- Development of e-resources on standard procedure of operation and applications of important electronic devices used by undergraduate science students funded by University of Delhi and received grant of Rs 5 lakhs.
- Didactic education of computer and communication techniques funded by CISCO systems and received grant of Rs 50,000.

18. Research Centre /facility recognized by the University: The Department has a workshop cum research center.

19. **Publications:**

a. Publication per faculty: 11/3= 3.66 per faculty

b. Number of papers published in peer reviewed journals (national / international) by faculty and students: 11

Name	Papers in Peer Reviewed International Journals
Ms Venika Gupta	--
Ms Preeti Singhal	--
Dr Amita Kapoor	11

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.): Nil

d. Monographs: Nil

e. Chapter in Books: Nil

f. Books Edited : Nil

g. Books with ISBN/ISSN numbers with details of publishers: Nil

h. Citation Index/h-index

Name	Citation Index	h-index
Ms Venika Gupta	--	--
Ms Preeti Singhal	--	--
Dr Amita Kapoor	20	2

Name of journal in which faculty has published papers	Impact Factor (2012)	SNJP (2012)	SJR (2005-12)
Transparent Optical Networks (ICTON), 2010 12th International Conference on	--	--	--
Proceedings of SPIE	0.589	--	0.22
Applied Optics	1.689	--	--
J. Opt. Soc. America B	2.210	--	--
Proc. Asia Pacific Microwave Conference	--	--	--
Optics Communications	1.438	--	0.76
International Journal of Information Technology and Management			

20. Areas of consultancy and income generated: Nil

21. Faculty as members in National committees/ International Committees/ Editorial Boards

- Dr Amita Kapoor is IEEE and OSA member. She is also part of IEEE mentor program. She serves as reviewer for Optical Society of America (OSA) and as TPC for various International and National conferences.

22. **Student projects**

- **Percentage of students who have done in-house projects including inter departmental/programme:** 18%
- **Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/other agencies:**

  All the second year and third year students of B.A.Sc Electronics had to go for compulsory training/project in outside agencies. From 1989-2009 all students went for such trainings in places like CEL, DRDO, MTNL, AIR, Air India etc. From 2010 onwards in the B.Sc (H) there was no provision for such training. Still

students are motivated to undergo training for their own benefit. This year 30% of the students went for training at outside agencies.

23. Awards/ Recognitions received by faculty and students

Dr Amita Kapoor

- Was awarded Instructor Year of Service award for 10 years of active participation and service in the CISCO Networking Academy Program.
- Was given Certificate of Excellence for First Place Student Presentation, " Long period grating refractive index sensor: optimal design... interrogation", presented at the International conference Photonics 2008 organized by Indian Institute of Technology Delhi.
- Was awarded the prestigious DAAD Sandwich Model Scholarship to study at institute of Photonics and quantum electronics, Karlsruhe Institute of Technology, Karlsruhe, Germany.
- She is a reviewer for Optical society of America (OSA) group of publications.

Awards Won by Students:

- Following students held university positions for the academic session 2011-2014
  - Ms Aayushi Gaur - 1st Position
  - Ms Anchali Jain – 3rdPosition
- Ms Prachi Sharma and Ms Kanika Asht won the third prize in *Line follower* Robotics competition held at JECRC University, Jaipur in 2014.

24. List of eminent academicians and scientists/ visitors to the department:

- Dr Niloufer Shroff, Scientist G and Head (Electronics Materials and Components division), Electronics Niketan, Department of Electronics and It, MCIT, New Delhi.
- Dr. Sanjeev K. Kaushal, VP for Corporate Technology and Business Development at Tokyo Electron Limited (TEL), Minato, Tokoyo, Japan.

- Prof. Dr. Dr-ing Wolfgang Freude, außerplanmäßiger (Extraordinary) Professor, Institute of Photonics and Quantum Electronics, Karlsruhe Institute of Technology, Karlsruhe, Germany.
- Mr Rakesh Bhatnagar, Retd. ADGE Doordarshan, New Delhi.
- Prof. Ajoy K. Ghatak, Professor Emeritus, Physics Department of Indian Institute of Technology, New Delhi.
- Prof. Enakshi Khullar Sharma, Head and Professor, Department of Electronics Science, University of Delhi, South Campus, New Delhi.
- Prof D. S. Mehta, Professor, Department of Physics, Indian Institute of Technology, New Delhi.
- Dr. J. V. Chaudhary, Joint Director DRDO, Delhi.
- Dr. Vikas Sahni, School of Computing, National College of Ireland

25. Seminars/ Conferences/Workshops organized & the source of funding

a. National (Last 5 years)

- UGC sponsored national conference *Recent Trends in Instrumentation and Electronics (RTIE-2015)* organized on January 5-6, 2015 jointly with department of Instrumentation.

b. International- Nil

26. Student profile programme/course wise:

Name of the Course/programme (refer question no. 4)	Year of Admission	Applications received	Selected	Enrolled *M *F
B.Sc (H) Electronics	2011-12	-	36	F
B.Sc (H) Electronics	2012-13	-	50	F
DC-I as Electronics Sem-I	2013-14	11531	39	F
B.Sc (H)Electronics	2014-15	15949	38	F

*M=Male F=Female

27. Diversity of Students

Year	% of students from the same state	% of students from other States	% of students from abroad
2011-2012	78%	22%	Nil
2012-2013	72%	28%	Nil
2013-2014	56%	44%	Nil
2014-2015	38%	62%	Nil

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.? Not applicable

29. Student progression

Ours is an undergraduate college. The college has no track of students pursuing higher studies after post graduation.

Student progression	Against % enrolled
UG to PG	95%
PG to M.Phil.	Nil
PG to Ph.D.	Nil
Ph.D. to Post-Doctoral	Nil
Employed (after graduation) • Campus selection • Other than campus recruitment	
Entrepreneurship/Self-employment	Nil

30. Details of Infrastructural facilities

a) Library: The department has a small library/book club and a reading room. Students use its facility during practicals and otherwise. The department library has about 100 books donated by faculty and alumni.

b) Internet facilities for Staff & Students: The department has about 40 systems with Internet facility. They are available for both staff and students to access web.

c) Class rooms with ICT facility: On each floor there is a seminar room with projector and display board. Besides this the department also has a projector which can be moved to any class as required.

d) Laboratories: The department has fully equipped seven laboratories and a research center. We have two electronic simulation labs where we have the latest open source and proprietary softwares to train students in the fields of embedded systems, Robotics and Micro-controllers. Department has a high end server. There is a digital and Microprocessor lab with 8086 kits and supported accessories. Department also possesses 8051 and Atmega 2560 micro-controller boards and kits. The Analog and communication lab is fully equipped with DSO, Multimeters, function generators and communication trainer kits.

31. **Number of students receiving financial assistance from college, university, government or other agencies**

Year	Number of students receiving full financial assistance	Number of students receiving partial financial assistance
2011-12	2	-
2012-13	5	-
2013-14	4	1
2014-15	4	-

32. **Details on student enrichment programmes (special lectures / workshops / seminar) with external experts (Last 5 years)**

- A talk was organized on *Cloud Computing - the hype, reality and future* by Dr. Vikas Sahni, School of Computing, National College of Ireland on 30th October 2014.

- Organized a two day Workshop on *Robotics-i SensoBotz* in association with ARK Technosolutions, 13-14 March 2014.
- Organized a two day workshop *Mobipreneur Workshop*, Conducted by Mr Rajat Sharma, CEO, Thotlabs, in association with Nurture Talent Academy and Entrepreneur Development Cell, IIT Delhi.
- Organized a two day Workshop on *Robotics* conducted by ARK Technosolutions, in association with AIESEC, IIT, Kaharagpur, NRC India and ARK Technosolutions in January 2013.
- Organized a One day *Workshop On Optics*, with Prof Ajoy Ghatak, Professor Emeritus, Indian Institute of Delhi, New Delhi as the resource person on March 03, 2011
- Organized a two day technical festival *Technexus-2011*. There was a lecture by Mr Rakesh Bhatnagar, Retd ADGE Doordarshan Delhi on Communication Techniques followed by inter college technical gaming events like circuit making, presentation etc.

33. Teaching methods adopted to improve student learning:

- The teaching is supported by the use of animations to explain difficult concepts.
- Due to small class strength it is possible to give individual attention to students.
- Team work is encouraged by giving team based projects/assignments.
- To improve their speaking skills students are asked to give presentation on relevant topics.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities:

Both faculty and students actively participate in the events organized by Eco Club and Women Development Cell beside this department organizes trips to old age home etc for both faculty and students..

- A visit to an old age home *Jan Kalyan* was organized on 20th October 2014 to share and spread the celebration of Deepawali.

35. SWOC analysis of the department and Future plans

Strengths

- Well qualified and committed faculty.
- State of the art lab facilities.
- Regular organization of workshops, seminars and lecture series.
- Learning beyond syllabus is encouraged.
- Good team work.
- Conducive interdepartmental interactions

Weakness

- Research dimension lacking
- Less Interaction with the industry.
- Curriculum upgrade is not regular

Opportunities

- Good infrastructure.
- Encouragement for research and in-house projects.
- Freedom to organize short term workshops.
- Good interdepartmental support

Challenges

- Students are girls with varied financial and cultural background.
- Helping them come out of protective shell.
- Break traditional mindset.
- Inculcate research interest in both faculty and students.
- Upgrading both labs and faculty knowledge with the advancements in electronic industries.

Future Plans:

- Increase interaction with Industry and Academia by regularly organizing national workshops and seminars.
- Increase the research component for both faculty and students.
- Arrange educational trips.

- Utilize our resources and expertise for community extension services
- More collaborative projects with the industry.

36. List of Research Publications:

Dr Amita Kapoor

- Punita Saxena, Amita Kapoor, Efficiency Evaluation of State Transport Undertakings of India using DEA-NN approach, International Journal of Information Technology and Management, Jan 2015, 10(5) 2189-2198
- Sneha Kabra, Amita Kapoor, Himani Dua, "Development of e-resource on standard procedure of operation and applications of important electronic devices used by undergraduate science students", Journal of Undergraduate Research and Innovation, University of Delhi, February 2015 1(1), 233-238.
- Kapoor, Amita, Sneha Kabra, and Himani Dua. "Development, use and impact of e-learning based modules for teaching electronics: To undergraduate girl students: A case study." In *MOOC, Innovation and Technology in Education (MITE), 2014 IEEE International Conference on*, pp. 215-218. IEEE, 2014.
- Kabra, Sneha, Himani Dua, and Amita Kapoor. "Development of e-learning based module for teaching practicals in electronics to science and engineering students in India." In *Teaching, Assessment and Learning (TALE), 2014 International Conference on*, pp. 173-174. IEEE, 2014.
- Kapoor, Amita, and Enakshi K. Sharma. "Neural network modelling of EDFA." In *Recent Advances in Photonics (WRAP), 2013 Workshop on*, pp. 1-3. IEEE, 2013.
- Freude, Wolfgang, René Bonk, Thomas Vallaitis, Andrej Marculescu, Amita Kapoor, Enakshi K. Sharma, Christian Meuer et al. "Linear and nonlinear semiconductor optical amplifiers." In *Transparent Optical Networks (ICTON), 2010 12th International Conference on*, pp. 1-4. IEEE, 2010.
- Kapoor, Amita, Enakshi K. Sharma, Wolfgang Freude, and Juerg Leuthold. "Saturation characteristics of InGaAsP-InP bulk SOA." In *OPTO*, pp. 75971I-75971I. International Society for Optics and Photonics, 2010.

- Kapoor, Amita, and Enakshi K. Sharma. "Long period grating refractive-index sensor: optimal design for single wavelength interrogation." *Applied optics* 48, no. 31 (2009): G88-G94.
- Jain, Geetika, Amita Kapoor, and Enakshi K. Sharma. "Er-LiNbO 3 waveguide: field approximation for simplified gain calculations in DWDM application." *JOSA B* 26, no. 4 (2009): 633-639.
- Kapoor, A., R. Singh, and E. K. Sharma. "Suppression of Amplified Spontaneous Emission in Erbium Doped Fiber with Long Period Grating written in it." In *Microwave Conference, 2007. APMC 2007. Asia-Pacific*, pp. 1-4. IEEE, 2007.
- Kapoor, Amita, Geetika Jain, and Enakshi K. Sharma. "Simplified gain calculation in erbium-doped LiNbO3 waveguides." In *Integrated Optoelectronic Devices 2007*, pp. 646808-646808. International Society for Optics and Photonics, 2007.

EVALUATIVE REPORT OF THE DEPARTMENT OF FOOD TECHNOLOGY

1. **Name of the department** :**FOOD TECHNOLOGY**
2. **Year of Establishment** :1989
3. **Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.):** Bachelor with honours in Food Technology (three years) and B. Tech. in Food Technology (four years)
4. **Names of Interdisciplinary courses and the departments/units involved:**

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 :**

7. **Courses in collaboration with other universities, industries, foreign institutions, etc.**

   IGNOU Diploma Course"Value Added Product from Fruits and Vegetables" (2006-2011)

8. **Details of courses/programmes discontinued (if any) with reasons :**

   IGNOU Diploma Course"Value Added Product from Fruits and Vegetables".

