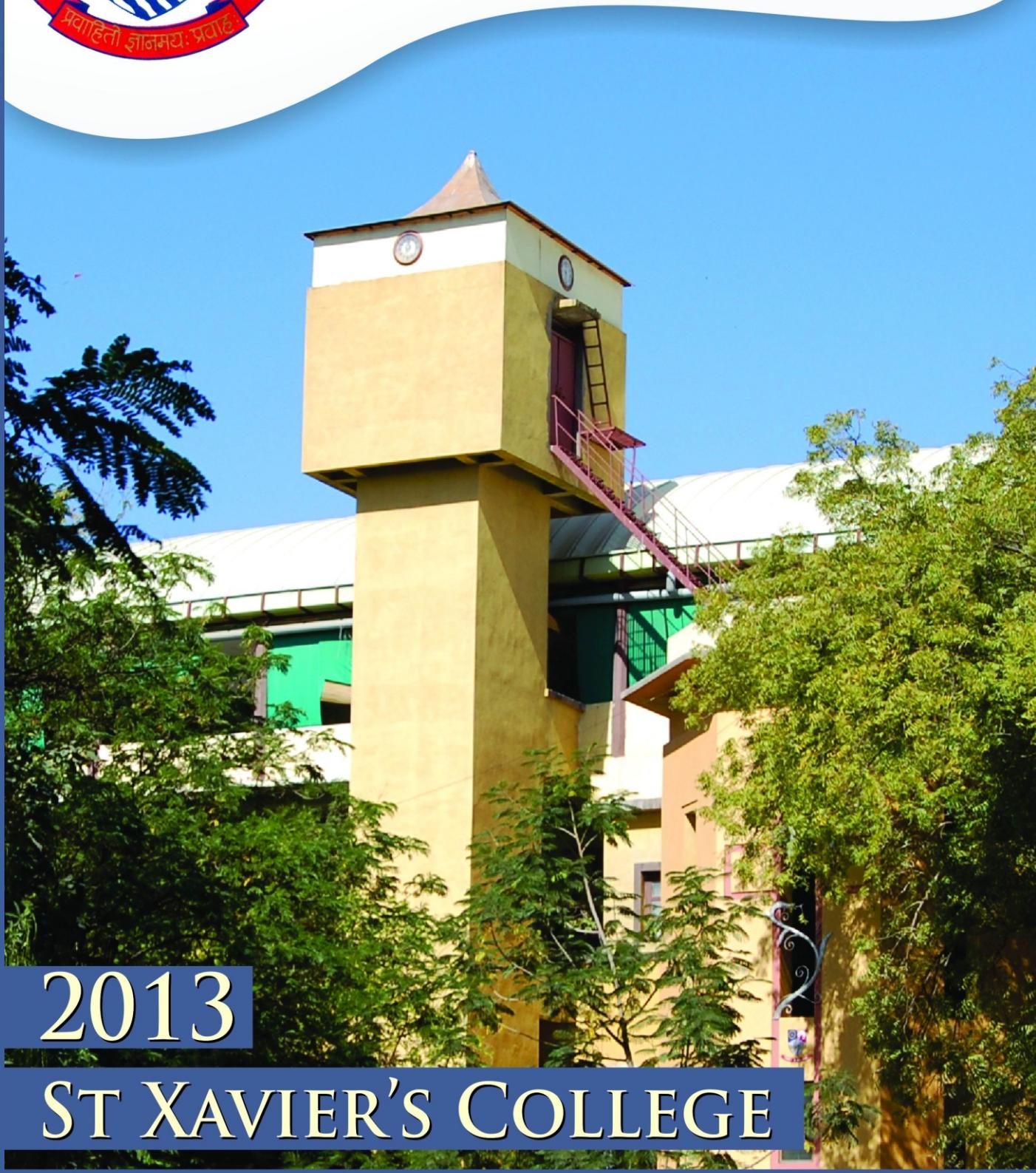


THE INSTITUTIONAL SELF STUDY REPORT FOR RE-ACCREDITATION



2013

ST XAVIER'S COLLEGE

Navrangpura, Ahmedabad - 380 009. Tel. 079-26308057

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Executive Summary

EXECUTIVE SUMMARY

St Xavier's College, Ahmedabad, founded in 1955, the only grant-in-aid Christian Institution of Higher Education in the State of Gujarat, is run by a world-wide religious organization, the Society of Jesus, founded by St. Ignatius Loyola (1491-1556). Members of this organization, known as Jesuits, are also called "the schoolmasters of Europe" since they took up education of Europe in the Middle Ages. The Society of Jesus runs nearly 150 institutions of higher education across the world.

Our College has completed 58 years in the service of higher education. It was accredited with 5 Stars (in 2001) and reaccredited with an A+ (in 2007). Declared a College with Potential for Excellence in 2006, the College was also recognized by DBT (in 2009) under the Star Colleges Scheme. India Today has consistently ranked Xavier's as the best College in Gujarat and among the top 50 colleges in India. The College which had been trying to get academic autonomy without success since 1976 has taken giant strides towards this goal. More recently, a group of six faculty spent two days at Loyola College and Stella Maris in Chennai, to familiarize themselves with the nuances involved in opting for academic autonomy, which they also shared with the rest of the faculty, on their return. Dr. Ignacimuthu, the former Vice Chancellor of University of Madras, was invited to Xavier's, Ahmedabad, for a seminar on "Autonomy for Quality and Excellence", as a part of preparation of the faculty in opting for academic autonomy. After obtaining the necessary No Objection Certificate (NOC) from Gujarat Government as well as from Gujarat University, we are awaiting a response from UGC to begin the process to grant us academic autonomy.

The College has set clear goals and every activity is geared towards achieving them. With the aim of empowering the students, the College has kept an eye on the market developments and on changes within the academic world. . In the changing context of a wide variety of options in the job market, the College gives a wider choice of subjects to the students, including Vocational and Career Oriented Programmes (COPs). The College has added two new COPs to the earlier twelve, and also started five courses (including MSW) under the Convergence Scheme of IGNOU. In the last two years, the CBCS system has been introduced and the College has been at the forefront in ensuring its effective implementation. It has ensured that a significant number of its faculty serve on Boards of Studies to update syllabi. The students are counseled when choosing their subjects, and the College attempts to add value to their graduate learning.

In keeping with its mission, the College has sought to devise its own semester electives; it has conducted electives linked to environmental issues. On its own initiative, Xavier's has designed its own modules aimed at adding value to the curriculum. These include a capacity building, holistic, human resource development module, PGOP, which is offered to all students, and has been effectively integrated into the annual system. It has also developed an Education Plus Leadership Programme (for students from disadvantaged groups). The College has developed and tested a youth appropriate stigma reduction curriculum (related to HIV AIDS) in a college setting for the first time in the nation. Tying up with NGOs (like CRS, ICRW) has helped provide professional orientation to the faculty to handle these curricula, thus ensuring their sustainability. The College has even conducted technology-linked courses like Backpack Journalism with foreign collaborative interaction. Almost all the members of the Management

are from the field of education and have been significant in heading these interventions. The College has systematized the feedback system to know the demands of times.

The process of teaching-learning-evaluation is at the core of the activities of the College. The process of admission is transparent and student-friendly, and has come in for praise from several quarters. Use of student counselors at the time of admissions has helped in this effort. The College has special counters for the differently-abled and for students from dispossessed classes. The College systematically ensures both equity and access to students of different strata and diverse talents which is reflected in the student profile of the College. Faculty have actually been to different areas to recruit students either for specific subjects or particular streams. They are also involved in counseling and selecting students for particular subject. The admission process is closely evaluated and suitably modified each year.

With a view to providing inclusive education, Xavier's has institutionalized a mechanism to accompany students from disadvantaged groups: Jagrat, Utkarsh and Urja continue to respond creatively to the needs of these groups. Hand holding of the weaker students by the Star batch, mentoring by faculty and colleagues, remedial learning, personalized study and group study are ways by which the College effectively caters to the needs of advanced, differently-abled and slow learners. Faculty have been trained in mentoring and sensitized to issues of stigma and inclusiveness. The College also experimented with a system of compliance which has promoted teacher-student interaction and responsible learning. Each faculty prepares a unitized teaching plan taking into account the learner group. Seminars, class-presentations, assignments, quizzing, group projects, field trips/study tours/contact programmes, internships etc are some of the student-centric methods used as means of learning. Not just faculty but also students are encouraged to participate at national seminars. Advanced learners are helped equip themselves with skills to target premier institutions. The results are encouraging. These students participate in national seminars, undertake internships and entrepreneurial ventures, do hands-on research, etc.

The College tries to induct quality faculty. Never willing to compromise on providing faculty, the College, after bearing the financial burden of employing ad hoc faculty for several years, finally took legal recourse and is hopeful of getting all the required faculty. The criteria and process of faculty selection has been reviewed and streamlined by the Management. At Xavier's, the feedback of students at demo-lectures is taken seriously before deciding to employ a faculty. Faculty are encouraged not only to complete their Ph.D. but also to keep up presenting papers and publishing. Financial assistance and other facilities are given for research, and faculty have been encouraged to accept scholarships abroad. Faculty are also encouraged to attend trainings aimed at handling new curricula. The annual Staff Research day is a healthy tradition which Xavier's continues.

Xavier's takes an additional examination which gives scope for experimentation. Students were trained to appear for Multiple Choice Questions (MCQ) type examinations and the practice has now been adopted by the parent University. The students are given their assessed papers look at so that the evaluation system becomes transparent. Faculty are encouraged to try different methods of evaluation with the prior permission of the Principal. Students' evaluation of teaching is systematized. Faculty have also been helped to understand 'quality' and integrate

quality concerns into their teaching-learning. They are also being trained to move towards technology advanced learning. The College has seriously implemented the API (Annual Performance Index) as recommended by the Govt. The Students Council for Quality (SCQ) has been set up and deals directly with the Principal.

Research is our major thrust. Both faculty and students are provided with research facility at our research centre, Xavier Research Foundation. Though run by the College, it has been given an independent status to avoid red-tape. Five students from every department are annually selected to take up research projects. Consequently, a total of 65 students undertook research projects in 2011-12 as compared with 10 per year earlier. A number of them go on to pursue top class research later due to this (UG level) training and exposure. Faculty research output is constantly on the increase. In order to encourage consultancy the management does not insist on sharing the remuneration. We collaborate with academic, research, industry and philanthropic organizations.

Our extension activities go beyond the regular NSS activities. Prerna, Tarumitra and XCD continue on our campus. Our faculty engage themselves in extension activities in areas of their expertise. Senior Management persons have demonstrated that curriculum-extension interface is possible: be it the tissue culture venture in adivasi Bhiloda, in North Gujarat, or the Aadi aushadhi (medicinal enterprise) in South Gujarat. These are excellent examples of how an integration of scientific research with social interventions can effectively change the trajectory of human lives, empowering them to change from traditional tribal healers to successful entrepreneurs.

The infrastructure of the college keeps pace with the needs of the College. The College has 30 lecture halls, AV rooms, a Conference Room, an Assembly Hall, two auditoriums, an open air theatre, playgrounds, a new and well-furnished computerized library with 74,156 books, 56 journals and periodicals, 16 laboratories, 3 Computer labs with 57 terminals, a 25-terminal language lab, 2 ITUs, special computers for the visually challenged students, 4 LCD projectors, a state of the art Research Centre etc. The 26-acre campus is pleasing to the eye with lush greenery. The facilities are maintained well by Estate Manager, Electrician, Gas Mechanic, Hardware Engineer, and others.

The College is student-centred. Student data are computerized and student progression is monitored. Both academic and psychological counseling is provided. Two full time counselors, two faculty with added responsibility of a Career Cell, teams to take care of co-curricular and extracurricular activities, sports director, coaches etc take care of various aspects of student support and progression. The College had a system of Deans to provide personalized service to students of each year. Students organize cultural events and raise funds for the same and thus get training for life. Students also run two ‘companies’ (ITUs) - Xplant and XOIC. The Campus Ministry cell conducts PGOPs to facilitate the holistic growth of every student. The College has held trainings in mentoring, facilitation skills, sensitivity and inclusiveness to equip the faculty. Facilitating mechanisms include a career cell, the Students’ Council for Quality, and a Campus Ministry cell which coordinates welfare measures and regular activities for the disadvantaged groups. The institution permits students to make maximum use of its infrastructure so as to excel holistically.

The College Management is highly structured and yet with sufficient freedom to the persons on the spot. In an effort towards greater participatory management, Xavier's has four Vice Principals: Fr. Vincent Saldanha and Dr. Lancy D'Cruz are fully empowered to deal with academic aspects of Arts and Science students, Dr. Sebastian Vadakan looks after Quality and Research, and Dr. Rajesh Iyer handles co-curricular activities. Various bodies meet regularly to plan and evaluate. The Management ensures that lack of finances do not hinder implementing a good idea.

Thus the College keeps in tune with the changing needs, serving not only the students that come to it, but also contributes to areas beyond through creative outreach programmes. It provides excellent education without losing sight of providing equal opportunity to all sections of society. It blends academic excellence with skills development while making creative attempts to ensure value inculcation. We hope that our dream of autonomy, which is now much more of a reality, will be realized in the very near future, thus providing a launching pad for entry into a high orbit of excellence.

**Fr (Dr) Robert Arockiasamy, S.J.
Principal**

Profile of the Institution

B. Profile of the Affiliated/Constituent College

1. Name and address of the college:

Name: The Principal
Address: St Xavier's College, Navrangpura.
City: Ahmedabad. Pin: 380 009 State: Gujarat.
Website: www.sxca.edu.in

2. For communication:

Designation	Name	Telephone with STD code	Mobile	Fax	Email
Principal	Fr. (Dr.) Robert Arokiasamy, s.j.	O: 079-26308057 R: 079-26301075	9427026600	079-26303740	bobsj@jesuits.net
Vice Principal	Fr. Vincent Saldanha, s.j.	O: 079-26308057 R: 079-26301075	9723449215	079-26303740	vincentsaldanha@jesuits.net
	Fr.(Dr.) Lancelot D'Cruz, s.j.	O: 079-26308057 R: 079-26301075	9723449209	079-26303740	lancy_dcruz@hotmail.com
Steering Committee Co-ordinator	Dr. Sebastian V.A.	O: 079-26308057 R: 079-26857961	8000175529	079-26303740	sebastian.vadakan@sxca.edu.in

3. Status of the of Institution :

- Affiliated College
- Constituent College
- Any other (specify)

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. Is it a recognized minority institution?

- Yes
- No

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

Appendix - 1

6. Source of funding:

Government

Grant-in-aid

Self-financing

Any other

✓

7. a. Date of establishment of the college: **15/06/1955** (dd/mm/yyyy)

b. University to which the college is affiliated / or which governs the college (If it is a constituent college) **Gujarat University**

c. Details of UGC recognition:

Under Section	Date, Month & Year (dd-mm-yyyy)	Remarks (If any)
i. 2 (f)	20/02/1980	
ii. 12 (B)	20/02/1980	Same certificate Appendix 2a

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

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

Under Section /clause	Recognition/Approval details Institution/Department/ Programme	Day, Month and Year (dd-mm-yyyy)	Validity	Remarks
i.				
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: **26/09/1996**.... (dd/mm/yyyy)

b. for its performance by any other governmental agency?

Yes No

If yes, Name of the agency :

IMC Ramkrishna Bajaj National Quality Award

..... and

18/01/2012

Date of recognition: (dd/mm/yyyy)

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

Location *	Urban
Campus area in sq. mts.	26 Acre or 105290 sq.mts.
Built up area in sq. mts.	9142 sq.mts. (new building is not included)

(* 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
One Hall (2000 capacity); one hall (300 capacity) with AV facility; one hall (100 capacity) with AV facility; One open air theatre (2000 capacity)
- Sports facilities
 - * play ground : **Hockey, Football, Cricket, Basketball, Volleyball, Paleta and Tennis**
 - * swimming pool: **Agreement with Gujarat Sports Clubs.**
 - * gymnasium : **No**

• Hostel

- * Boys' hostel
 - i. Number of hostels : **01**
 - ii. Number of inmates: **170**
 - iii. Facilities (mention available facilities): **Individual cupboard, cot, hot water, drinking water, reading room, mobile charging facility, Mess (vegetarian), T.V. room daily room cleaning, common cultural celebrations.**
- * Girls' hostel
 - i. Number of hostels: **01**
 - ii. Number of inmates: **150**
 - iii. Facilities (mention available facilities): **Individual cupboard, cot, Hot water, drinking water, reading room, mobile charging facility, Mess (vegetarian), T.V. room daily room cleaning, common cultural celebrations.**
- * Working women's hostel - **Nil**
 - i. Number of inmates
 - ii. Facilities (mention available facilities)
- Residential facilities for teaching and non-teaching staff (give numbers available -- cadre wise)
- Cafeteria -- **Yes**
- Health centre – **Agreement with nearby Gujarat University Health Center.**
First aid (every department, sports room and counseling room has a kit), Inpatient, Outpatient, Emergency care facility, Ambulance
 Health centre staff –

Qualified doctor	Full time <input type="checkbox"/>	Part-time <input checked="" type="checkbox"/>
Qualified Nurse	Full time <input type="checkbox"/>	Part-time <input checked="" type="checkbox"/>
- Facilities like banking, post office, book shops: **No**
- Transport facilities to cater to the needs of students and staff
- ✓• Animal house: **Yes**
- ✓• Biological waste disposal: **Yes**
- Generator or other facility for management/regulation of electricity and voltage: **No**
- Solid waste management facility : **AMC collects waste pots**
- ✓• Waste water management: **Yes**
- ✓• Water harvesting: **Yes**

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

Sl. No.	Programme Level	Name of the Programme/Course	Duration	Entry Qualification	Medium of instruction	approved Student strength	No. of students admitted
1	Under-Graduate	B.Sc. in Botany, Biotechnology, Biochemistry, Chemistry, Electronics, Industrial-Chemistry, Mathematics, Physics, Statistics, Zoology	Three years Or Six semesters	10+2	English	360	435
		B.A. in Economics, English, Functional-English, Gujarati, Psychology, Sanskrit	Three years Or Six semesters	10+2	English and Gujarati	290	303
2	Post-Graduate	M.Sc. in Chemistry	Two years	B.Sc.	English	30	31
		M.A. in English	Two years	B.A.	English	75	34
3	Integrated PG Prog.	-	-	-	-	-	-
4	Ph.D.	Biochemistry		M.Sc.	English	6	5
		Economics		M.A.	Gujarati	8	3
		English		M.A.	English	7	2
		Sanskrit		M.A.	Sanskrit Gujarati	10	4
	M.Phil.	Biochemistry	One year	M.Sc.	English	3	-
		Botany		M.Sc.	English	3	-
		English		M.A.	English	3	-
		Sanskrit		M.A.	Sanskrit Gujarati	3	1
5	Certificate courses	Career Oriented Programs Arts: Counseling, Creative Arts, English Language and Communication Skills, Foreign Trade Management, Journalism,	One year	10+2.	English and Gujarati		738

		Rural Development, Mass Media and Audiovisual Communication Science: Bio-informatics, Computer Hardware, Gardening and Landscaping, Microbial Biotechnology, Microprocessor & Photonics, Nutrition and Dietetics, Statistics & SPSS, Instruments Chemical Analysis					
6	UG Diploma	CTE, CHR	6-12 months	10+2	English	-	68
7	PG Diploma	PGDAC, PGJMC	1-3 years	Graduation	English	-	51
8	Any Other (specify and provide details)	MSW	2-5 years	Graduation	English	-	137

13. Does the college offer self-financed Programmes?

Yes No

If yes, how many?

15 Career Oriented Programs + 5 IGNOU

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

Yes	<input checked="" type="checkbox"/>	No		Number	07
-----	-------------------------------------	----	--	--------	----

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.)

Particulars	UG	PG	Research
Science	08	01	02
Arts	05	01	03

Particulars	UG	PG	Research
Commerce	-	-	-
Any Other not covered above	-	-	-

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

a. annual system **2 UG, 2 PG, PhD = 5**

b. semester system **2 UG, 2 PG = 4**

c. trimester system **Nil**

17. Number of Programmes with

a. Choice Based Credit System **15**

b. Inter/Multidisciplinary Approach

c. Any other (specify and provide details)

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

Yes 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?

Yes No

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

Yes 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?

Yes No

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

Positions	Teaching faculty						Non-teaching staff		Technical staff	
	Associate Professor	Assistant Professor	Adhyapak Saahayak							
	*M	*F	*M	*F	*M	*F	*M	*F	*M	*F
Sanctioned by the UGC / University / State Government <i>Recruited</i>	31	16	1	-	3	1	17	1	-	-
Yet to recruit	-	-	-	-	9	6	6	4	-	-
Sanctioned by the Management/society or other authorized bodies <i>Recruited</i>	-	-	-	-	3	4	1	3	-	-
Yet to recruit	-	-	-	-	-	-	-	-	-	-

*M-Male *F-Female

21. Qualifications of the teaching staff:

Highest qualification	Associate Professor		Assistant Professor		Adhyapak Saahayak		Total
	Male	Female	Male	Female	Male	Female	
Permanent teachers							
D.Sc./D.Litt.	-	-	-	-	-	-	-
Ph.D.	22	13	-	-	3	2	40
M.Phil.	2	2	-	-	3	3	10
PG	8	3	-	-	2	3	16
PGDCA	-	-	1	-	-	-	1
Temporary teachers							
Ph.D.	-	-	-	-	-	-	-
M.Phil.	-	-	-	-	-	-	-
PG	-	-	-	-	-	-	-
Part-time teachers							
Ph.D.	-	-	-	-	-	-	-
M.Phil.	-	-	-	-	-	-	-
PG	-	-	-	-	2	3	5

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

13

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

Categories	Year 1 (2008-09)		Year 2 (2009-10)		Year 3 (2010-11)		Year 4 (2011-12)		Year 5 (2012-13)	
	Male	Female								
SC	16	13	24	14	16	18	22	13	22	19
ST	30	19	24	17	27	21	36	21	31	19
OBC	37	31	46	41	34	38	54	39	55	48
General	174	310	219	385	197	397	221	410	193	410
Others	-	-	-	-	-	2	6	9	-	6

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	672	120	-	-	792

Students from other states of India	64	2	-	-	66
NRI students	-	-	-	-	-
Foreign students	2	-	-	-	2
Total	738	122	-	-	860

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

UG **22%**

PG **08%**

26. Unit Cost of Education

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

(a) including the salary component

Rs. 38027 /-

(b) excluding the salary component

Rs. 2660 /-

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 University

Yes No

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

IGNOU

c) Number of programmes offered

05

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

Yes No

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

Sr.No.	UG Courses	Teacher-Student ratio
1.	Economics	1:35
2.	English	1:40

3.	Gujarati/Hindi	1:23
4.	Psychology	1:82
5.	Sanskrit	1:5
6.	Biochemistry	1:45
7.	Biology	1:30
8.	Chemistry/Industrial Chemistry	1:16
9.	Mathematics	1:40
10.	Physics	1:45
11.	Electronics	1:25
12.	Statistics	1:8
13.	Biotechnology	1:45

Sr.No.	PG Courses	Teacher-Student ratio
1	English	1:17
2.	Chemistry	1:14

29. Is the college applying for Accreditation : Cycle 1 Cycle 2 Cycle 3 Cycle 4

Re-Assessment:

(Cycle 1 refers to first accreditation and Cycle 2, Cycle 3 and Cycle 4 refers to re-accreditation)

30. Date of accreditation* (applicable for Cycle 2, Cycle 3, Cycle 4 and re-assessment only)

Cycle 1: **19/01/2001** (dd/mm/yyyy) Accreditation Outcome/Result..... **5 star**

Cycle 2: **31/03/2007** (dd/mm/yyyy) Accreditation Outcome/Result..... **A⁺**

Cycle 3: (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.

235 days

32. Number of teaching days during the last academic year

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

215 days

33. Date of establishment of Internal Quality Assurance Cell (IQAC)
IQAC **25/01/2001**.... (dd/mm/yyyy)
34. Details regarding submission of Annual Quality Assurance Reports (AQAR) to NAAC.
AQAR (i) **13/02/2013**.... (dd/mm/yyyy)
AQAR (ii) **13/02/2013**.... (dd/mm/yyyy)
AQAR (iii) **13/02/2013**.... (dd/mm/yyyy)
AQAR (iv) **20/09/2012**.... (dd/mm/yyyy)
35. Any other relevant data (not covered above) the college would like to include. (Do not include explanatory/descriptive information)

We have effectively functioning following bodies.

- * **CWDC**
- * **SCQ**
- * **Career Cell**
- * **Campus Ministry Cell**
- * **Jagrat**
- * **Utkarsh**

Criterion wise Analysis

CRITERION I: CURRICULAR ASPECTS

1.1 Curriculum Planning and Implementation

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

The goal of St Xavier's College (SXC) is to provide students with an environment for the all round development of their mental, physical, aesthetic, social, and spiritual potentials, together with the attitudes of integrity, hard work, honesty, fairness, and tolerance, so that they give of their very best. Excellence in these fields is to be interpreted in terms of putting the skills developed in each at the service of the socially discriminated groups in our country with a view to setting up a society where all have equal opportunity as children of God. (*Prospectus Arts and Science, St Xavier's College, page 4*).

These values are communicated to students, staff and other stakeholders through the College Prospectus, website (www.sxca.edu.in), policies, and practices of the College.

SXC maintains a high level of academic excellence. It has the privilege of being the first in the State to receive the “Best College” award from the Gujarat Government. It was accredited with Five Stars by NAAC in 2001 and reaccredited with the highest awarded grade for reaccreditation of A+ in 2007. Society at large rates it as the best College of Gujarat. Popular magazines like India Today consistently rate St Xavier's College, Ahmedabad, as the best College in Gujarat and among the top 50 colleges of India. In 2006, UGC recognized St Xavier's College as a College of Potential for Excellence. In 2009, DBT recognised St Xavier's College under the Star College Scheme.

- 1.1.2** *How does the institution develop and deploy action plans for effective implementation of the curriculum? Give details of the process and substantiate through specific example(s).*

St Xavier's College is affiliated to Gujarat University. The University has a prescribed syllabus for every subject. The College follows this syllabus. The Principal, in consultation with the management and the Academic Council, plans the curriculum for the year. This is communicated to the entire College through the various departmental heads.

The College has two different academic plans: a yearly plan and a CBCS based semester system, since 2010 June. The Principal requests a term plan of teaching from each faculty and this is followed up by the Head of each department. The College also ensures that faculty prepares a daily teaching plan for the entire term. This format is given to every student at the beginning of the calendar year.

From 2010, the College introduced ‘compliance’ system as an academic reform. According to the University system of education, every student must have 75% physical presence in all classes in order to appear for the semester-end examination. Though SXC insists on 100% attendance, students may remain absent for various personal reasons. In order to ensure that learning has taken place, a student has to meet the professor whose classes s/he has missed, and take up an assignment to demonstrate that s/he has covered the matter.

The Principal also monitors whether 70% of the syllabus has been completed by the end of the first term for students in the yearly system, and 60% of the syllabus has been completed for students in the semester system by mid-semester. The curriculum is completed according to the Gujarat University mandate.

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

In 2010, Gujarat University adopted CBCS. In order to design the semester wise syllabus, faculty from English, Psychology, Sanskrit, Biochemistry, Botany, Chemistry, and Zoology departments were involved. Moreover, faculty from Sanskrit, Botany, Biochemistry, Chemistry, Physics, Mathematics, Statistics and Zoology are in the respective Board of Studies (BoS) that finalize the syllabus for the entire University. Several faculty from the Science departments are examiners at the University practical examination, as well as paper setters for theory examinations. Several faculty from the Arts departments are theory examination paper setters too. For several years, the College has been offering its facilities to the University for conducting the annual/semester-end examinations, and the final practical examinations.

Though the University does not offer any freedom to modify the curriculum, faculty have total freedom to plan the mode of teaching within the prescribed curriculum. Faculty receive support in the form of a well organized timetable, well furnished classrooms, AV rooms, LCD, DVD player, OHP, discussion friendly classrooms, Internet facilities, computers, INFLIBNET, local library facility, student feedback forms, challenges from national institutes, inputs from other colleges etc. Faculty also enrich themselves through attending refresher courses, seminars, training in their field, and training in computer software. For example, most of the faculty of the Physics department undertook training in Flash prior to a national seminar which was organised by the department. Some faculty use the open spaces such as the lawn and the botanical garden to conduct classes.

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

Based on the University calendar, the College prepares its own calendar. This is initially discussed in the Heads of Departments meeting and the final calendar is circulated to all the departments. Three internal examinations and two practical examinations are conducted for those in the annual system and two internal examinations and a practical examination are conducted for CBCS students. The same system is followed for Career Oriented Programmes (COPs) and other elective courses.

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

The curriculum should benefit the stakeholders. Therefore, various departments investigate their peculiar mechanism to meet the stakeholder's requirements. For eg., the department of Biochemistry prepares its students to be absorbed in pharma industry. It also conducts training programmes for students to face the national level competitive examinations to ensure the entry of students to national institutes. The department of Economics trains students to get into commerce and trading.

The College interacts with St Aloysius College, Mangalore, on a more or less regular basis for research activities. To expose students to a higher order of learning industrial tours (Biochemistry, Physics-Electronics, Economics as part of its COP), industrial training (Biotechnology), study tour (Chemistry to Central Salt and Marine Chemical Research Institute), field visits (students of Psychology department to mental asylum and mentally challenged students' house) are organised. The department of Botany conducts study tours and botanical garden visits to Mt Abu, Sawantawadi, Wagai etc.

As part of extending the curriculum, students of Journalism - both Gujarati and English- have done internship with leading dailies of Ahmedabad. The students of Physics have regular internship with CIPET, and Shah Audio system. The College has also interacted with many leading industries for placement. This year, during campus recruitment, companies such as Google, TCS, Infosys, Wipro, iGATE, Reliance Industries, and Zydus Cadila took part. The department of Chemistry had extended their expertise to the Government of Gujarat to test soil collected from all over Gujarat. The College has tested about 15,000 samples as part of this linkage.

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

Eight of our faculty contribute their expertise in the Board of Studies of Gujarat University and one of them (Dr Urmi Shah) is in the BoS of Sanskrit at Somnath University, Saurashtra. Faculty from English,

Psychology, Sanskrit, Biochemistry, Botany, Chemistry, and Zoology have contributed in framing syllabi for Gujarat University when it was changing from the annual system to CBCS. Several of our faculty (Biochemistry, Chemistry, and Physics) serve as coordinators for University practical examinations. The syllabus for Functional English was prepared by one of the faculty from the department of English of SXC. Several of our faculty are paper setters, evaluators and practical examiners at the final University examination. (There is no formal system for student feedback in curriculum designing. Teachers communicate their view points through HoDs to the BoS. For example, use of biological sample was avoided in the University practical examination when there was a flu epidemic in Ahmedabad. The BoS of Zoology has reduced the use of animals during routine practicals).

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

The College has designed the curriculum for 14 Career Oriented Programmes (COP) recognised by UGC. Each department was asked to design and offer a Career Oriented Programme so that students get additional advantage in the future. This has been well received by the students. These programmes are designed according to the guidelines of UGC for COP courses. Every Arts course have three to five papers with a total of 12 credits (180 hrs) of theory, 8 credits of practicals or field work. Science courses will have 12 credits of practical besides the 3 papers. Under the CBCS, foundation and soft skill courses are developed and offered by SXC. In the last two years, the College has been offering yoga, value oriented education, and Indian Culture as soft skills. The Personal Growth Oriented Programme is totally designed and conducted by the faculty of SXC. This programme was offered to students because the counsellors of the College felt that many students require a support system to deal with themselves, family, and society.

One of the faculty from the department of English designed and conducted a course in Journalism and Communication Skills for NIEM, Ahmedabad. He also designed and conducted a three week course in Communication Skills for students of Management at CEPT University. SXC also designed the Education Plus ‘Youth Leadership Programme’ along with Catholic Relief Service (CRS), and has published the same. The College faculty, along with the ICRW, also designed ‘Stigma Reduction programme for Higher Educational Institutes’.

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

The stated objectives of the College are implemented and achieved in the following manner:

Intellectual and Academic: St Xavier's College maintains a high level of academic excellence. It has the privilege of being the first in the State to receive the "Best College" award from the Gujarat Government. It has been accredited with Five Stars by NAAC in 2001 and reaccredited with the highest awarded grade for reaccreditation of A+ in 2007. Society at large rates it as the best College of Gujarat. Popular magazines like India Today consistently rate St Xavier's College, Ahmedabad, as the best College in Gujarat and among the top 50 colleges of India. In 2006, UGC recognized SXC as a College of Potential for Excellence. In 2009, DBT recognised SXC under the Star College Scheme.

The Principal with the help of HoDs ensures that 70% of the syllabus is covered by the end of first term for students of the annual system. For the CBCS students, 60% is completed by mid semester and entire syllabus by the semester-end. By the end of every year/semester, three examinations are conducted in a phased out manner to ensure that students learn the subject. They are also given assignments, regular biweekly tests (Economics, Biochemistry, Voc. Biotechnology), and compliance work. Internal marks are given to motivate students to take up studies seriously. The weightage for internal marks is 30. This includes, 5 for the midterm test, 10 for the term end test, 10 for assignments/class test/quizzes/any other creative evaluation methods, and 5 for regularity in class.

Training, Self development, and Equity: Every year a significant number of our students win high honours and prizes at the University examinations. Besides, our students are invariably at the top in sports and extracurricular activities held by the University. SXC has been retaining the University Championship for athletics for the last few decades. During the last three years about 6 students from the College represented the University at the national level. The College also offers several opportunities for the all round development of the students: language courses, computer courses, cultural festivals, debates, film appreciation fora, discussions, seminars, symposia, drama club, translation forum, research projects, study tours, exhibitions, camps, personality development programmes, soft skill development courses, etc.

Access to the Disadvantaged: The College also has various programmes and activities on a regular basis conducted by support structures and associations meant specifically for the physically challenged students (Utkarsh), the marginalized and socially disadvantaged students (Jagrat), the lady students and staff of the College (Urja- College Women Development Cell), and the contract labourers and peons (Prerna).

Community and National Development: The College also contributes towards community and national development by offering various opportunities through the NSS, NCC, environmental cell (Tarumitra), extension programmes with tribal people and economically backward women, etc.

Ecology and Environment: The College also has a lush green campus spread over 26 acres with ecological niches set up to promote environmental awareness. The College is a non pollution zone with green laboratories. Students are not allowed to bring four wheelers on campus. The College has initiated energy conservation process through trapping solar energy, and setting up water harvesting systems.

Value Orientation: The College integrated into the timetable a weekly value education session for every class (till 2008). From 2009 onwards this concept has been upgraded to a larger scale as Personal Growth Oriented Programme (PGOP) where faculty and students are beneficiaries. A few of our faculty conduct value orientation seminars, and staff training programmes for other colleges and schools both at the state and at the national level. On occasions, both faculty and students are sent for seminars in this field.

Employment: St Xavier's College has set up a Career Guidance Cell to facilitate employment opportunities for our students. This cell is instrumental in arranging career workshops and in coordinating campus interviews, held by various companies and industrial houses.

Global Demands: As part of our global outreach initiatives, the College has also tried to network with foreign universities like St Joseph's University, Philadelphia, Marquette University, Wisconsin, in academic matters. Every year one or the other student of the College is also chosen by the University for the Student Exchange Programme to Japan. Every year some of our students go abroad for further studies and some of them have done well enough to win prestigious scholarships like the Bardhan Trust Scholarship. Two faculty members had gone for Post doctoral work to Hungary on UGC Fellowship and one of them has been awarded Fulbright Scholarship.

1.2 Academic Flexibility

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

Certificate Courses: The College offers 14 certificate courses in COP, which are recognised by UGC and approved by Gujarat University. Initially UGC had sponsored seed money to develop these courses. Currently we are in the 6th year.

Diploma Courses: SXC offers five programmes of IGNOU under the Convergence Scheme since 2008. The department of Chemistry is also

helping in the Post Graduate Diploma in Analytical Chemistry (PGDAC) course of IGNOU.

Name of the Course	Academic Year (students opted)			
	2008	2009	2010	2011
MSW	65	25	27	23
CHR	15	-	3	-
PGJMC	-	07	16	8
PGDAC	-	28	22	5
CTE	-	-	54	11

Skill development courses: The motto of SXC is all round development. In order to achieve this, the College has been offering various programmes for the past 15 years that help a person to develop not only in the academic but also the aesthetic, spiritual, and physical aspects. In 2009, the College restructured these and named it Personal Growth Oriented Programme (PGOP). There are 25 modules. The PGOP has two divisions: programmes that addresses soft skill development and programmes for personal discovery (listed below). The personality based PGOP has been designed by a team coordinated by the counsellors of the College. The counsellors felt that many students have difficulty and lack of knowledge and skill in handling relationship with oneself, family, society and God. This programme was designed to address this issue. Initially, all the faculty went through training in this programme which was later offered to all the students of the College. Later on a core team was prepared to give training to the students on weekends.

Sr. No.	Programme
Skill Based PGOP	
Fine Arts	
1	Collage
2	On the spot Painting
3	Clay Modelling
4	Rangoli
5	Cartooning
Music	
6	Western Vocal
7	Western Instrumental
8	Classical Vocal
9	Light Vocal
10	Instrumental (N.P)
11	Instrumental (P)
Drama	
12	One Act Play
13	Skit
14	Mime
15	Mimicry
16	Mono Acting

Literary	
17	Debate
18	Poetry Recitation
19	Verse Completion
20	Extempore
21	Elocution
22	Quiz
Dance	
23	Folk
24	Classical
Personality Based PGOP	
25	Personal Growth Oriented Programme

When the Government of Gujarat came to know about this programme, the College was approached and we have designed a similar programme for the State that aims at the holistic development of a student. The government started this training under the brand name of Saptadhara.

The College also offers special skill development programmes to SC, ST and OBC students on a regular basis.

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

Gujarat University does not allow a dual degree. However, the programmes under the convergence scheme of IGNOU and COPs offer an additional certificate. The College offers a certificate for Journalism in collaboration with Marquette University, Wisconsin.

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

The College has opted for all the combinations offered under CBCS for Science and Arts with an eye on career options for students. It has also opted for electives that have an advantage in terms of skills development and career options. For example, 14 electives are offered to Sem-1 students. Environmental Education is an elective that is compulsory for Sem-2 students so that they are conscious about environmental issues.

The College also offers Mathematics to Biology students and vice versa. This is indeed a bold step to cater even to the needs of a few students. The College makes a lot of effort to give choices to students and accommodate their needs.

As we are in the early stages, lateral and vertical mobility has not been introduced at the moment. However, we are open to explore such possibilities for the betterment of students in the future.

The College offers various enrichment programmes to students. Until 2008 value education was offered to all the students every week. Since 2009 it has been incorporated into PGOP and offered to all the students. Students who complete the required hours of training are also given certificates. 24 soft skills are also offered to all students every year.

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.

The College offers 14 self-financed certificate course in COPs. This was started with seed money given by the UGC. These courses are recognised by the UGC and approved by Gujarat University. The duration is one year. The College also plans to offer diploma and advanced diploma in the near future. These programmes are offered to anyone who is eligible according to Gujarat University criteria and has a desire and interest to learn. The classes are conducted outside the normal working hours on Saturdays, Sundays, and on holidays. In-house faculty, faculty from neighbouring colleges and experts in the chosen subjects are invited to conduct classes. These courses increase the employability of a student. For example, on completing the course in Nutrition and Dietetics students have started fitness training centres; students of Microbial Biotechnology have good prospects in Pharmaceutical firms. These short term and week-end courses are open to people other than our own students. In the past a couple of housewives and students of other institutes have taken advantage of these courses.

The fee structure is as follows:

		Credits	Fee (per semester)
Arts	Theory	12	Rs. 2250
	Projects	08	
Science	Theory	12	
	Practical	08	Rs. 4500
<i>Each Credit is 15hrs. So 300hrs total.</i>			

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

The College offers to its students various skill oriented programmes that have local, regional and environmental demands. Vocational Biotechnology gives students an advantage in getting jobs in the pharma sector; Industrial Chemistry students are absorbed by various industries which Gujarat is known for. Many of our students are selected during campus interviews by such industries. The course in Spoken English which is primarily offered to students coming from the Gujarati medium fetch them jobs at better places; The course in

Foreign Trade and Management, Journalism, and Counselling have good job prospects in Gujarat. As one of the skills-oriented extension programmes the department of Botany organises and trains tribal medicinal men from Dediapada taluka in South Gujarat to cultivate, process, pack and sell tribal medicines under the trade name of *Aadi aushadhi*. This group also participates in food festivals at various places with their innovative formulae. One of their products, a *mahuda* based ice cream, is going to be patented. The application for the same has been sent.

- 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/combinations of their choice? If ‘yes’, how does the institution take advantage of such provision for the benefit of students?***

The University does not provide such a facility as of now. However, the College has a tie up with IGNOU and conducts five courses that have been availed of by 302 students so far. Moreover, Marquette University offers a certificate course in Journalism in collaboration with SXC.

1.3 Curriculum Enrichment

- 1.3.1 *Describe the efforts made by the institution to supplement the University’s Curriculum to ensure that the academic programmes and Institution’s goals and objectives are integrated?***

The institutional goal is to provide students with an environment for all round development and equal opportunity. For mental growth, the College has the academic set up, regular classes, practicals, a Research Centre, a library, personal/individual guidance outside class hours etc. All are expected to make use of these resources.

Year	2008-09	2009-10	2010-11	2011-12
Annual Expenditure	36383437	36193854	58563679	65292471
Annual Expenditure in Rs. (salary excluded in)	3169646	4097616	4315218	4568482
No. of students	1971	1814	1901	1717
Unit Cost of Education	18459	19952	30806	38027
Unit Cost of Education in Rs. (salary excluded)	1608	2259	2270	2660

In 2011-12, the unit cost of education was Rs. 38027 which ultimately comes from tax payer's money. So every student has a social debt and thus a responsibility. The NSS conducts activities that take care of social responsibilities. The NSS works with people in a neighbouring slums, with physically and visually challenged persons, in public hospitals etc. We hope to take up issues like ecology, community

health, non-formal education, child-labour etc. in the future. The intervention is as an institution of higher learning. Hence, the College encourages students to take up research in these areas and publish articles in newspapers etc. to conscientize people.

The College in collaboration with Catholic Relief Service (CRS) offered a training programme to SC, ST and OBC students on a regular basis for a period of five years. A team of faculty planned and conducted the sessions in a well spaced manner. This programme helped the students to come to terms with their rural background, broaden their vision, change their mindset, and think out of the box. Students who have undertaken this training have been securing admissions in good Universities for courses which they would have never thought of doing. As an outcome of this programme, the College has prepared and published a book, 'Youth Leadership Programme: Education Plus' (ISBN: 978-93-80066-41-7).

Two full time personal counsellors for psycho-spiritual well-being, vast play grounds, a sports director, and participation in various sports and games for physical well-being are there to help Xavierites develop. SXC is a place that shows unity in diversity. The College has students of all castes and creeds. There is a sizable number of physically or visually challenged students. There is a special cell for differently-abled persons and special computers for visually challenged students. College provides an opportunity to experience living together and thus overcome our prejudices, befriending people of various communities and experience the basic goodness of being children of one God.

Cultural activities take care of the development of the aesthetic talents of students. The College has cultural activities on every Saturday, culminating in the annual Culfest held in December. Campus recruitment takes care of helping students find jobs.

1.3.2 *What are the efforts made by the institution to modify, enrich and organize the curriculum to explicitly reflect the experiences of the students and cater to needs of the dynamic employment market?*

The College is in no position to modify the curriculum as it is affiliated to Gujarat University. However, many efforts have been made at the departmental level to enrich the curriculum to cater to the needs of the employment market. The Vocational Biotechnology cell offers a two-year training in plant tissue culture. Though not listed in the syllabus, it is offered as a value addition to the course at SXC. Students have organised themselves to form a company, called 'Xplant' where there is a production unit, a marketing unit, an accounting section etc. The group prepares marketable tissue cultured products for tabletops in restaurants, offices etc. They evaluate the strategy, audit financial transaction for the year and handover the unit to a new batch of students for the following year.

The Industrial Chemistry cell has a similar entrepreneurial programme ‘XOIC’ for manufacturing coloured candles, petroleum jelly etc. These programmes are offered to give value addition and expose students to the nuances of entrepreneurship.

The Radio and TV communication programme of Functional English exposes students to actual media communication by exposing them to a media centre, Gurjarvani, which is on campus. These students are also given a chance to interact and evaluate media by watching, analysing, critically evaluating and correlating with life. Students are also given a chance to prepare radio and TV scripts which are evaluated. Guest lectures are organised annually to which experts from the media are invited.

1.3.3 *Enumerate the efforts made by the institution to integrate the cross cutting issues such as Gender, Climate Change, Environmental Education, Human Rights, ICT etc., into the curriculum?*

The College has attempted various programmes to address these issues.

Topic	Attempts made	Nature of attempts
Gender Issues	1	Workshop
Environmental education	2	Research based study/Foundation course
Tree Plantation	3	Action based (Tarumitra)
Human Rights	2	Seminars
Stigma Reduction	4	Seminars/ Awareness programme
Understanding Flash	1	Activity based
College Women Cell/ Urja	3	Seminars

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

The following courses (40) are value added/enrichment programmes offered for holistic development.

Moral, ethical values and life skills: Personal Growth Oriented Programme has been designed by the counsellors/coordinators of Campus Ministry. The College felt the need to address the concerns of the students, especially issue related to relationship with oneself, others, and God. The programme has been offered to all students since 2009 both in Gujarati and in English.

The College offers 25 life skills oriented courses. A student is allowed to choose any one of the courses and undergo rigorous training for 10 days (30 hrs). Once this course is completed, they showcase their skills before the entire College.

Employable skills and better career options: The 14 COPs are initiated in order to increase the employability of the students. So far, 1964 students have benefited from this programme in the last five years.

From the graph it is evident that there is an upward trend in the number of students opting for the COP courses.

Community orientation: Various programmes are conducted with a community orientation. In 2012, in collaboration with International Centre for Research on Women (ICRW), a three tier programme was conducted on ‘Stigma reduction in AIDS’. Initially, a team of experts from ICRW conducted the workshop for 17 faculty of SXC. The faculty then conducted the same workshop for 64 students of the second year. These 64 students addressed the entire College (1800) about stigma reduction. Jagrat (an association for students from dispossessed groups) organises various community oriented programmes for its members. Six to eight students of Jagrat have been going back to their villages during their annual holidays to conduct English classes for 8th and 10th standard students since 2008. The College also coordinates remedial classes for slum children of Behrampura in Ahmedabad. This course is coordinated by a former student of SXC who was a beneficiary of our earlier programmes. Students of first year as well as of NSS assisted Xavier Centre for Development in conducting classes for the slum children on this campus till 2011. Utkarsh is a forum for the physically challenged students at SXC. These students are also guided in study techniques and exam preparations.

The College has offered the following programmes in the past.

No	Title	Beneficiaries	Attempts made	Number of participants	Participating Dept
Moral and ethical Values	PGOP	All	2009 onwards	≈1200/yr	All
Life skills	PGOP Soft Skills (24)	FYBA FY BSc	2009 onwards	≈1600/yr	Outsourced
Career Options	COP	FYBA FYBSc	2007 onwards	2011-12 (42)	All
Community orientation	ICRW (AIDS)	SYBSc SYBA	1	64 students 17 faculty	10 Departments
	Jagrat for English improvement in rural areas	FYBA FYBSc	2008-09; 09-10; 10-11 3 attempts	120/yr benefit	English Department
	Behrampura Slum Programme	Slum students		40-50	Outsourced
	XCD: go to slum/ teach slum children/NSS	Slum students		70-75	NSS

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

The stakeholders do not have any say in enriching the curriculum. Eight of our faculty are in Board of Studies. Regular student feedback is taken and members of BoS take points from students to present to the BoS. The Board revise the curriculum once in three years. The syllabus was revised for all courses in 2010 in Gujarat University.

Therefore the College looks forward to getting autonomy to address these issues.

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

Personal Growth Oriented Programmes are evaluated at the end of the course in oral as well as in a written format. This is analysed and necessary improvements/ changes are made. The kind of transformation that happens in the participants is reflected in the manner in which they behave or in their response to activities on campus. Many students do come and share their feedback with the counsellors in person.

Life skill programmes are also evaluated at the end in a written form.

Vocational courses are evaluated through two examinations, regular class tests, projects, internship (for certain courses such as Voc. Biotechnology and Voc. Industrial Chemistry), feedback from institutes where internship was carried out etc. Students of Industrial Chemistry and Voc. Biotechnology secure admission to elite institutions in India and abroad. This is an indication of the quality of the programmes the institute is offering.

Programmes such as Jagrat have helped students to deal with themselves, improve their English, do better in core subjects, think out of the box (till the introduction of this programme, all students invariably opted for B.Ed. after graduation; now they also explore MSW, Law, MA, Defence and similar courses).

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?*

At present eight of our faculty (11%) are in the BoS of the University that assist in curriculum designing, examinations and quality maintenance. Faculty of English, Psychology, Sanskrit, Biochemistry, Botany, Chemistry, and Zoology were involved in preparing syllabus for Gujarat University when it opted for CBCS in 2010.

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

There is no formal mechanism for obtaining student/stakeholder's feedback on curriculum and communicating the same to the parent University. However, the syllabus of COP is adapted based on the inputs given by students at the end of 3 years.

The College implements many curriculum enrichment programmes such as study tours, field trips, industrial visits, seminars, workshops,

assignments, class tests, remedial classes etc. However, there is no formal mechanism for communicating these to the University. Though there is no formal system of giving feedback to the parent University, the innovations we implement at the College level are taken up by other institutions and also by the University. For example, the syllabi set for COP courses by SXC were taken up by other institutions.

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

Gujarat University introduced CBCS in 2010. The College introduced 2 new certificate courses in COP (Applied Statistics and SPSS, Instrumental Chemical Analysis). Gujarat is the hub of Chemical industries like Dyes, Drugs, Petrochemicals, Cement, Fertilisers, Pesticides etc. All the newly synthesized products need structural evaluation. Looking to the importance and requirements of analytical chemists in such industries SXC introduced a COP in Instrumental Chemical Analysis and a Post Graduate Diploma in Analytical Chemistry (PGDAC) from IGNOU from 2009.

The College also introduced 5 distance education programmes of IGNOU. The COP and IGNOU courses were introduced because they added value and gave an advantage to our students in securing jobs. They also equip them beyond the curriculum. The IGNOU course on Teaching English increases the employability and enhances their skills. These courses were introduced due to a demand from the public.

Any other relevant information regarding curricular aspects which the college would like to include.

- ✓ The College had applied for the IMC Ramkrishna Bajaj Award in 2011 under education category. It bagged a merit certificate and was judged as one of the six top educational institutes in the country.
- ✓ Students of Sanskrit have won 'The Gita-Vijaya Padma Trophy' in 2013.
- ✓ One of our faculty was the Chair of the BoS for Gujarati. In collaboration with the Academic Staff College, he organized a workshop for all the Heads of Departments from Colleges in Ahmedabad to suggest topics for syllabi. These suggestions were taken up by the BoS in changing the syllabi (Fr Francis Parmar from the Gujarati Department).
- ✓ One of the faculty got two awards for teaching. (Dr Vincent Braganza from Biochemistry Department). He was awarded the Rajeev Gandhi Award for Excellence in Education and Vidya Rattan Gold medal for outstanding achievement in the field of education.
- ✓ One of the faculty has filed an online patent (Dr Lancelot D'Cruz from the department of Botany).
- ✓ A faculty of Physics has won the Indian Association of Physics Teachers (IAPT) four times in the past 4 years under the *Experimental* category (Dr AP Patel).

- ✓ Dr TC Pandya won the IAPT award under the *Computer Simulation* category.
- ✓ Dr Sebastian V was awarded M.Phil guideship in Biochemistry by Gujarat University.
- ✓ Dr DG Trivedi, Dr Rajesh Iyer, Dr CJ Clement, Dr Sebastian V, Dr Sudeshna Menon, Dr Arefa Mansuri, Dr Profaina Christian, Dr Nandita Christy, Dr Atul Macwana, Dr Dilip Vasava, were awarded Ph.D in the last 4 years.
- ✓ Prof Aruna Pandya and Shardha Bhatt were awarded M.Phil.
- ✓ Prof. Vinayak Yadav, Prof. Puransingh, Prof. Shardha Bhatt, Prof. Robin Parmar, Prof. Amit Koshti, Prof. Vijaysingh Dhandhukiya, Prof. Udayan Prajapati, Prof. Kinjal Desai, Prof. Shital Doshi, Prof. Jagruti Parmar, Prof. Aruna Pandya, and Prof. Bijal Shah have registered for Ph.D. Two of the ad hoc faculty, Prof C. Dunca and Prof. Susan George have also registered for Ph.D.
- ✓ Dr Nandita Ganguly is in ‘Who’s Who?’.
- ✓ Dr K.I.Patel is a member of Economic Planning Board, New Jersey, USA.
- ✓ Prof. B.B.Bhaduria was awarded ‘SANMAN PATRA’ by Akhil Bhartiya Hindi Bhashi Utthan Sangh (ABHBUS) in 2009 for services given to society.
- ✓ Prof Arti Kumar has been appointed as an examiner for Business English (level 1, 2, 3), Young Learners of English, Key English Test, and Preliminary English Test of Cambridge University.
- ✓ Dr Urmi Shah received travel grant from UGC to attend 14th World Sanskrit Conference at Kyoto, Japan in 2009.
- ✓ Fr Dr Vincent Braganza is a Fellow of Gujarat Science Congress.
- ✓ Fr Dr Lancelot D’Cruz is a Fellow of the ‘Society of Ethnobotanists’.

CRITERION II: TEACHING-LEARNING AND EVALUATION

2.1 Student Enrolment and Profile

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

General: The date of admission is decided by Gujarat University and advertised in local dailies. A candidate can approach any college on that day and apply for admission. SXC also offers the choice of downloading the form from the website and applying in person in order to reduce the rush at the forms' counter.

The public is informed about admissions through display boards on the College premises. Banners of each department are displayed to attract students, since 2010. These banners display the scope, career prospects, syllabus outline, and nuances of each of the core courses offered at SXC.

Senior students assist in the admission process by counselling the applicants, helping them in filling forms, explaining the scope of the course etc.

Once the form is filled it is scrutinized and the candidate is interviewed by the departmental faculty and the Head of the department to ensure that the right and deserving candidates are selected. Normally the criteria are fixed according to the passing percentage of HSC in that year (eg. the cut off % of the last 3 years is given below). The primary decision of selecting a student is given to the department. This gives a sense of ownership and the department is expected to choose candidates they think are the most suitable.

Cut of %	2010-11		2011-12		2012-13	
	Min %	Max %	Min %	Max %	Min %	Max %
ARTS						
Economics	40	98	44	91	44	90
English	36	84	41	89	36	99
Gujarati-Hindi	43	73	35	77	26	76
Psychology	38	85	44	90	42	91
Sanskrit	37	79	41	76	41	79
Fun. English	45	93	47	89	49	93
SCIENCE						
Biochemistry	33	80	39	93	36	94
Botany	32	75	37	79	34	87
Chemistry	33	75	36	85	35	81
Computer Sciences	32	92	35	94	34	92
Maths	36	82	36	94	35	90
Physics	31	89	38	92	38	92
Electronics	31	76	35	89	37	76
Statistics	32	82	34	86	35	83
Zoology	31	86	34	84	43	92
Voc. BT	37	93	36	93	38	85
Voc. IC	35	92	34	90	30	80

Those who fit the criteria of the College are directed to the Principal for the final interview. The list of the selected students is displayed on the notice board and, if needed, a second and third waiting list is displayed.

A certain number of seats are reserved for Christians, SC/ST/OBC, students from other Boards, (if their results are declared late), the physically challenged, and the differently abled.

Vocational: Same as above, except a few seats are also allotted to industry in Industrial Chemistry and Voc. Biotechnology.

In the recent past, in order to attract best students to the College, faculty have gone to higher secondary schools that are run by the Jesuits. This has yielded good results (eg. Sanskrit).

- 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.**

SXC has opted for merit and interview to admit students to the College. Every year the criteria changes according to the HSC result. The College had the following criteria for the admission process in 2012-13. 50% marks to the HSC examination results, 20% to subject knowledge, 20% to motivation and ability, 10% to personality, interest in doing COP and other activities etc. However, for Vocational Biotechnology, a written entrance examination is conducted due to the heavy rush. Those candidates who come from non-English medium have an oral language proficiency test. 50% of the seats are reserved for Catholics and Christians. Special consideration is given to the physically challenged, visually challenged, and differently abled candidates by giving them extra time. Senior student volunteers take special care of them.

SXC admits students from all categories. The table below gives the category wise representation of students corresponding to each department in Arts and Science.