9. **Number of Teaching posts :**

	Sanctioned	Filled
Professors		
Associate Professors		
Asst. Professors (2009-14)	7	2-permanent (Promoted to Associate Professor through CAS/MPS) 1-permanent (Asst. Professor) 4 –adhoc

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
Dr.Ranjana Singh	Ph.D, M.S.c Food Technology	Associate Senior Professor	• F.T. Product Development • Soybean Processing & Tech.	23	NIL
Dr. Deepa Joshi	Ph.D. Dairying M.Sc. Food Technology	Associate Professor	• Enzymology • Food Microbiology	23	NIL
Ms. Para Dholakia	MSc. Food & Nutrition	Assistant Professor	Food Science & Nutrition	11	

11. List of senior visiting faculty:

12. **Percentage of lectures delivered and practical classes handled(programme wise) by temporary faculty:** 67%

13. Student -Teacher Ratio (program wise): 20:1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled :

Technical Assistant : 1 (Permanent)

Lab Assistant : 2 (Permanent)

Lab Attendant : 1 (Contractual basis)

15. Qualifications of teaching faculty with D.Sc/ D.Litt/ Ph.D/ MPhil/PG.: Details given in clause 10.

16. **Number of faculty with ongoing projects from a) National b) International funding agencies and grants received:** 3 (10 Lac, 8.5 Lac and 7.33 Lac)

17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received:

- An Assessment of consumer's exposure to pesticides in conventional vegetables sold with the "organic "tag in Delhi- NCR region, India (2012-2013)
- Synthesis & characterization of silver nanoparticles and their role in inhibiting

food spoilage organisms.

- A grant of Rs. 7.33 Lac given by DBT from 2014-2017 under its "Star College Scheme towards fixed assets, recurring expenses, study tours and visits.

18. Research Centre /facility recognized by the University:

19. Publications:

* **a) Publication per faculty**

Name	Publications in journal	Pub. Cited in web	Books edited	Books authored	Citation index	SNIP/sjrNP

* **Number of papers published in peer reviewed 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**
* **Chapter in Books**
* **Books Edited**
* **Books with ISBN/ISSN numbers with details of publishers**
* **Citation Index**
* **SNIP**
* **SJR**
* **Impact factor**
* **h-index**

20. Areas of consultancy and income generated:

21. Faculty as members in

a) National committees b) International Committees c) Editorial Boards....

Dr. Deepa Joshi

- Technical Expert (Feb.2012) "Assessment Committee of part of Scientist B in BIS (Bureau of Indian Standards), New Delhi.
- Advisor (May 2013) Interview Board, Staff Selection Commission, Ministry of Agriculture.
- Member (Oct.2013- till date) Food Analyst Examination Board, FSSAI (Ministry of Health & Family Welfare, New Delhi.)

22. Student projects

a) Percentage of students who have done in-house projects including inter departmental/programme

In house projects	% of students
Novel product Development	Approx. 33%
Project on pesticide	4%
Project on use of silver nanoparticles to prevent food spoilage	4%

b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/other agencies:

23 Awards/ Recognitions received by faculty and students

- Dr. Ranjana Singh(Associate Professor) given *Meritorious teacher* award by Delhi Government (2013-2014)
- Dr. Deepa Joshi (Associate Professor) given *Meritorious teacher* award by Delhi Government (2014-2015)
- University topper Year 2014.
- Two students won 'Best presenter award 'in the student academic congress held in 2013
- Every year two students are awarded with YK Kapoor Memorial award by All India Food Processors Association

- Every year one students is awarded with Italian Technical Services by All India Food Processors Association

24 List of eminent academicians and scientists/ visitors to the department

- Mr. Daniel, Mr. C. 19:1Gefain Assistant Country Director , Dr. Nirupa Sen, Safety Coordinator, U.S.Food and Drug Administration(FDA)
- Ms. Parina Garg Deputy Manager, NPD, GSK Consumer health care.
- Mr. Shaminder Pal Singh R&D and Scientific and regularity affair Pepsico India.
- Ms. Anita Makhijani, Assistant technical adviser ministry of Woman and Child.
- Director, Assocom institute of Bakery technology and management (AIBTM).
- Ms. Renu Kohli Vice President Nutrition and Health policy PepsiCo India.
- Mr. Anand Gulati Training and Development manager, Dr. Sujata Pandit head R&D FRAC.

25 Seminars/ Conferences/Workshops organized & the source of funding

a) National : Yes **b)International :**

National (Seminars/ Conferences/Workshops) from 2009-2014: 7

Source of funding: (EIC) Export Inspection Council, AIBTM, AFST (I) Association of Food Scientist & Technologists

- Achieving Food Security in times of crisis- World Food Day 16th Oct. 2009.
- United Against Hunger - World Food Day 16th Oct. 2010
- Food Prices-from crisis to stability- World Food Day 16th Oct. 2011
- Agricultural Cooperatives- Key to feeding the world – World Food Day 16th Oct. 2012
- Sustainable food system for food security and nutrition – World Food Day 16th Oct. 2013
- Family Farming: Feeding the world, Caring for the Earth- World Food Day 16th Oct. 2014
- Workshop on Food safety in international trade, in collaboration with export inspection council of India and AFST (Delhi) 4-6 April 2013

26 Student profile programme/course wise:

Name of the Course/programme (refer question no. 4)	Applications received	Selected	Enrolled *F
2011-2012		46	F
2012-2013		46	F
2013-2014		56	F
2014-2015	16384	45	F

* 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
Food Technology 2011-12	74	26	Nil
Food Technology 2012-13	84	16	Nil
Food Technology 2013-14	60	40	Nil
Food Technology 2014-15	47	53	Nil

28 How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc? Not applicable

29 Student progression- Ours is an undergraduate college. The college has no track of students pursuing higher studies after post graduation.

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

Student progression	Against % enrolled
Entrepreneurship/Self-employment	NA

30 Details of Infrastructural facilities

a) Library ------ one Departmental Library with reference books, Magazines and student project Reports

b) Internet facilities for Staff & Students ----- Yes

c) Class rooms with ICT facility------Yes

d) Laboratories----- 7 Laboratories with two Pilot Plants

- Analytical laboratory I
- Analytical laboratory II
- Food Microbiology laboratory with culture lab
- Instrumentation laboratory
- Food &Nutrition Laboratory
- Food Engineering Laboratory
- Sensory Laboratory
- Plant I
- Plant II

31 Number of students receiving financial assistance from college, university, government or other agencies

Fee Concession –

Year	No. of Students
2011-2012	2
2012-2013	3
2013-2014	3
2014-2015	4

a. **POSCO Scholarship** – 1 student

32 Details on student enrichment programmes (special lectures / workshops / seminar) with external experts

- Celebration of World Food day every year on 16th Oct. with technical session and event session.
- Workshop by US FDA on Heat Processed Food.
- Conference and Exhibition like CII, CSIR Technofest, and AIFPA seminar.
- Industrial Project with Paharpur packaging industries.
- Attended National Conference on Ushering second green revolution in Indian agriculture through public private partnership organized by CII.
- Participation in one day seminar on Food Safety role of standards conducted by BIS.
- Excursion to NDRI. Karnal, YAKULT Sonepat.
- International conference on food processing value change management and food safety at NIFTEM (kundli).
- Presentation of novel Food product during Antardhwani.
- Presentation on paper by students in student academic congress.
- International conference cum exhibition on " India Farm to Fork 2013" organized by PHD Chamber of Commerce and Industry, supported by MoFPI, APEDA, NHB was attended by the students and faculty members on 29-30 Nov,2013 at New Delhi.
- Participated in the inter-college cuisine competition "Flavours of India" with the cuisines of Bihar and Punjab during Nutrition Week celebration, organized by Institute of Home Economics in August'13.
- Glaxo Smith Kline Consumer Health care Ltd conducted an ideation and Interactive session cum competition.
- Student and faculty attended conference on "Lab quality management at par global standards" organized by RRR Business Promotion Pvt.
- Visit to International Lab EXPO. At pragati Maidan.

33 Teaching methods adopted to improve student learning:-

Seminar, Workshop, Power Point Presentation, Project Reports, Market Survey.

34 Participation in Institutional Social Responsibility (ISR) and Extension activities

- Tobacco Free Brigade
- Eco Club Activities
- Literary Society

35 SWOC analysis of the department and Future plans

Strengths:

Dedicated faculty, Team work, healthy interaction between faculty, students and other departments, well equipped laboratories, hands on practical training of all students.

Weakness:

Only undergraduate program running.

Opportunity:

Sufficient, Support from MOFPI, UGC, DBT, Links and collaboration with research institute and industries (it is already a component of FYUP).

Challenges:

To procure a PG Course with would enhance our research capability to obtain patent and Commercialization of NPD, to setup sensory lab. , to obtain star college (DBT), UGC Project, Incubation center for entrepreneurship program.

36. List of Research Publications:

EVALUATIVE REPORT OF THE DEPARTMENT OF INSTRUMENTATION

1. **Name of the department : Instrumentation**
2. **Year of Establishment :** 1989
3. **Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.:** Bachelor wih honours in Instrumentation (three years) and B. Tech Instrumentation (four years)
4. **Names of Interdisciplinary courses and the departments/units involved:**
   Departments of Biology, Electronics, Mathematics, Chemistry, Biochemistry and Physics are involved.
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:**
   The department participates in teaching of B.Sc. (Hons) programmes of Electronics.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.:**
   Six month lab course namely *Spectroscopic Methods Lab* has been conducted by instrumentation department in collaboration with Indira Gandhi Open University (IGNOU) for two semesters.
8. **Details of courses/programmes discontinued (if any) with reasons:**
9. **Number of Teaching posts :**

	Sanctioned	Filled
Professors	-	-
Associate Professors	-	-
Assistant Professors	5	2* -permanent 3- adhoc * Both have been promoted to Assistant Professor, Senior Scale, under CAS

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. Daya Bhardwaj	M.Sc. Instrumentation	Assistant Professor (Sr. Scale)	Analytical Instrumentation	15	Nil
Dr. Sneha Kabra	Ph.D. Electronics	Assistant Professor (Sr. Scale)	Semiconductor Device Modeling and Simulation	9	Nil

11. List of senior visiting faculty:

- Mr. R. K. Vishwanathan, Ranbaxy Lab. Pvt. Ltd. New Delhi
- Dr. Devnath, Indian Institute of Technology, Delhi
- Dr. Sahil Chandra, Institute of Nuclear Medicine and Allied Sciences (INMAS)
- Mr. S. K. Aggarwal, Economics Times
- Mr. S.k. Agha, Quality Assurance, Ambassador Sky Chef
- Mr. K. Ramesh, Ranbaxy Lab. Pvt. Ltd. New Delhi
- Mr. A. R. M. Rao, Ranbaxy Lab. Pvt. Ltd. New Delhi
- Dr. Vinod Sharma, National Heart Institute, Delhi
- Dr. K. Ganesh. All India Institute of Medical Sciences, Delhi
- Dr. Dinesh, USIC, Delhi
- Dr. Parongma Sen, Jawahar lal Nehru University, Delhi
- Ms. Reena Chakraverti, Indian Statistical Institute, New Delhi
- Dr. S. Narayan, Deshbandhu College, Delhi
- Mr. Rakesh Maheshwari, Electronics Regional Test Laboratory, Delhi

- Dr. Ritu Verma, Dabur India Ltd.
- Dr. T. G. Chandrashekhar, Ranbaxy Lab. Pvt. Ltd. New Delhi

12. **Percentage of lectures delivered and practical classes handled(programme wise) by temporary faculty:** 60% Approx

13. **Student -Teacher Ratio (program wise):** 14:1

14. **Number of academic support staff (technical) and administrative staff; sanctioned and filled :**

    Technical Assistant-01

    Lab Assistant- 02

    Lab Attendent-01

15. **Qualifications of teaching faculty with DSc./ D.Litt/ Ph.D/ MPhil/PG.:** Details are given in clause 10.

16. **Number of faculty with ongoing projects from a) National b) International funding agencies and grants received:**
    - No. of completed projects- 2
    - No. of faculties involved – 3
    - Funding Agency- University of Delhi
    - Total grant received for these projects- Rs 9.5 lakhs.

17. **Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received:**

    The Instrumentation Department has been granted the following projects under Vice-Chancellor Innovation Project Scheme, Delhi University which are funded by University of Delhi.
    - Innovation Project (SRCA 201) titled "*Effect of Anemia on academic performance of under graduate students of East Delhi Colleges*" sanctioned in November 2013 of amount Rs. 4.5 lakhs.

- Innovation Project (SRCA 203) titled *"Development of e-resources on standard procedure of operation and applications of important electronic devices used by undergraduate science students"* sanctioned in November 2013 of amount Rs 5 lakhs.
- Innovation Project (SRCA 101) titled "*An assessment of consumer's exposure to pesticides in conventional vegetables and vegetables sold with 'organic' tag in Delhi-NCR region, India*" from May 2012 to May 2013 of amount Rs 10 lakhs.
- The Department has also been granted Rs 11.99 Lakhs under DBT Star college scheme for various projects and workshops by Department of Bio-Technology in October 2014.

18. Research Centre /facility recognized by the University: No

19. Publications:

a) Publication per faculty 13/2 =6.5

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

Name	Publications in International/ National journals
Ms. Daya Bhardwaj	2
Dr. Sneha Kabra	12

∗**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.):** 13

∗**Monographs :** Nil

∗**Chapter in Books:** Nil

∗**Books Edited**: Nil

∗**Books with ISBN/ISSN numbers with details of publishers:** Nil

∗**Citation Index:** Dr. Sneha Kabra- 125

∗**h-index:** Dr. Sneha Kabra- 7, Ms. Daya Bhardwaj-3

Name of journal in which faculty has published papers	Impact factor (2012)	SNIP (2012)	SJR(2012)
Solid State Electronics, Elsevier, UK	1.397	1.183	0.793
Microwave and optical technology letters, Wiley	0.618	0.542	0.470
Physica Status Solidi (C), Wiley-VCH Verlag	NA	NA	NA
MicroElectronics Journal, Elsevier, UK	0.912	0.91	0.512
Phytochem Review	4.333	-	-
Biomass and Bioenergy	2.975	1.765	1.703
DU Journal of undergraduate research and Innovation	NA	NA	NA

20. Areas of consultancy and income generated: Nil

21. Faculty as members in

a) **National committees:** Nil

b) International Committees: Nil

c) Editorial Board: Nil

22. Student projects

a) Percentage of students who have done in-house projects including inter departmental/programme: 30%

b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/other agencies: 80% Approx.

23. Awards/ Recognitions received by faculty and students:

Year	Name of student/faculty	Award	Event
2010-11	Ms. Surabhi Ms. Tarannum Ms. Sukriti	I Prize II Prize III Prize	University Positions in academics
2009-10	Ms. Chetali Gupta Ms. Shubhangi Sood Ms. Tanu Bhardwaj	I Prize II Prize III Prize	University Positions in academics
2008-09	Ms. Sunaina Gupta Ms. Sarul Malik Ms. Bhawna Bourai	I Prize II Prize III Prize	University Positions in academics

24. List of eminent academicians and scientists/ visitors to the department:

- Ms. Sangeeta Mehta, Senior Analyst, Agilent Technologies India Pvt. Ltd.
- Dr. Deeksha Katyal ,Associate Professor, University School of Environment Management, Guru Gobind Singh Indraprastha University
- Dr. Kusum Lata, Program officer, United Nations Framework Convention on Climate Change(UNFCC), Germany
- Ms. Preeti Dhingra Thakkar, Neuroelectrophysiologist, G. B. Pant Hospital
- Prof. P. K. Bhatnagar, Former Head, Department of Electronic Science, Delhi University
- Dr. Saleem Javed, Associate Professor, Jamia Hamdard University
- Ms. Poonam Srivastava, Associate Vice-President, Jubiliant Organysys, Noida
- Dr. A. Sen gupta, Senior Scientist, National Physics Laboratory
- Dr. Perne Das Gupta, Secretory , Confederation of Indian Food Trade and Industry (CIFTI),
- Mr. Sahil Chandra ,Scientist , Institute of Nuclear Medicine and Allied Sciences (INMAS)
- Dr. D.A. Dabolkar, Director ,Sriram Institute of Industrial Research
- Dr. T. G. Chandrashekhar, Associate Director and Head, Analystical Research, Ranbaxy limited

- Mr. Vishwajeet Mitra, President, R&D division, Himachal futuristic communications limited (HFCL).
- Dr. Vinod Sharma, National Heart Institute
- Mr. Deepak Gunvante, R&D consumer health care ,Smithkline Beecham
- Ms. Rashmi Sharma, General Electronics(GE) Capital, Gurgaon
- Dr. Gopala Rao, Retired Scientist, Solid State Physics Laborartory
- Mr. R.K. Vishwanathan, Assistant Director, Instrumentation, Ranbaxy laboratory limited
- Dr. A.R.M. Rao, Manager, High-performance liquid chromatography (HPLC) Lab, Ranbaxy limited
- Mr. K. Ramesh, Manager, Gas Liquid Chromatography (GLC) Lab, Ranbaxy limited
- Ms. Shashi Singh Choudhary, Director, RTF

Apart from these, many other academicians and experts from various industries have been visiting the department regularly.

25. Seminars/ Conferences/Workshops organized & the source of funding

- Department of instrumentation organized two days National conference on *Recent Trends in Instrumentation and Electronics*, (R-TIE 2015) on 5-6 January 2015. It was sponsored by University Grants Commission.

26. Student profile programme/course wise:

Name of the Course/programme (refer question no. 4)	Year	Applications received	Selected	Enrolled *M *F
B.Sc. (H) Instrumentation	2011-12	NA	30	F
B.Sc. (H) Instrumentation	2012-13	NA	48	F
B.Tech Instrumentation	2013-14	6433	35	F
B.Sc. (H) Instrumentation	2014-15	8693	59	F

*M=Male F=Female

27. Diversity of Students

Name of the Course/programme (refer question no. 4)	Year	% of students from the same state	% of students from other States	% of students from abroad
B.Sc. (H) Instrumentation	2011-12	100	0	NIL
B.Sc. (H) Instrumentation	2012-13	72	28	NIL
B.Tech Instrumentation	2013-14	67	33	NIL
B.Sc. (H) Instrumentation	2014-15	56	44	NIL

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc? ? Not applicable

29. Student progression: Ours is an undergraduate college. The college has no track of students pursuing higher studies after post graduation.

Student progression	Against % enrolled
UG to PG	75%
PG to M.Phil.	NA
PG to Ph.D.	NA
Ph.D. to Post-Doctoral	NA
Employed • **Campus selection** • **Other than campus recruitment**	
Entrepreneurship/Self-employment	NA

30. Details of Infrastructural facilities

a) Library --Approximately 50 books on various subjects of the course curriculum are available in Departmental library

b) Internet facilities for Staff & Students -----Yes

c) Class rooms with ICT facility-----3 Class room dedicatedly for Department

d) Laboratories----- Department of Instrumentation has 5 laboratories, namely Microprocessor and Microcontroller lab, Analytical and Biomedical lab, Electric Machines lab, Analog electronics lab and Industrial Instrumentation lab

31. Number of students receiving financial assistance from college, university, government or other agencies:

Year	No. of Students
2011-12	3
2012-13	1
2013-14	0
2014-15	3

32. Details on student enrichment programmes (special lectures / workshops / seminar) with external experts:

- A lecture was given on "Biomedical Instruments for persons in special need" by Dr Suresh Chandra, DRDO.
- Department of Instrumentation and Department of Electronics of the college organized a UGC sponsored two day National Conference on Recent Advancements in Instrumentation and Electronics on 5th and 6th January 2015
- Two days workshop on Embedded systems: 8051 and its various peripherals for automation in collaboration with Sofcon India Private Limited on 18-19 March 2015.
- Three days workshop on *Embedded system design using 8051 microcontroller* was organized in the department on 17-19 November 2014.
- The Instrumentation department in collaboration with Electronics Department has organized a two days workshop "Workshop on Basic Electronics and Instrumentation Electronics" on 10th and 11th October, 2013 for the teaching and non teaching faculty members.
- The Instrumentation department has also organized a seminar on "Role of Analytical Instrumentation in Industries" on 30th August, 2013 by Agilent

Technologies India Pvt. Ltd.

- The Instrumentation department has organized a two days seminar and training on 8th and 9th October, 2013 at M/s Toshvin Analytical Private Ltd.
- Lectures under the series *vyakhyan* were held in March'2014 in which our eminent alumni, Dr. Kusum Lata, Dr. Deeksha Katyal, and Ms. Preeti Dhingra Thakkar were invited to interact with the students.
- Department has organized two day lecture series on "Innovation in Analytical Techniques"

33. Teaching methods adopted to improve student learning:

- Extensive use of ICT to make teaching learning process more effective and efficient.
- Hands on training on various sophisticated analytical, biomedical and electronics instruments are given to the students.
- In-house summer projects are conducted for undergraduate students during vacations.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities:

The students and faculty of department of Instrumentation has been actively participating various ISR and extension activities. They were actively involved in Swachta Abhiyan committee of the college, wherein they along with other students of the college, went to areas nearby college and had spread awareness regarding cleanliness.

35. SWOC analysis of the department and Future plans

Strengths:

- Dedicated and hardworking faculty
- Interdisciplinary nature of course that allows students to get the jobs in various industries/organization such Ranbaxy Pvt. Ltd., Jubilant Organisys, Various hospitals and diagnostic labs etc .
- Hands on training on various sophisticated research level instruments for all enrolled students.

- Strong Alumni to help new students to understand their future prospects in current industry scenario.
- Department is well equipped with Analytical Instrumentation, Biomedical Instrumentation, Electronic Instrumentation and Industrial Instrumentation laboratories
- Analytical Instrumentation Lab is equipped with sophisticated instruments like HPLC, GC, FTIR, UV-Vis Spectrophotometer, Autotitrator, colorimeter, flame photometer etc which is not available in any other college of Delhi University.
- Biomedical Instrumentation Lab is equipped with instruments like Blood cell counter, Ultrasound Machine, ELISA reader, BIOPAC students Kit for ECG, EEG, pulse rate, respiration rate measurement, BP Machines, Glucometer,
- Electronic Instrumentation Lab has instruments like series and parallel DC motors, Induction motors, Digital storage oscilloscopes, cathode ray oscilloscopes.
- Industrial Instrumentation lab has instruments namely Ratio control measurement, level measurement, orifice meter, DC calibration machine, thermocouple, circular chart recorder, RTD kit, Ultrasonic flow meter, dead weight tester. Electromagnetic flow meter etc.

Weakness:

- Insufficient permanent faculty members.
- Course running in only two colleges.
- Unawareness of vast scope of instrumentation course amongst students.
- Unavailability of national/state competitive exams such as NET/SLET etc.

Opportunity

We have sufficient infrastructure for running master's course and research projects in collaboration with industries/research institutions.

Challenges

To establish state of art central Instrumentation facility that can cater to needs not only of our own college students but also to students from other colleges and

University

36. List of Research Publications:

Ms. Daya Bhardwaj:

- Daya Bhardwaj and Nutan Kaushik (2013) Phytochemical and pharmacological studies in genus *Berberis,* Journal Phytochemistry Reviews DOI 10.1007_s11101-013-9272-x (Impact factor: 4.333).
- Nutan Kaushik, Daya Bhardwaj (2013) Screening of Jatropha curcas germplasm for oil content and fatty acid composition, Biomass and Bioenergy, xxx , 1-9(Impact factor: 2.975).

Dr. Sneha Kabra:

- Sneha Kabra, Harsupreet Kaur, Ritesh Gupta, Subhasis Haldar, Mridula Gupta and R.S.Gupta "A Semi Empirical Approach for Submicron GaN MESFET Using an Accurate Velocity Field Relationship for High Power Applications", Microelectronics Journal, pp.620-626, no.7, vol.37, 2006.
- Sneha Kabra, Harsupreet Kaur, Subhasis Haldar, Mridula Gupta and R. S. Gupta "An Analytical Model for GaN MESFET's Using New Velocity-Field Dependence" Physica Status Solidi C, pp. 2350-2355, no.6, vol.3, 2006.
- Sneha Kabra, Harsupreet Kaur, Subhasis Haldar, Mridula Gupta and R. S. Gupta, "Two Dimensional Subthreshold Analysis of Sub-Micron GaN MESFET" Microelectronics Journal, vol. 38, no. 4-5, pp. 547–555, 2007.
- Sneha Kabra, Harsupreet Kaur, Subhasis Haldar, Mridula Gupta and R. S. Gupta, "A Semi-Empirical Model for Admittance and Scattering Parameters of GaN MESFET for microwave circuit applications" Microwave and optical technology Letters, vol.49, no. 10, pp.2446-2450, 2007.
- Sneha Kabra, Harsupreet Kaur, Subhasis Haldar, Mridula Gupta and R. S. Gupta, "Temperature Dependent Analytical Model of sub-micron GaN MESFETs for Microwave Frequency Applications", Solid State Electronics, vol.52, no.1, pp.25-30, 2008.