Category-wise Subject-wise No. of students 2012-2013 (Arts Stream)

Subject/ category	Economics	English	Fun. English	Gujarati	Psychology	Sanskrit	Total
Open	118	60	63	18	122	23	404
SC	11	5	0	7	7	9	39
ST	19	15	4	18	7	5	68
OBC	13	6	3	12	22	7	63
Christian	39	28	25	10	35	4	141
Sports	23	4	4	2	7	0	40
Co-Curri	1	0	2	0	2	1	6
Army Quota	0	3	0	0	3	0	6
Recommended	1	1	2	0	4	0	8
Phy. chall	4	2	1	6	5	3	21
Foreign	0	1	0	0	1	0	2
TOTAL	229	125	104	73	215	52	798
Women	119	78	83	28	163	29	500

Category-wise Subject-wise No. of students 2012-2013 (Science Stream)

Subject/ category	BIO CHEM.	BOT	BIO TECH	CHEM	ELEC	IND. CHEM	MAT	PHY	STAT	ZOO	TOTAL
Open	83	40	94	59	62	80	78	111	85	64	756
SC	8	4	2	11	3	4	6	9	4	10	61
ST	4	13	1	23	0	1	5	6	3	1	57
OBC	8	10	14	20	4	8	21	15	8	6	114
Christian	9	7	8	14	3	3	13	18	4	8	87
Sports	2	0	0	1	1	2	10	2	4	1	23
Co-Curri	0	0	1	0	0	0	0	0	0	0	1
Army Quota	0	0	2	1	1	1	1	0	0	0	6
Recommended	1	0	1	0	1	0	0	0	0	0	3
Phy. challe	0	1	0	0	0	0	0	0	0	0	1
Foreign	1	0	0	0	0	0	0	0	0	0	1
TOTAL	116	75	123	129	75	99	134	161	108	90	1110
Women	92	49	95	61	32	50	72	88	63	72	674

- 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.*

As seen in the table under 2.1.1, SXC admits students who pass HSC with grace marks and also with distinction. The range is too vast. This is mostly the scenario in other neighbouring colleges as well. However, the academic environment at SXC is such that the average annual result has not gone below 90% in any subject.

- 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, prior to the admissions, members of the management who are directly involved in teaching in the College meet in order to finalise the admission policies and procedures based on the 12th result. This is communicated in a written form to those faculty who are assisting in the admission process.

The College evaluates the admission process every year and necessary amendments are made from past experiences. This has helped the institute to modify its modus operandi in the past. For example, in 2010 the HSC result was good and SXC admitted students with high percentage. However, many of them also got admission to medicine, engineering and pharmacy. As a result, many students opted out. In 2011, though the HSC result was good, SXC opted for average students so that they remain in the College. Also, since 2011 we fixed the upper limit to each subject to 30 in Science and 40 in Arts. This was to ensure we had sufficient students in each subject. In Science, however, we admitted about 20 more in each to make sure the

numbers remained at around 30 after those opting for professional course had left.

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.*

SXC has taken a conscious policy decision to provide inclusive education.

Efforts have been made in recent years to provide education to the rich and the poor, fast learners as well as slower ones, able bodied

ones along with differently abled, students from rural and urban area, a good mix of genders and of religions.

The screenshot shows a news article from THE TIMES OF INDIA's Education section. The headline is "Helping poor students avail better education". The article discusses efforts by Xavier's College in Navrangpura to ensure disadvantaged students have access to higher education through a special programme called 'Yatra'. It also mentions a special education programme called 'Youth Leadership Development Program' (YLDP). The article includes a timestamp (Jul 6, 2014, 12:43am IST), a photo, and social sharing options (Twitter, Facebook, Google+).

SC/ST/OBC	There is a separate admission counter for the SC/ST/OBC where a management person counsels the candidates. Since, SXC is a minority College, 50% admissions are granted/reserved for candidates from the SC/ST/OBC and minorities in order to bring them up in society.
Women	Women are not given any special priority. They are considered in the general category or in their respective specific categories as admissions are based on merit. Our College is considered the 'safest' place for girl students and this is one of the reasons why parents choose our College. We have consistently had more than 50% women students as can be seen from the table & chart below.
Differently abled	They are helped with a separate counter on the ground floor, and by two counsellors. Student volunteers also help them and there is no queue for these applicants. We are proud to say that the College has had 25 physically challenged students between 2010 and 2013.
Economically weaker sections	They are helped at a separate counter. Finance is never a major consideration to get admission in SXC. Economically weaker students are offered financial assistance or scholarships.
Minority community	Being a minority College, up to 50% seats are made available to our minority community and preference is given to them. The social perception that our College is the safest place for discriminated minorities, they flock here and are admitted as can be seen from the table & chart below.
Any other	<p><i>Athletes and sports persons:</i> Special consideration based on performance trials is given to sports persons. They are helped at a separate counter.</p> <p><i>Artists and Performers:</i> Special considerations are given to people who perform well in the trials that are conducted.</p> <p>Special consideration is given to candidates who have performed well in NCC, and in any other special category.</p>

Composition of students in Arts
Average for the period 2010-2013



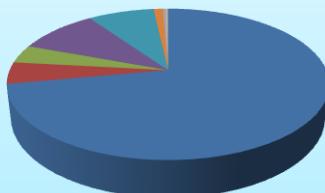
% of women 62

■ Open
■ OBC
■ Co-Curri
■ Handicapped

■ SC
■ Christian
■ Army Quota
■ Foreign

■ ST
■ Sports
■ Recommended

Composition of students in science
Average for the period 2010-2013



% of women 60.1

■ Open

■ SC

■ ST

■ OBC

■ Christian

■ Sports

■ Co-Curri

■ Army Quota

■ Recommended

■ Handicapped

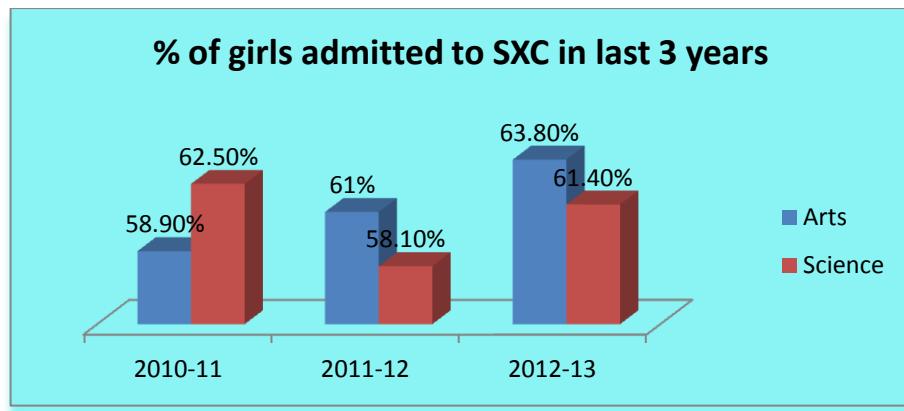
■ Foreign

Category wise recruitment of freshers during the last five years

Percentage of students under the categories	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
SC	4.97	4.29	3.90	5.55	4.21	5.10
ST	11.17	6.97	6.69	6.71	6.85	6.22
OBC	11.42	11.45	10.33	12.18	11.19	12.82
Physically Handicapped	1.41	0.63	0.26	0.29	1.80	0.74
General	71	76.48	78.80	75.25	75.93	75.09
TOTAL : in %	100	100	100	100	100	100

Girls admitted to SXC

Category	2008-09	2009-10	2010-11	2011-12	2012-13
Arts	154	172	189	174	194
Science	170	245	349	289	267
Total	324	417	538	463	461



There are two important aspects to our admission procedure: firstly, the transparency of the procedure. Secondly, our faculty, student volunteers and the administrative staff are involved in helping candidates with special assistance given to the disadvantaged. Hence, there is a wider involvement.

SXC also has appointed two full-time, qualified psychological counsellors who are available to all students for counselling and support during working hours.

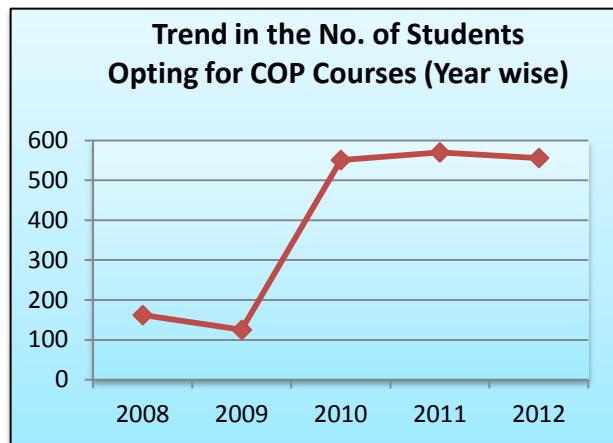
- 2.1.6** *Provide the following details for various programmes offered by the institution during the last four years and comment on the trends. i.e. reasons for increase / decrease and actions initiated for improvement.*

Comparative data of forms sold to admitted freshers over past five years

	2007-2008	2008-2009	2009-2010	2010-11	2011-112
Applied	5422	5523	5602	5272	5022
Admitted	524	897	583	572	783

Students admitted in COP

Sr.No.	Programme	No. of students admitted			
		2008-09	2009-10	2010-11	2011-12
Arts					
1	Counselling	27	30	57	44
2	Creative Arts	0	61	27	29
3	English Language and Communication Skills	170	145	119	115
4	Foreign Trade Management	12	57	59	39
5	Journalism	41	73	72	56
6	Rural Development	11	30	15	5
Science					
7	Bioinformatics	4	23	35	43
8	Computer Hardware	5	42	79	31
9	Gardening and Landscaping	0	14	6	12
10	Instruments for Chemical Analysis	-	-	-	50
11	Microbial Biotechnology	8	24	35	30
12	Microprocessor and Photonics	0	29	46	57
13	Nutrition and Dietetics	0	23	20	20
14	Statistics and SPSS	-	-	-	25



Students admitted in IGNOU Courses

Name of the Course	Number of students admitted			
	2008-09	2009-10	2010-11	2011-12
MSW	65	25	27	23
CHR	15	-	3	-
PGJMC	-	07	16	8
PGDAC	-	28	22	5
CTE	-	-	54	11

2.2 Catering to Diverse Needs of Students

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

The College not only admits differently abled students but also has established a cell named 'Utkarsh' under the aegis of Campus Ministry to take care of their needs. Students of the College organize activities and look after the needs of the differently abled students. They read, write and organise special tuition classes for them. The College has set up three computers with special softwares for the visually challenged people in the library. Earlier the Blind Men's Association had supported these students with transportation facility to reach College premises. When this was discontinued, Campus Ministry arranged for 50% of the finances for transportation to and from the College.

The College conducted two seminars in the last 5 years for Utkarsh students. The first seminar was conducted on 'Govt. Policies for Visually Challenged People', (by Mr Bhaskar Mehta, Commissioner for the Differently-abled, ex-student who is visually challenged himself). The second one (Mr Tarak Luhar, Principal of Blind School) was on 'Govt. policies for the Differently-abled'). SXC is a hub for differently-abled students of other neighbouring colleges to gather for get togethers and seminars. There is an annual Utkarsh get together held on campus.

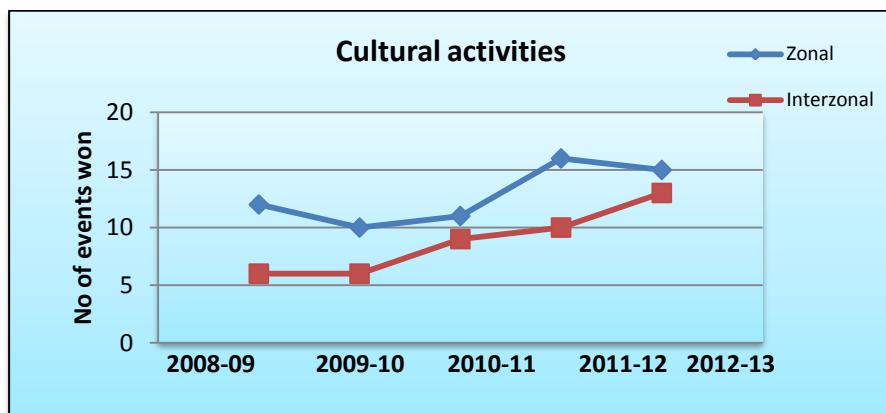
SXC also has two full time qualified counsellors for students. A number of alumni are ever willing to support them. One of them, a visually challenged alumnus is the Commissioner for the differently-abled persons. Another alumnus not only supports the functions financially, but organizes get-togethers at her residence to make them feel at home.

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

During the admission interview, the skill and knowledge base of a candidate is assessed by the interviewer and if needed necessary input is given to students regarding remedial courses and skill development programmes. The COP in English Language and Communication Skills conducts an entrance test where skills of comprehension, writing and speaking in English are tested. Based on their ability, the students are divided into batches. Different teaching methodologies and grading systems are employed for different groups. For the tribal students, who hail from rural background and Gujarati medium schools, special remedial classes in English and in their core subjects are held. Prior to the introduction of COP in English Language and Communication Skills, the department of English conducted special tutorials in the afternoons for both tribal and other weaker students (from 1990 to 1997 and 2000 to 2007).

For those Science students who shift from the Biology to the Maths group, a remedial course is offered. For those students who have not had an exposure to computers up to HSC, a course in computer is compulsory in semester-I.

The College not only admits students with special talents in various fields, but also offers 24 programmes in skill development before the University Youth Festival. This is in keeping with the vision of the College: the overall development of a student. This has paid rich dividends and our College bags most of the prizes at youth festivals with some of them going all the way to compete at the National level. In 2010-11, 12 students and in 2012-13, six students went to National level and this year SXC won two prizes at the National.



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

In early 2007, the College had initiated the process of separating the weak batches from star batches. The weak students were given organised academic inputs (Biochemistry, Voc. Biotechnology, Psychology), special coaching in writing skills (Chemistry and Physics), and confidence building programmes by faculty. Handholding of the weaker students by star batches was done (data not maintained). Mentoring is done in every department, where a group of students both weak and bright were assigned to a particular faculty to follow up not only academically but in their all round development. However, with the introduction of CBCS, this could not be rigorously implemented. Various strategies have been used right from the founding of the College for this purpose.

Under Jagrat (an association for students from dispossessed groups), enrichment courses have been conducted for Science students since 1994 (Biochemistry, Biology, Chemistry, Physics) so that their performance can be better in the final examination. This tradition is followed for the Arts students too. For example, the English department conducts language training courses for Jagrat students. In the past, departments like Sanskrit, Gujarati prepared audio cassettes to assist the visually challenged students in learning.

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

The College has an inclusive admission policy under which, SC, ST, OBC, physically and visually challenged and differently-abled students are given special consideration for admission. Various awareness programmes, workshops and talks are organized to sensitise and conscientise students and faculty.

Environment: Gujarat University has introduced a course in Biodiversity under the CBCS scheme which is compulsory for all students. This course is offered in both Gujarati and in English. A visit to the Centre for Environmental Education is organised for the TY students of Psychology. The department of Chemistry celebrated the International Year of Chemistry by organising a poster competition on 'Green Chemistry and Environment', where 167 students from six Science colleges of Ahmedabad participated. The College has over 800 species of plants on campus and an ecological niche which the students of Botany regularly visit for study purpose, and to interact with nature. Moreover, SXC has various environment policies as can be seen in the table below.

Inclusion: SXC has a separate cell called Campus Ministry that works towards inclusiveness. Our differently-abled students are given a chance to perform during the College cultural programmes. They

make, display, and sell rakhi during Rakshabandhan, earthen lamps during Diwali, soft toys, and candles. This helps other students to appreciate the efforts made by these students. This year, SXC collaborated with Anand Niketan, a centre for differently abled people, to organise a cricket match for the visually challenged students on our campus. The College Women's Development Cell, Jagrat, Tarumitra, organize various programmes. Recently SXC in collaboration with ICRW, Delhi, organized a 3 tier workshop on stigma reduction in AIDS. In this programme, 17 faculty were trained, and they in turn trained 64 students and the students organised a programme for the entire College. Details of other programmes are given below.

	Programme
Environment	An elective course in Environmental Science is offered to all semester-2 students; also in Gujarati to take care of the Gujarati medium students Solar system installed Water harvesting system and tube well recharging system installed Tarumitra Four wheelers of students are not allowed on campus in order to reduce pollution Smoking free zone The use of plastic cups has been eliminated from the canteen and paper cups are used.
Gender	CWDC: 1 programme
Inclusion	ICRW-1 for staff ICRW-2 for students (Twice) ICRW-3 for entire College Jagrat: Rural exposure, programme on Inclusion AICUF: Students went for AICUF camps and workshops in 2007, 2008, 2009, 2011.

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

Various methods have been explored to cater to the needs of advanced learners in the past. Since 1980s, students have been divided into star batch and weak batch and mentored. This practice still continues in SXC. Under the supervision of faculty the star batches were encouraged to go beyond the routine curriculum. They were supported to go for summer training in national institutes, pharma industry, and inducted into a year long research on campus. Research students are also given endowment and on completion, a gold medal is awarded. Students of English, Economics, Physics, Biochemistry, and Voc. Biotechnology have presented posters at National and State level seminars whereas a student of Sanskrit (Ms Mana Shah) and Psychology (Ms Archana Murthy) presented a paper each at an International conference in 2009. Students of Mathematics have participated at the Mathematics Olympiad.

From 2009 to 2012, compliance system was in place. This was a method adopted to reduce classroom teaching, and to encourage self learning. Under this system a student can remain absent upto 25% of the total classes (including medical leave etc.). Compliance requires that the students keep track of the topics they have missed and meet the concerned professor and ascertain from him/her the requirements to demonstrate that s/he has covered the matter taught in class through self study. Compliance underwrites the duty of the faculty to ensure that every student covers the syllabus either by attending class or, in situations where s/he does not attend class, by self study. It gives the student the right to manage her/his student life. This served two purposes: student-faculty interaction improved and responsible learning was introduced.

Earlier ten students from the department of Biochemistry after a screening test and interview, were selected for special research projects. Later on students from other neighbouring Science colleges were also added to this programme. Since 2011, five students from each department (both Arts and Science) of SXC have been encouraged for a year long research work under the guidance of a supervisor.

To cater to the needs of advanced learners and to ensure that they are well placed in national institutes, a capacity building programme was initiated from 2007 by the department of Biochemistry. This programme has been fully supported financially by the Gujarat Govt. since 2011. Under this programme, various Science colleges of Ahmedabad and Gandhinagar districts come together. It trains students to develop skills of analysis, communication, interview, deductive logic etc. It enables them to target top national institutes for advanced studies. From 2008-12, five students secured admission in TIFR/NCBS combined. Many others opt for JNU. Last year 57 students opted for this programme and all of them have secured admission in well placed National Universities. The result of 2011-12 batch is as follows.

	No. of Students selected in the final list (2011-12)
IIT Roorkee	1
TIFR, Mumbai	2
MSU, Baroda	4
Nirma, Ahmedabad	5
VIT, Vellore	3
SPU, Vidyanagar	1
Other Universities	41

Advanced learners, who have finished their Masters are also invited as teaching assistants for regular as well as COP courses under the supervision of faculty members. This has been tried by the department of Economics, English, Psychology and Botany.

2.2.6 How does the institute collect, analyze and use the data and information on the academic performance (through the programme duration) of the students at risk of drop out (students from the disadvantaged sections of society, physically challenged, slow learners, economically weaker sections etc.)?

SXC periodically conducts examinations, biweekly or weekly tests, gives assignments to assess the academic performance of students. This data is used by each department to follow-up students. Depending on the need, remedial classes are organized by the concerned departments for slow learners and personalised training is offered to cope with academics. Data for the last 2 years is given below.

	2010-2011			2011-12		
	FY	SY	TY	FY	SY	TY
Economics	-	4	6	-	-	-
English	4	4	3	6	4	4
Biochemistry	-	-	2	18	18	2
Botany	-	6	12	4	8	12
Chemistry	1	-	1	-	-	1
Electronics	-	-	-	25	25	20
Physics	-	-	-	40	50	50

There is a special column in the admission form to know the needs of such students. There are two full time counsellors to whom students, especially those from disadvantaged sections of society and the differently-abled, go for guidance. Staff members are sensitized to bring to the notice of authorities any such needy person. The Principal, during the personal interview, checks the admission form and makes a note of needy students. Faculty are asked to propose the names of students from needy groups etc. to be awarded special scholarships on the annual day.

Students from economically weaker sections are also helped with books, college fees, hostel/mess fees, and supplementary classes by the College as well as by specific departments like Economics, Sanskrit, Biochemistry, Chemistry, and Physics. SXC has a Poor Student Library which lends books to students for a year. The information about the book bank is given through library notices. The Poor Student Library has 10570 books and last year, 42 books were added.

The Principal analyses the annual results for all streams and announces these at the beginning of the year as well as in the annual report. Immediately after the results, each department is asked to analyse these to highlight the strengths and weaknesses of the teaching methodology of each paper.

Readers for visually challenged and differently abled students are arranged from among the present College students. Students are also offered counselling by two full-time trained counsellors. At the

beginning of the year students from weaker sections of society and those who need financial assistance are asked to fill up a form indicating their financial position, past academic records, present financial need etc. These forms have to be submitted to the Campus Ministry office. The forms are then scrutinised by members of the Governing Council and the Management. Financial aid is allotted keeping in mind the needs etc. The financial aid provided by the management during the last five years is as follows.

Year	No. of Beneficiaries	Amount (Rs.)
2008-09	1	1762
2009-10	8	25500
2010-11	175	498150
2011-12	150	584362
2012-13	97	266000

2.3 Teaching-Learning Process

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

The Management of SXC meets prior to the reopening of the College and makes a tentative plan for the year. This is then presented to the whole faculty at a meeting before the reopening of the College. The Principal highlights the important events to be held, including the examination dates. This is designed in keeping with the University timetable and requirements (Academic Calendar for Sem-II, 2012-13 prepared and followed by SXC is given below).

St Xavier's College Ahmedabad-9 Calendar Year: 2012-13

Month: December, 2012		
Date		Proposed Events
01.12.12	S	
02.12.12	S	
03.12.12	M	Feast of St Francis Xavier Mass at 10.15am Regular classes for Third Years from 8.00 am onwards (only 3 lectures) HoD meeting at 11.30 am University examination begins for SY students. College is centre for Commerce (Morning) and Science (Afternoon)
04.12.12	T	University practical exam begins for FYBSc.
05.12.12	W	
06.12.12	T	
07.12.12	F	
08.12.12	S	CWC: Seminar on 'Dikari Bachao Divas' in AV Room by Yasodaben, Investigator, Ministry of Home Affairs, Gandhinagar. Organized by Ms Mabel Macwan.

09.12.12	S	TIFR examination (09.30 to 4.30pm) on campus
10.12.12	M	Regular classes for Third Years from 8.00 am onwards (only 3 lectures) till month end
11.12.12	T	
12.12.12	W	
13.12.12	T	
14.12.12	F	University practical exam begins for SYBSc. (timetable details contact: Atul M/ Saby V)
15.12.12	S	
16.12.12	S	
17.12.12	M	Task force to study Autonomy leaves for Chennai (Team leader: Dr Nirmal Desai)
22.12.12	S	Christmas celebration for Class IV employees: Old library hall at 11.00am; 4.30pm for administrative and faculty with family: College lawns.
23.12.12	S	
24.12.12	M	University examination begins for FY students. College is centre for Commerce (morning) and Science (Afternoon)
25.12.12	T	Christmas
26.12.12	W	FY Uni. exam continues till Jan 5.
31.12.12	M	Year ending

This meeting is followed by the preparation of the individual departmental plan for the academic year/semester. Each faculty is then supposed to prepare and submit a unitised teaching plan to the Principal so that 30% of the syllabus is covered by midterm, 60% by the end of the first term, and 100% by the end of the second term. (A sample unitised teaching plan is given below). The College conducts three internal examinations (a midterm, and two terminals) to evaluate learning for the students of the annual system.

**T. Y. BSc, Biochemistry
Paper VI Metabolism
Teaching Plan 2012-13 (till mid-term)**

No	Topic	Date	Remarks
1	Introduction to metabolism		
2	Survey of Metabolism - 1		
3	Survey of Metabolism - 2		
4	Glycolysis		
5	Glycolysis		
6	Glycolysis		
7	Glycolysis: Energetics		
8	Glycolysis: Metabolic regulation		
9	Glycolysis: Metabolic regulation		
10	Glycolysis: Experimental approach to metabolism		
11	<i>Test</i>		
12	Feeder pathways		

13	Glycogen degradation		
14	Glycogen synthesis		
15	Regulation of glycogen metabolism		
16	Gluconeogenesis		
17	Gluconeogenesis		
18	Gluconeogenesis		
19	Regulation: Glycolysis & Gluconeogenesis		
20	Regulation: Glycolysis & Gluconeogenesis		
21	<i>Test</i>		
22	PPP: Oxidative phase		
23	PPP: Nonoxidative phase		

In the semester system, 60% of the syllabus is covered by mid semester and 100% by semester end. Two examinations are conducted for internal assessment, where one of them is an objective type (online for the TY). Moreover, assignments, seminars, field trips, class tests, quizzes etc are also included in the assessment, which has 33% weightage.

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

To broaden the gamut of the IQAC proposed by NAAC, an inclusive policy was adopted by SXC where quality was monitored at 3 levels.

Level 1: It comprises of all Governing Council members and members of the Management. The council members meet at the beginning for training, evaluation and chalking out plans for the College. Most of them are also members in other educational bodies of Jesuits, the organisation that runs the College. They do undergo training and interact with resource persons of higher education from across the globe. A lot of what they learn about improving the academic quality is translated into action. For example, the compliance system was one such outcome. The Governing Council also meets every Tuesday to evaluate, plan out and discuss College related matters.

Level 2: It consists of all the Heads of Departments (HoDs) and the OS. This committee meets every Tuesday and discusses matters pertaining to the day to day running of the College. They evaluate existing learning methodologies and give inputs on improving the system. The unitised teaching plans, completing the courses according to schedule, conducting theory and practical examinations, displaying marks etc. are monitored by this committee.

Level 3: The third level is the Students' Council for Quality (SCQ) which consists of representatives from each class. These students are selected through consensus by their classmates. The SCQ has around 6 committees which follow up various aspects of the functioning of the

College. The heads of these committees together with SCQ coordinator interact with the administration of the College to focus more clearly on students' issues. The council is responsible for the organisation and implementation of various College functions, such as the annual College Cultural Festival, the first year admissions, the third year farewell programme and so on.

The Principal meets each group separately and discusses issues related to quality on campus. With the wider inclusion of people in the IQAC, steps are taken to assure quality not only in academics but also in non academic matters.

The IQAC periodically evaluates faculty performance and correlates it with student performance. It has been analyzing and compiling data for the entire College in the past. It also organizes workshops in order to change the mindset of faculty and to improve the quality of output. The College in its enthusiasm to excel have taken training in IMC Bajaj award and competed for the same. Activities such as strategic action planning and participative learning methodologies were organized by IQAC which helped faculty to aspire towards better quality.

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?*

Student-centred learning methods have been incorporated or tested in the College. Seminars are conducted where the student explores the nuances of a topic and presents his/her learning before the whole class. Assignments help the student to explore various learning sources like the internet and other libraries, and to develop analytical and reasoning capabilities. Learning is made student-centred by field trips (Botany, Zoology, Chemistry, Gujarati, Economics, Physics, Psychology), and industrial tours (Biochemistry, Statistics), class presentations, and study tours (Botany, Zoology, Physics). Some faculty (Economics and English) conduct group discussions and debates on certain topics. Quizzing based on the topics covered in the class (Biochemistry, Psychology) has been an interesting student-centred, participatory innovation at SXC.

The departments of English, Gujarati and Economics have conducted survey programmes carried out by students and presented in public forums. Students carry out projects and internship in industry (Voc. BT, Voc. IC, and Psychology) which help them learn independently outside the classrooms. Students with rural background correlate what they study to real life situations and issues of rural areas and present their learning to the entire class. This helps other students know about rural problems and the presenter grows in self confidence and overcomes stage fear.

The vocational cell has set up a training unit to sow the seeds of entrepreneurship. Students practice what they learn in class and make tissue-culture plants ([www.facebook](http://www.facebook.com)), and attractive candles. They have been marketing these products. This has been an excellent forum for self-management, knowledge development, and skills formation.

The core team of students that actually organises students' activities is another participatory learning



activity. SXC also conducts exhibitions which are fully designed, prepared, and managed by students. In 2011, an exhibition on career prospects was organised by each department.

Four of the departments have LCD projectors (Biochemistry, Biology, Chemistry, Physics). Four departments have OHP and two common LCD projectors are available for faculty to use in teaching. An LCD projector and a video camera are available exclusively for COP courses.

Departments are also provided partial financial support to organize study tours (Biochemistry and Voc. Biotechnology) and seminars (all Arts departments). This year, the Arts departments pooled the allotted money and organised a seminar on 'Education: A step towards Inclusiveness'. In 2008, the department of Sanskrit organised a seminar with partial financial assistance from Gujarat Sanskrit Academy on 'Bhakti Philosophy in Sanskrit' where Prof. Ravindra Raj Singh of Brock University, Canada, gave the keynote address. The College also has a central research facility where students and faculty conduct research. Several of our faculty use the facilities of neighbouring institutes like ISRO, PRL, PERD Centre, the British Council Library, and LD Institute of Indology for research purposes.

Field trips and rural/urban exposures are good interactive learning modules for faculty and students alike. The entire Jagrat training team visited and stayed in rural areas to understand the background of our rural students. Moreover, some of the faculty stayed with the students and coordinated programmes for Jagrat.