- Harsupreet Kaur, Sneha Kabra, Subhasis Haldar, and R. S. Gupta, "Impact of graded channel (GC) design in fully depleted cylindrical/surrounding gate MOSFET (FD CGT/SGT) for improved short channel immunity and hot carrier reliability" Solid State Electronics, vol. 51, pp. 398-404, 2007.
- Harsupreet Kaur, Sneha Kabra, Subhasis Haldar, and R. S. Gupta, "An analytical drain current model for graded channel cylindrical/surrounding gate MOSFET" Microelectronics Journal, vol.38, pp. 352-359, 2007.
- Harsupreet Kaur, Sneha Kabra, Subhasis Haldar, and R. S. Gupta, "An Analytical Threshold Voltage Model for Graded Channel Asymmetric Gate Stack (GCASYMGAS) Surrounding Gate MOSFET", Solid State Electronics, vol. 52, pp.305-311, 2008.
- Harsupreet Kaur, Sneha Kabra, S Haldar, RS Gupta, Impact of laterally asymmetric channel and gate stack architecture on device performance of surrounding gate MOSFETs, Microwave and Optical Technology Letters, vol52, no.3, pp. 746-750, 2010
- Sona P Kumar, Anju Agrawal, Sneha Kabra, Mridula Gupta and R.S.Gupta "An analysis for AlGaN/GaN modulation doped field effect transistor using accurate velocity-field dependence for high power microwave frequency applications" Microelectronics Journal, vol.37, pp. 1339-1346, 2006.
- Sona P Kumar, A Agrawal, R Chaujar, Sneha Kabra, M Gupta, Threshold voltage model for small geometry AlGaN/GaN HEMTs based on analytical solution of 3-D Poisson's equation", Microelectronics Journal, Vol38 no.10, pp 1013-1020, 2007
- Sneha Kabra, Amita Kapoor, Himani Dua, "Development of e-resource on standard procedure of operation and applications of important electronic devices used by undergraduate science students", DU Journal of Undergraduate Research and Innovation, 2015

EVALUATIVE REPORT OF THE DEPARTMENT OF BIOCHEMISTRY

1. **Name of the department** :**Biochemistry**
2. **Year of Establishment** : 1989
3. **Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)** :
4. **Names of Interdisciplinary courses and the departments/units involved:**
    - Biochemistry : Instrumentation, Food Technology and Electronics
    - Cell Biology: Biomedical Science
    - Medicinal Chemistry: Biomedical Science
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:** The department participates in teaching of B.Sc. (Hons.) programme of Food Technology, Electronics, Instrumentation and Biomedical Science.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.** No
8. **Details of courses/programmes discontinued (if any) with reasons :**
9. **Number of Teaching posts :**

	Sanctioned	**Filled**
Professors		
Associate Professors		
Asst. Professor	1	01- Permanent (Promoted to Associate Professor through CAS/MPS)

10. **Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D. / M. Phil. etc.,)**

Name	Qualification	Designation	Specialization Biochemistry	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
Dr. Sadhna	*Ph.D.*	*Associate professor*	*Biochemistry*	*23 years*	

11. **List of senior visiting faculty:**
12. **Percentage of lectures delivered and practical classes handled(programme wise) by temporary faculty:**
13. **Student -Teacher Ratio (program wise):** 15:1
14. **Number of academic support staff (technical) and administrative staff; sanctioned and filled**

    Technical Assistant- 01

    Lab Attendent - 01
15. **Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ Mphil/PG.:** Details are given in clause 10.
16. **Number of faculty with ongoing projects from a) National b) International funding agencies and grants received:**
17. **Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received:**

    Project titled *Effect of anaemia on academic performance of undergraduate students of East Delhi university colleges* funded by University of Delhi under the innovative project scheme of Rs 4.5 lakhs.
18. **Research Centre /facility recognized by the University:**
19. **Publications:**

    * **a) Publication per faculty**

Name	Publications in journal	Pub. Cited in web	Books edited	Books authored	Citation index	SNIP/sjr NP

- **Number of papers published in peer reviewed 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**
- **Chapter in Books**
- **Books Edited**
- **Books with ISBN/ISSN numbers with details of publishers**
- **Citation Index**
- **SNIP**
- **SJR**
- **Impact factor**
- **h-index**

20. Areas of consultancy and income generated:

21. Faculty as members in

a) National committees b) International Committees c) Editorial Boards….

22. Student projects

a) Percentage of students who have done in-house projects including inter departmental/programme

b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/other agencies

23 Awards/ Recognitions received by faculty and students

24 List of eminent academicians and scientists/ visitors to the department

25 Seminars/ Conferences/Workshops organized & the source of funding

a)National

b)International

26 Student profile programme/course wise:

Name of the Course/programme (refer question no. 4)	**Applications received**	**Selected**	**Enrolled** *M *F	**Pass percentage**

Name of the Course/programme (refer question no. 4)	Applications received	Selected	Enrolled *M *F	Pass percentage

*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

28 How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc. ? Not applicable

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	
Entrepreneurship/Self-employment	

30 Details of Infrastructural facilities

a) Library -Nil

b) Internet facilities for Staff & Students -Yes

c) Class rooms with ICT facility- Yes

d) Laboratories-well equipped with all kinds of instruments required to perform experiments for undergraduate students of Biochemistry i.e spectrophotometers visible and u.v, eletrophoretic apparatus, planar and column chromatography.

31 Number of students receiving financial assistance from college, university, government or other agencies

32 Details on student enrichment programmes (special lectures / workshops /

seminar) with external experts

33 **Teaching methods adopted to improve student learning** - quizzes are conducted regularly in the class after completion of each unit, videos and animations are shown to students whereever possible for better understanding.

34 Participation in Institutional Social Responsibility (ISR) and Extension activities

35 **SWOC analysis of the department and Future plans**

Strengths:

- well equipped laboratory and trained lab staff makes conduct of experiments a smooth task
- Willngness of higher authorities (principal and governing body) to provide regular support for growth of institution.

Weakness

Being a supporting department it can not carry out any major activity seperately, like conduct of seminar, talks etc

EVALUATIVE REPORT OF THE DEPARTMENT OF BIOLOGY

1. **Name of the department** : **Biology**
2. **Year of Establishment** : 1989
3. **Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)** : Not Applicable
4. **Names of Interdisciplinary courses and the departments/units involved:**
    - General Biology -Electronics,Instrumentation and Food Technology
    - Microbiology and Genetics -Instrumentation
    - Lab Technology and Maintenance-Instrumentation
    - Molecular Cell Biology -Biomedical Science
    - Introduction to Biology -Food Technology
    - Environmental Studies-Biomedical Science
    - Biomedical Instrumentation- Instrumentation
    - Human Physiology II- Biomedical Science
    - Environmental Science- Food Technology.

5. **Annual/ semester/choice based credit system (programme wise) :** Not Applicable
6. **Participation of the department in the courses offered by other departments**

   The department participates in teaching of B.Sc. (Hons.) programme of Food Technology, Electronics, Instrumentation and Biomedical Sciences.

7. **Courses in collaboration with other universities, industries, foreign institutions, etc.** No
8. **Details of courses/programmes discontinued (if any) with reasons** –NA

9. **Number of Teaching posts :**

	Sanctioned	**Filled**
Professors		

Associate Professors		
Asst. Professors	1	01- Permanent (Promoted to Associate Professor through CAS/MPS)

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
Dr. Rekha Mehrotra	B.Sc, M.Sc, M.Phil (Botany), Ph.D. (Genetics)	Associate Professor	Tissue Culture and Genetics	25 years	-

11. List of senior visiting faculty:

12. **Percentage of lectures delivered and practical classes handled(programme wise) by temporary faculty:** NA

13. Student -Teacher Ratio (program wise) : NA

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled :

Technical Assistant: 01(contractual)

Lab Assistant: 01 (permanent)

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil/PG.: Details are given in clause 10.

15. **Number of faculty with ongoing projects from a) National b) International funding agencies and grants received:**

- National Project(Innovation project by University of Delhi)- 01 faculty

Project Details:

Title: Antimicrobial and Phytochemical Studies on Some Indian Spices against Multidrug Resistant Human Pathogens.

Grant Amount: Rupees Four Lakhs and Fifty Thousand.

16. **Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received: ----------**
17. **Research Centre /facility recognized by the University:--------**
18. **Publications:**

* **a) Publication per faculty**

Name	Publications in journal	Pub. Cited in web	Books edited	Books authored	Citation index	SNIP/sjrNP

* **Number of papers published in peer reviewed 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----------**
* **Chapter in Books----------**
* **Books Edited ----------**
* **Books with ISBN/ISSN numbers with details of publishers---------**
* **Citation Index ----------**
* **SNIP----------**
* **SJR----------**
* **Impact factor ----------**
* **h-index ----------**

19. **Areas of consultancy and income generated:--------**
20. **Faculty as members in ----------**

a) National committees b) International Committees c) Editorial Boards….

22. Student projects

a) Percentage of students who have done in-house projects including inter departmental/programme----------

- Students from other departments have done in-house projects(80% from B.Sc Biomedical Science and 20% B.Sc Instrumentation)

b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/other agencies--------

23 Awards/ Recognitions received by faculty and students---------

24 List of eminent academicians and scientists/ visitors to the department--------

25 Seminars/ Conferences/Workshops organized & the source of funding

a)National -------

- Organized workshop on *Maintenance of Laboratory Instruments* for college teachers in collaboration with Western Regional Instrumentation Centre, University of Mumbai. Teachers were asked to bring faulty instruments from their college and the instruments were repaired for them, thereby giving an insight about the working and troubleshooting of the instruments. Various lectures and practical aspects of laboratory instruments were also undertaken.
- Funded by Centre for Enterpreneurship and career oriented program CECOP

b)International----------

26 Student profile programme/course wise: NA

Name of the Course/programme (refer question no. 4)	**Applications received**	**Selected**	**Enrolled** ***M** ***F**	**Pass percentage**

*M=Male F=Female

27 Diversity of Students: NA

Name of the Course	**% of students from the same state**	**% of students from other States**	**% of students from abroad**

28 How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc? ? -----NA

29 Student progression----------NA

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 ------

b) Internet facilities for Staff & Students ---Yes

c) Class rooms with ICT facility--Yes

d) Laboratories-----

- The Labs are well equipped with various basic and sophisticated equipments which enables them to carry out various exercises not only listed in the curriculum but also additional recent ones.

31 Number of students receiving financial assistance from college, university, government or other agencies--------NA

32 Details on student enrichment programmes (special lectures / workshops / seminar) with external experts

- Invite industry personals for giving live demonstrations for different techniques and procedures required for carrying experiments. This provides opportunity to the students to have interaction with industry people on one and one basis.

33 Teaching methods adopted to improve student learning

- Have undergone training in various industries/hospitals/institutes, so as to have hands-on-training for conducting practical classes and also to develop industrial linkage.
- Invite service engineers from the companies, so that instruments could be opened up by them in front of the students and their working trouble shooting aspects could be demonstrated.
- Students are asked to make working exhibits/projects so as to hone up their understanding and skills about a particular problem

34 Participation in Institutional Social Responsibility (ISR) and Extension activities

Worked in the "Education for All" programme of Delhi Government under National Literacy Mission from 1995-2000. A large number of activities were undertaken such as

- Survey of literates/ illiterates in East Delhi.
- Organizing literacy centers & their supervision.
- Organizing post- literacy classes to provide various skills such as :

  *Baking

  *Sewing

  *T.V. repair

  *Electronics /Electrical repairs

  * Screen Printing
- Various medical camps with the help of Indian Medical Association were organized.

35 SWOC analysis of the department and Future plans

Strengths*:*

- Well equipped and well maintained Laboratories
- All Instruments in working condition.
- Practicals linked with industrial application
- All practicals listed in curriculum are conducted for all the batches and never

ever any practical has been left out.

- Advanced exercises have also been introduced having industrial relevance.

Weakness:

- More emphasis on research required.

Opportunity:

- To initiate new courses such as Microbiology.

Challenges:

- To strengthen academic interaction with other departmental curriculums so as to make Biology more meaningful and relevant in interdisciplinary courses.

36. List of Research Publications:

- Rao, 1. Usha: Rao, I.V. Ramanuja: Narang, Vibha; Jerath, Rekha and PILLAI, K. Gangadharan. 1988. Mass propagation of Bamboos from Somatic Embryos and their successful transfer to the forest. In: Proc. International Bamboo Workshop. Cochin , India(Nov 14-18,1988)

EVALUATIVE REPORT OF THE DEPARTMENT OF CHEMISTRY

1. **Name of the department** : **Chemistry**
2. **Year of Establishment** : 1989
3. **Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.) :**
4. **Names of Interdisciplinary courses and the departments/units involved**
   - Organic Chemistry: B.Tech. Food Technology, B.Tech. Instrumentation, B.Sc. (H) Biomedical Science
   - Bonding in Solid State: B.Tech. Electronics
   - Chemistry: B. Sc. (H) Food Technology and Instrumentation
   - Analytical Instruments I and II: B.Tech. Instrumentation and B. Sc. (H) Instrumentation
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**

   The department participates in teaching of B.Sc. (Hons.) programme of Food Technology, Electronics, Instrumentation and Biomedical Sciences.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.**

   College was the Program Study Centre for IGNOU *Post graduate diploma in Analytical Chemistry* in 2011 and 2012.
8. **Details of courses/programmes discontinued (if any) with reasons**: The above course was discontinued due lack of availability of counselors for taking the classes.
9. **Number of Teaching posts :**

	Sanctioned	Filled
Professors		
Associate Professors		

Asst. Professors	1	01 - (Promoted to Associate Professor through CAS/MPS))

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
Dr. Jasjeet Kaur	M.Sc., Ph.D.	Associate Professor	Organic and Analytical Chemistry	19.5 Years	*Nil*

11. List of senior visiting faculty: Nil

12. **Percentage of lectures delivered and practical classes handled(programme wise) by temporary faculty:** 40% (Approximately)

13. Student -Teacher Ratio (program wise): 35 : 1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled : Sanctioned – 2; Filled – 1(Promoted to Lab Assistant)

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil/PG.: Details given in clause 10.

16. **Number of faculty with ongoing projects from a) National b) International funding agencies and grants received:**

- One Research Project entitled, *Small Particle Reagents for Detection of Latent Fingerprints,* under the Research Award Scheme of the UGC; Grant-in-aid – Rs. 3 Lakh
- One Innovation Project entitled, *Synthesis & Characterization of Silver Nanoparticles and their role in Inhibiting Food Spoilage Organisms*, sanctioned by the University of Delhi, shared by two other faculty members; Grant-in-aid – Rs. 7.5 Lakh

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) Publications per faculty:

* **a) Publication per faculty:** 89/1 = 89
* **Number of papers published in peer reviewed journals (national / international) by faculty and students**

Name	Papers in International/National Journals
Dr. Jasjeet Kaur	89

* **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.):** 28 Papers listed in Citation Index. Number of Citations: 74
* **Monographs:** Nil
* **Chapter in Books:** Nil
* **Books Edited:** Nil
* **Books with ISBN/ISSN numbers with details of publishers:** One

  Indian Civilization and the Science of Fingerprinting, Publication Division, Ministry of Information and Broadcasting, New Delhi (2013).

  ISBN: 978-81-230-1811-9
* **Citation Index:** 228
* **h-index**: 7

Name of Journal	Impact Factor	SNIP	SJR
Nature	38.597	8.647	14.548
Metal Based Drugs	3.806	0.972	0.429
Journal of Inorganic Biochemistry	3.430	1.322	0.887
Forensic Science International	2.877	1.460	1.326
Journal of Forensic Identification	2.433	0.719	0.457

Thermochimica Acta	2.046	1.255	0.529
Journal of Thermal Analysis	1.982	-	-
Neoplasma	1.574	0.505	0.509
Z. Naturforsch	1.363	-	-
Science and Justice	1.244	-	-
Current Science	0.935	0.680	0.280
Chemical Papers	0.879	0.650	0.313
Journal of Chemical Education	0.820	-	-
Education in Chemistry	0.817	0.363	0.145
Indian Journal of Chemistry	0.787	0.726	0.282
Indian Journal of Traditional Knowledge	0.492	0.263	0.346
Journal of Indian Chemical Society	0.250	-	-

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 inter departmental/programme:

In-house projects were a part of curriculum of the Foundation Course – *'Science and Life'* during the academic session 2013-14 in which all the students participated.

Ten students of B.Sc. (H) Food Technology and B.Sc. (H) Instrumentation were involved in Innovation Project entitled, *An Assessment of Consumer's Exposure to Pesticides in Conventional Vegetables and Vegetables Sold with the 'Organic' Tag in Delhi-NCR region, India,* sanctioned by the University of Delhi during the academic session 2012-13.

Ten students of B.Sc. (H) Food Technology and B.Sc. (H) Instrumentation were involved in Innovation Project entitled, *Synthesis & Characterization of Silver Nanoparticles and their role in Inhibiting Food Spoilage Organisms*, **sanctioned by the University of Delhi during the academic session 2013-14.**

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:

- Received the *Best Teacher Award – 2012*, presented by the *Department of Higher Education, Government of the NCR, Delhi.*
- Received 2nd prize for the innovation, *Nano-sized composition for detecting latent fingerprints* under the *Ideaz category of Anveshan – National Search for Innovation*, presented by *Centre for Innovation, Incubation and Entrepreneurship, Indian Institute of Management, Ahmedabad* on April 8, 2006.
- Received *WIPO-2001 International Award – 2001* for the innovation, Novel spray formulations based on xanthen dyes for detecting latent fingerprints, judged as the best innovation for the year 2001, by *World Intellectual Property Organization, Geneva,* a UNO subsidiary, and presented on its behalf by *National Research Development Corporation, New Delhi* on May 11, 2002
- Received *National Technology Day Award - 2000* for the innovation entitled, Novel spray formulations based on xanthen dyes for detecting latent fingerprints, Presented by *National Research Development Corporation, New Delhi on May 11, 2000.*
- Recipient of the *Young Scientist Award-1997*, presented by *Indian Science Congress Association*, during its 84th Session, held in Delhi on January 3-8, 1997, for the paper entitled, Use of a Phase Transfer Catalyst for developing Latent Fingerprints on unusual surfaces
- Received Academic Award for securing First Position in B.Sc. Examination.

24 List of eminent academicians and scientists/ visitors to the department: Nil

25 Seminars/ Conferences/Workshops organized & the source of funding:

a)National:

Organized the *Workshop on Spectroscopic and Chromatographic Analytical Techniques* , funded by *Centre for Entrepreneurship and Career Oriented Programme, (CECOP) in 2003, 2004 and 2006*

b)International: Nil

26 Student profile programme/course wise: NA

Name of the Course/programme (refer question no. 4)	Applications received	Selected	Enrolled *M *F	Pass percentage

*M=Male F=Female

27 Diversity of Students: NA

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad

28 How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc. ? NA

29 Student progression: NA

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: Nil

b) Internet facilities for Staff & Students: Yes

c) Class rooms with ICT facility: All Classrooms from common pool are equipped with ICT facilities

d) Laboratories: Three well equipped laboratories

31 Number of students receiving financial assistance from college, university, government or other agencies: NA

32 Details on student enrichment programmes (special lectures / workshops / seminar) with external experts: NA

33 Teaching methods adopted to improve student learning:

Use of ICT facilities, hands-on training on analytical instruments and value addition through field work. Students are encouraged to give presentations on topics pertaining to current advancements in chemistry.

34 Participation in Institutional Social Responsibility (ISR) and Extension activities:

Faculty is the Programme Officer for NSS unit of the college and responsible for ISR activities conducted under NSS. Students from all streams are involved in making various activities a success.

35 SWOC analysis of the department and Future plans

Strengths

The faculty is involved in active research work in which the students too are engaged. Received training in operating sophisticated analytical instruments.

Weakness

Chemistry is not taught as a main subject, as a result of which the Department rarely gets a chance to organize academic activities.

Opportunity

The hands-on training received by students in the state-of-art analytical chemistry lab offers them opportunity to get optimum placements, as well as chances for pursuing higher education.

Challenges

- To create environment conducive to academia-industry interaction.
- To make the students proactive and self-reliant.
- To mould the interest of students towards research and innovations.

36. List of Research Publications: Enclosed

LIST OF PUBLICATIONS IN INTERNATIONAL JOURNALS

- Thermal studies on platinum metal complexes of N-methylcyclohexyldithiocarbamate, *Thermochim. Acta*, **171**, 49-55 (1990).
- Organomercury(II) complexes of 6-thioguanine : Synthesis, characterisation and biological studies, *J. Inorg. Biochem*., **42,** 147-151 (1991).
- Thermal studies on organomercury(II) complexes of 6-thioguanine, *Thermochim. Acta*, **176,** 321-325 (1991).
- Thermogravimetric studies on bimetallic dithiocarbamate complexes, *Z.Naturforsch*., **47b**, 1297-1299 (1992).
- Diuretic activity of organomercury(II) complexes of theophylline and theobromine, *J. Inorg. Biochem*., **48**, 305-310 (1992).
- Organomercury(II) complexes of kojic acid and maltol:Synthesis, characterisation and biological studies, *J. Inorg. Biochem*., **54,** 67-74 (1994).
- Studies on organomercury(II) complexes of 5-fluorouracil, *Chem. Papers*, **48**, 323-325 (1994).
- Structure determination and anti-inflammatory activity of some purine complexes, *Metal Based Drugs*, **2**, 13-17 (1995).
- Organomercury(II) complexes with anti-carcinogenic agents. I. Synthesis and characterization, *Neoplasma*, **42**, 187-190 (1995).
- Organomercury(II) complexes with anti-carcinogenic agents II. Anti-neoplastic activity,*Neoplasma*, **42**, 191-193 (1995).
- Thermal investigations on arylmercury(II) complexes of kojic acid and maltol, *J. Thermal Anal*., **46**, 1375-1382 (1996).
- Studies on Organomercury(II) complexes of 6-mercaptopurine, *Rev. Latinoamer. Quim*., **25**, 17-21 (1996).

- Application of phase transfer catalysis to fingerprint detection, *Science & Justice*, **36**, 267-269 (1996).
- Platinum metal complexes of N-ethylcyclohexyldithiocarbamate, *Chem. Papers*, **51,** 276-279 (1997).
- A novel, cost-effective, organic fingerprint powder based on fluorescen eosin-blue dye, *Res. Pract. Forens. Med*., **40**, 121-123 (1997).
- Organomercury(II) complexes of isoniazid and pyrazinamide: Synthesis, characterisation and anti-tubercular activity, *Rev. Latinoamer. Quim*., **26**, 37-41 (1998).
- Organomercury(II) -barbiturate complexes: Synthesis, characterisation and biological studies, *Rev. Latinoamer. Quim*., **27**, 65-70 (1999).
- Chemical methods for detecting latent fingerprints, *Journal of Chemical Education*, **76**, 488A-488B (1999).
- Transcription of fingerprints: A review, *Res. Pract. Forens. Med*., **42**, 69-73 (1999).
- Novel titanocene derivatives involving anti-carcinogenic ligands, *Rev. Latinoamer. Quim*., **27**, 106-110 (1999).
- Fingerprints detection by erythrosin-B dye.I. Spray formulation, *Res. Pract. Forens. Med.,* **43**, 165-167 (2000).
- Fingerprints detection by erythrosin-B dye.II. Powder formulation, *Res. Pract. Forens. Med.,* **43**, 169-170 (2000).
- Fingermarks' detection by eosin-blue dye, *Forensic Sci. Int.*, **115**, 69-71 (2001).
- Thermal studies on some biologically active organomercury(II) complexes, *J. Therm. Anal*. *Cal.,* **65**, 249-255 (2001).
- Powder method for detecting latent fingerprints : A review, *Forensic Sci. Int*., **120**, 172-176 (2001).
- A fingerprint powder formulation based on guinea green B dye, *Res. Pract. Forens. Med.,* **44,** 267-268 (2001).
- Ninhydrin method for detecting latent fingerprints: a review, *Res. Pract. Forens. Med.,* **44,** 299-310 (2001).
- Forged fingerprints, *Ridge Detail in Nature*, **23**, 4-5 (2001).

- Detection of blood – fingerprints: A review, *Res. Pract. Forens. Med.,* **45,** 221-225 (2002).
- Leaving a clue, *Education in Chemistry*, **19**, 105-109 (2002).
- Sharp eyes saw through early effort to fake prints, *Nature (London)*, **420**, 15-16 (2002).
- Fingerprints reflections in archives mirror, *Ridge Detail in Nature*, **24**, 11-13 (2002).
- On Henry's fingerprint classification system, *Fingerprint Whorld*, **28**, 197-206 (2002).
- Fingerprint detection using phloxine B dye, *J. Forensic Identification*, **53**, 8-13 (2003).
- A fingerprint powder formulation based on rhodamine B dye, *J. Forensic Identification*, **53**, 551-555 (2003).
- Amino acid specific fingerprint reagents: A historical review, *Identification Canada*, **26**(4), 13-17 (2003).
- A new reagent for detecting fingerprints on paper, *Res. Pract. Forens. Med.*, **46**, 239- 240 (2003).
- Handprinting in medieval India, *Ridge Detail in Nature*, **25**, 4-9 (2003).
- Fingerprint powder formulations based on organic, fluorescent dyes, *J. Forensic Identification*, **54**, 4-8 (2004).
- On telegraphic code for fingerprints, *Fingerprint Whorld*, **30**, 21-23 (2004).
- Fingerprints' detection by rose Bengal dye, *Fingerprint Whorld*, **30**, 52-55 (2004).
- On single digit fingerprint classification system, *Fingerprint Whorld*, **30**, 102-104 (2004).
- A fingerprint powder formulation involving cyano blue dye, *Fingerprint Whorld*, **30**, 163 (2004).
- A fingerprint powder formulation involving basic yellow dye, *Res. Prac. Forens. Med.*, **47**, 237-238 (2004).
- On the question of single digit fingerprint card index, *Ridge Detail in Nature*, **26**, 18-19 (2004).

- Proflavin-based fingerprint dusting composition, *Fingerprint Whorld*, **31**, 239 (2005).
- Henry's edification into the fingerprint arena, *Ridge Detail in Nature*, **27**, 25-26 (2005).
- Nanoparticle size fingerprint dusting composition based on fluorescent eosin Y dye, *Fingerprint Whorld*, **32**, 146-147 (2006).
- A fingerprint powder formulation involving brilliant blue R dye, *Turkish Journal of*
- *Forensic Sciences*, **5**, 23-26 (2006).
- Post-mortem fingerprinting, *Ridge Detail in Nature*, **28**, 39-40 (2006).
- A novel, nanoparticle size fingerprint detecting composition based on fluorescent Lucifer Y stain, *Fingerprint Whorld*, **34**, 24-25 (2007).
- More light on Azizul Haque's contribution to the fingerprint classification system, *Ridge Detail in Nature*, **29**, 72-73 (2007).
- When fingerprinting the pensioners became mandatory, *Ridge Detail in Nature*, **30**, 60-61 (2008).
- Fluorescent small particle reagent. Part I: A novel composition for detecting latent fingerprints on wet non-porous items*, Fingerprint Whorld*, **36**, 150-153 (2010).
- Fluorescent small particle reagent. Part II: Detection of latent fingerprints on compact disks, *Fingerprint Whorld*, **36**, 154-157 (2010).
- A novel fluorescent small particle reagent for detecting latent fingerprints on wet non-porous items, *Egyptian Journal of Forensic Sciences*, **2**, 45-47 (2012).
- DFO reagent for detection of latent fingerprints: A review, *Fingerprint Whorld*, **40**, 16-23 (2014).

LIST OF PUBLICATIONS IN NATIONAL JOURNALS

- Studies on organomercury(II)-purine complexes, *Indian J.Chem*., **31A**, 972-974 (1992).
- N-Alkylcyclohexyldithiocarbamato complexes of Fe(III), Co(III) and Ni(II), *Indian J.Chem*., **32A**, 730-731 (1993).