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?*

Teaching methodology of SXC is not purely lectures. In MA English Sem-1 and 2, every student is expected to write a seminar paper in each semester and present it in class. In MA Sem-3 and 4, they write

seminar paper and a minor research paper and present these in class as part of their requirements. Certain faculty initiate discussions in class on current issues (eg. Can POP be used in making Ganesha idols which are immersed in rivers?) Departments also organise seminars on Saturdays and annual seminars pertaining to their syllabi. For eg. the data given below is of the department of Statistics.

Name	Topic	Class
Bhasin Khayati, Shah Riddhi, Shreya	Origin, scope and application of statistics	FYBA
Agrawal Seby	Organising a sample survey	FYBA
Dave Dhara, Priya Joseph	Preparing questionnaire	FYBA
Shray Mulyil	Primary and secondary data	FYBA
Anjana Varghese	Statistical inference	FYBA

- For the past several years, SXC has been offering hands-on research for the advanced learners of every department. These students are selected through a rigorous selection process.
- Many of our students are exposed to National and State level seminars where they present research papers. At the 33rd PTCA meeting held in Ahmedabad, 33 Bioscience students presented their work.
- Some students go for summer internships to National institutes such as TIFR, IISc, IPR etc. Several students attend seminars and workshops.
- In 2011-12, 10 students of Biochemistry attended a seminar organised by GSBTM on entrepreneurship.
- Five students of Biochemistry attended a seminar on pollution organised by KK Shastri College, Maninagar.
- Three of them took part in a workshop on Confocal microscopy organised by Ahmedabad University. Many of them take part in workshops to enrich their skill and knowledge. For example, all TY students and some SY students attended an international conference on ‘Applied Mathematics and Statistics’ sponsored by UGC, Gujcost and DST in 2011-2012.
- To nurture critical thinking and scientific temper, students of Sanskrit participate every year in the State level ‘Gita Competition’. This year, the students won ‘The Gita Vijay Padma Trophy’.
- The department of Biochemistry exposes research students to scientific articles from advanced journals and the work is presented during seminars.
- The vocational cell conducts entrepreneurship programmes where the students design, and make tissue cultured plants and market them. The students also run a company called Xplant.
- The students of Industrial Chemistry have a similar programme where entrepreneurship qualities are nurtured in a similar company called XOIC.

- SXC once collaborated with the Govt. of Gujarat to conduct soil testing of over 15,000 samples collected from various parts of Gujarat. These activities ignite their creativity, critical thinking and innovations.
- Four students of Botany attended a Plant Taxonomy Workshop organized by the BNHS (Bombay Natural History Society) at SERENITY, Ahmedabad, in April 2012.
- Students of all the Science Departments have participated in the Minaxi Lalit Science Examinations and also in the Annual Science Excellence Competitions organized by Gujarat University.

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

Some of our faculty use INFLIBNET (N-List) for research related work. Several of our faculty from Arts and Science are invited for BISAG lectures (Dr Profaina Christian, Dr Arti Oza, Dr KP Banaji, Dr Nirmal Desai, Dr Atul Makwana, Prof Bijal Shah, Dr Mallika Sanyal, Prof. Francis Christy, Dr S Sondarva, Dr Kinnari Dubbal, Dr Momin M, Dr Lancelot D'Cruz, Dr TC Pandya, Dr Rajesh Iyer, Dr AP Patel, Dr CJ Clement). These programmes use technology to reach to the larger student community. The College library has been shifted to a new building and we plan to make it a 24 hours library accessible to the entire city of Ahmedabad. We are also working towards linking the College website with library software. Recently (24th January, 2013), an expert from NPTEL (Mr Tilak Raj) conducted training cum information workshop on the use of NPTEL (National Programme on Technology Enhanced Learning) to students and faculty members.

Several faculty make use of LCD projectors, DVDs, PPTs, OHP, AV room and its facilities, computer lab etc. to make teaching more effective. Many of our younger faculty are eager to explore the possibility of e-learning and other techniques. However, lack of exposure has been a hindrance. The College is working towards addressing this.

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

Faculty: Besides the normative Orientation and Refresher courses, our faculty are exposed to a variety of knowledge and skills development programmes such as seminars, symposia and workshops. SXC has set aside a day for interaction and sharing on the first Saturday of March every year and designated it as 'Staff Research Day' where the research output of faculty is published in the form of 'Research Annals of Xavier's, Ahmedabad'. This has been a practice since 2003. A

'Departmental Society' has been started since 2011 by all departments. This society meets on Saturday afternoons and conducts activities for the department. These activities have initiated the process of thinking beyond the syllabus

All Jesuit institutions of higher learning meet annually at the national level to evaluate, discuss, and share issues related to higher education and deliberate on the vision for the year ahead. At the international level there is a triennial meeting to discuss and evaluate the global scenario of higher education. Moreover, there is a triennial meeting of all Catholic Colleges under the aegis of Xavier Board, and of all Christian Colleges under the aegis of All India Association for Christian Higher Education (AIACHE). This body also focuses on local issues in higher education.

Students: Students are exposed to research, exchange programmes, national and local seminars, workshops, capacity building programmes of GSBTM for national level competitive examinations, COPs, industrial tours, discussions, movies, projects, internships, and guest lectures. These have helped students get an edge over students of other colleges of the University. The vocational cell of Biotechnology and Industrial Chemistry exposes its students to entrepreneurship. Students of Biotechnology run a company in the name of Xplant with a registered logo. The students of Industrial Chemistry run a similar company, XOIC. This gives them an exposure to production, marketing, financing, planning, and entrepreneurship. They also offer hands-on training to other students of the city colleges and schools on plant tissue culture. Such learning encourages student participation, and fosters creativity, critical thinking and innovative methods. Guest lectures are regularly arranged for students by the department of Sanskrit on literature and manuscriptology.

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

Academic, personal, psycho-social support and guidance is given by respective departments. One of the faculty from the department of Psychology is a practicing clinical psychologist. Moreover, SXC has two full time trained counsellors and many students take advantage of this facility. This service is availed of by faculty as well. The Career Cell organizes workshops (where students are taught how to write a CV, given interview tips) and placement camps. The Campus Ministry has designed and offers a three year programme to the entire student body on building relationships, discovering and handling oneself. The programme is evaluated at the end and the response has been very encouraging. They are also given a participation certificate on completing the programme.

2.3.8 *Provide details of innovative teaching approaches/methods adopted*

by the faculty during the last four years? What are the efforts made by the institution to encourage the faculty to adopt new and innovative approaches and the impact of such innovative practices on student learning?

Different faculty have tried and tested various innovative teaching methods in the past. Subject based quiz (once a topic is completed), learning by doing exercises given in a workbook, learning through experiments are some of the innovative methods tried. The department of English conducts novel reading and writing criticism. They also organise viewing of films. Later it culminates in the writing an assignment. This exposes the students to listening, speaking and writing skills. The department of Biochemistry prepared and printed Lab Journal for all its students in 2012. The department of Physics has been printing laboratory resource record book. The departments of Gujarati and Sanskrit conduct study tour to the Institute of Indology museum to expose students to language development. They have also conducted visits to the traditional *pols* of Ahmedabad city. The department of Economics organised a visit to the Sabarmati riverfront to assess the economic impact of the project. The department of Psychology organises visits to a mental asylum, exposes students to old age homes and to villages so that they can interact with people there. The table below shows the activities conducted by the Science departments as teaching innovations (no. of beneficiaries are given in bracket).

	2008-09	2009-10	2010-11	2011-12
Biochem	Star/weak students Remedial classes	Star/weak students Remedial classes	Workbook (43) PPTs based learning	GSBTM training (57) Printed Lab Journal (240) Workbook (63)
Botany	Field Trip (93 students)	Field Trip (65 students)	Field Trip (67 students)	Field Trip (52 students)
	Presentations (23)	Presentations (12)	Presentations (23)	Presentations (52)
	Seminar (23)	Seminar (12)	Seminar (23)	Seminar (52)
Chemistry	TYBSc seminar	TYBSc seminar	TYBSc seminar	TYBSc seminar
Maths	Preparation based on question bank	Preparation based on question bank	Preparation based on question bank	Training in mathematics through models
Physics-Electronics	Seminars through ppt.	Seminars through ppt.	Seminars through ppt.	Seminars through ppt.
Statistics	Providing formula sheets for Statistics practical work SYBSc.	Providing formula sheets for Statistics practical work SYBSc. and TYBSc.	Providing formula sheets for Statistics practical work TYBSc. and TYBSc.	Providing printout of practical work done in computer lab to students of FYBSc.&SYBSc.
Voc. Cell	Xplant	Xplant	Xplant and XOIC	Xplant and XOIC

SXC has a Digital English Language Laboratory (DELL), funded by the Gujarat Govt., which is used by students during COP in English

Language and Communication Skills. This facility has also been used by the Govt. of Gujarat to conduct the SCOPE examinations. SXC has also added LCD projectors (4), video camera (1), projection microscope (1) new computers (65), internet access to all faculty and to the library, movies and cassettes to teach English etc. In the annual report a special mention is made of the innovative methods used by faculty and their names are announced to encourage them.

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

The library has 74156 books and 56 journals. The department of English, Biochemistry, Biology, Statistics, and Chemistry maintain their own departmental libraries as well. The Poor Student Library with 10612 books caters to the needs of students who cannot afford to buy text books. These books can be kept by them for an entire year/ till they complete the course. Every year, each department is given financial assistance to buy reference as well as text books. In 2012, the College added one more Encyclopaedia: Encyclopaedia Britannica on Technology. The department of Statistics has purchased SPSS software to improve teaching learning. For visually challenged students, two computers with special programmes are available in the library.

The library has been moved recently into a more spacious building with INFLIBNET facility (N-List). The library is automated with SOUL programme and has internet facility. SXC is slowly moving towards a 24hr e-library open to the public of Ahmedabad.

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.*

At the beginning of each academic year a unitized plan is made by each faculty and this is followed up by each HoD. Hence, the institution has not faced any hurdles in completing the curriculum. However, under the semester system the College has to conduct several examinations which reduces the number of actual teaching days. Our College is studying this new system and the problems therein so that it can come up with creative solutions.

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

The quality of teaching-learning is monitored at various levels. Class tests, mid-term/semester and terminal/semester end examinations are conducted regularly. Weak students are assisted with mentoring, remedial classes and individual attention. Moreover the final University examination and academic progress towards higher studies help each department to gauge the quality of teaching. At the end of every year/ term the HoD conducts a written evaluation of the teaching faculty in a confidential manner. This is then communicated to the concerned members for follow up action. Each faculty is expected to

carry out an Annual Performance Index (API) which is shared with the Principal who adds his comments. This is sent to the Dept. of Higher Education, Gandhinagar, for further perusal. The high demand ratio for all courses is also indicative of the quality of teaching-learning offered at SXC. The College also has a suggestion box where a student/stakeholder can voice her/his concerns. The issues are addressed by the Principal.

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*

Though this is a grant-in-aid College, the Govt. has not sanctioned new posts for quite some time. To ensure that students do not suffer due to this, the Management has made provisions and appointed six faculty on a fulltime basis and nine more on a part-time basis. With the changing requirements of the curriculum and need for specialized faculty, the Management has also made provisions for 13 visiting faculty (Chemistry, Psychology, Gujarati, and English).

Highest qualification	Associate Professor		Assistant Professor		Adyapak Sahayak		Total
	M	F	M	F	M	F	
Permanent teachers							
Ph.D.	22	13			3	2	40
M.Phil.	2	2			3	3	10
PG	8	3			2	3	16
PGDCA			1				1
Temporary teachers							
Ph.D.							
M.Phil.							
PG							
Addhoc							
Ph.D.							
M.Phil.							
PG					2	3	5
					Total		72

When a faculty retires or when the workload increases in a particular department, the College requests the Government for a new post. Once the approval comes, an advertisement is placed in the leading dailies and applications are invited. Short-listed candidates are called for an interview. Those short-listed after the interview are called for a demonstration lecture, attended by the departmental faculty, Management personnel, and some students. Based on the feedback received from them, the final selection is made and sent to the University and then to the Education department for their approval. Thus the Management, faculty, and students participate in the selection of new faculty. The College thus has its own transparent method for selection.

In selecting faculty, besides the academic qualifications and teaching skills, the Management also keeps in mind the aptitude of the candidate to imbibe the vision and mission of the institute. The working environment at SXC is pleasant, person-oriented and respectful. The Management gives ample freedom to each faculty to broaden her/his capabilities.

The goal of SXC is the overall development of its faculty and students. Several of the faculty are sent for training in advanced techniques to workshops and seminars. Similar programmes are also organised on campus so that many more faculty can be trained. Those who do not have a Ph.D. are encouraged to complete theirs and all possible facilities (such as NOC, occasional duty leave, lab facilities, financial aid, teaching assistance etc.) are provided to them. In the last five years, six of them have been awarded Ph.D. and two more are pursuing their Ph.D. work. SXC encourages faculty to take up minor as well as major research projects. In the last five years, two minor research projects with the total outlay of Rs 90,000 (details: Criterion.3.1.5) and ten major research projects with the total outlay of Rs 2,94,84,000 have been completed. Two minor research projects with the total outlay of Rs 5,40,000 and two major research projects with the total outlay of Rs 92,16,000 are currently on.

When Gujarat University introduced CBCS in 2010, almost all faculty from the departments were involved in syllabus formulation. Some of the courses designed for electives by the faculty of SXC (public health, yoga, value oriented education) have been adopted by Gujarat University in their entirety.

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.*

SXC was one of the first colleges in Gujarat (since 1995) to introduce Vocational Biotechnology and Industrial Chemistry as part of its curriculum. In order to remain relevant and updated with the subject, four workshops in advanced techniques, four National Seminars (including the 33rd PTCA symposium) and Annual Research Seminars have been conducted. The College also conducts a COP course in Bioinformatics designed by the faculty of SXC. These courses attract the best brains of the city. For example, the demand ratio for Voc. Biotechnology in 2012 was 1: 30.

The College has even gone to Court to ensure that the Govt. gives permission to employ good, qualified faculty and has succeeded in getting the High Court to direct the Government to grant permission.

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

Academic Staff Development Programmes	Number of faculty nominated
Refresher courses	Prof. RM Parmar (1) Dr M Gadani (2) Prof. DV Khatara (1)
HRD programmes	14
Orientation programmes	3
Staff training conducted by the university	0
Staff training conducted by other institutions	9
Summer / winter schools, workshops, etc.	9
BISAG Lectures	11

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: Workshops are conducted by XRF, Biochemistry, and Physics to improve teaching learning methods. Since 2010, the department of Physics conducts training programme for science teachers with assistance from Indian Academy of Science. The faculty of the department of Physics themselves underwent a 15 day training in ‘Understanding Flash’ a computer software so that the learning can be used in improving teaching students. Many faculty are also trained in various capacity building programmes.

Handling new curriculum: In order to have a deeper understanding of CBCS and new education policy, the Govt. of Gujarat organised several workshops under the aegis of Knowledge Consortium of Gujarat (KCG) where eight faculty of SXC and one from the administrative staff took part (Dr Vincent Braganza, Dr Sebastian, Dr Suresh P Thacker, Dr Sudeshna Menon, Prof. Ami Shah, Dr Shuchita Mehta, Dr Urmi Shah, Dr Arti Oza, Mr Agnelo Vaz). Two of them (Dr Vincent Braganza and Prof. B.B.Bhaduria) were resource persons. Seven faculty members (Dr Nirmal Desai, Dr Francis Christy, Dr Dilip Vasava, Dr Atul Makwana, Prof D.V. Katara, Dr Mallika Sanyal, Prof Bijal Shah) attended a seven day residential programme organised by KCG on Chemistry. Dr Nirmal Desai, Dr Dilip Vasava Prof D V Katara, have also attended second KCG on research methodologies.

Each department in Science met a number of times in order to design the CBCS curriculum for the University. They have worked out new practicals as well.

Content/knowledge management

Selection, development and use of enrichment materials: The department of Physics introduced lab record book in printed format. The departments of Biochemistry and Psychology introduced printed journal for practicals for all the semesters. The department of Biochemistry also came up with a workbook for one of the papers for TY BSc students with the aim of learning by doing.

Assessment: Though the Gujarat University proposes a two examination system for evaluating students at SXC a mid terminal examination is also conducted to keep students focused on studies and help them to be on track. Since 2009, an online MCQ type examination is held for all the subjects for the TY and MCQ type for all the subjects for FY and SY students. This innovation was introduced in order to initiate and introduce students to the competitive examination pattern. Later on the University adopted this healthy practice and included it in their examination style. One of the faculty of the Sanskrit department did a course in English speaking and writing skills to equip himself for classroom teaching.



Cross cutting issues: The College conducted a seminar on 'Inclusivism' where all the Arts departments were involved. Personal Growth Oriented Programme is conducted in the College for both faculty and students. This programme focuses on character formation and develops interpersonal relationships. In order to develop sensitivity towards the differently-abled and the disadvantaged groups, Campus Ministry organised several (24 programmes since 2007) programmes. ICRW organised a workshop on 'Piloting Integrated Youth based Stigma and Discrimination Curriculum in Higher Education' where initially 17 faculty members were trained and they in turn trained 64 students. These students visited various AIDS rehabilitation centres (female sex workers (FSWs), members of the gay and transgender communities and with people living with HIV (PLHIV) at Rajkot, Vadodara, Surat, and Ahmedabad). At the end, students organised a programme for the entire College and shared their experiences and findings. Dr Arti Oza underwent training at NIDM, Delhi on Disaster Psycho-social care'.

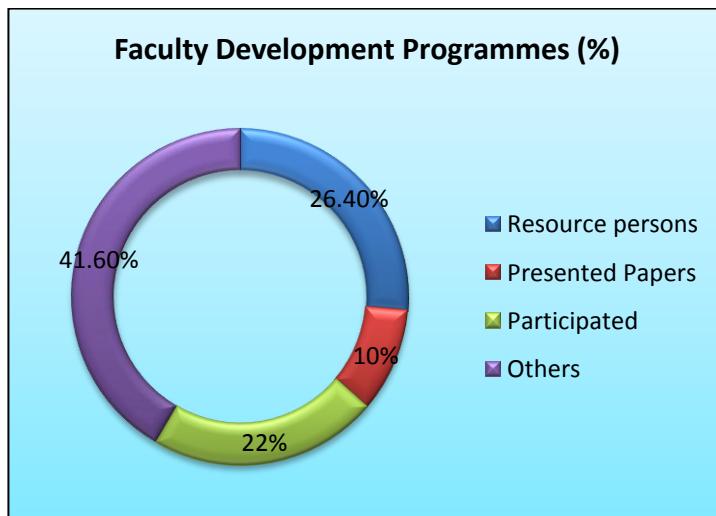
Audio Visual Aids/multimedia

The department of Physics organised training in Flash to upgrade the faculty on nuances of the software so that this facility can be made use in teaching using multimedia. The administrative staff and faculty were trained in computer and internet use.

Teaching learning material development, selection and use

The department of Biochemistry, Biology, Voc. Biotechnology and Voc. Industrial Chemistry have been trained in advanced techniques in Molecular Biology, where sophisticated instruments are used. This training helps the faculty in actual class room teaching.

c) *Percentage of faculty members in:*



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.)

The College has various systems to recharge faculty. College encourages all faculty to apply for minor and major research grants. Currently eight faculty have ongoing projects to the tune of Rs.92.16 lakhs. Those faculty without a doctorate are encouraged to apply for Ph.D. In the last five years, seven faculty have got Ph.D. (Dr Arefa Mansuri, Dr Profaina Christian, Dr Pinky Desai, Dr Sebastian V, Dr Sudeshna Menon, Dr Atul Makwana, Dr Dilip Vasava). Two of the faculty (Dr Nirmal Desai and Dr MR Gadhwani) had Post doctoral fellowship in Hungary and Dr Sanjeev Gupta was awarded Fulbright scholarship. Several of our faculty collaborate with other research and academic institutes for research, teaching, training and curriculum designing. (Dr DG Trivedi and Dr Kinnari Dubbal: ISRO; Dr Sebastian V, Dr Vincent Braganza: Gujarat University; Dr Sebastian V: Ahmedabad University, SP University; Dr Atul Makwana, Dr M Gadhwani: Bhavnagar University, Dept of Biochemistry: Gujarat State Biotechnology Mission, Gandhinagar). SXC also encourages faculty as well as administrative staff to attend and present papers in seminars, participate in workshops, recharging programmes of Knowledge Consortium of Gujarat (KCG), and to interact with industry. Faculty are also encouraged by being granted duty leave to present papers, being acknowledged at the annual meeting, and the College annual report, and getting financial assistance.

Research grant provided	
Dr Dilip Vasava	Rs. 46000
Study leave	
Dr Nirmal Desai	2010 - 2011: University of Dedrecen, Dedrecen, Hungary (TAMOP EU Scholarship)
Dr Mrudul Gadhwani	2009-10: Semmelwe's University, Budapest, Hungary (Hungarian Scholarship)
Dr Sanjeev Gupta	Fulbright Scholarship, USA
Support for research and academic Publications	
Teaching experience in other Institutes	
Dr Vincent Braganza	PG teaching at GU for Biochemistry
Dr Sebastian V	PG teaching at GU for Biochemistry PG teaching at Ahmedabad University
Dr Atul Makwana	PG teaching at Bhavnagar University
Dr US Shah	PG Teaching at JG College of Performing Arts
Dr ILMehra	PG teaching at HK Arts
Dr Kushnuma Banaji	PG Teaching at GU
Dr Profaina Christian	PG Teaching at Civil Hospital
Dr Clement CJ	PG Teaching at Nagri Hospital
Dr Mrudul Gadhwani	PG Teaching at Nagri Hospital
Prof Udyan Prajapati	PG Teaching at Bhavan's College
Industrial engagement	
Dr Dilip Vasava	Soil analysis of 15012 samples assigned by Govt of Gujarat
Dr Vincent Braganza	Bio safety committee of Intas Pharmaceuticals
Dr Lancelot D'Cruz	Bioethics Committee

The College has a Research Centre on campus that provides facilities to faculty for academic recharge. Campus Ministry, has two full-time qualified counsellors who are available for psycho-spiritual recharge. They organize the Christmas get-together for staff every year. Departments take turns to invite other departments for tea and snacks every Saturday. This has helped interpersonal interaction and bonding.

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

In 2011, SXC received the IMC Ramkrishna Bajaj certificate of merit in the field of education. The College is listed among the top 50 colleges in the survey conducted by India Today, and the number one College in Gujarat. SXC has been awarded with CPE, and DBT selected SXC under the Star Scheme. SXC receives projects that were sanctioned by way of recognition of expertise of 11 faculty. In the last 4 years, the outlay is Rs. 3,93,30,600. All these institutional awards and recognition are an acknowledgement of the institutional culture and the environment prevailing on this campus.

One faculty (Dr Vincent Braganza) received two awards for teaching. He was awarded the Rajeev Gandhi Award for Excellence in

Education and Vidya Rattan Gold medal for outstanding achievement in the field of education. Several of the faculty get recognition based on their academics, creativity, and intellectual calibre. For example, a faculty of Physics (Dr A.P. Patel) has won the Indian Association of Physics Teachers (IAPT) four times in the past four years under *Experimental* category and another one (Dr T.C. Pandya) the IAPT award under the *Computer Simulation* category once. Another faculty has filed an online patent. A faculty of the department of Psychology, Dr Kushnuma Banaji, was awarded ‘Achiever’s Award’ by Ushta-te-Foundation and Dr Arefa Mansuri is a member of Mansuri Youth Development Committee. Nine of our faculty are visiting faculty at other universities or institutes. One was invited to be in the planning committee of Gujarat Knowledge Consortium by the Government of Gujarat. Eight are in the Board of Studies of Gujarat University. One of the faculty was the Chair of the BoS at Gujarat University.

Faculty of SXC strive to maintain high standards and make great efforts to be the benchmark for other institutes. Healthy competition between departments, interdepartmental collaborations, mutual appreciation, departmental evaluation, sharing in departments has created a healthy environment to strive for excellence.

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?*

Yes, SXC has introduced teacher evaluation by students. It is conducted by the HoD for each faculty of the concerned department. Currently this is carried out for all programmes in the second and third years. Faculty are encouraged to carry out evaluation even by the first year students. Though the institute has its evaluation format, some of them have designed their own format which is more rigorous. There is an adapted evaluation form available for practicals as well. These evaluations have resulted in improving the performance of faculty who have began to focus more on student centric learning. We have not yet systematized evaluation by external peers. By and large we receive feedback in oral form. Feedback given by alumni (oral), evaluative reports and ranking by magazines like India Today serve as evaluation by external sources. The University results are analysed as one way of evaluation by external sources. The departments that perform well are recognized in the annual report of the College.

From 2007-09, the IQAC used to carry out the evaluation for the entire College, analyse the result to enhance quality and implement the suggestions given by students. From 2009 to 2012, the system of evaluation was modified and each faculty was expected to do the analysis and submit the consolidated report to the Principal. Since 2007, the Government of Gujarat has initiated Annual Performance Index (API), which is linked to promotion, change of scale etc. The College makes use of this system for the improvement of its own faculty.

2.5 Evaluation Process and Reforms

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

The academic evaluation process is described in the prospectus of the College (pg.16-17), which is adapted from the Gujarat University rules and regulations (www.gujaratuniversity.org). The evaluation process can also be accessed from the College website (www.sxca.edu.in). The rules and regulations regarding examination are intimated to students during the three days of orientation at the opening of the College each year. As and when needed, information regarding the evaluation process is put up on the notice board and a notice is circulated in every classroom. Moreover, the HoDs inform their respective departmental students through departmental notice boards.

Since last year, a student cell for quality (SCQ) has been established. The student representative informs her/his respective class about all the major developments and decisions. The SCQ communicates the pulse of the students to the Principal on important issues. Students are aware of a suggestion box where they can voice their concerns not only regarding the evaluation process, but also anything else about the College and their college life. Periodically, the SCQ also informs students about various evaluation processes available and how these are carried out.

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?*

Though the Gujarat University's mandate is two examinations for theory and one for practicals as part of the internal evaluation, at SXC three examinations are conducted for theory and two for practicals in the annual system. The additional mid-term evaluation helps take stock and introduce changes if required. Under the semester system the College has a mid-sem and a sem-end examination in each semester. One round of practical examination are held in each semester as well. Besides the regular written exams, the College has introduced student seminars, classroom presentations by way of exam reforms. Two professors conduct weekly tests (Dr Robert A, Dr Sebastian V), assigning a predetermined portion of internal marks to them.

SXC is the first College in Gujarat to opt for accreditation. Therefore, we have been the benchmark for other institutes. SXC introduced MCQ type of evaluation in 2009 which is being adopted by Gujarat University since last two years. Online evaluation has been in place for TY students at the mid-term examination. For first and second year students MCQ examination is conducted on paper due to certain constraints and number of students. Since 2012, SXC has also introduced OMR sheets as part of its examination reform. Once the examination is over, the papers are assessed, marks are displayed and

assessed papers shown to students for verification. Each student is informed about the format for calculating internal marks (*see Prospectus, pg.16*) and given an opportunity for rechecking, registering their grievances regarding internal marks before they are sent to 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?*

Academic Evaluation: SXC conducts examinations and other evaluation reforms such as formative assessment (assignment, quiz, field trip, seminars, popular lectures, etc.) in accordance with University rules. The students are informed at the beginning of the academic year about the reforms/changes introduced or initiated by SXC. These changes are implemented in a systematic and transparent manner. SXC organises centralised evaluation of examination papers whenever required. Answer sheets are shown to students to bring about transparency and also as a check on faculty to ensure implementation of evaluation reforms and proper assessment.

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

Currently the formative assessment has only 5% weightage in the University system, that too with regard to discipline. Concepts such as creativity, capacity to think, coming up with innovative ideas, motivating others, capacity to go out of themselves, application of knowledge gained in class room etc. are part of the formative evaluation. SXC has initiated assignments, seminars, and other creative activities as means of evaluating students. It has also devised other creative means of evaluating students through cultural activities, sports, NSS, NCC, Tarumitra, Culfest training, student activity group etc. Certificates are also awarded for student involvement.

The University conducts the final exams that have 70% weightage. 30% weightage is for continuous evaluation entrusted to the College. 25% of these marks are given from the internal exams and 5% are reserved for discipline and attendance. At the beginning of the academic year during the inaugural address, the Principal announces the results and names of those who rank among the first fifty in the University examinations. During the Annual Prize Distribution ceremony the Principal awards the winners in various fields such as sports, extracurricular activities, NCC, NSS and academics. This acts as a great motivating factor for all students.

Some of our past students who are in top institutes round the world are given a chance to address and interact with the present students to motivate them.

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

The institute monitors the progress of the students through its evaluation system, and attendance maintenance which is centralized. The marks are put up on notice board after every examination. The papers are shown to them to take stock of their performance. The final University result is announced at the beginning of every academic year and those who figure in the top 50 of the University are given recognition in public.

Xavierites among 50 Toppers of University (2009-10)

FYBA		SYBA		TYBA		FYBSc		SYBSc		TYBSC	
2009 – 10						2009 – 10					
Rank	Dept.	Rank	Dept.	Rank	Dept.	Rank	Dept.	Rank	Dept.	Rank	Dept.
3	ECO	2	PSY	1	SAN	2	MAT	1	MAT	3	MAT
7	ECO	4	ECO	4	PSY	3	MAT	2	STA	8	STA
8	ENG	5	ECO	5	PSY	5	PHY	4	BOT	10	BOT
9	ENG	10	PSY	6	PSY	22	BT	12	BT	18	STA
10	ECO	11	PSY	12	PSY	38	BIC	13	MAT	19	BT
16	ECO	32	ECO	18	PSY	42	BT	15	BT	24	BIC
21	PSY	35	ECO	19	PSY	50	BT	20	MAT	25	MAT
31	ENG	45	ECO	23	PSY			24	BT	26	MAT
33	PSY			24	PSY			31	PHY	32	STA
43	ECO			25	PSY			33	BT	33	MAT
50	SAN			28	SAN			38	ZOO	34	CHE
				33	SAN			39	CHE	35	BT
				34	PSY			40	CHE	36	ZOO
				35	PSY			43	PHY	38	BIC
				38	PSY					44	BIC
				41	PSY					47	PHY
				42	PSY						
TOTAL = 11		TOTAL = 8		TOTAL = 17		TOTAL = 7		TOTAL = 14		TOTAL = 16	

Xavierites among 50 Toppers of University (2010-11)

FYBA		SYBA		TYBA		FYBSc		SYBSc		TYBSC	
2010 – 11						2010 – 11					
Rank	Dept.	Rank	Dept.	Rank	Dept.	Rank	Dept.	Rank	Dept.	Rank	Dept.
1	ECO	1	ECO	4	PSY	6	IC	1	MAT	1	MAT
16	PSY	3	ECO	5	PSY	10	PHY	3	MAT	2	MAT
21	ECO	4	ECO	8	PSY	15	BT	7	MAT	4	MAT
23	ECO	5	ECO	15	PSY	18	BIC	12	CHE	5	STA
31	PSY	6	ECO	17	PSY	22	PHY	15	BT	6	STA
38	ENG	7	ECO	20	ECO	39	STA	17	STA	9	BOT
48	ECO	11	PSY	21	ECO	43	BT	18	BT	11	MAT
		13	ECO	31	PSY	46	PHY	19	BT	12	ZOO
		17	ECO	34	PSY			20	PHY	16	MAT
		18	ENG	37	PSY			35	BT	17	MAT
		21	ECO	43	PSY			36	MAT	19	STA
		22	PSY					37	BT	21	STA
		28	ECO							22	MAT
		34	ENG							23	ZOO
										24	STA
										34	ZOO
										38	MAT
										40	BOT
										41	PHY
										43	BT
										44	MAT
										46	STA
										47	MAT
										48	CHE
										49	MAT
TOTAL=7		TOTAL=14		TOTAL=11		TOTAL=8		TOTAL=12		TOTAL=25	

Xavierites among 50 Toppers of University (2011-12)

FYBA Sem-II		SYBA		TYBA		FYBSc Sem-II		SYBSc		TYBSC	
2011 – 12						2011 – 12					
Rank	Dept.	Rank	Dept.	Rank	Dept.	Rank	Dept.	Rank	Dept.	Rank	Dept.
11	ECO	3	PSY	2	PSY	6	ZOO	1	BOT	1	MAT
27	ENG	5	ECO	3	PSY	11	ZOO	2	ZOO	3	MAT
29	ECO	7	ECO	4	PSY	14	BIC	3	ZOO	7	MAT
32	PSY	10	PSY	5	PSY	17	ZOO	6	ZOO	12	CHE
33	ENG	14	ECO	7	PSY	20	BIC	11	MAT	15	BIC
34	ENG	15	PSY	8	PSY	21	BIC	14	ZOO	17	STA
42	ECO	20	ECO	13	ECO	22	MAT	15	PHY	18	BIC
		26	ECO	15	PSY	24	MAT	18	BIC	19	BIC
		27	ECO	20	PSY	25	MAT	20	STA	20	PHY
		28	ECO	21	PSY	38	BIC	21	ZOO	35	BIC
		29	PSY	22	PSY	39	BIC	24	ZOO	36	MAT
		30	PSY	23	PSY	42	BIC	27	BIC	37	BIC
		39	PSY	27	PSY	46	BIC	28	PHY		
				31	PSY	49	BIC	33	MAT		
				32	ECO	50	CHE	40	ZOO		
				33	ECO			41	ZOO		
				38	PSY			42	PHY		
				41	PSY			44	MAT		
				45	ECO			45	ZOO		
				50	ECO			47	ELE		
								48	BOT		
								49	CHE		
								50	PHY		
TOTAL=7		TOTAL=13		TOTAL=20		TOTAL=15		TOTAL=23		TOTAL=12	

As can be seen from the table, SXC has always maintained very high standards in academics. At the beginning of the year during inaugural address the Principal announces the University result of the previous semester/year. This is a moment of inspiration for students to take up studies seriously. The winners are awarded on the Annual Day.

At the departmental level, based on the examination scores, students are divided into weak and star batches. The weak students are offered several programmes to ensure that they pass all the examinations (remedial classes by faculty and senior students, solving previous University examination papers, group study etc.). The star batches are offered additional inputs, assignment and seminars to enhance their learning.

SXC is not interested only in academics. The following table helps to gauge our achievements in various fields.

Course	2008-09	2009-10	2010-11	2011-12	2012-13
	No. of prizes Won/out of				
Sports Championship	7/20	7/24	4/24	5/22	2/25
Runner up	1/20	2/24	4/24	4/22	13/25
Extracurricular activities	12/26	10/26	11/26	16/26	15/27

2.5.6 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.)

SXC has been transparent in its internal evaluation. Once an examination is conducted, the assessed paper is shown to the students and the marks are put up on the notice board. Any discrepancy in the assessment can be brought to the notice of the faculty and rectified.

In 2009 the compliance system was introduced. At SXC each student must have at least 75% physical presence in all classes. According to the compliance system if a student remains absent from a class for any reason, s/he is expected to meet the faculty whose classes s/he has missed, and demonstrate that the missed portion has been studied independently. This has brought about a sense of responsibility and accountability in the students.

The weightage assigned for the overall development of students is 5% in the annual system.

2.5.7 Does the institution and individual teachers use assessment/evaluation 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 performance of students in a particular paper is reflective of the planning and execution of a course. Several departments have offered remedial classes in order to support the weak students. SXC has a mentoring mechanism where weak students are supported by a mentor. Mentoring has helped to understand the academic as well as the non-academic issues students face. The Vice Principal of Science, the Vice Principal of Arts, and the two counsellors also help students to look into their performance at various levels.

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

SXC shows the evaluated answer sheets to the students and thus gives them a chance to check the assessment. Any student can approach the faculty concerned for any discrepancy in evaluation. If not satisfied, they may also approach the HoD. If this is still not satisfactory, they may approach the Principal or drop a note stating their grievance in the suggestion box which is attended to by the Principal.

The University has an independent system with reference to evaluation. It offers re-checking and re-evaluation facility at a nominal charge after the results are declared.

2.6 Student performance and Learning Outcomes

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

The goal of SXC is to create an environment for the all round development of their mental, physical, aesthetic, social, and spiritual potentials, together with the attitudes of integrity, hard work, honesty, fairness, and tolerance, so that they give of their very best. This is stated in the College prospectus (pg.4) as well as on the College website. The learning outcomes in terms of academic, sport and extracurricular activities are put up on the notice board and certificates are awarded every year during the Annual Prize Distribution. The College also invites parents of major award winners through individual letters for the award ceremony. As and when the College wins trophies in sports and cultural activities, these are displayed for students to view and notices are circulated in each class. On completion of research by students an annual medal ceremony is held where parents, well wishers, HoDs of various departments, and research guides are invited. Many parents come to attend annual cultural festival where students perform.

There is the roll of honour at the entrance of the College building where the names of sportsmen and sportswomen of each year are listed. Dr Vikram Sarabhai Trophy for all round service to humanity

and Xavier Medal for Excellence for all round excellence are coveted prizes SXC gives. Special coaching to sports persons, special training to those with various talents, participation in Youth Festivals, special counters at the time of admission for those with various talents are our way of encouraging all round development. Notices that go around in class when a student has achieved something noteworthy is also a way of making faculty and students appreciate the performance of our students.

Prizes awarded to students

Particulars	2008-09	2009-10	2010-11	2011-12
Students receiving Prizes	232	254	257	268
Medals awarded	63	80	75	74
Trophies/Souvenirs awarded	8	8	8	3
Total Amount awarded	1,11,100	91,800	95,150	88,400

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

With regard to academics (teaching, learning and assessment), the institutional strategies are at two levels, namely, planning and execution, and evaluation.

Planning and execution: Every faculty gives a unitised teaching plan to students at the beginning of the academic year. This helps them to follow the classes. 60% of the syllabus is covered by the term end for students of annual system and 100% by year end. 60% of the syllabus is completed by mid-semester for students of semester system, and 100% by the end of semester. This is periodically monitored by the HoDs and intimated to the Principal on request.

Evaluation: Three examinations are conducted to assess academic learning. Faculty have a lot of freedom to explore other evaluative mechanisms of learning outcomes. Therefore, class tests, quizzes, assignments etc. are also employed to assess student learning.

The attitudes of integrity, hard work, honesty, fairness are fostered through the policies and practices of the College. Under no circumstances does SXC allow copying or other malpractices in examinations. The discipline committee decides on cases of malpractices in exams and after giving a chance to the student to explain or accept responsibility, the committee gives a zero to the student who is proved to have indulged in malpractice. Since internal evaluation has 25% reserved in the final evaluation, this acts as a serious deterrent.

2.6.3 What are the measures/initiatives taken up by the institution to enhance the social and economic relevance (quality Jobs, entrepreneurship, innovation and research aptitude) of the courses offered?

In order to enhance social and economical relevance, all the courses have research as an extension (which is offered to five selected students in each dept). Some departments organise field trips, study tours, industry visit, career guidance, GPSC, UPSC training, etc.



Certain Science departments have tried social outreach programmes in order to enhance social relevance. The department of Biochemistry linked up with Central Michigan University of the USA to survey, analyse and reflect on water quality in the slums of Ahmedabad. This has resulted in providing the people with water purifier filters. Since 2007, the department of Biochemistry offers special coaching to third year students for cracking national level competitive examinations. This has resulted in many students getting admission in TIFR (4 students), NCBS (1 student), IIT (1), JNU (\approx 10 students) and many more prestigious institutes abroad. In 2011-12, Government of Gujarat fully funded this training programme and SXC extended the services to students of other colleges of Ahmedabad and Gandhinagar districts. All the 57 students who took training in the last academic year (23 of them from SXC and 34 from other colleges), are doing higher studies in top universities around the country. These programmes have initiated research aptitude and scope for these courses. Thus the College contributes to the growth of students of other colleges too. Students of most other Science departments proceed towards higher studies.

The COP courses are aimed at career openings. SXC offers 14 COPs. The course in Foreign Trade Management organises guest lectures, industrial tours and student seminars to enhance the relevance of the course. The COP in Counselling has internship in hospitals, schools or with NGOs. The Vocational Cell has an industrial training unit where students learn nuances of entrepreneurship. Students run two companies (Xplant and XOIC) where they produce and market tissue cultured plants, fancy candles, vaseline etc. which are based on what they have learned in classrooms. The Career Cell conducts workshops and activities which trains students on CV writing, interview tips and campus interview. This year, companies such as TCS, Google, Teach for India, Careernet etc. came for campus interviews. 335 students participated in these and two were already offered jobs and result from other companies is awaited.

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

A sizable number of our students come from Gujarati medium and from rural areas. The transition from Gujarati medium to English medium and rural to urban areas poses various difficulties. Jagrat is a forum for students to tackle these issues. Faculty have designed a programme that helps students to overcome these issues. The outcome of this training module has been published as a book. It has conducted 70 sessions in the last 5 years (details can be presented during peer team visit). In order to overcome the language barrier it has organised English courses, and in academics it has conducted special training programmes for Science students in collaboration with the concerned departments and also created a support system for these students.

Moreover, the mid-terminal, and terminal examinations marks are compiled by each department and weak students are followed up. For eg; the departments of Physics and Psychology work on writing skills by solving University question papers. The departments of Biochemistry, Chemistry, and Physics, conduct remedial classes for weak students. These departments also involve senior students in teaching their juniors. The departments of Sanskrit and Gujarati where majority of students come from dispossessed groups, prepares a question bank to help students for annual examinations. The data collected from University results is analysed and presented to departments to follow up on students.

When planning for the future these issues are addressed by the Principal, especially during the Academic Council meetings. Every department is encouraged to adopt a system that suits them. Students of star batches are encouraged to strive for University ranks.

2.6.5 *How does the institution monitor and ensure the achievement of learning outcomes*

The real learning outcome and the difference SXC make in the life of any student can be evaluated only at the end of three years. During the initial stage, the institute monitors through mentoring (though we have not systematized it yet). Many of our students are pursuing higher studies in reputed institutes. Admission to such institutes requires basic criteria which is way above average. For eg; two out of the 12 students selected by TIFR, one of the 18 selected by IIT Roorkee this year was from SXC. Similarly, the 4th rank in the country for JEEBT was bagged by a student of SXC. However, it is extremely difficult to follow up students once they leave the institute.

2.6.6 *What are the graduate attributes specified by the college/affiliating university? How does the college ensure the attainment of these by the students?*

The graduate attributes are specified in the vision of the College. The College aims at providing students with an environment for the all round development of their mental, physical, aesthetic, social, and spiritual potentials, together with the attitudes of integrity, hard work, honesty, fairness, and tolerance, so that they give of their very best in

life. Excellence in these fields is to be interpreted in terms of putting the skills developed in each at the service of the socially discriminated groups in our country with a view to setting up a society where all have equal opportunity as children of God. These core values are what set SXC apart from all other colleges in the country. The Xavierite motto is to be ‘a person for others’. The College makes every effort to train its students in these values and vision in the following manner:

Intellectual and Academic: SXC has been consistently on top of the list for its result. Last year 90 of our students were among the top 50 of the University. Society at large rates it as the best college of Gujarat and this can be seen at the time of admission. In 2006, UGC recognized SXC as a College of Potential for Excellence and in 2009, DBT recognized SXC with Star College category.

Training, Self development, and Equity: Every year, a significant number of our students are at the top in sports and extracurricular activities at the University. In 2012-13 during the Inter Zonal Youth Festival out of the 15 events 13 prizes were bagged by our students. The College has been retaining the University overall General Championship for athletics and games for the last 20 years. The College also offers several opportunities for the all round development of the students: language courses, computer courses, cultural festivals, film appreciation fora, seminars, workshops, research projects, study tours, camps, rural exposure, sensitization forum etc.

Access to the Disadvantaged: The College also has various programmes and activities on a regular basis conducted by support structures and associations meant specifically for the physically challenged students (Utkarsh), the marginalized and socially disadvantaged students (Jagrat), and the lady students and staff of the College (Urja- College Women Development Cell).

Community and National Development: The College also contributes towards community and national development by offering various opportunities through the NSS, NCC, environmental cell (Tarumitra) etc. A number of our alumni have occupied top positions in various fields, like, Religion, Politics, Academics, Research, Administrative Services, Defence, Business, Entertainment, Sports (if desired, the list will be made available at the time of the Peer Team visit).

Ecology and Environment: The College also has a lush green campus spread over 26 acres with ecological niches set up to promote environmental awareness. SXC is a smoke free, tobacco free, plastic free zone. In order to reduce pollution and save petroleum energy it does not allow four wheelers by students on campus. It has set up solar system with a three and half hour capacity, tube well recharging system, water harvesting system etc.

Value Orientation: The College has integrated into the curriculum, a three-day (now two-day) session on Personal Growth Oriented Programme (PGOP) for every class. Faculty also conduct value orientation seminars, and staff training programmes for other colleges and schools both in the state and at the National level.

Employment: The College has set up a Career Cell to facilitate employment opportunities for our students. This cell is instrumental in coordinating campus interviews by various companies and industrial houses.

Capacity building/ Value addition: SXC is the regional centre for capacity building of GSBTM (Govt. of Gujarat) which trains students to appear for National level entrance examinations. We have achieved encouraging results.

Global Demands: As part of our global outreach initiatives, the College has also tried to network with foreign universities like Marquette University, Wisconsin, and St Joseph's University, Philadelphia, in academic matters. Our students are also chosen by the Gujarat University for the student exchange programme. Every year many of our students go abroad for further studies and some have done well enough to win prestigious scholarships.

Develop skills: SXC has introduced 14 value added courses as Career Oriented Programmes. These are UGC recognized and Gujarat University approved. The College has also been offering Computer Science as a course to Arts and Science students. The three Vocational Courses (Biotechnology, Industrial Chemistry and Functional English) focus on career and skills development. These programmes attempt to develop the analytical, communicative, creative, evaluative, and cognitive skills of the students.

Promote community orientation: Two of the courses have a community orientation. They are Nutrition and Dietetics and Rural Development. Some courses are offered in short modules by the College itself such as a course in leadership training for first year ST students, and a 20-session legal course also for ST students. These are not UGC approved, but are specially designed by experts and are supported by the Catholic Relief Service (CRS).

Any other relevant information regarding Teaching-Learning and Evaluation which the college would like to include.

One of the faculty has an outreach programme in the rural areas of Gujarat (Dediapada) where he has organised the tribal medicinal men to form self help groups. This group has been cultivating and marketing indigenous medicines under the trade name of 'Aadi aushadhi'. Students of Botany interact with these tribal medicinal practitioners and benefit from these interactions. This group of tribals and students of SXC also take part in the food festival organised each

year by IIM Ahmedabad, where they interact with city people and promote their indigenous/ herbal medicines among the urban population.

One of the faculty has an extension project that helps create livelihood options through rose cultivation and plant tissue culture training to nearly 50 tribal women in Sabarkantha district of Gujarat. Women are taught how to do plant tissue culture of horticulture plants, especially rose. They sell the flowers generated from these tissue cultured plants as a means of livelihood. The project is under a scheme of the DST (WOS-B) and has enabled the setting up of a Green House in the Ode taluka of Bhiloda to be managed and run by the women.



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?

SXC has a Research Centre. Xavier Research Foundation (XRF), a sister concern, is the official research coordinating unit of SXC. It is located on campus. Ph.D. students of Biochemistry and faculty of other departments (Chemistry, Voc. Industrial Chemistry, Voc. Biotechnology, and Biology) also use the facilities of XRF. The department of Physics-Electronics has an experimental research lab.

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.

The former Principal of the College, Dr Vincent Braganza, is also the Director of the Xavier Research Foundation. Research is coordinated through a committee comprising the Director (Principal), all the HoDs and an assistant director (Dr S.K. Ghosh). The Director meets the research team of the XRF on a weekly basis; he also meets with the students doing research projects on a weekly basis to review and plan their research work. The assistant director helps to put together research proposals and to oversee project implementation.

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

The chief investigator is given full autonomy and support to carry out the work. Each person is given a work space. Resources are released in time and accounting is done by the accounts office. They are even supported with advanced training, helped in capacity building, provided with support staff, special leave is granted for attending seminars and paper presentations, and recognition during the annual day. Infrastructure and technology support such as software (SPSS) is offered. The accounting department helps in auditing the accounts and in the timely submission of the utilization certificate.

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

- Five students from every department of both Arts and Science are selected through a rigorous process and a year long training is offered to complete a research project. They are awarded a research medal at a public function to encourage them to continue in research. Students also conduct research seminars.
- The faculty have a staff research day where they present their research findings. This is also an incentive for both faculty and students.

- Many students take part in State level seminars and present posters. When National seminars are held on campus, it is compulsory for students of the respective department to participate (eg, Physics for Tomorrow and 33rd Annual PTCA meeting). During the 33rd Annual PTCA meeting (2011) an abstract of student research was also published.
- Students are also taken on study tours/ field trips where they get real exposure to learning through observation. Final year Botany students have been going for Botanical study tours to Sawantwadi and Mt Abu with top taxonomists. This along with the fact that every Botany student completes at least one project as part of the regular syllabus, probably reflects in the high number of Botany students opting for MSc studies.
- Students are encouraged to take part in the Gujarat Science Congress and GIBiON (Gujarat Integrated Biology Network) competitions as well as in Minaxi Lalit awards. Last year, 63 students participated in Minaxi Lalit competition from SXC. Every year an average of about 25 students of Physics take the National Graduate Physics Examination (NGPE).
- Students of Physics and Electronics participated in State level poster/oral presentations.
- The department of Chemistry has organized two events to celebrate the International Year of Chemistry 2011 (IYC 2011). In collaboration with XRF the department organised a workshop on Analytical Techniques for Biological and Chemical Sciences-II and an Inter-college Competition on ‘Chemistry for Life’ with 167 students from six Science colleges of Ahmedabad participating.
- Similarly the department of Physics organized a seminar on “High Potential Research Areas in Physics” on the January 31, 2013. Top researchers from the Physical Research Laboratory, Space Application Centre and Institute of Plasma Research interacted with \approx 200 undergraduate students from 10 colleges from Gujarat. These activities help to develop scientific temper and research aptitude among students.
- Four Students of Botany attended a Plant Taxonomy Workshop organized by the BNHS (Bombay Natural History Society) at SERENITY, Ahmedabad (April 2012).
- Students of Jagrat have also done small projects relating their academic subjects to their social reality as part of the Youth Leadership Development Programme.
- SXC has just initiated a student-faculty initiative in 2013, where they will go to schools to discuss science in order to develop scientific climate in school students. This also aims at attracting the best minds to the campus to do science in the future.
- With the change in leadership, SXC is now working towards implementing a new strategy involving research. The Jesuit Management has appointed Dr (Fr) Fernando Franco S.J. to coordinate research among all the Jesuit institutions on campus

i.e. SXC, XRF, BSC, Gurjarvani and XICA. A research team comprising members of all these institutions has already been set up. One of results of this initiative was the Arts Seminar on “Education: A Step towards Inclusiveness” held on January 31, 2013 which was attended by 26 faculty and 120 students.

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

Many of the faculty are involved in active research through guiding projects and also in collaborative projects. Last year, the 63 undergraduate students selected for research were guided by the faculty of different departments. There are 7 Ph.D. guides in various subjects (Economics, English, Sanskrit, Biochemistry, Chemistry, and Physics) involved in active research. Some of our faculty have collaborative project with other institutes and being funded by various funding organisations. They have the following ongoing/ completed projects in the last 5 years.

Name	Dept.	Duratio	Title	Funding agency	Amount (Rs.)
Dr Mabel Macwan	WDC	2012-13	Equal Opportunity for Reserved and Open Category	UGC	55000
SXC	Psycho	2011-13	Nature of changing values of college Professors	UGC	125000
Dr Urmi Shah	Sanskrit	2007-10	A Critical edition of Nitiprakashika: Study in modern relevance	UGC	634600
Prof Francis Christy	Chemistry	2010-13	Sensitive and powerful alternative to study the complexation of macrocyclic ligands especially the family of thiocalixarene	UGC	85000
Dr Pranav Trivedi	Chemistry	2011-13	Glistening candles with glowing pictures	MSME	641000
Dr Vincent Braganza	Biochemis	2012-13	Employment through innovation and entrepreneurship	ALBOAN Foundation, Spain	2700000
Dr Vincent Braganza	Biochemis	2010-12	Support for Entrepreneurial and Managerial Development of SMEs through Incubators	Ministry of Micro, Small & Medium Enterprises (MSME), GOI	5759000
Dr Vincent Braganza	Biochemis	2009-10	Upliftment of Agricultural Practices among the farmers through Plant Tissue Analysis Laboratory	Gujarat Horticulture Mission	900000
Dr Vincent Braganza	Biochemis	2007-10	Isolation & characterization of hydrocarbon degrading microbes from various ecological sources	Neko Resources Pvt. Ltd.	1500000
Dr Vincent Braganza	Biochemis	2008-11	Empowerment of women in rural areas through micropagation of flowering plants	DST-WOS- B	1000000
SXC	Biochemis	2011-13	Ethics and Environment	UGC	125000
Dr Kinnari Dubbal	Botany	2008-13	Ocean set-II to Mangrove studies in Gulf of Kutch and gulf of Khambhat	SAC, ISRO	1100000
Dr N. Ganguly	Physics	2009-13	Influence of Stratosphere-Troposphere exchange on Ozone Variability	ISRO	400000
Dr M R Gadhw	Physics	2008-10	Synthesis of Nano Magnetic Composites: Physical Properties	UGC	80000

Dr D.G. Trivedi	Physics	2009-12	Microwave Scattering Properties Of Lunar Rigolith Using Chandrayaan-1 Mini-Sar Data.	ISRO	600000
Dr D.G. Trivedi	Physics	2012-14	Chandrayaan-1 Mini-SAR Data Analysis for Lunar Polar Region: Scattering mechanism database & preparation of morphological maps	ISRO	575000
Dr Sanjeev Gupta	Physics	2012-15	First principles characterization of metal nanowires for sensing and energy harvesting applications	DST	24 48000
Dr Lancelot D'Cruz	Botany	2012-13	Socioeconomic development and traditional medicinal knowledge protection in Relwa, Dediapada and Nani singloti villages. Phase V.	Social Donor Agency, Spain	3600000
Dr Lancelot D'Cruz	Botany	2012-13	Networking and Ongoing Formation of Rural School Teachers.	Social Donor Agency, Spain	150000
SXC		2012	Stigma Reduction in HIV AIDS	ICRW	600000
Dr Lancelot D'Cruz	Botany	2011-12	Socioeconomic development and traditional medicinal knowledge protection in Relwa, Dediapada and Nani singloti villages. Phase IV.	Social Donor Agency, Spain	2500000
Dr Lancelot D'Cruz	Botany	2009-11	Socioeconomic development and traditional medicinal knowledge protection in Relwa, Dediapada and Nani singloti villages. Phase III.	Social Donor Agency, Spain	7600000
Dr Lancelot D'Cruz	Botany	2007-09	Socioeconomic development and traditional medicinal knowledge protection in Relwa, Dediapada and Nani singloti villages. Phases I & II.	Social Donor Agency, Spain	6700000
SXC		2006-09	Student Leadership Programme	CRS	450000
Dr Dilip V Coordinator	Chemistry	2011	Soil analysis/ Soil Health Card	GoG	1200000
Prof Udayan Prajapati	Maths	2010	Workshop on Mathematical Models making'	UGC	10000
			Total		Rs. 3,90,89,600

Faculty are encouraged to do quality research and those who have not yet completed their doctorate are encouraged to do so. Two of them (Statistics and Economics) have been awarded faculty improvement programme (FIP) by UGC to complete their Ph.D. Six of the faculty (Dr Sebastian V, Prof Kinjal Desai, Dr Sudeshna Menon, Prof Shital Doshi, Prof Francis Christy, Dr Dilip Vasava, Prof Bijal Shah) collaborate with Xavier Research Foundation for their research. The College also has links with premier institutes like PRL, ISRO, Science City, etc. for research related activities. It collaborates with the Blatter Herbarium, Mumbai, to organize field trips. College also has internships in industry for four courses namely; Voc. BT/IC, Physics, and Chemistry (MSc). Physics has internship with two industries at present. About four students are sent to these industries (CIPET and Shah Audio) every year.

- ✓ Seven of our faculty are recognized Ph.D. guides (Dr Sarvar Sherrychand, Dr Suchita Mehta, Dr Urmi Shah, Dr KI Patel, Dr Vincent Braganza, Dr Mallika Sanyal, Dr TC Pandya).
- ✓ Four are M.Phil guides (Dr Sarvar Sherrychand, Dr Urmi Shah, Dr Kinnari Dubbal, Dr Sebastian V).

- ✓ Fourteen more faculty (Dr UB Goti, Dr Nirmal Desai, Dr Atul Makwana, Dr Mallika Sanyal, Dr Sebastian V, Dr. Rajesh Iyer, Dr. Mrudul Gadhvi, Dr. Urvi Chhaya, Dr. Arun Patel, Dr. A.J. Trivedi, Dr. D.G. Trivedi, Dr. Anita Sharma, Dr. N.D. Ganguly, Dr Lancelot D'Cruz) have applied for Ph.D. guideship under the new Gujarat University initiative.

Faculty participate in conferences and present their research findings. Several faculty have presented papers/posters in the last five years. The College promotes such endeavours by providing financial assistance. Study leave is also granted. In the annual report of the College the names of those who do research, publish, and participate in National and International seminars are mentioned.

	No. of publications
Books authored (including Visiting faculty)	24
Contribution in books	22
Publication in peer reviewed Journals	151
In International data base	3
Oral Presentations	102
Poster Presentations	30

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.

The following programmes were conducted with a focus on capacity building in terms of research and imbibing research culture among the faculty and students. The College organizes an annual Staff Research Seminar where faculty present papers. These papers then are published by the College. The College also encourages students to take part in active research, and capacity building workshops are conducted for both faculty and students. In the last three years, the departments of Physics and Electronics has organized two National seminars, one National workshop, and one State level workshop.