- Organometallic derivatives of uracil and thymine, *Indian J. Chem*., **37A**, 355-356 (1998).
- A novel, cost-effective, organic fingerprint powder based on fluorescent Rose Bengal dye, *Indian Police Journal*, **45** (4), 83-85 (1998).
- Organomercury(II)-dithiocarbamate complexes: Synthesis,characterisation and fungicidal activity, *J. Indian Chem. Soc*., **76**, 185-187 (1999).
- Novel, cost-effective, organic fingerprint powders based on fluorescent eosin-yellow dye, *Indian J. Criminology*, **27,** 73-74 (1999).
- Fingerprint powder formulations based on fluorescence dye, *J. Indian Acad. Forens. Sci.*, **38**, 37-40 (1999*).*
- Methods for fixing constituents of human sweat for developing latent fingerprints, *Bombay Hospital Journal*, **42**, 119-123 (2000).
- Organic fingerprint powders based on fluorescent phloxine B dye, *Defence Science Journal*, **50**, 213-215 (2000).
- Cyanoacrylate method for detecting latent fingerprints: A review, *J. Indian Acad. Forens. Sci*., **39**, 39-48 (2000).
- Detection of fingerprints on unusual surfaces: A review, *Indian J. Criminology*, **28**, 101-107 (2000).
- Laser detection of latent fingerprints: A review, *Laser Horizon,* **5(1),** 3-7 (2001).
- Iodine method for detecting latent fingerprints: A review, *Indian Police Journal,* **48(1),** 119-122 (2001).
- Fingerprint powder formulations based on acridine orange dye, *Indian J. Criminology.,* **29,** 87-89 (2001).
- A tale of two fingerprint experts, *Indian Journal of History of Science*, **36**, 151-159 (2001).
- Unconventional reagents for detecting latent fingerprints: A review, *J. Forens. Med. Toxicol.*, **19(2),** 18-20 (2002).
- A fingerprint powder formulation based on Congo red dye, *International J. Med. Toxicol. & Legal Medicine*, **5**, 27-28 (2002).

- A fingerprint powder formulation based on aniline blue dye, *Indian Police Journal*, **49**(3), 44-45 (2002).
- Indian civilization and the science of fingerprinting, *Indian Journal of Traditional Knowledge*, **2**, 126-136 (2003).
- A fingerprint powder formulation based on Azure I dye, *Indian J. Criminology*, **31**, 4-5 (2003).
- World's first conviction on fingerprint identification, *National Crime Records Bureau Gazette,* **15**(2), 1-3 (2003).
- Fingerprint powder formulation based on Azure II dye, *Defence Sci. J.* **54**, 179-182 (2004).
- A fingerprint powder formulation based on basic fuchsin dye, *Journal of Forensic Medicine and Toxicology*, **21**, 8-9 (2004).
- The forgotten Indian pioneers of fingerprint science, *Current Science*, **88**, 185-191 (2005).
- Fingerprint evidence – an infallible aide.1. The great train robbery, *National Crime Records Bureau Gazette,* **17**(1), 7-8 (2005).
- A fingerprint powder formulation involving Sudan III dye, *The Perspective*, **11**, 85-87 (2008).
- Nanotechnology in aid of fingerprint detection, *C.B.I. Bulletin*, **16**(1-6), 35-36 (2008).
- A novel, nanoparticle-size fingerprint dusting composition based on eosin B stain, *Indian Police Journal*, **55**(2), 46-50 (2008).
- Detection of latent fingerprints: A review, *Indian Police Journal*, **56**(3), 62-66 (2009).
- A novel method for detection of fingerprints on articles collected from arson sites, *CBI Bulletin*, **18**, 34-36 (2010).
- Detection of latent fingerprints on unique crime scene evidence, *Lab World Magazine*, **2**, 5-9 (2013).
- A novel fluorescent small particle reagent based on eosin B stain for developing latent fingerprints, *Indian Police Journal*, **61**(2), 227-233 (2014).

EVALUATIVE REPORT OF DEPARTMENT OF MATHEMATICS

1. **Name of the department** :**Mathematics**
2. **Year of Establishment** :1989
3. **Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.) :**

4. **Names of Interdisciplinary courses and the departments/units involved**
   - Mathematics : Electronics and Instrumentation
   - Calculus and Matrices : Computer Science
   - Calculus and Geometry : Computer Science
   - Differential Equations : Computer Science
   - Probability and Statistics: Computer Science
   - Operations Research : Computer Science
   - Statistical Methodology : Computer Science
   - Mathematics and Statistics : Food Technology
   - Relaibility and Statistical Techniques: Instrumentation
   - Statistical Quality Control: Instrumentation
   - Mathematics: Biomedical Science.

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**
   The department participates in teaching of B.Sc. (Hons.) programme of Food Technology, Electronics, Instrumentation and Biomedical Sciences.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.** Not applicable
8. **Details of courses/programmes discontinued (if any) with reasons** *NIL.*

9. **Number of Teaching posts :**

	Sanctioned	Filled
Professors		
Associate Professors		
Asst. Professors	03	01 Permanent (Promoted to Associate Professor through CAS/MPS) 02 Ad-hoc

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
Dr. Punita Saxena	Ph.D.	Associate Professor	Linear Programming, Data Envelopment Analysis	24	NIL

11. List of senior visiting faculty:

12. **Percentage of lectures delivered and practical classes handled(programme wise) by temporary faculty:** Not applicable

13. Student -Teacher Ratio (program wise):

14. **Number of academic support staff (technical) and administrative staff; sanctioned and filled :** Not applicable

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil/PG.: Details are given in clause 10.

16. **Number of faculty with ongoing projects from a) National b) International**

funding agencies and grants received:

MINOR PROJECT by University Grants Commission= 1

INNOVATIVE PROJECT by University of Delhi =1

17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received:

MINOR PROJECTS

- Project titled *Effect of Anemia on academic performance of students of East Delhi colleges,* 2013-2014 of amount Rs.4,50,000.
- Research Project in the year 2011 by UGC for *Evaluating Efficiencies of the Delhi University Colleges using Data Envelopment Analysis* of amount Rs.1,40,000.

18. Research Centre /facility recognized by the University:*N/A*

19. Publications:

- **a) Publication per faculty** = 10/1= 10
- **Number of papers published in peer reviewed 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.) :** 3
- **Monographs :** NIL
- **Chapter in Books:** NIL
- **Books Edited**
- **Books with ISBN/ISSN numbers with details of publishers :** NIL
- **Citation Index :** 11
- **SNIP**
- **SJR**
- **Impact factor :**
- **h-index :** 1

Name	Publications in journal	Pub. Cited in web	Books edited	Books authored	Citation index	h-index
Dr. Punita Saxena	10	10	nil	Nil	11	01

Name of journal in which faculty has published papers	Impact Factor	SNJP	SJR
International Journal of Information Technology and Management	1.317	-	-
International Journal of Mathematics and Computer Application Research	4.6257	-	-
Opsearch	-	0.507	0.26
Journal of Interdisciplinary Mathematics	-	-	0.15

20. Areas of consultancy and income generated -----Nil

21. Faculty as members in

a) National committees b) International Committees c) Editorial Boards….

Dr. Punita Saxena

- Lifelong member of Operations Research Society of India.
- Member East Delhi Health and Education Society.

Student projects

a) Percentage of students who have done in-house projects including inter departmental/programme

b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/other agencies

22. Awards/ Recognitions received by faculty and students

Dr. Punita Saxena

- Was awarded with the "Meritorious Teacher Award" by Government of NCT of Delhi in the year 2013.
- Secured 1st rank in M.Sc Mathematics, Hans Raj College, University of Delhi

23. List of eminent academicians and scientists/ visitors to the department

- Prof. B.K.Das, Professor, Department of Mathematics, University of Delhi.
- Prof. S.C.Arora, Retired Professor, Department of Mathematics, University of Delhi.
- Prof. J.K Sharma, Professor, Faculty of Management Sciences, University of Delhi.
- Prof. S.K.Mattoo, Professor, Department of Computer Science, University of Delhi.
- Dr. Rajendra Prasad, National fellow, IASRI, Pusa, Delhi.
- Mr. Rakesh Maheshwari
- Dr. K K Aggarwal, Associate Professor, Department of Operations Research, University of Delhi

24. Seminars/ Conferences/Workshops organized & the source of funding

a) National: National Workshop on "Application of Mathematical Techniques in industries"sponsored by Centre for Enterprenuership and Career Oriented Programmes (CECOP), University of Delhi.

b) International

25. Student profile programme/course wise:

Name of the Course/programme (refer question no. 4)	Applications received	Selected	Enrolled *M *F	Pass percentage

*M=Male F=Female

26. Diversity of Students

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad

27. How many students have cleared national and state competitive examinations

such as NET, SLET, GATE, Civil services, Defense services, etc. ? Not applicable

28. 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	
Entrepreneurship/Self-employment	

29. Details of Infrastructural facilities

a) Library -------no

b) Internet facilities for Staff & Students -----yes

c) Class rooms with ICT facility------yes

d) Laboratories----- Well quipped with sytems of latest configuration and mathematical and statistical softwares such as Matlab, SPSS and Mathematica.

30. Number of students receiving financial assistance from college, university, government or other agencies

31. Details on student enrichment programmes (special lectures / workshops / seminar) with external experts

32. Teaching methods adopted to improve student learning

- Mainly lecture method with use of ICT
- Use of mathematical and statistical softwares like Matlab and SPSS.

33. Participation in Institutional Social Responsibility (ISR) and Extension activities

Member of East Delhi Health and Education Society that is involved in the education and health related issues of East Delhi under privileged colonies.

34. SWOC analysis of the department and Future plans

Strengths:

Mathematics is taught to all the five major courses offered by the college. The objective is to teach the practical aspects of mathematical concepts. The faculty members of the department are engaged in research work.

Weakness:

Mathematics is not a major discipline. The students can therefore be not engaged in research projects.

Opportunity:

We train students to go for research/higher studies and take up challenging jobs in their respective industries.

Challenges:

To meet the demands of growing number of students and to skill them as per the requirements of industries and make them employable.

35. List of Research Publications:

- Efficiency evaluation of State Transport Undertakings of India using DEA-NN approach, International Journal of Management and Information Technology,, Vol.10, N0.5,pp. 2189-2198, 2015.
- Comparing the efficiencies of State Transport Undertakings of India using Data Envelopment Analysis, International Journal of Mathematics and Computer Applications Research, Vol.3, Issue1, pp.89-100, 2013.
- Efficiency evaluation of the Indian bus companies using DEA in the light of weight restrictions, Lecture Notes in Management Sciences, 2011.
- Measuring Efficiencies in Indian Public Road Transit: A Data Envelopment Analysis Approach, Opsearch, Vol.47, Issue 3, pp.195-204, 2011.
- Data Envelopment Analysis: An Application in the Transport Sector, Journal of Interdisciplinary Mathematics, 2006, Vol.9 No.2, pp. 385-395, 2006.
- Neighbourhood Schools: A Paradigm to Combat Pollution and Save Energy, Indian Journal of Transport Management, 28(3), pp.415-430, 2004.
- Resident Welfare Associations: A Futuristic Approach to Reduce Vehicular Density,

Indian Journal of Transport Management, 27(2), pp.220-233, 2003.

- Car Parking: Managerial perspectives-II (A case study of Delhi). Indian Journal of Transport Management, 25(6), pp.575-591, 2001.
- Car Parking: Managerial Perspectives -I (A case study of Delhi). Indian Journal of Transport Management, 24, pp.741-745, 2000.

Presentations/Publications in Conference Proceedings

- Efficiency evaluation of the Indian bus companies using DEA in the light of weight restrictions, presented in the 3rd International conference on Operational Research (ICAOR,2011), held in Bahcehiser University, Istanbul, **TURKEY** from 24-26 August, 2011.
- Enumeration Technique for Set Covering, Partitioning and Packing Problems with Quadratic Objective function : A Combinatorial Approach, Presented in the UGC sponsored 3rd National Conference MATEIT-2010, held in Delhi, **INDIA**, from 30-31 January, 2010.
- Efficiency Assessment of Public Transport Undertakings of India using Data Envelopment Analysis, Presented in the Second Mathematical Programming Society International conference on Continuous Optimization (ICCOPT-II,2007) held in McMaster University, Hamilton, Ontario, **CANADA** from 13-16 August, 2007.
- Efficiencies of State Transport Undertakings: An Empirical Analysis using Data Envelopment Analysis, Presented in the First National Conference on Mathematical Techniques in Electronics and IT Industries, sponsored by UGC, Govt. of India, held at Deen Dayal Upadhyaya College, University of Delhi, **INDIA** from 22-25 March, 2006.
- Data Envelopment Analysis: An Application in the Transport Sector, Presented in the tenth International Conference on Statistics, Combinatorics and Related Areas held in the University of Southern Maine, Portland, **USA** from 3-5 October, 2003.
- Car Parking: Managerial perspectives (A case study of Delhi), In Proceedings of Thirty Fourth Annual Convention of Operational Research Society of India, An International Conference on Operational Research and National Development pages 154-156. December 2001.

- Career Options for Women in Mathematics, In Proceedings of Conference of Women Scientists and Technologists: Role in National Development organized by Department of Biotechnology, Government of India, **INDIA**, March 2002.