Title of the Conference	Date	Status	No of Scientists participated	No of participants
Staff Research Seminar	2008	State	8	80
Women in Science: A career in Science	2008	National	6	220
Staff Research Seminar	2009	State	8	80
Staff Research Seminar	2010	State	6	80
Physics for Tomorrow: Advancements in	2010	National	11	250

Energy, Environmental Sciences, Material Sciences & Biophysics				
XXXVI Refresher Course in Experimental Physics	2011	National	5	50
Workshop on Analytical Techniques for Biological and Chemical Sciences-II	, 2011	Regional	4	30
Staff Research Seminar	2011	State	6	80
IYC 2011(International Year of Chemistry)	2011	Regional	2	167
Advanced BSc Programme	2012	State	3	30
33 rd PTCA	2012	National		
Staff Research Seminar	2012	State	6	80
GIBION	2013	State	23	600
Seminar on “High Potential Research Areas in Physics”	2013	National	8	200
Human rights in education	2013	State	5	72
Education: A step towards inclusiveness	2013	State	26	120

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

Every department has its own priority area. The College faculty have their expertise in the following areas.

Department	Prioritized Research Areas	Area of Expertise
Arts		
Economics	FDI, Foreign Trade Management, Macro economics, trade and investments; foreign trade management, IPR and Indian pharmaceutical industry, Indian economic environment Agricultural economics	Finance and Trade, Food safety standards, FTM, IPR and pharmaceutical industry, Indian economic environment; agricultural Economics
English	Linguistics, Journalism, Language	Linguistics

Gujarati-Hindi	Journalism	Journalism
Psychology	Counseling	Counseling
Sanskrit	Vedas, Dharmashastras, Epics, Puranas, Critical Edition preparation	Vedas, Dharmashastras, Epics, Puranas, Critical Edition preparation
Science		
Biochemistry	Plant Tissue culture, Photochemistry, Molecular genetics, medicinal plants	Protein Chemistry
Biology	Ethnobotany, Medicinal plants, Gardening, Remote sensing, Taxonomy	Medicinal plant cultivation, Ethnobotanical documentation, floristic studies
Chemistry	Organic synthesis, Polymer, supra molecular, Analytical, Coordination Chemistry, Method validation and optimization, Nanoparticles	Synthesis, Method validation and optimization
Mathematics	Graph Theory	Graph Theory
Physics-Electronics	Nanotechnology, Atmospheric Science, Condensed matter Physics, Theoretical Physics	Synthesis of Nanomagnetic particles, magnetic fluids, atmospheric science, study of ozones, aerosols, condensed matter physics, theoretical calculations of elastic properties of solids, thin films.

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

SXC make ardent efforts to attract eminent researchers to visit campus and inspire faculty and students. State and National seminars, special lectures are organized where experts are invited. Workshops for capacity building are organised to enhance interaction and learning. State level Science competitions were organised on campus so that eminent scientists and academicians from various institutes visit the campus and interact with faculty and students.

3.1.9 *What percentage of the faculty members 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?*

Ours is a grant-in-aid College and the Govt. does not easily sanction sabbatical leave. However, 8% of the faculty have availed of sabbatical leave for research. Two faculty were awarded post doctoral fellowship

and went to Hungary for a year and a half each. One of them from the department of Physics and Electronics (Dr Sanjeev Gupta) has gone to the USA on a one year leave to pursue his post doctoral research. He has got the prestigious Fulbright Scholarship. This has given them an international exposure and advantage in research output through publications in reputed journals. One of the faculty from the department of Economics took a sabbatical for two years to collaborate with Research Information System (RIS), Delhi. Two of the faculty (Economics, Statistics) received UGC fellowship to complete their Ph.D. These factors have contributed to instil research culture on campus encouraging students into active research, and faculty themselves engaging more in research. Motivated by the institutional attitude 11 faculty have enrolled for Ph.D. and 13 have applied for Ph.D. guideship.

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

The College has a special day at the end of second term called “Staff Research Seminar Day” at which, about six to eight faculty present their research findings before the entire faculty and invited dignitaries. On this occasion, the College also comes out with ‘Research Annals’, a collection of research articles written exclusively by the faculty of SXC, Ahmedabad. This creates not only awareness, but also encourages others to take up research. A few faculty have tried the lab to land approach. eg., The plant tissue culture unit has been trying to teach the rural women of Bhiloda (200 kms north of Ahmedabad) to tissue culture roses and to earn their livelihood.

An interesting model of ‘lab to land’ transfer is the ‘Aadi aushadhi’ venture set up by Dr Lancy D’Cruz. On completion of his doctoral work, he formed a network of tribal medicinal practitioners (bhagats) in the Dediapada forests (300 kms south of Ahmedabad). This association has been converted into a profit making venture providing additional livelihood options to the tribal population, under the trade name of ‘Aadi aushadhi’. With funding from an International donor agency and with a team of NGOs working in tandem, ‘Aadi aushadhi’ today markets both traditional adivasi medicine and value-added food products. The group has staked claims to a patent on Mahuda icecream which is a first time product marketed by this group

The entrepreneurship section of Vocational IC/BT has been marketing tissue cultured products as well as coloured candles to raise funding for further research and to earn entrepreneurship experience. SXC also helps tribal participation in the food festival at IIMA by setting up stalls for them and organising the stall events by supporting with manpower. In order to create awareness among students, the College has been organising research seminars on campus and encouraging students to participate in various seminars and workshops. It has been promoting

research culture among its students by selecting five students from each department and providing necessary facilities to carry out projects. It has also extended this facility to neighbourhood Science colleges.

A student-faculty initiative has begun in 2013 with the goal of promoting scientific temper among school students and to initiate them into discussing about science and promote scientific thinking in them.

SXC has also initiated a process of collaborative research with all the sister institutes on campus by appointing a member of the Management, Dr Fernando Franco, as Animator of Research on campus.

3.2 Resource Mobilization for Research

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

Year	Annual Budget (Rs.)	Amount earmarked (Rs.)	Major heads of expenditure	Actual Utilisation (Rs.)	% utilised for research
2008-09	36383437	680179	Awards	53000	100%
			Consumables	627179	
2009-10	36193854	582574	Awards	33000	
			Consumables	441574	
			Maintenance	108000	100%
2010-11	58563679	1092554	Awards	27500	
			Consumables (+PG)	1065054	100%
2011-12	65292471	1500265	Awards	31500	
			Consumables (+PG)	1314265	
			Maintenance	154500	100%

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

One of the faculty was given a seed money (Rs. 46,000) to begin his research leading to Ph.D. Every year, those students who are selected for UG research from each department are given Rs 500 towards research expenses.

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

Student projects are usually supported by Government and other private funding. Very little amount is funded by the student body to support student research as only Xplant is into profit making.

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

Certain departments (Economics and Psychology) have interacted with XRF for interdisciplinary research as part of doctoral work. They had initiated research in the economically weaker areas of Bhiloda. This research could not be completed as the area was too far and financially not viable. Attempts were also made to offer interdisciplinary subjects as elective papers at SXC (eg. Environmental Science). The Environmental Science course which is compulsory for all Arts and Science students of the College in Semester-II, has been conducted by the faculty of Biology, Chemistry, Physics-Electronics and Psychology. Biochemistry and Physics are working on a Biophysics course as an elective.

Perhaps our best initiative in interdisciplinary research has been the programme with the ICRW on "Piloting Integrated Youth Based Stigma and Discrimination Curriculum in Higher Education". Faculty of 12 departments and students of 10 departments worked together with the ICRW to design and implement the stigma reduction framework into a higher education institution for the first time in the country.

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 Xavier Research Foundation, an integral part of the College, has full-fledged research facilities for Biosciences and Chemical Sciences. The Bioscience facilities include plant tissue culture, DNA finger printing, microbiological studies, protein studies, immunological work and phytochemical analysis. The Chemical lab has facilities for organic synthesis, physical and electro chemistry studies, etc.

Six of the faculty have used these facilities to complete their doctoral work. Some students of Gujarat University also make use of this facility for their Ph.D. or to complete their M.Phil. and MSc dissertation. Students from other Universities also (North Eastern Hill University) have made use of our facility in the past. All these facilities are made available after College hours. The department of Physics has an experimental Nanoscience lab. This facility is used for faculty and students collaborative research programme.

SXC has INFLIBNET facilities on campus for students and faculty. The College library has a good collection of international journals as reference material (Nature, Science, Biochemistry etc.). SXC also has a botanical garden with over 800 species. These facilities are used by all departments of the College.

3.2.6 Has the institution received any special grants or finances from the industry or other beneficiary agency for developing research facility?

If 'yes' give details.

Project	Funding agency	Outlay (Rs)
Dr Pranav Trivedi	MSME, GOI	6,41,000
Dr Lancelot D'Cruz	Social Donor Agency, Spain	36,00,000
Dr Lancelot D'Cruz	Social Donor Agency, Spain	1,50,000
SXC	ICRW	6,00,000
Dr Lancelot D'Cruz	Social Donor Agency, Spain	25,00,000
Dr Lancelot D'Cruz	Social Donor Agency, Spain	76,00,000
Dr Lancelot D'Cruz	Social Donor Agency, Spain	67,00,000
SXC	CRS	4,50,000
Dr Vincent Braganza	Social Donor Agency, Spain	27,00,000
Dr Vincent Braganza	MSME, GOI	57,59,000
Dr Vincent Braganza	Gujarat Horticulture Mission	9,00,000
Dr Vincent Braganza	Neko Resources Pvt. Ltd.	15,00,000
Dr Vincent Braganza	DST- WOS- B	10,00,000
Dept of Biochemistry	Concord Biotech	2,00,000
Total		3,43,00,000

Vocational BT and IC have two seats reserved for industry. These seats have the same fees structure; however, an amount of Rs 50,000 is donated to the College every year towards purchasing the additional and high ended chemicals needed for this course.

There are two computers financed by ONGC and one under Star College Scheme for the visually challenged students with special software. Though more for their special use and not specifically for research, it could be used to facilitate research.

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

SXC is very proactive towards faculty who are supported in all possible ways to secure research funds from various funding agencies. They are provided with timely information about project, encouragement, stationery, travel grant, duty leave etc. Two of the faculty had attended a seminar organised by DST on the nuances of project writing.

3.3 Research Facilities

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

SXC has a library where new books and journals suggested by different departments are added every year. All departments have internet facilities. The library has INFLIBNET facilities. Faculty are encouraged to work towards their doctorate. Faculty are given duty leave for presenting papers in seminars. Two of the faculty were

granted leave for post doctoral fellowship in Hungary and one faculty to the USA. Two faculty opted for FIP of UGC to complete their research.

Students are also given opportunities to carry out research. Five students are selected from each department to do research under the guidance of a faculty. Medals and fellowships are offered to students as encouragement. Scholars come from outside to train students and faculty in advanced skills. Seminars are also conducted for students and faculty.

The Xavier Research Foundation is a sister concern of SXC where research facilities are available for faculty and students. The facilities available on campus are:

No	Equipments (above 1 lakhs)	Make
1	Infra Red Spectrophotometer	Shimadzu
2	Fluorescent Microscope	
3	Flame Photometer	Systronics
4	Auto Titrator, Conductometer	Metrohem
5	Spectrophotometer	Shimadzu, Beckman
6	Bio-safety Cabinet (ESCO)	ESCO
7	CO ₂ Incubators	Hereus
8	Gas Chromatography	Shimadzu
9	Lyophilysyer	
10	High Speed Refrigerated Centrifuges	Sigma, Hereus
11	Cromatography system	Biorad
12	Gradient and Non-gradient PCR	Eppendorf, Techne
13	Electrophorectic apparatus	Technosource
14	Western blot apparatus	Cells
15	AAS	Shimadzu
16	HPLC	ISCO
17	HPTLC	CAMAG-Anchrom
18	Sonicator	Cole Palmer
19	Fermentor	Sartorius
20	Digital Balance	Metler
21	SR 830 Dual Phase Lock in Amplifier	Stanford Research System, USA
22	P E loop tracer	
23	H. P. Work station	HP
24	6.5 digits Fluke Digital Multimeter	
25	Spin coat unit	
26	Solenoid	

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

By and large upgrading and adding new infrastructure facilities depends on the requirements of the research faculty and the PG centre

for Chemistry. Based on the project and financial availability upgradation is done. In the last five years various equipments such as HPTLC, AAS, GC, Spectrophotometer, Auto titrator were added. The new library building, personal cabins for all faculty, computers in all Science departments, Wi-Fi connectivity in the College building were introduced to facilitate 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.*

Yes. The College has seats reserved for industry in two subjects. The industry gives finances for purchasing glasswares, chemical and small equipments. The institution has received a lyophiliser from Concord Biotech costing about two lakhs. SXC also collaborates with many industries for internship of its students. Physics and Electronics has collaborative research programme with nationally acclaimed institutes like SAC, Ahmedabad, PRL and IPR. Every year SAC, Ahmedabad, gives the department a Sun Photometer on loan for a period of one month to carry out experimental research in the field of Atmospheric Sciences. The outcome of this partnership has been very fruitful and as a result a proposal of 19 lakhs has been made by the department which is being sanctioned.

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

Every year industries accept \approx 30 students of Physics-Electronics in their R&D departments for internship. Thus, highly sophisticated, state of the art facility is made available to students. Some of the faculty members of Physics and Botany have linkages with ISRO, PRL for research. Those faculty that had registered for Ph.D. in other Universities have an undertaking with them. For example, the department of Biochemistry had an understanding with SP University, Vidyanagar, and Chemistry had an understanding with South Gujarat University and Bhavnagar University. Students of Industrial Chemistry and Vocational Biotechnology go to other research laboratories for summer training. Students of Functional English and Gujarati go to rural areas for an exposure of a real life research. The department of Economics helps students to get research assistantship under professors at IIM, Ahmedabad. They get to work on various research projects that the IIM professor is working upon. This year two final year students are there. Students of the COP in FTM have to undertake training with an industry or write a project report. They are generally guided to research along with their training with custom house agents, freight forwarders or export houses and/or write a research project. The INFLIBNET centre of Gujarat is located in the Gujarat University campus which is a km away. Moreover, the College has access to INFLIBNET (N-List) on campus which is made use of by our faculty and students. Some faculty and students also make use of facilities at the British Library as well.

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

The Xavier Research Foundation offers journals and advanced manuals for Biosciences and Chemistry. The central library has INFLIBNET facility which is used by faculty who are active in research. Computers, internet, sophisticated equipments etc. are also available for researchers at XRF.

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

SXC has initiated the process of linking all sister institutes on campus for collaborative research. A coordinator has been appointed to facilitate this process. The post of Vice Principal, Research and Quality, has been created to facilitate all research activity on campus. In the past, the department of Gujarati had collaborated with Gurjarvani, a sister institute on campus, for media communication to produce a film on 'Akho', a Gujarati poet in 2012. Students of SXC acted in this film. Two of the faculty of the English department collaborated with Behavioural Science Centre for seminars on rural issues and women related issues. XRF is an extension of College where faculty and students of all departments carry out their research. The department of Biochemistry is collaborating with Behavioural Science Centre to take science to rural areas and develop scientific temper among school students. Dr Robert A (Economics) has completed and published a research study on 'Cooperatives in Gujarat' along with Dr Jimmy Dabhi and Sr J. Canis of the Behavioural Science Centre (ISBN:978-93-80066-69-1).

The following facilities were added in the last five years to facilitate research on campus.

1. SPSS, a computer software for data analysis, was added,
2. Animal cell culture laboratory, revamping the Plant Tissue Culture lab,
3. Phytochemistry lab,
4. Analytical labs,
5. A Physics lab for advanced studies in Nanoscience,
6. DNA lab,
7. Microbiology lab,
8. Separate lab for UG students,
9. Bioinformatics lab.

3.4 Research Publications and Awards

3.4.1 Highlight the major research achievements of the staff and students in terms of:

Patents obtained and filed (process and product):

- ✓ Dr Lancelot D'Cruz (Botany): "Herbal ice-cream from *Madhuca indica* and method of preparation thereof". Indian Invention Patent Application Number: 2777/MUM/2012.

Original research contributing to product improvement:

- ✓ A faculty of Physics has demystified for the first time the cause of ozone pollution at the surface level in different parts of India.
- ✓ *Aadi aushadhi* has put into the market value added products like Brahmi khakras, brahmi toast, mahuda biscuits and a host of other products (www.aadiaushadhi.com).

Research studies or surveys benefiting the community or improving the services:

- ✓ The departments of Economics and Psychology conducted a survey on the status of mental illness in the economically backward, Bhiloda area.
- ✓ The department of Biochemistry conducted a preliminary survey on the nutritional status of tribal men in the Dediapada area.
- ✓ Historically, *Aadi aushadhi* evolved out of the research work conducted by Fr (Dr) Lancelot D'Cruz, department of Biology, on the medicinal plants of Vasava adivasis in the Dediapada forests of South Gujarat.

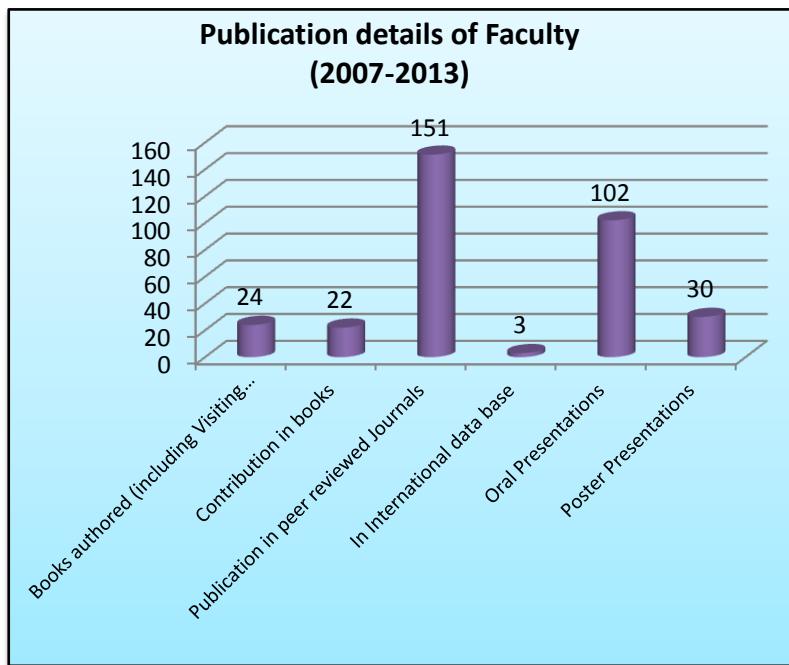
Research inputs contributing to new initiatives and social development:

- ✓ The department of Botany has helped the formation of self help groups in Dediapada by organising the tribal medicinal men.
- ✓ In the Bhiloda rural project, women were taught plant tissue culture to cultivate roses.

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

The College has a Research Annals published at the end of every academic year. This practice was started in 2003 in order to develop a research culture and to encourage others to do research. Faculty from both Arts and Science streams are in the editorial board. Any faculty who is active in research is encouraged to contribute articles to the "Research Annals of Xavier's, Ahmedabad". During the first week of March, six to eight faculty present their research findings before the entire College faculty and the Research Annals is also released on that day.

3.4.3 Give details of publications by the faculty members and students



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

Name	National	
Dr Rajesh Iyer	National	The best research paper of the year 2009 in material Sciences (The Material Research Society of India, an organization of IISc.).
Dr Patel, A.P.	National	Indian Association of Physics Teachers (IAPT); <i>Four times</i>
Dr Pandya, T.C.	National	Indian Association of Physics Teachers (IAPT)
Menon, S., .S. K. Ghosh and Braganza, V.	National	Best poster, Jamia Hamdard University, New Delhi, 2012
Bhatt, R., S.K. Ghosh, Braganza, V	National	Best poster, Vidyanagar Seminar, 2010
Gohel, H., S K. Ghosh and Braganza, V.	National	Second best poster, Vidyanagar Seminar, 2010
Bhatt, R., Braganza, The best research paper of the year 2009 in material Sciences and S. K. Ghosh.	National	Third best presentation, Saurashtra Uni. 2011
Bhatt, R., Vincent Braganza and S.K. Ghosh.	State	Best presentation, GSC, 2011
Kshirsagar, K and Braganza, V.	National	Best presentation, PTCA Symposium, 2012

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

- ✓ Dr Vincent Braganza has received the following awards: IMC Ramkrishna Bajaj observer. He is also a member of the Bio-safety Committee of Intas Pharmaceuticals. The Rajeev Gandhi Award for Excellence in Education and Vidya Rattan Gold medal for outstanding achievement in the field of education.
- ✓ Dr Sanjeev Gupta: Fulbright Scholarship
- ✓ Dr Nirmal Desai: Post Doc Scholarship to Hungary

- ✓ Dr Mrudul Gadhvi: Post Doc Scholarship to Hungary
- ✓ Prof. B.B.Bhaduria was awarded ‘SANMAN PATRA’ by Ahhil Bhartiya Hindi Bhashi Utthan Sangh (ABHBUS) in 2009 for services given to society.
- ✓ Prof. Arti Kumar has been appointed as an examiner for Business English (level 1, 2, 3), Young Learners of English, Key English Test, and Preliminary English Test of Cambridge University.
- ✓ Dr Lancelot D’Cruz, FELLOW of the ‘Society of Ethnobotanists’ (July 2011).
- ✓ Dr Khushnuma Banaji received ‘Achiever’s Award’ on 3/12/2011 by Ushta-te Foundation for service in Education, Psychology and Counselling.

Incentives given to faculty members for receiving state, national and international recognitions for research contributions.

The awards they receive are displayed for all students to see. Their names are announced in the weekly general get together as well as at the annual day celebrations.

3.5 Consultancy

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

Usually the institute receive enquiries and requests from industries for consultancy services. The table below shows the consultancy services that faculty members of SXC is offering.

Name of Consultancy service	Person/s engaged	Total amount received	Duration (Year)
Research Information System under the ministry of commerce, Delhi	Dr Robert A	35 lakhs	2009-11
Right to Food	Dr Robert A	Honorary	2010
Child Migration from Rajasthan	Dr Robert A	Honorary	2011
Intas Pharmaceuticals	Dr Vincent Braganza	Honorary	2010 onwards
MSME	Dr Vincent Braganza	Honorary	2010-2011
Bioethic committee	Dr Lancelot D’Cruz	Honorary	2008 onwards
MSME	Dr Sebastian V	Honorary	2010-2011
Soil Testing	Dr Dilip Vasava	12 lakhs	2011
IPR Course at NAARM	Dr Pinky Desai	Honorary	2008
IPR Course for Sky Quest	Dr Pinky Desai	Honorary	2008
Organic Farming	Dr Lancelot	Honorary	2010

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

The College encourages faculty to offer consultancy services and gives some level of freedom. We have no formal mechanism to advocate the expertise available, except through word of mouth or articles published in the media (Xplant). Mention of such achievements is made in the Annual Report of the College. SXC has not been asking for a share of the money generated through consultancy, in order to promote consultancy culture.

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

The institute encourage consultancy services, and offer expertise to other bodies.

- ✓ The department of Biology is offering its expertise to Aadi aushadhi an NGO working towards rural upliftment through the cultivation of medicinal plants.
- ✓ The department of Botany and Biochemistry were consulted by Vignyan Prasar, Delhi for preparing and evaluating Biodiversity teaching kit.
- ✓ In Arts subjects, the department of English has been offering consultancy services in English teaching skills and Communication skills.
- ✓ Faculty of Botany and Biochemistry are consultants for Ethics Committees of Pharmaceutical companies.
- ✓ A faculty in the department of Economics prepared an economic survey form for the DST sponsored research project in Bhiloda and conducted the analysis.

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

Major areas	Revenue generated
Biomedical ethics/ clinical trials	240000
Medium Scale Manufacturing Enterprise	641000
Trade and Commerce	3500000
Soil testing	1200000
Ethnomedicine	Honorary
Organic farming	Honorary
Total	5581000

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?

In order to encourage consultancy service, the College does not ask for a share in the revenue earned. The College also encourages free consultancy to encourage the spirit of sharing knowledge and expertise. However, one of the faculty contributed the entire amount (Rs 60,000 per year) towards the enrichment programmes of the SC,

ST, OBC (Jagrat). This contribution has been the resource for keeping this programme going since 2010. Another example is: College fees of students involved in the soil analysis project were paid from the project money of 12 lakhs.

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 has many extension services that ensure the development of social responsibility in its students. NCC is very active in SXC. It inculcates patriotism and commitment to the nation. Xavier Centre for Development has been organising evening classes for the children of the neighbourhood slums. The Xavier Centre for Development (XCD) which was started several years ago by a retired faculty is today an independent Trust which runs from the College campus. The College Management has handed over the running of XCD to a religious Sister. However, the Principal of the College remains its Secretary. The XCD was working with children from the Gulbai Tekra slum in the College neighbourhood. The slum students would come to the College campus in the evenings for remedial classes and learning activities. College students were involved in their classes and other activities.

Lately XCD has extended its activities to more slum areas and has been bringing students to College campus using its own transportation system. Since last year, this unit has been moved out to different localities to meet the needs of more students of poorer localities. NSS kindles a spirit of serving the economically and academically poorer people and students. NSS has been helping in conducting these evening classes. Due to difficulty in maintaining the transport, the XCD have now moved to conducting classes in the slum areas. Students from the College are involved in teaching on a regular basis. They are also helping out at a similar 'evening school' held at Loyola Hall, a school in the adjoining Memnagar area.

Taumitra has been active in making Ahmedabad green by planting trees. They have planted over 300 trees on the College campus and over 1000 in and around Ahmedabad in the last five years. Run in collaboration with NGOs Jeevan Thirth, ACF, Gurjarvani and ANALA, Tarumitra volunteers motivated by a training workshop held at Koba (in August 2008) organized 'tree plantation' programmes, 'clean the campus' programmes, and a special panel discussion on "The Making of a Green Mega City" at the Annual Culfest-2009. At present, attempts are being made to integrate the Tarumitra programme into the semester system.

SXC came forward to partner with the International Centre for Research on Women (ICRW) and was chosen as one of five participants (SXC being the only educational institution in the entire

country) in an innovative 10-month effort to incorporate a model for reducing HIV-related stigma in a variety of settings throughout India. With funding from the United Nations Development Programme (UNDP) and in collaboration with India's National AIDS Control Organization, ICRW is designing a blueprint to curtail HIV-related stigma in hospitals, local governing bodies, the workplace, as well as in institutions of higher learning.

The main activities of the project entitled "Piloting Integrated Youth Based Stigma and Discrimination Curriculum in Higher Education": The findings of the project were shared at a Study Dissemination Workshop held at Delhi on January 18, 2013 (<http://www.icrw.org/media/news/icrw-releases-blueprint-reducing-hiv-related-stigma-india>).

A research was undertaken by Dr Rajesh Iyer, a group of five College students and SAC, Ahmedabad to identify the most polluted area of Ahmedabad. This work was carried out over a period of two years (2010-12). The research findings are going to be published (under communication). The outcome of this work has been that the SAC, Ahmedabad asked SXC to write a major research proposal to equip SXC to carry further work in this area. SXC have already submitted a proposal of Rs. 19 lakhs and is in the final stage of clearance. These research findings will be presented to the Ahmedabad Municipal Corporation so that they can take corrective action.

The College, along with the Catholic Relief Services (CRS) also engaged a core group of faculty in designing, implementing and publishing an 'Education Plus' programme specially for students from disadvantaged communities. This "Youth Leadership Development Programme" has been worked out in the form of learning modules to be implemented over three years of graduation. It includes modules on Motivation, Rural exposure, Urban exposure, Social analysis, Discrimination, Self-esteem and Career orientation. A significant number of students who participated in this programme have opted for a career in social work.

SXC has established a special section, Campus Ministry, with two full-time professional counsellors to take care of the needs of differently-abled students, foreign students and any one else in need. Also, senior members of the College Management have been directly involved in piloting the ICRW and CRS sponsored programmes. All of these help to promote institution-neighbourhood-community network and student engagement leading to contributing to good citizenship, service mindedness and holistic development of students and faculty. The College has introduced PGOP (Personality Growth Oriented Program) for all students. These are value-based programmes, specially designed by the College to promote good citizenship and service mindedness.

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

There is a coordinator for each of the programmes mentioned above. The co-ordinators ensure that different programmes run according to the requirement of students. At the end of many of the programmes SXC awards certificates. The programmes of Jagrat, (an association for students from dispossessed groups) is documented, evaluated and followed up by faculty and the coordinator. Moreover, there are many activities where students themselves volunteer (for eg., save the tiger, save vultures, save dogs etc.) but SXC has not been maintaining a record. The NSS office encourages students to develop social values. Two full time counsellors, media publicity, annual awards for such involvements are also institutional mechanisms to track student involvement in social movements. Faculty are asked to give names of those involved in such activities from each department to be included in the annual report of the College. The Dr Vikarm Sarabhai Award for outstanding service to humanity and NSS/social involvements awards are also mechanisms to promote social responsibilities of students.