EVALUATIVE REPORT OF THE DEPARTMENT OF PHYSICS

1. **Name of the department** : **Physics**
2. **Year of Establishment** : 1989
3. **Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)** :
4. **Names of Interdisciplinary courses and the departments/units involved:**
   - Applied Physics: Instrumentation
   - Electricity and Magnetism: Electronics
   - Applied Quantum Physcis: Electronics
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:**
   The department participates in teaching of B.Sc. (Hons.) programme of Electronics and Instrumentation.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.:** NA
8. **Details of courses/programmes discontinued (if any) with reasons :**

9. **Number of Teaching posts :**

	Sanctioned	Filled
Professors		
Associate Professors		
Asst. Professors	1	01, (Promoted to Associate Professor through CAS/MPS)

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
Dr Alka Vohra Kuanr	M.Sc. Ph.D	Associate Professor	Solid State Physics	24	NIL

11. **List of senior visiting faculty:** NIL
12. **Percentage of lectures delivered and practical classes handled(programme wise) by temporary faculty**: NIL
13. **Student -Teacher Ratio (program wise):**
14. **Number of academic support staff (technical) and administrative staff; Sanctioned and filled :**

    Lab Attendent: 01
15. **Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil/PG.:1, Ph.D** - Detail given in clause 10.
16. **Number of faculty with ongoing 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:** UGC (Minor Research Project) Completed
18. **Research Centre /facility recognized by the University**: NIL
19. **Publications:**

    * **a) Publication per faculty** 17/1=17
    *

Name	Publications in journal	h-index	Cumulative Impact factor	Books authored	Citation index

Dr. Alka Vohra Kuanr	17 (International)	7	29.4	NIL	160

- **Number of papers published in peer reviewed journals (national / international) by faculty and students:** 17 (International Journals)
- **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** : NIL
- **Books Edited :** NIL
- **Books with ISBN/ISSN numbers with details of publishers:**NIL
- **Citation Index :** 160
- **SNIP**
- **SJR**
- **Impact factor :** 29.4
- **h-index :** 7

Name of Journal	Impact Factor	SNIP	SJR
Journal of Applied Physics	2.19	1.289	1.38
IEEE Transactions on Magnetics	1.21	1.557	0.878
Journal of Vacuum Science & Technology B	1.3	0.87	0.878
Journal of Physics D: Applied Physics	2.52	1.375	1.259
Journal of magnetism and magnetic materials	2.00	1.568	1.081
Physics Letters A	1.63	1.241	0.899
Optics & Laser Technology	1.675	1.688	0.711
physica status solidi (a)	1.21	1.013	0.978

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 inter departmental/programme

b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/other agencies

23. Awards/ Recognitions received by faculty and students

24. List of eminent academicians and scientists/ visitors to the department : NIL

25. Seminars/ Conferences/Workshops organized & the source of funding

a)National :NIL

b)International : NIL

26. Student profile programme/course wise: NA

Name of the Course/programme (refer question no. 4)	Applications received	Selected	Enrolled *M *F	Pass percentage

*M=Male F=Female

27. Diversity of Students : NA

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc. : Not applicable

29. Student progression : Not Applicable

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	

Student progression	Against % enrolled
Entrepreneurship/Self-employment	

30. Details of Infrastructural facilities

a) Library: NIL

b) Internet facilities for Staff & Students: Yes

c) Class rooms with ICT facility: All class rooms from common pool are equipped with ICT facilities.

d) Laboratories-Two well equipped laboratories with two dark rooms, one seminar room and one workshop.

31. Number of students receiving financial assistance from college, university, government or other agencies : NA

32. Details on student enrichment programmes (special lectures / workshops / seminar) with external experts : NA

33. Teaching methods adopted to improve student learning: Use of ICT, hands on training, projects. Students are motivated to give presentations on current topics in Physics.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities : NA

35. SWOC analysis of the department and Future plans

Strengths:

Well Equipped Physics Laboratory with instruments like lasers, spectrometer, CRO's etc. Weakness:

B.sc. Physics (Hons.) is not being taught in the college. This has restricted the academic activities of the department.

Opportunity:

In the well equipped physics laboratory students are specially trained for industry environment. They are taught to deal with trouble shooting of mechanical, electrical, optical etc instruments.

Challenges:

To inspire and motivate students towards research and innovative projects.

36. List of Research Publications: Attached

LIST OF PUBLICATIONS AND INTERNATIONAL JOURNALS

- High frequency study of core–shell reusable $CoFe_2O_4$–ZnO nanospheres, Journal of Applied Physics 115 (17), 17B515 (2014)
- High frequency study of core-shell and uncoated Fe_3O_4 nanoparticles, Journal of Applied Physics 111 (7), 07B542 (2012)
- Nickel Nano-Wires Filled Alumina Templates for Microwave Electronics, IEEE Transactions on Magnetics, 45 (10), 4052-4055 (2009)
- Microwave Magnetic Properties of NiFe Nanostrips, IEEE Transactions on Magnetics, 45 (10), 3550-3553 (2009)
- Effect of temperature on the ferromagnetic-resonance field and line width of epitaxial Fe thin films, IEEE Transactions on Magnetics, 45 (10), 4015-4018 (2009)
- Microstrip-tunable band-pass filter using ferrite (nanoparticles) coupled lines, IEEE Transactions on Magnetics, 45 (10), 4226-4229 (2009)
- Size dependent microwave properties of ferrite nanoparticles: Application to microwave devices, Journal of Applied Physics 105 (7), 07B522-07B522-3 (2009)
- Gigahertz frequency tunable noise suppressor using nickel nanorod arrays and Permalloy films, Journal of Applied Physics 105 (7), 07A520 (2009)
- Ultrathin magnetic multilayer films for low-field microwave notch filters, Journal of Vacuum Science & Technology B 25 (6), 2603-2606 (2007)
- Magnetization relaxation in sputtered thin fe films: An FMR study, IEEE Transactions on Magnetics, 42 (10), 2930-2932 (2006)
- Temperature-dependent impedance anomaly, microwave GMR and exchange-coupling in thin Ni/Cu multilayered films, Journal of Physics D: Applied Physics 33 (1), 34 (2000)

- FMR studies on Fe/Cr/Fe trilayer ultrathin films; magneto-crystalline anisotropy and electromagnetic impedance, Journal of magnetism and magnetic materials 165 (1), 275-279 (1997)
- Swept-frequency FMR on Fe/Cr/Fe trilayer ultrathin films; microwave giant magnetoresistance, Physics Letters A 221 (3), 245-252 (1996)
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- Effect of anisotropy and volume of pore on spin-wave linewidth Physica status solidi (a) 153 (1), 191-202 (1996)
- Laser induced damage in Si substrate used in MIC/MMIC, Journal of Physics D: Applied Physics, Vol. 23, (1990) p 56-66.

www.rajgurucollege.com
शहीद राजगुरु कॉलेज ऑफ एप्लाईड साईंसेस फॉर वुमैन
SHAHEED RAJGURU COLLEGE OF APPLIED SCIENCES FOR WOMEN
(दिल्ली विश्वविद्यालय)
वसुंधरा एनक्लेव (चिल्ला स्पोर्ट्स कॉम्पलैक्स के पास),
नई दिल्ली-110096
दूरभाष: 22623503, 22623505
दूरभाष/फैक्स: 22623504
(UNIVERSITY OF DELHI)
Vasundhara Enclave (Adjoining Chilla Sports Complex)
New Delhi-110096
Ph.: 22623503, 22623505
Phone/Fax: 22623504

संदर्भ सं./Ref.No. SRCASW/ 25/NAAC/15 दिनांक/Date 07/4/15

DECLARATION BY THE HEAD OF THE INSTITUTION

I certify that the data included in this Self-study Report (SSR) are true to the best of my knowledge.

This SSR is prepared by the Head of the Institution after internal discussions and no Part thereof has been outsourced.

I am aware that the Peer team will validate the information provided in this SSR during the peer team visit.

Dr.Payal Mago
OSD (Principal)

प्राचार्य/Principal
शहीद राजगुरु कॉलेज ऑफ एप्लाईड साईंसेस फॉर वुमैन
SHAHEED RAJGURU COLLEGE OF APPLIED SCIENCES FOR WOMEN
(दिल्ली विश्वविद्यालय/University of Delhi)
वसुंधरा एनक्लेव, नई दिल्ली-110096
Vasundhara Enclave, New Delhi-110096

UNIVERSITY OF DELHI
दिल्ली विश्वविद्यालय

CB-II/258/Affl./SRC/ASW/043/08

6.01.2014

NOTIFICATION

It is notified that the Shaheed Rajguru College of Applied Sciences for Women, Jhilmil Colony, Vivek Vihar, Delhi-110095 has shifted to following address:

Shaheed Rajguru College of Applied Sciences for Women,
Vasundara Enclave,
Delhi-110096.
Tel. No. – 011-22623503, 22623505

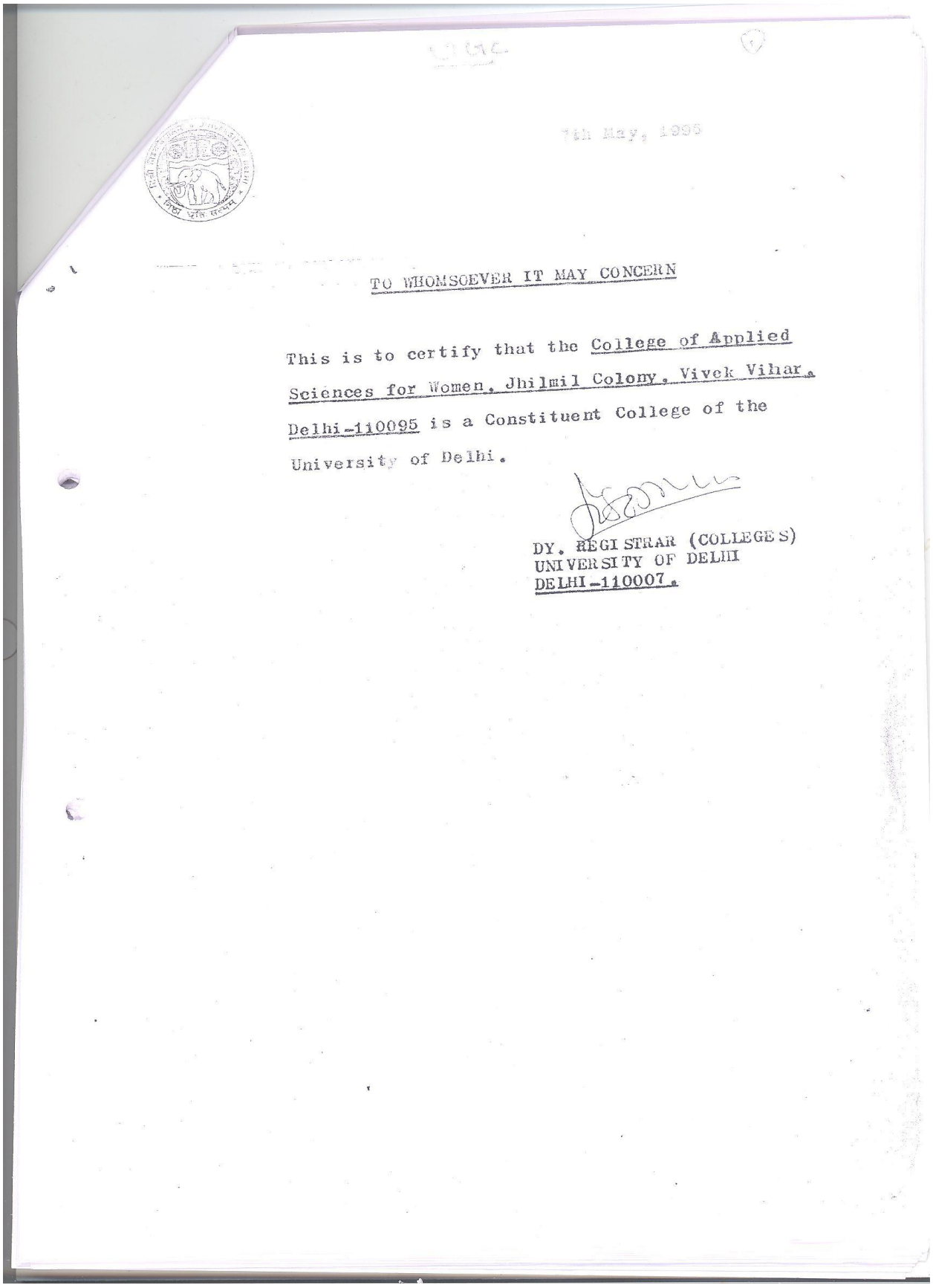
Registrar

Copy to:

1. The Principal, Shaheed Rajguru College of Applied Sciences for Women, Vasundara Enclave, Delhi-110096.
2. The Secretary, University Grants Commission, Bahadur Shah Zafar Marg, New Delhi Pin-110 002.
3. The Director, Directorate of Higher Education, Govt. of NCT, A-Wing, Delhi Secretariat, IP Estate, New Delhi.
4. The Dean, Faculty of _____.
5. The Deputy Controller of Examination, University of Delhi South Campus, Benito Juarez Road, New Delhi-110021.
6. The Deputy, Registrar, University of Delhi South Campus, Benito Juarez Road, New Delhi-110021.
7. The Assistant Registrar, Vice-Chancellor Officer/Pro-Vice Chancellor Office/Registrar Office University of Delhi, Delhi-110007.
8. The P.S to Dean of Colleges/Director South Campus, University of Delhi, Delhi-110007.