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

NAAC accredited five stars, and reaccredited A+ to SXC. UGC awarded SXC with CPE, DBT awarded Star College category in the first round, IMC Ramkrishna Bajaj Jury awarded us a merit certificate. Ever since India Today has added Ahmedabad to its list to recognise best colleges, SXC has kept up the top position, both in Arts and Science, at the State level and figures in the top 50 colleges of India. At SXC, there is a rush for admissions every year. This is indicative of a well run College.

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

The institute has various outreach programmes. Several of these are through funded projects. In such cases, clear budgets are allocated for conducting the activities. In other cases, the College sets aside funding for socially oriented activities which are in keeping with the College's vision and mission. All the programmes are for the upliftment of the discriminated in society inspired by the vision of the founding fathers of the Society of Jesus. Major programmes are listed below:

	2009-08	2009-10	2010-11	2011-12
	budget	budget	budget	budget
Dediapada prg	4986487	1820683	1809299	2220858
Bhiloda prg		1000000		
Jagrat	-	-	11914	12242
PGOP	-	-	210482	853168

Overall impact: All the programmes have been well appreciated. The impacts are both tangible and non-tangible. For example, the Dediapada project and the Bhiloda projects have helped people to organised farming, better farming practices, and financial stability through the formation of self help groups. The Bhiloda project has helped rural women to set up plant tissue culture based rose cultivation which is a means of livelihood as there is a huge demand for roses for religious purposes in that area.

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

According to the University criteria every first year student is expected to join in one of the extension programmes of the College. In most of the extension services of the College faculty on their own come forward to take the lead. The co-ordinators encourage students to participate. The University also recognises the contribution and service in most of these organised extension programmes. In extension programmes such as English teaching to rural areas, students come up on their own. In NCC, students do take part in the Republic Day Parade and SXC students have been selected regularly for the past four years. Chemistry students like Apoorva Bhatt joined the Navy, Dharmendra Singh joined the Army, Anirudh Sinh joined as an IPS officer. Three students (Kushal Chand and Unnati Desai to Russia; Rashmi Gulia to Singapore) were selected for student exchange programme under NCC. This is also an incentive to NCC students. Some noteworthy achievements of NCC are given below:

Year	Name	Achievement
2008-09	Kushal Chand	Selected for Youth Exchange Programme to Russia
2009-10	Unnati Desai	Selected for RDC Parade and Youth Exchange Programme to Russia
	Manushi Desai	Awarded 3 Gold Medals in CATC Camp in Air Wing
	Krunal Khatri	Awarded Gold Medal for best cadet in CATC Camp
2010-11	Rashmi Gulia	Selected for RDC parade and Youth Exchange Programme to Singapore
	Unnati Desai	Awarded Gold Medal for best cadet in Gujarat University
2011-12	Manish	Selected for RDC camp at Delhi
2012-13	Nidhi Rao Ronak Parmar	Selected for RDC camp at Delhi
	Paridhi Arora	Awarded Gold Medal for best cadet in Gujarat University

SXC awards the '*Dr Vikram Sarabhai Medal*', the most prestigious award of SXC, to any student who has done exemplary service to

humanity and the ‘Brother Lobo Prize’ for the student excelling in social service.

But keeping in mind the specific needs of the students, it has initiated six programmes. The one for the differently-abled began on a small scale for its own students, but now it caters to students from other colleges as well. Every year students from various colleges gather on SXC campus for a get together.

The Jagrat programme has helped many students to dream big and strive for better jobs. This programme aims at a paradigm shift. Earlier these students picked up exclusively a career in academics mostly aspiring to become school teachers. The leadership programme with its social orientation has seen a significant shift towards social work as a preferred career option.

Now the trend is changing and they are taking up diverse jobs. This programme also helps them to improve their self esteem, understanding of self and background. The PGOP has helped students to introspect and meet the self, and develop better relationships in College as well as in society. Urja (Women Development Cell) programmes help women faculty and students to come together. Prabhat is a unit that interact with children with down-syndrome. Children come to SXC campus to play and study. Students of Psychology interact with these children. Prerna is an extension for the 4th class employees of the College. All ad hoc staff of housekeeping, the College mess and canteen staff, come together for programmes. The College faculty are encouraged to take part in these activities. They have been provided quality training and their involvement in these activities fetches them credit in their API.

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?*

- Jagrat (an association for students from dispossessed groups) has carried out studies of the rural area, gender issues, legal aspects, human rights etc. This has created a sense of awareness and a need to organise activities for the community they belong to. Moved by this activity, many students of Jagrat have taken up MSW to empower themselves with a view to going back to their own community. SXC also collaborates with Behavioural Science Centre (BSC), a sister institute on campus, to conduct some of its programmes such as gender issues, legal course etc.
- The BSC conducts a MSW programme and a Human Rights Programme (both of IGNOU). The BSC also conducts the COP on Rural Development which has a compulsory component of field work.
- In 2008, students of Psychology had conducted a survey on the status of mental illness, levels of poverty and inequalities in Bhiloda, a tribal dominated area in North Gujarat. They also

conducted a study on the implementation of NREGA. Another survey was to assess the malnutrition status in rural areas of Dediapada. It was conducted by one of the students of Biochemistry. The data was an eye opener when presented in front of the entire third year class.

- The COP on Rural Development also conducts sessions on gender issues and other social maladies.

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

- Every year 120 students benefit from the English teaching course meant primarily for rural students. Students learn beyond academics in extension activities such as NCC, NSS, rural projects, PGOP etc. They get to know about the background of many of their classmates, get a real picture of the rural India, and the value of hardwork.
- The Tarumitra extension helps students to inculcate environmental consciousness. These programmes make students socially conscious, challenge their belief system, increase sensitivity and awareness. It helps them to analyse and correlate what they are studying in the class with their field experiences.
- The students of Economics study various aspects of agriculture, organic farming, etc. in the classroom. This is then correlated with what they observe during village exposure programmes. It also motivates them to go out of themselves, to be better citizens and win prizes at the annual day of the College.

Some of the extension programmes involve adults and it is aimed at livelihood options for them.

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 outreach programmes of SXC are very participatory. SXC has an extensive education network spread across Gujarat. Two flagship programmes of the College attempting to link good scientific research with meaningful social interventions are the *Aadi aushadhi* project at Dediapada (in South Gujarat), and the Bhiloda project (in North Gujarat).



Historically, *Aadi aushadhi* evolved out of the research work conducted by Fr (Dr) Lancelot D'Cruz, of the department of Biology on the medicinal plants of the Vasava adivasis in the Dediapada forests of South Gujarat.

Strongly believing that research must benefit the common man, and building on the background of ethno-medicinal and botanical research, SXC, through its research wing - Xavier Research Foundation - began a long term relationship of working together with the adivasis of the Dediapada forests through the Adivasi Samajik Kendra, Dediapada. A project, 'People-forest-laboratory linkages for conservation of ethnomedicinal biodiversity', financed by the GEC (Gujarat Ecology Commission) and implemented by Xavier Research Foundation strengthened the link between local tribes and forest resources while using some of the best methods available in modern science.

Witnessing the positive results and future potential, ALBOAN (a Spain based agency) agreed to partner and fund a collaborative venture with SXC in 2006-07. Thus began a unique, collaborative and creative venture with the overarching objective of socio-economic development of the Vasava tribals and protection of their traditional medicinal knowledge. Subsequently, in order to harness the expertise, collaborative arrangements were established involving the NGO Jeevan Thirth and Manthan Education Promotion Society, the pharmaceutical (Sky Quest Labs Private Limited) and educational sectors (SXC, XRF and Blatter Herbarium, Mumbai).



The project entitled 'Socio-economic Development and Protection of Traditional Medicinal Knowledge Protection in Relwa, Dediapada and Nani Singloti Villages of South Gujarat' is now in its fifth phase. It aims at up-scaling the work of medical knowledge protection, medicinal plant cultivation, and strengthening the market engagement by a group of medicinal women and men organized as a unit named *Aadi aushadhi*.

Aadi aushadhi is a step precisely in this direction. Significantly it has been built on a solid base of detailed studies of the ethno-medicinal wisdom of the Vasava tribals leading to the documentation of over 250 plant species of ethno-medicinal significance belonging to over 75 families. Subsequently, *Aadi aushadhi* attempted to build skills and created impact in five key areas - social (group formation), financial (initiating thrift and credit), natural resources management (soil and water conservation and introducing organic farm methods), market engagement (setting up a network and retail outlets for sale) and innovation (diversifying and developing unique herbal food products). *Aadi aushadhi* has made significant contribution in improvement of

land quality, water management, good agricultural practices, medicinal plant cultivation, product making and marketing.

Aadi aushadhi brings together four Self Help Groups (SHGs) which have bank accounts in the name of each group; they provide soft loans to members for their immediate needs, based on rules laid down by themselves. This project has helped the adivasi farmers and medicinal men to come together and to work for community development through organic farming as well as through learning and implementing good agricultural practices.

With an office and a processing and marketing unit at Dediapada, *Aadi aushadhi* has developed different herbal and medicinal products and started sale through a network of retail outlets across Gujarat. They have been regularly participating in many food festivals where they exhibit their expertise and showcase the traditional food practices of the adivasis of Gujarat. One of the products, an ice-cream based on certain ingredients with medicinal value, has been singled out for praise and a provisional patent has been filed. This initiative has been appreciated at the local level and by the Govt of Gujarat and the Govt of India for its holistic approach and for the total involvement of community.



Aadi aushadhi which is coordinated from SXC, is an excellent example of how an integration of scientific research with social interventions can effectively change the trajectory of lives, empowering them to change from traditional tribal healers to successful entrepreneurs. For more details, *Aadi aushadhi* has its own website www.aadiaushadhi.com

In the Bhiloda based extension programme, by one of the faculty, women are taught to cultivate ornamental plants through tissue culture. It has been a source of livelihood for many families living in and around Bhiloda, a predominant tribal area in North Gujarat. This project too has the full participation of the community.

The Bhiloda based programme, funded by the DST under the WOS-B scheme was carried out by Dr Vincent Braganza through the XRF. It aims at empowering rural women by promoting entrepreneurial skills. Around 30 women of Ode village in the remote semi arid regions of North Gujarat were trained in green house cultivation of rose species. Through a series of interactive sessions, these women have been trained to take up cultivation of flowers in green houses. A green house has been set up in their village for this purpose.

The lab based experiments include germinating germ-free propagates of a flowering plant for mass cultivation. The transfer of technology will ultimately result in the tribal women being able to use plant tissue culture as a means of livelihood generation.

Xavier Centre for Development is involved in conducting remedial classes for school children coming from poorer urban backgrounds providing them nutritious food, and ensuring that they learn the importance of hygiene and good health. Initially classes were conducted on campus; now these have been moved out of campus where they involve teachers from the local community. Many of our NSS students participate in rendering their services by teaching children. In the past, some of the beneficiaries from this background have secured admission in BCA on merit.

The English teaching course is conducted in rural schools by students of SXC who belong to the local areas. It has helped a minimum of 120 students per year to learn English. Hence in all our out reach programmes, there is full community participation.

Two faculty of the College, Fr. Vincent Saldanha and Dr. (Fr.) Lancelot D'Cruz have initiated a project entitled "Networking and Ongoing Formation of Rural School Teachers" in South Gujarat. This is a pilot project which aims at bringing together the present day school teachers (primary, secondary and higher secondary) who are our alumni from Xavier's schools across the State or of SXC. It seeks to create an area-wise network of these teachers which will serve to energise, motivate and empower the group with necessary skills. This will lead to a overall improvement in the system of education, specially rural education. It will also serve as a basis for creating an ongoing interactive forum of rural teachers.

Fr Vinayak Jadav (department of Gujarati) has been instrumental in launching a unique Gujarati magazine called 'Adilok'. This adivasi magazine was earlier produced from SXC campus. Dr Dilip Vasava (Chemistry) is closely involved with the management of Adilok. Several adivasi students of the College serve Adilok in various capacities.

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.

- ✓ SXC collaborates with Gurjarvani, a media centre on campus and a sister institute, for the Tarumitra project. The other Tarumitra partner agencies include Ahmedabad Community Foundation (ACF), Jeevan Tirth and the Ahmedabad Nature Lovers Association (ANALA).
- ✓ In the past a Gujarati film was prepared on a Gujarati poet, Akho, by Gurjarvani in collaboration with students and faculty of SXC. The students of Journalism, and Functional English,

interact with Gurjarvani for their projects. Students of the ICRW project interacted with Gurjarvani to produce a film for their Stigma Reduction campaign.

- ✓ With the Behavioural Science Centre, another sister institute on campus, SXC collaborates for taking Science to villages. It also collaborates with BSC for conducting a COP, (Rural Management), MSW and Human Rights courses (IGNOU).
- ✓ The present Principal, Dr. Robert A, has been part of a collaborative study on “Women’s Cooperatives” together with the BSC. Their findings have been published.
- ✓ SXC has collaborated with XRF for the Bhiloda project where the students of Psychology and Economics were involved in conducting a survey.
- ✓ The *Aadi aushadhi* project has involved multi-pronged collaboration: with NGOs (like Jeevan Tirth and Manthan); with industry (Sky Quest) and with academia (Blatter Herbarium, Mumbai) and SXC. At the ground level it has involved intensive networking between the Adivasi Samajik Kendra (Dediapada), the centres of Nani Singotti, Relwa and Bedwan with SXC.

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.

We may not have received any tangible awards for our extension activities. However the following details of last two years helps to evaluate the strength and impact of our programmes.

- ✓ Three NCC students (Kushal Chand and Unnati Desai to Russia, Rashmi Gulia to Singapore) were selected for student exchange programmes.
- ✓ Five students were selected for Republic Day Parade. (Unnati Desai, Rashmi Gulia, Manish, Nidhi Rao, and Ronak Parmar).
- ✓ Manushi Dave was awarded three Gold Medals in CATC Camp in Air wing.
- ✓ Krunal Khatri was awarded the Gold Medal for best cadet in CATC Camp.
- ✓ Unnati Desai and Paridhi Arora won Gold Medal for best cadet in Gujarat University

The number of presentations made on the *Aadi aushadhi* initiative, both at National and International Conferences, is also indicative of the appreciation this initiative has earned. Presentations on *Aadi aushadhi* were made at:

- ✓ The 12th International Conference of Ethnopharmacology’(Kolkatta, February 2012)
- ✓ The International Conference on Life Science’ (Ambaji, November 2011)
- ✓ The National Symposium on ‘Evolving Paradigm to Improve productivity from Dynamic Management and Value Addition for

- Plant Genetic resources' (Department of Botany, Gujarat University, Ahmedabad, 2011).
- ✓ The International Conference on Folk and Herbal Medicine (Udaipur, November 2010).
 - ✓ The National Symposium on 'Cultural & Ecological Aspects of Plant diversity of Coastal India with Thrust on Conservation" organized by the A.P.T (Dehradun) and Society of Ethnobotany (Sawantwadi, September 2010).
 - ✓ The National Symposium on 'Medicinal Plants: A Promising Resource of the Country' (Dept of Biosciences, VNSGU, Surat, June 2010).
 - ✓ The First International Conference on Conservation marketing and Patenting of Medicinal Plants (ICCMP) (Raipur, Chattisgarh, March 2010).
 - ✓ The International Conference on 'Global Warming: Agriculture, Sustainable Development and Public Leadership' (Gujarat Vidyapith, Ahmedabad, March 2010).
 - ✓ The Centenary celebrations of the Blatter Herbarium and the National Conference on "Plants in Relation to Man & Biosphere" (Blatter Herbarium, Department of Botany, St. Xavier's College, Mumbai, 2007).
 - ✓ The International Workshop on "Herbal Medicinal Plants and Traditional Herb Remedies" organized by the Non-Aligned Movement Science and Technology Centre (NAM S & T Centre) at Hanoi, Vietnam on September 20-21, 2007.

It should also be noted that the many projects that we receive from the Government as well as from NGOs is an award for our achievements. In 2011, the College had applied for the IMC Ramkrishna Bajaj award under the category of education. The fact finding team recognised the contribution of SXC not only in academics but also other social commitments. SXC was awarded with a merit certificate.

3.7 Collaboration

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

SXC has collaborated with the following institutes:

With Research laboratories	Purpose of Collaboration	Beneficiary
SAC	Equipment	Dr Rajesh Iyer, and five students
PRL	Equipment	Dr Clement and Dr Rajesh
ISRO	Research Projects	Dr DG Trivedi, Dr Kinnari D
IPR	Equipment/ Theoretical	2 per year
ACTI	Chemicals	Dr Atul Makwana

North Eastern Hill University	Research Facilities	Dr Vincent Braganza
Sardar Patel Institute of Economic and Social Research	Library	Dr Pinky Desai
'Darshanam' PG institute affiliated to Shri Somnath Sanskrit University	Library	Dr Urmi Shah

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.

- ✓ We have a MoU with the Marquette University, Wisconsin, USA to conduct a combined course with SXC in Backpack Journalism. As per the MoU, students of two departments of Marquette (Journalism and Applied Global Business Learning) have visited SXC over the last four years.
- ✓ SXC has an MoU with IGNOU to conduct five courses under the Convergence scheme.
- ✓ SXC also collaborate with Manthan and Jeevan Thirth, (NGOs) for the Dediapada project.
- ✓ In 2011, SXC collaborated with Central Michigan University, USA, to study the hygienic conditions of the semi urban areas of Ahmedabad city. This has resulted in interacting with people, conscientizing them about health and hygiene.

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.

- ✓ Industry - institution interaction has helped student in internship. The Concord Biotech, a premier pharmaceutical company, not only allowed us an industrial visit but also gifted a lyophiliser to improve research output.
- ✓ Many of our well wishes donate books to the library.
- ✓ The Indian Academy of Science, Bangalore has given SXC free subscription of one of their Journals which helps students and faculty to upgrade academic output.
- ✓ There are seats reserved for industry in Vocational Industrial Chemistry and Biotechnology. These seats are clubbed with an agreement as regard to financial assistance, glassware, chemicals etc.
- ✓ Several companies recruit our students to their firms. In 2012 companies such as Google, iGATE, Infosys, Wipro, TCS, Zydus, etc. visited the campus for recruitments.
- ✓ Many custom house agents, freight forwarders and export houses

including Nirma Industries, Siyaram, Adani exports, Arvind Lalbhai have given training to students of COP in FTM. Nirma Industries employed a first year lady student in its export-import department and she was the first lady in that department of Nirma Industries. Other industries have also offered placements to students. Adani Ports and Kandla Port authorities specially allowed students of FTM to visit the ports for 3 consecutive years. (Last visit was made in 2008 – 09).

3.7.4 *Highlighting the names of eminent scientists/participants who contributed to the events, provide details of national and international conferences organized by the college during the last four years.*

The College has organised four National conferences/conferences, one National workshops and a State level workshop. College also has conducted six state level seminars. In the last five years, the following eminent researchers came over to our College and interacted with faculty and students.

Name	Expertise	Affiliating Institute
Dr S Natesh		Senior Advisor, DBT
Dr. Vibha Dhawan		Admin Director, TERI
Dr. S K Apte		Scientist, BARC
Dr. Ramalaxmi Datta		Vivekanand Institute Of Biotech, 24 Parangas, West Bengal
Dr. Rakhi Chaturvedi		IIT, Guwahati
Dr Prakash Chauhan	Atmospheric Sciences	SAC, Ahmedabad
Dr Srinivasa Rao	Plasma Physics	IPR, Ahmedabad
Dr Venkataraman	High Magnetic field Physics	IISc., Bangalore
Dr. S. Maheshwari	Plant Tissue Culture	Jaipur National University
Dr. A. R. Mehta	Plant Tissue Culture	National Agriculture University, Navsari Sun Agrigenetics, Vadodara
Dr.(Fr) Leo D'Souza	Plant Tissue Culture	Kupper Biotech Centre, St. Aloysius College, Mangalore
Dr. Vibha Dhawan	Plant Tissue Culture	TERI, New Delhi
Dr. P. B. Kavi Kishore	Plant Tissue Culture	Osmania University, Hyderabad
Dr. Neera Bhalla Sareen	Plant Tissue Culture	
Dr. S.K. Sen	Plant Tissue Culture	Advanced Lab for Plant Genetic Engineering, IIT, Kharagpur
Dr. J. P. Khurana	Plant Tissue Culture	Department of Plant Molecular Biology, University of Delhi South

		Campus
Dr. S. Natesh	Plant Tissue Culture	Department of Biotechnology, New Delhi
Dr. Anjan Bannerjee	Plant Tissue Culture	IISER, Pune
Dr. S.K. Apte	Plant Tissue Culture	BARC, Mumbai
Dr.Kaza Krishnamurthy	Plant Tissue Culture	NCL, Pune
Dr. Pious Thomas	Plant Tissue Culture	Indian Institute of Horticultural Research, Bangalore
Dr. Ramalaxmi Datta	Plant Tissue Culture	Vivekananda Institute of Biotechnology, Nimpith, West Bengal
Dr. S. R. Thengene	Plant Tissue Culture	NCL, Pune
Dr. Subramanian	Genetic Engineering	S.P. University, Vallabh Vidyanagar
Dr Alok Dhavan	Environmental Toxicology	Director, Ahmedabad University
Dr Harish Padh	Pharmaceutical Chemistry	Vice Chancellor, SP University, Vidyanagar
Dr Vidita Vaidya	Developmental Neuroscience	TIFR, Mumbai
Shri H. A. Mehta	Fibre to Fabric	ACTI Ahmedabad
Shri T. J. Jain	Application of Dyes	ACTI Ahmedabad
Mr. Dilip Sharma	Enzymes and it's Industrial Applications	Director, Nepta Chemicals (India) Pvt. Ltd. (ACTI Ahmedabad)
Dr Shailesh Patel	Modern Analytical Chemistry Techniques	LMCP Ahmedabad
Dr S K Patel	Chemistry: The Changing perceptions	South Gujarat University Surat
Dr Singhvi	GeoPhycis	PRL, Ahmedabad
Dr Anjan Joshipura	Particle Physics	PRL, Ahmedabad
Dr Sudarshan Iyengar	Economics	Vice Chancellor, Gujarat Vidyapith
Dr M.R. Almeida	Taxonomy	Bllatter Herbarium, Mumbai
Mr. S. Yadav	Taxonomy	SERENITY, Ahmedabad
Dr Rohini Godbole	Physcics	IISc, Bangalore
De Sujatha Ramdurai	Mathematics	TIFR, Mumbai
Dr Kuljit Kaur	Solar Physics	PRL, Ahmedabad
Dr Tanuja Kulchreshtha	Pharma	Zydus Cadila, Ahmedabad
Dr Sudha Bhattacharya	Env. Science	JNU, Delhi
Dr Kamaljit Ray	Meteorology	Indian Meteorological Society
Dr Shobna Menon	Chemistry	GU, Ahmedabad
Dr Narotham Sahu	Life sciences	Science City, Ahmedabad

3.7.5 How many of the linkages/collaborations have actually resulted in

formal MoUs and agreements? List out the activities and beneficiaries and cite examples (if any) of the established linkages that enhanced and/or facilitated

a) Curriculum development/enrichment

The collaboration with Marquette University has helped in devising new curriculum in Backpack Journalism. Also it has resulted in formal student exchange programmes to India between two departments of Marquette. The students of the Applied Global Business Learning School of Marquette have been studying the Xplant, XOIC and Aadi aushadhi as case studies during their annual visits over the last 4 years. They provide a written report with recommendations to each of the groups and several of these have been systematically implemented.

b) Internship/ On-the-job training

The department of Physics, Vocational Biotechnology and Chemistry (for PG) have internship.

c) Summer placement

Interaction with various companies has helped us to send a student for summer training. Many of the neighbouring pharmaceutical companies do accommodate and train our students of Voc. Industrial Chemistry and Biotechnology.

d) Faculty members exchange and professional development

Collaboration with University of Dedrecen, Dedrecen and Semmelwe's University, Budapest, Hungary helped two of our faculty in professional development and in research publications. Sanjeev Gupta received Fulbright scholarship for a year to do research in the USA.

e) Research

Collaboration with SAC, PRL and ISRO has helped five faculty and five students to carry out research.

f) Consultancy

The collaboration with NGOs, (Manthan and Jeevan Tirth) have helped the Dediapada project with regard to product formulation, developing marketing strategy, procuring equipments, establishing linkages with Government etc. These linkages have help *Aadi aushadhi* get financial assistance from the Govt for NREGA work, equipment, subsidy for attending fairs, irrigation pipes, etc.

g) Extension

In collaboration with the Red Cross, SXC organises blood donation camps every year.

h) Publication

Collaboration with Catholic Relief Service has helped in conducting programmes for SC, ST, and OBC students and to come out with a book, 'Youth Leadership: Education Plus' in 2011 ISBN: 978-93-80066-41-7.

Collaboration with BSC has helped SXC to co-author a book on women empowerment: "Savings and Credit Cooperatives and Women's Empowerment in Gujarat" Canis J., Arokiasamy, R and

Dabhi, J. 2012. Gujarat Sahitya Prakash, Anand, India. ISBN: 978-93-80066-69-1.

i) ***Student Placement***

Last year some of the companies that came to the campus for recruitment are Google, Infosys, Wipro, TCS and have recruited students.

j) ***Twinning programmes***

College has a twinning programme with IGNOU under the Convergence Scheme.

k) ***Introduction of new courses***

The course in Backpack Journalism was introduced as an outcome of a MoU with Marquette University.

l) ***Student exchange***

Three students have benefited from the student exchange programme of Gujarat University since 2007.

m) ***Any other***

Though there is no formal MoU, the students of Sophia University, Japan, under the Meguko programme do visit us once in two years to interact with our students and with the beneficiaries of XCD. College has an MoU with St Joseph's University, Philadelphia, for academic activities.

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

✓ SXC has made efforts to collaborate with Central Michigan University, USA, for the water project. As part of this programme, ten students from the department of Biochemistry (selected after an interview), visited the semi urban areas of Ahmedabad in order to study health and hygiene.

✓ It collaborates with GSBTM, the nodal centre of DBT in Gujarat, for capacity building programmes. It is a training programme for UG students of six Science colleges of Ahmedabad and Gandhinagar districts preparing them to appear for National competitive examinations. Students are screened through an online examination before being admitting to this 12 days X 12 hrs course.



Any other relevant information regarding Research, Consultancy and Extension which the college would like to include.

- ✓ SXC has initiated UG research since 1992 in Biosciences. Later on this facility was extended to neighbouring colleges and SXC students from every department. Students are given fellowships and gold plated silver medal as incentives. This practice has now been adopted by other science colleges in Ahmedabad.
- ✓ College also collaborated with GSBTM in organising the GIBiON event (Bioutsav-2013) in 2012-13. This is a State level Science competition where over 600 undergraduate students participate in various competitions such as article writing, extempore, poster presentation, oral presentation, seminars, and bioquiz.
- ✓ Several of our faculty go to other institutes to train staff in interpersonal relationships. Prof Ami Shah, Dr Kushnuma Banaji, Dr Clement, Dr Ishwar Mehra, Prof Ami Mehra, Dr Sebastian V, Fr. Vincent Saldanha, Dr Lancelot D'Cruz, Dr Atul Makwana, Dr Dilip Vasava have offered their services in the last five years.
- ✓ Dr Kushnuma Banaji was awarded 'Achiever's Award' in 2011 by Usha-te Foundation for service in Education, Psychology and Counselling.
- ✓ Prof Francis Christy has coordinated State level online CAT exam in Chemistry at SXC in Jan 2013 for 30 UG PG students of Chemistry.
- ✓ One of the faculty is in the editorial board of National journal (Dr Vincent Braganza: Editorial Board member of Plant Cell Molecular Biology and Biotechnology Journal).
- ✓ Dr Nandita Ganguly is a reviewer at International Journal of Remote Sensing, Indian Journal of Radio and Space Physics, Atmospheric Environment, Earth Science India, Earth Science Series.
- ✓ Dr Nandita Ganguly is a Fellow of the Society of Earth Scientists. She is also a life member of Indian Geophysical Union.
- ✓ Dr T.C. Pandya is a fellow of Gujarat Academy of Science.
- ✓ Dr M.R. Gadhwani is on the review panel of Material Sciences and Engineering-B, Elsevier (ISBN-0921-5107).



CRITERION IV: INFRASTRUCTURE AND LEARNING RESOURCES

4.1 Physical Facilities

4.1.1 *What is the policy of the Institution for creation and enhancement of infrastructure that facilitate effective teaching and learning?*

The Policy: The College authorities study the feedback received from staff and students with regard to the adequacy of the existing infrastructure as well as newer developments with regard to infrastructure facilities. Budget is made available to enhance the facilities and try to make them state of the art to the extent possible.