Deputy Registrar (Colleges)

University of Delhi, Main Campus, Delhi-110 007 (India)
Tel. 7667725/3922480; Fax : 7666350; Website : www.du.ac.in



7th May, 1995

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the College of Applied Sciences for Women, Jhilmil Colony, Vivek Vihar, Delhi-110095 is a Constituent College of the University of Delhi.

DY. REGISTRAR (COLLEGES)
UNIVERSITY OF DELHI
DELHI-110007.

ANNEXURE-I

UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG
NEW DELHI-110002.

No.F.8-34/93(CPP-I) May, 1996

The Registrar,
University of Delhi,
Delhi-110007.

21 MAY 1996

Sub: List of Colleges prepared under Section-2(f) of the UGC Act, 1956-Inclusion of New Colleges.

Sir,

I am directed to refer to the college letter No. nil dated 7th May, 1996 on the above subject and to say that the name of the following college has been included in the above list under constituant Colleges teaching upto Bechelor's Degree:-

Name of the Colleges	Year of Estt.	Remarks
College of Applied Sciences for Women, Jhilmil Colony, Vivek Vihar, Delhi-110095. (Dr. S. Lakshmi Devi)	1989	The College is eligible to receive central assistance in terms of the rules framed under Section 12-B of the UGC Act, 1956.

Yours faithfully,

(GURCHARAN SINGH)
Deputy Secretary

forwarded to:-

1. The Principal, College of Applied Sciences for Women, Jhilmil Colony, Vivek Vihar, Delhi-110095.
2. The Secretary, Govt. of India, Ministry of Human Resource Development (Department of Education), T-14 Section, New Delhi.
3. All Officers/Sections in the UGC Office.
4. S.O., FD-III/Delhi College UGC Office.
5. Incharge Computer Cell, UGC.
6. Guard file.

(D.D. MEHTA)
Section Officer

file it
S Lakshmi

SHAHEED RAJGURU COLLEGE OF APPLIED SCIENCES FOR WOMEN

JHILMIL COLONY, VIVEK VIHAR, DELHI-110095.

MAINTENANCE ACCOUNT

INCOME AND EXPENDITURE ACCOUNT
FOR THE YEAR ENDED MARCH 31, 2011

2009-10 Rs.P.	EXPENDITURE	2010-11 Rs.P.	2009-10 Rs.P.	INCOME	2010-11 Rs.P.
39177565.00	Salary & Wages	40038673.00	60000000	Grant-in-aid (Recurring) from the Government of Delhi	34000000.00
25034.00	Daily Wages & Labour Charges	180.00	3510873	Fees	3720594.00
97939.00	Printing & Stationery	192773.00		Less: Amount transferred to Capital account being the amt. used for purchase of BIS/BMS lab equipments	
68477.00	Conveyance	92735.00	115933	Miscellaneous receipts	747247.00
185417.00	Vehicle Running Expenses	131277.00	473111	Interest	656176.00
1189399.00	Lab. Expenses	1204319.00		**Excess of Expenditure over income**	7875913.00
45094.00	Uniforms	59656.00			
130582.00	Postage & Telephone	123395.00			
129944.00	LTC/HTC expenses	438708.00			
491024.00	Guest lecturer fees	1357150.00			
19343.00	Insurance	33423.00			
189369.00	Repair & maintenance-other	214656.00			
657564.00	Security system	657564.00			
57649.00	Advertisement	171985.00			
877285.00	Water & electricity	902477.00			
13200.00	Legal expenses	28225.00			
103052.00	Newspapers & periodicals	96920.00			
21504.00	Garden expenses	15788.00			
2755.00	Bank charges	3681.00			
3309.00	Audit fees	4309.00			
5105.00	Seminar/Conference/Annual Day Expenses	0.00			
469091.00	Medical expenses	840340.00			
291135.00	Miscellaneous expenses	382433.00			
0.00	Placement brochure	0.00			
8675.00	Library expenses	9263.00			
19840406.00	**Excess of income over expenditure**				
64099917.00	**Total**	**46999930.00**	**64099917.00**		**46999930.00**
			0.00		0.00

Notes on accounts forms an integral part of this account.

This is the Income & Expenditure Account
referred to in our audit report of even date

For BHS & Co.
Chartered Accountants

S.B.Sharma
Partner
(M.No.90647)

Place: Delhi
Dated: 20.06.2011

BHS & CO. New Delhi

For Shaheed Rajguru College of Applied Sciences for Women

S. Lakshmi T. Ravi

Dr.S.Lakshmi Devi
Principal

T.N.Ravi
Section Officer (Accounts)

SHAHEED RAJGURU COLLEGE OF APPLIED SCIENCES FOR WOMEN

JHILMIL COLONY, VIVEK VIHAR, DELHI-110095.

MAINTENANCE ACCOUNT

INCOME AND EXPENDITURE ACCOUNT
FOR THE YEAR ENDED MARCH 31, 2012

145

2011-12 Rs.P.	EXPENDITURE	2011-12 Rs.P.	2010-11 Rs.P.	INCOME	2011-12 Rs.P.
40038673.00	Salary & Wages	44008637.00	34000000.00	Grant-in-aid (Recurring) from the Government of Delhi	42400000.00
180.00	Daily Wages & Labour Charges	180.00			
192773.00	Printing & Stationery	218900.00	3720594.00	Fees	5124698.00
92735.00	Conveyance	112988.00		Less: Amount transferred to Capital account being the amt. used for purchase of BIS/BMS lab equipments	
131277.00	Vehicle Running Expenses	189451.00			
1204319.00	Lab. Expenses	1827718.00			
59656.00	Uniforms	43538.00	747247.00	Miscellaneous receipts	375558.00
123395.00	Postage & Telephone	132043.59	656176.00	Interest	696006.00
438708.00	LTC/HTC expenses	198011.00	7875913.00	**Excess of Expenditure over income**	3639348.59
1357150.00	Guest lecturer fees	1768729.00			
33423.00	Insurance	36333.00			
214656.00	Repair & maintenance-other	189097.00			
657564.00	Security system	657564.00			
171985.00	Advertisement	81791.00			
902477.00	Water & electricity	1079394.00			
28225.00	Legal expenses	0.00			
96920.00	Newspapers & periodicals	31680.00			
15788.00	Garden expenses	25420.00			
3681.00	Bank charges	2613.00			
4309.00	Audit fees	4309.00			
0.00	Seminar/Conference/Annual Day Expenses	4140.00			
840340.00	Medical expenses	944675.00			
382433.00	Miscellaneous expenses	289470.00			
0.00	Placement brochure	40120.00			
9263.00	Library expenses	195014.00			
	Fees Concession	153795.00			
	Excess of income over expenditure				
46999930.00	**Total**	**52235610.59**	**46999930.00**		**52235610.59**
			0.00		0.00

Notes on accounts forms an integral part of this account.

This is the Income & Expenditure Account
referred to in our audit report of even date

For BHS & Co.
Chartered Accountants

S.B.Shorey
Partner
(M.No.90647)

Place: Delhi
Dated: 11.07.12

BHS & CO. FRN.: 016889N CHARTERED ACCOUNTANTS

For Shaheed Rajguru College of Applied Sciences for Women

Dr.S.Lakshmi Devi
Principal

T.N.Ravi
Section Officer (Accounts)

Amritanshu Rai
Treasurer

Santosh Sareen
Chairperson

SHAHEED RAJGURU COLLEGE OF APPLIED SCIENCES FOR WOMEN

VASUNDHARA ENCLAVE, DELHI - 110096

MAINTENANCE ACCOUNT

INCOME AND EXPENDITURE ACCOUNT
FOR THE YEAR ENDED MARCH 31, 2013

178

2011-12 Rs.P.	EXPENDITURE	2012-13 Rs.P.	2011-12 Rs.P.	INCOME	2012-13 Rs.P.
44008637.00	Salary & Wages	52038994.00	42400000.00	Grant-in-aid (Recurring) from the Government of Delhi	52800000.00
180.00	Daily Wages & Labour Charges	63410.00			
218900.00	Printing & Stationery	320460.00	5124698.00	Fees	7791260.00
112988.00	Conveyance	128380.00	375558.00	Miscellaneous receipts	247021.00
189451.00	Vehicle Running Expenses	151944.00	696006.00	Interest	1381358.00
1827718.00	Lab. Expenses	2756371.50	3639348.59	**Excess of Expenditure over income**	6152955.02
43538.00	Uniforms	57901.00			
132043.59	Postage & Telephone	145029.52			
198011.00	LTC/HTC expenses	352143.00			
1768729.00	Guest lecturer fees	2202115.00			
36333.00	Insurance	35617.00			
189097.00	Repair & maintenance-other	2463408.00			
657564.00	Security system	1346612.00			
81791.00	Advertisement	78541.00			
1079394.00	Water & electricity	4178744.00			
0.00	Legal expenses	0.00			
31680.00	Newspapers & periodicals	39053.00			
25420.00	Garden expenses	70934.00			
2613.00	Bank charges	1436.00			
4309.00	Audit fees	4371.00			
4140.00	Seminar/Conference/Annual Day Expenses	13000.00			
944675.00	Medical expenses	1116345.00			
289470.00	Miscellaneous expenses	459951.00			
40120.00	Placement brochure	0.00			
195014.00	Library expenses	16647.00			
153795.00	Fees Concession	322760.00			
	Internet facility Expenses	8427.00			
	Excess of income over expenditure				
52235610.59	**Total**	**68372594.02**	**52235610.59**		**68372594.02**
			0.00		0.00

Notes on accounts forms an integral part of this account.

AUDITOR'S REPORT

This is the Income & Expenditure Account
referred to in our audit report of even date

For BHS & Co.
Chartered Accountants

C.A. S.B.Shori
Partner
(M.No.90647)

Place: Delhi
Dated :24.05.13

For Shaheed Rajguru College of Applied Sciences for Women

S. Lakshmi Devi
Dr.S.Lakshmi Devi
Principal

T.N.Ravi
T.N.Ravi
Section Officer (Accounts)

Amritanshu Rai
Amritanshu Rai
Treasurer

Santosh Sareen
Santosh Sareen
Chairperson

SHAHEED RAJGURU COLLEGE OF APPLIED SCIENCES FOR WOMEN

VASUNDHARA ENCLAVE, DELHI - 110096

MAINTENANCE ACCOUNT

INCOME AND EXPENDITURE ACCOUNT
FOR THE YEAR ENDED MARCH 31, 2014

2012-13 Rs.P.	EXPENDITURE	2013-14 Rs.P.	2012-13 Rs.P.	INCOME	2013-14 Rs.P.
52038994.00	Salary & Wages	60567288.00		**Grant-in-Aid (Salaries)**	
63410.00	Daily Wages & Labour Charges	74410.00	52800000.00	Plan	
320460.00	Printing & Stationery	399689.00		Non-plan	64900000.00
128380.00	Conveyance	115745.00		Plan (SCSP)	
151944.00	Vehicle Running Expenses	171544.00			
2756371.50	Lab. Expenses	1020543.02		**Grant-in-Aid Otherthan Salaries (General)**	
57901.00	Uniforms	36686.00		Plan	4750000.00
145029.52	Postage & Telephone	161246.64		Non-plan	6600000.00
352143.00	LTC/HTC expenses	542608.00		Plan (SCSP)	
2202115.00	Guest lecturer fees	1617000.00			
35617.00	Insurance	66391.00	7791260.00	Fees	6633310.00
2463408.00	Repair & maintenance-other	487099.00	247021.00	Miscellaneous receipts	1097089.00
1346612.00	Security system	2638515.00	1381358.00	Interest	1423350.00
0.00	House Keeping services	874320.00		Licence Fees	17318.00
0.00	House Tax	4686288.00	6152955.02	**Excess of Expenditure over income**	
78541.00	Advertisement	102422.00			
4178744.00	Water & electricity	5605623.00			
0.00	Legal expenses	0.00			
39053.00	Newspapers & periodicals	47374.00			
70934.00	Garden expenses	37533.00			
1436.00	Bank charges	864.00			
4371.00	Audit fees	4371.00			
13000.00	Seminar/Conference/Annual Day Expenses	13108.00			
1116345.00	Medical expenses	1091849.00			
459951.00	Miscellaneous expenses	334624.70			
0.00	Placement brochure	0.00			
16647.00	Library expenses	76998.00			
322760.00	Fees Concession	245155.00			
8427.00	Internet facility Expenses	0.00			
0.00	NFGLC expenses	895870.55			
0.00	Festival Expenses	84914.00			
0.00	Colllege Inauguration expenses	397589.00			
	Excess of income over expenditure	3023399.09			
68372594.02	**Total**	**85421067.00**	**68372594.02**		**85421067.00**
			0.00		0.00

Notes on accounts forms an integral part of this account.

This is the Income & Expenditure Account
referred to in our audit report of even date

For BHS & Co.
Chartered Accountants

CA.-S.B.Shori
Partner
(M.No.90647)

Place: Delhi
Dated :22.05.2014

BHS & CO. CHARTERED ACCOUNTANTS FRN 016889N

For Shaheed Rajguru College of Applied Sciences for Women

Dr.Punita Saxena
Acting Principal

T.N.Ravi
Section Officer (Accounts)

Shaheed Rajguru College of Applied Sciences for Women
(University Of Delhi)
Vasundhara Enclave, Delhi-110096
Ph:011-22623503, 22623505; Telefax: 011-22623504
Website: www.rajgurucollege.com