SXC is located in the heart of the city covering an area of 26 acres. It has a building with an administrative section, 30 classrooms, and a hall with a capacity for 2000 students. It has a separate building for the library and the College plans to move the administrative section to this block by the end of this year. SXC is well connected with other parts of the city by the local bus services. It has two separate hostels one for men and the other for ladies. The ladies hostel is located a kilometer away from campus. There is a canteen, and spacious sports grounds for the physical development of students. The College has two bore wells to meet the water requirements and an uninterrupted power supply. The College also has its own common LPG supply to meet the laboratory requirements. It has been recycling natural resources by utilizing rainwater for watering the gardens. It has also introduced a solar power system to meet part of the electricity requirements and tube lights have been replaced by LED in many classrooms. Some of the infrastructure facilities at the College are:

- 30 lecture rooms
- Audiovisual rooms with multimedia facility
- Central library and five departmental libraries
- Collection of specimens in Botany and Zoology laboratories
- College open air auditorium
- College closed door auditorium that can house 2000 students
- Computer laboratory with 70 terminals
- A language learning laboratory with 25 computers (DELL)
- Conference room
- Drinking water facility (separate for staff and students)
- Ecological niche
- Hostels for men and women
- In house washroom facilities
- Internet facility
- Ladies lounge
- Municipal water connection
- OHP and LCD projector, DVD players
- Portable amplifier system
- Some state of the art laboratory equipment
- Spacious parking plot
- Spacious play grounds (hockey, football, cricket, basketball,

- volleyball, paleta court, tennis, table tennis etc.) and facilities for weight exercises
- Three servers to link departments and the library
- Two tube wells, four water recharging systems, special toilets, ramp, lift for physically challenged students.

Since the last re-accreditation, the College has added the following: it has created a separate ICT building which houses the library, the Bachelor of Computer Applications, laboratories, a 300-seat auditorium, a room for alumni and staff rooms. The College has also four computer labs with ten terminals used for Backpack Journalism courses in collaboration with Marquette University, Wisconsin, USA, 25 terminals for SCOPE examinations, 30 for SPSS and 17 for the library. A solar system has also been added.

The College plans to make separate facilities for research coordination, IQAC, extra-curricular activities etc.

With the view to enhancing infrastructure that facilitates effective teaching and learning, the College has created five new classrooms, renovated six classrooms, installed white boards in many classrooms, renovated the AV room, painted the College building, made separate cubicles for all faculty.

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.

Academic activities: SXC has 16 laboratories, 30 classrooms, two ITUs- Xplant and XOIC for students to get training in research and entrepreneurship, a state of the art language lab, a conference room, an audio-visual room with a computer and an LCD projector, two computer rooms, a common gas connection, two tube wells, a research centre where state of the art equipment and facilities are centrally located. It also has an ecological niche and an animal house with the approval of CPCSEA.

Co-curricular activities: The College has two auditoriums, an open-air theatre that also can house 2000 students, several rooms for co-curricular activities, and separate rooms for the women's cell, Jagrat, sports, and counselling.

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.

Sports: The College has separate grounds for football, basketball, volleyball, cricket, paleta, tennis, hockey, a 400m track and necessary items for weight exercises, and for field and track events. It also has

facilities for table tennis, boxing and karate. It uses the municipal swimming pool for training. The inhouse auditorium has been used for all the major activities of the College. There is a separate room for NSS activities. The NCC programmes are coordinated by the sports in charge.

Cultural activities: The College has two auditoriums that can house 2400 students, an open-air theatre that can house 2000 students. Two faculty take care of cultural activities for the entire year.

Yoga, health and hygiene: The campus maintenance team is headed by the Estate Manager who ensures the greening and cleaning of the entire campus. In earlier years this was outsourced to external contractors. But, dissatisfied with the results, the Management has set up its own maintenance system under Fr Ronnie Sanctis, the Manager. The health and well-being of the faculty and students is the concern of the department of Campus Ministry comprising of Sr Mary James and Fr Roland D'Souza who have been specially appointed by the Management.

- 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 felt the need for separate library and IT facilities for the students. Hence, a separate ICT centre for the library, interactive classrooms and an auditorium have been set up. A separate wing for the Computer Applications College (XICA) has also been completed and XICA is functioning from its new home. SXC has spent over Rs. 42 lakhs towards developing and updating the existing facilities this year. The College also has a plan to build a gymnasium and health centre. It also plans to install internet in every department and swipe machines in the main and the departmental libraries to facilitate easy access to and transaction of books. These expenses will be met through grants from the UGC, and funds/donations from NGOs and other financing agencies.

SXC has responded to the growing academic needs by making more facilities available on campus. It has 30 classrooms. Five new classrooms were added in the wake of the CBCS system introduced by Gujarat University and the subsequent revised timetable of the College. As the Govt of Gujarat made it mandatory for all faculty and encouraged students to appear for SCOPE examination, SXC has set up an English language lab with Government help to meet this need. The number of students who have opted for computer training has increased in the recent past on account of CBCS. In order to meet the demand two new computer labs were set up. To cater to the needs of the Backpack Journalism course and COP in SPSS, two separate labs

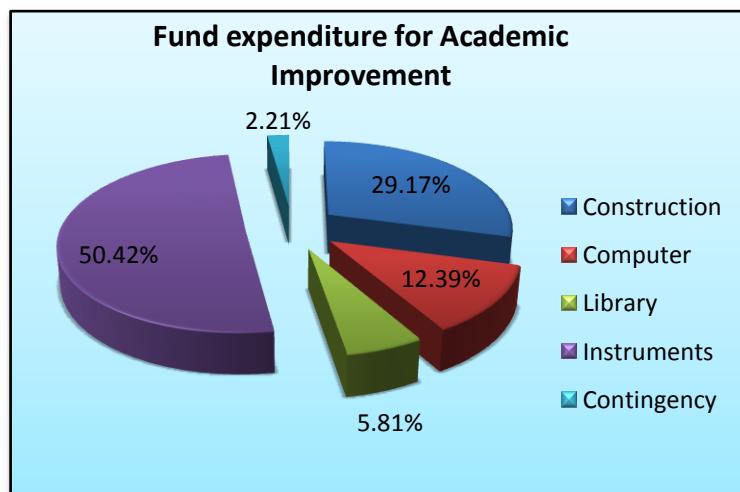
were set up. All the Science departments are equipped with computer and internet facility; Arts departments utilize the common lab facilities and Wi-Fi is used by those who have laptops.

Five new computers were installed this year: four in the administrative office and one in the Principal's office. A new water-filtering system was installed with the assistance from AMC. A total of 1261 books and 2 journals were added to the existing number of books in 2012-13.

Separate washrooms were constructed for men and women in the main building. Some new equipment, and AV aids such as LCD projectors (4), were purchased with DBT, DST and UGC grants.

SXC felt the need for separate lab and washroom facilities for the students. It has spent 6.9 lakhs towards this. It also plans to install swipe machines in the main library to monitor the student/ faculty utilization of library facilities.

Facilities developed	2008-09	2009-10	2010-11	2011-12	Total
Construction/ Renovation	Amount in Rs.				
	304134	3910079	00	00	4214213
Computer/ AV aids	430795	124082	00	617550	1172427
Library	151848	504291	47762	43524	747425
Instruments Consumables	1043872	601804	1065054	1754086	4464816
Contingency	00	152831	00	82175	235006



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

A lift was installed for the physically challenged with finances from FAEA (Foundation for Academic Excellence & Access) and TOXA (our Alumni Association) in 2005. A ramp was also constructed in 2005 with assistance from a former student. Separate computers with special software have been installed for the visually challenged

students in the library. Most of the lectures where physically challenged students are present are kept on the ground floor. Special washroom facilities have been arranged for such lady students in the ladies lounge. In collaboration with the Blind People's Association, a special pickup van was arranged to and from SXC from 2011. This has been discontinued since June 2012 and so SXC helps them with their auto fare to and from College.

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

Hostel Facility – Accommodation available: There are separate hostel facilities for ladies and men. The men's hostel accommodates 170 students and the ladies hostel accommodates 145. Both have mess (vegetarian) facilities. Besides facilities such as individual cupboard, reverse osmosis cold water for drinking, hot water during winter season, reading room, mobile charging facility, daily room cleaning facility, ironing facility, common get togethers common cultural celebrations etc. are there.

Recreational facilities, gymnasium, yoga centre, etc.

The men's hostel utilises the facilities of the College as both are located in the same premises. However the ladies hostel has its own recreational facility.

Computer facility including access to internet in hostel

The College campus has a paid internet facility. Most students use this. Some students also go to nearby internet cafes.

Facilities for medical emergencies

The College normally utilises the facilities of the University which is less than a kilometre away. If there are serious issues, the College has a good network of eminent doctors who are past students.

Library facility in the hostels

The hostel has a reading room facility with local dailies and some recreational books.

Internet and Wi-Fi facility

Currently we do not provide them with Wi-Fi. However, they can use internet facilities available on campus at a nominal fee (Rs 10/hr).

Recreational facility-common room with audio-visual equipments

Both the hostels have recreational rooms, TV sets and some indoor games.

Available residential facility for the staff and occupancy: The four Jesuits who are teaching and the two on the administrative staff stay at the Xavier Residence which is next to the College.

Constant supply of safe drinking water.

Both the hostels have RO cold water facilities.

Security

Both the hostels have their own round the clock private security arrangements. However, the men's hostel also has the College security as a second layer.

4.1.6 *What are the provisions made available to students and staff in terms of health care on the campus and off the campus?*

Every year, the University Health Centre conducts the mandatory health checkups for students. If there is an emergency, first aid boxes are available in hostel, in most departments (especially in department of Biochemistry), and with the counsellors. Other medical emergencies are handled with the help of doctors who are our alumni and well wishers.

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.*

- ✓ *IQAC:* Currently the IQAC coordinator is the HoD of Biochemistry. He operates from his office. SXC is in the process of allotting a separate space for IQAC.
- ✓ *Grievance Redressal unit:* There is a common suggestion box placed in front of the Principal's room which he periodically clears. Necessary action is taken after consulting the Vice Principals and the concerned HoD.
- ✓ *Women's Cell and Counselling:* The women's cell is located in a separate room. The two counsellors have cabins and a lobby for people to wait. It has enough privacy for students to interact and share.
- ✓ *Career Guidance and Placement Unit:* The placement cell operates from the department of Physics.
- ✓ *Health Centre:* The College does not have a health centre. It uses the facilities of the University which is only a kilometre away. However, for emergency, a first aid kit is available in many departments. The department of Biochemistry and the counsellors are equipped in handling all eventualities. It should also be noted that, all Science departments are equipped with fire safety measures.
- ✓ *Canteen:* There is a canteen for the staff and students of SXC where light refreshments are available. There is also a mess for the hostel students.
- ✓ *Recreational spaces for staff and students:* Canteen, the ladies' lounge, common faculty room, walkways with lush greenery, sports fields are available for staff and students for recreation. Students usually use the canteen for recreational purpose.

- ✓ *Safe drinking water facility*: SXC has two separate RO systems for faculty and students. Moreover, recently the AMC has installed a water softening plant for the institute free of cost.
- ✓ *Auditorium*: There are two auditoriums. There is a high tech auditorium with a seating capacity of 300 and an open air auditorium for 2000 students. Apart from this auditorium, there are 3 halls where a total of 2400 students can be accommodated (Siddharth Assembly Hall: 2000; Jai Chemical Hall: 300; AV Room: 100).

4.2 Library as a Learning Resource

4.2.1 Does the library have an Advisory Committee? Specify the composition of such a committee. What significant initiatives have been implemented by the committee to render the library, student/user friendly?

Yes. The Academic Council of the College (comprising the HoDs, librarian etc.) are ex-officio members of the Library Committee. This is to ensure speedy implementation.

One of the significant initiatives implemented by the committee was the shifting of the Library to its new site. A large number of old books had to be screened, selected and then transferred. The committee involved the entire faculty in this process. The committee along with the Governing Council also decided to give away old books to students rather than sell them as discarded.

Each department is allotted a specific amount of money every year to purchase books. The HoD in consultation with the faculty decides on the list of books to be purchased. At times the Academic Council decides to root the finances for certain common needs. For example this year, every department contributed a part of the money to buy an Encyclopaedia of Technology. Books were also purchased for NET and other competitive examinations.

All books are barcoded. SOUL software is used.

4.2.2 Provide details of the following

Total area of the library (in sq. mts.): 489.27 sq.mts (ground floor: 346.83 sq. mts and first floor: 142.83 sq.mts)

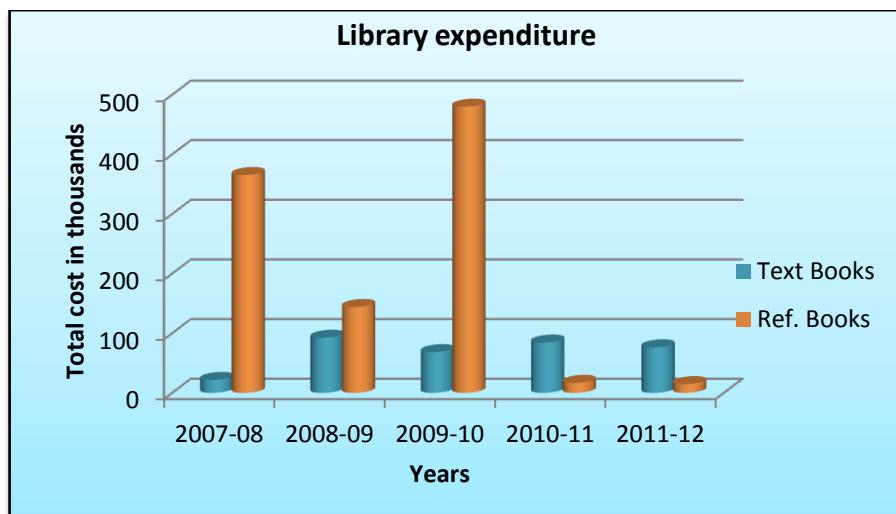
Total seating capacity: 215 students (ground floor 85; first floor 130)

Working hours: The library is open on all days except Sundays and public holidays. It operates from 9.00 am to 5.00 pm from Monday to Fridays, and 8.00 am to 1.00 pm on Saturdays.

Layout of the library (individual reading carrels, lounge area for browsing and relaxed reading, IT zone for accessing e-resources)

The new library has a separate section for reference, and reading room facilities for about 215 students. It has a collection of 74156 books and 20 journals and 36 periodicals on various subjects. The library also has

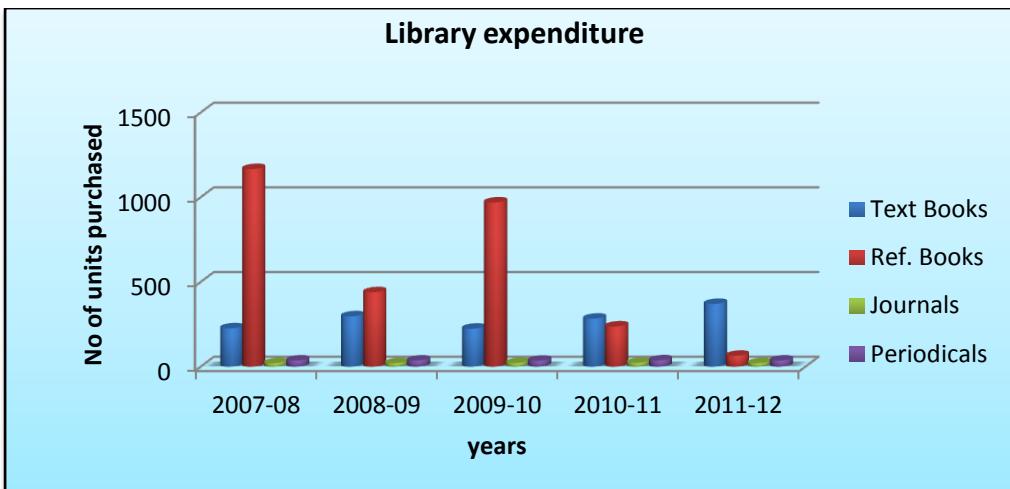
INFLIBNET (N-List) and internet facilities. 17 terminals with internet facilities are set aside for students. The library also has three computers with special programmes for visually challenged students. It also has a book bank to take care of the needs of poor students.



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

SXC has a transparent and participatory method of procuring books for the library. When the College receives library grants the money is distributed almost equally among departments. Each HoD requests the local distributor to supply subject related books for approval. The entire department scrutinises the titles and then the final selection is made. At times, books that are not available in India are procured from abroad. SXC takes all necessary measures to purchase the latest books. We are lucky to have the head offices of the INFLIBNET very close to the College. Our faculty make use of these facilities, especially e-journals. The data of library holdings for the last five years is given below:

	2007-08		2008-09		2009-10		2010-11		2011-12	
	No.	Total Cost								
Text books	226	21709	297	92482	224	68331	283	84395	370	7648
Reference Books	116	365438	439	14403	969	48008	237	16832	64	1469
Journals	20		20		21		22		20	
Periodicals	36		36		35		37		36	



The library also has 10612 books in the poor students' book bank and 641 books have been added to it in the last five years.

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

OPAC: Currently we are using the SOUL software as the Online Public Access Catalogue.

Library automation: All books are barcoded and SOUL programme is used. There is a swipe machine used for book distribution. This makes book distribution and tracking books easy. In the near future we plan to install automated tracking system in the library to collect data on library usage/ walk-ins.

Total number of computers for public access: In the library there are 19 computers with internet facility and SOUL enabled. These are used for information searching and tracking books. There are three separate computers with a scanner and special software for visually challenged students.

Total numbers of printers for public access: Library has photocopying facilities. XRF also provides printing facility for students at a nominal charge.

Internet band width/ speed: Currently SXC has 4.1Mbps band width.

Institutional Repository: Library repository is spread to 126.09 sq.mts that can house 90,000 books.

Participation in Resource sharing networks/consortia (like Inflibnet): SXC has INFLIBNET (N-List) facilities for faculty.

4.2.5 Provide details on the following items

Average number of walk-ins: 200

About 11% of students use the library every day and 10% of faculty regularly use the library for reference. We are in the process of

installing a digital tracking system to monitor the walk-ins.

Average number of books issued/returned: 120 books/day

Ratio of library books to students enrolled: 43:1.

Average number of books added during last three years

	2009-10	2010-11	2011-12	2012-13
Arts				
Economics	23	10	24	38
English	140	61	21	27
Gujrati-Hindi	228	160	77	256
Psychology	12	5	24	55
Sanskrit	45	47	57	12
Science				
Biochemistry	45	21	9	10
Botany	20	25	18	12
Chemistry	63	40	12	85
Computer Science	40	0	0	0
Mathematics	99	54	63	67
Physics- Electronics	65	48	34	95
Statistics	51	8	17	41
Zoology	9	9	14	10
Voc. Biotechnology	27	0	0	15
Voc. Industrial Chemistry	26	0	0	6
Journalism	256	0	21	0
General Reference	44	32	64	507

Details of “weeding out” of books and other materials: After a period of 15 years, the library discarded old books as it was moving to a new building. The old books were given free to faculty and students. Only the books left over were sold as discards.

4.2.6 Give details of the specialized services provided by the library

Reference: The library has a separate reference section. These books are not given out. Anyone can access these books within the library. This year, the library has added 507 books to the reference section.

Reprography: Photocopying facility is available in the library.

ILL (Inter Library Loan Service): Library has ILL facility. In the last three years, books have been provided to Adinet Institute, Gujarat University, HLCC.

Download: Library has 19 computers with internet facility where 17 are for student use.

Printing: We have not yet established a system for computer printouts in the library. However, photocopying facilities are available.

User Orientation and awareness: The library follows DDC20 for classification. Books are arranged according to the rules of DDC20 which helps users to trace books. The library is also located in a strategic place with good illumination.

INFLIBNET/IUC facilities: The library has INFLIBNET facility. Currently we have only N-list. We plan to upgrade this in the future.

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

The library has a librarian and two clerks. The librarian maintains purchase details, accounting of books, register maintenance. The clerks assist faculty and students with issuing of books, in locating books, and in photocopying.

For the smooth functioning of the library, all books are barcoded and automated with the SOUL programme. This software helps in easy tracing, reserving a book, daily transaction based on barcodes. It has two computers with a swipe machine for the day-to-day functioning and 17 computers with internet and INFLIBNET facilities for students and faculty.

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

There are three special computers with special software for visually challenged students. Audio cassettes are available for them in the departments of Sanskrit and Gujarati.

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

General feedback systems and the suggestion box take care of library feedback as well. In the general student feedback form, there is a question about the library facilities.

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)

SXC has a total of 197 computers of which 112 are for faculty, staff, administration and 85 are for students. Configuration ranges from AMD Sampron/ Celeron/ Dual Core with 256 RAM to 512 RAM.

Computer-student ratio: 1: 0.045

Stand alone facility: Currently all the computers are linked to LAN (3 servers). However, about 20% of the faculty use their personal laptops. Stand alone: 139 computers.

LAN facility: SXC is linked through LAN since 1998.

Licensed software: The following licensed software have been added in the past five years: Windows Server 2003, Windows Server 2008, Windows Server Clients, Windows 7, Windows Vista, MS-Office 2007 and 2010, SPSS V. 16, and SOUL for the library.

Number of nodes/ computers with Internet facility: There are 58 node computers. There are 197 with internet facility and many faculty use Wi-Fi.

Any other: SXC has a Wi-Fi enabled campus and this facility is currently offered to faculty.

The DELL Computer lab for SCOPE examination is set up with 25(1 Server+24) terminals.

4.3.2 *Detail on the computer and internet facility made available to the faculty and students on the campus and off-campus?*

The College has its own broadband (4.1 Mbps) and Wi-Fi connection, which is offered to faculty. There are five common computer labs with internet facility. Every Science department is provided with a computer and internet facility for academic purpose. The Arts faculty make use of facilities at the common computer lab. The computer labs are used by those students in Arts and Science who have computer science as an optional subject. XRF on campus has internet facilities which are available at a nominal fee. However, a large number of students rely on their laptops/ ipads/ mobile with internet facility.

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

The institute plans to introduce more computer labs to handle online examination. As 30% of our students are from rural areas, SXC would like to offer them more opportunities free of cost so that they too get the advantages of modern technology. SXC wishes to introduce touch screen computers on every floor for students to avail of the facilities of the library. SXC also plans to introduce at least five *smart classrooms* (initially for Science departments) and more classrooms with LCD projectors. Video conferencing facility, large display boards to display notices and announcements, a card reader to assist in MCQ based examinations, biometric system to monitor discipline, automating of purchase, handling and distribution of chemicals especially in Chemistry and Biochemistry labs are also planned. We also wish to offer a computer for every 20 students in each department. We would like to induct a large television to telecast EDUSAT, BISAG programmes for students.

We plan to execute the above with funding in the 12th Plan of UGC.

- 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)**

	2008-09	2009-10	2010-11	2011-12
Procurement	Nil	Nil	Nil	617550
Upgradation	Nil	Nil	Nil	Nil
Accessories	Nil	Nil	Nil	Nil
Maintenance	Nil	105840	Nil	94000
Total		105840	Nil	711550

- 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?**

Most faculty use computer and internet facilities for accessing teaching material and to prepare power point or *prezi* based presentations, showing video clippings from youtube, accessing journals and books. The College has an audiovisual room and a classroom fitted with an LCD projector and a computer. Faculty are encouraged to make use of these facilities to improve teaching and use innovative methods for the same. Students use these facilities when they have class seminars. Faculty also use films to learn and teach subjects. For example, a movie like (Lorenzo's Oil is used for teaching the nuances of fatty acid metabolism to TYBSc Biochemistry students).

- 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.**

As mentioned above, a movies like Lorenzo's Oil/GATTACA are used for teaching concepts to students of Biochemistry. Viewing is followed by discussion where ethical issues, alternate solution etc. are discussed. This opens students to think beyond the book. Students of the department of English listen to Shakespeare plays and other movies such as My Fair Lady or The Sound of Music to teach/learn nuances of English pronunciation. All these activities keep students at the centre of learning and faculty become facilitators. COP-ELCS uses cartoon movies, fairy tales etc. to initiate discussion, enhanced listening and speaking skills and to facilitate writing of assignments based on the movies. The DELL lab computers also have lessons in English (listening, reading and speaking skill) which the students use regularly.

Departments also conduct annual student seminars where each student is given a topic to prepare and present before the class. This again is a student centric learning method.

- 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?**

SXC is connected to INFLIBNET facilities through the University. Currently the facility is available to faculty only. Faculty and students were recently introduced to NPTEL which we want to make use of in our teaching.

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)?**

SXC has a full time Management appointed Estate Manager who takes care of the entire property. Repair works are carried out as and when the need arises.

Building: The building was painted in 2012 at a cost of Rs 9,40,000. Two new washrooms were constructed in the main building for ladies and gents. A new washroom was constructed for ladies staff. An assembly hall was constructed on the terrace. New cabins were constructed for all faculty which gives them privacy and encourages them to do research.

Furniture: The Estate Manager takes care of the furniture of the College.

Equipments: The departments handle the maintenance and repair of instruments with the help of experts from outside.

Computer: The College has entered into a contract with XRF for maintenance of computer and internet facilities.

	Allocation in the 11th Plan
Building	00
Furniture	00
Equipment	775000
Computers	00
Vehicles	00
Books	525000
Maintenance	100000
Capacity Building	100000
Exam Reform	100000
Education Innovation	100000
Field work/ Study Tour	100000
Other	100000
Total	1900000

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

Earlier, SXC had given the contract for the overall cleaning of the campus and the building to an outside agency. Currently, Management has appointed an Estate Manager who handles the maintenance of the College and coordinates with the Principal. There are full time Management appointees to take care of the cleaning of the washrooms, overall College cleanliness, the garden, water pumps, and the gas lines. The departments handle the maintenance and repair of instruments, with the help of experts from outside.

4.4.3 *How and with what frequency does the institute take up calibration and other precision measures for the equipment/instruments?*

Each department ensures that instruments are repaired and calibrated once a year. If an instrument breaks down, immediate action is taken by the HoD.

4.4.4 *What are the major steps taken for location, upkeep and maintenance of sensitive equipment (voltage fluctuations, constant supply of water etc.)?*

Voltage fluctuation is not an issue in Ahmedabad. However, sensitive equipments are protected using stabilisers. SXC has two tube wells which are used in rotation to evenly distribute the load. SXC has common gas facilities from where gas is distributed to the Chemistry, Biology and Biochemistry laboratories.

Any other relevant information regarding Infrastructure and Learning Resources which the college would like to include.

The College building was repaired and painted in 2012. Five new class rooms have been added. All the laboratories were revamped; an assembly hall that can accommodate 2000 students was constructed. Cubicles for every faculty, sports manager, and office extension, Deans of Science, Arts, Campus Ministry, and HoD of Biochemistry were constructed.

CRITERION V: STUDENT SUPPORT AND PROGRESSION

5.1 Student Mentoring and Support

- 5.1.1 Does the institution publish its updated prospectus/handbook annually? If 'yes', what is the information provided to students through these documents and how does the institution ensure its commitment and accountability?**

The prospectus is published every alternate year. It is given to each first year student at the time of admission and it is also available on the website. The prospectus gives general information about the origin of the College, explains the emblem and states the vision and goals of the College. Further, it gives information about the admission policy, courses offered, fee structure, rules and regulations, examination system, students' responsibilities, rules of the library, and College activities. It also gives information about scholarships, prizes, orientation programmes, various activities, and about the College faculty and administrative staff. These rules are explained to students at the beginning of every academic year during a formal meeting. At the beginning of the academic year, during the orientation days the prospectus is not only explained but a quiz is held on it.

Periodically, the Governing Council evaluates College activities and gives orientation to the running of the College. The vision of the College is put into practice by the Academic Council with the help of all staff members.

- 5.1.2 Specify the type, number and amount of institutional scholarships / freeships given to the students during the last four years and whether the financial aid was available and disbursed on time?**

	Type of scholarship	Number of scholarships	Amount (Rs.)	Total
2008-09	Research	47	47000	751093
	SC	25	82748	
	ST	105	621345	
	OBC	-		
	Any other	-		
2009-10	Research	70	33000	1932304
	SC	50	156095	
	ST	110	1452980	
	OBC	111	255729	
	Phys. challenged	14	34500	
2010-11	Research	55	27500	578973
	SC	101	143418	
	ST	168	405555	
	OBC	70	00	
	Phys. challenged	11	2500	
2011-12	Research	63	31500	934780
	SC	94	637570	
	ST	31	167095	
	OBC	34	91115	
	Phys. challenged	3	7500	

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

	2008-09	2009-10	2010-11	2011-12
(Actual no. of beneficiaries in bracket)				
State Govt.	(130) 6.6%	(285) 15.7%	(350) 18.4%	(162) 9.4%
Central Govt	0	0	0	0
FAEA	(93) 4.7%	(4) 7.6%	0	(2) 0.1%
Foreign (UDAN)	0	(91) 5%	(53) 2.78%	(86) 5%
Institutional	(1) 0.05%	(8) 0.44%	(175) 9.2%	(150) 8.7%
Total no. of students	1971	1814	1901	1717
Total Beneficiaries	11.35%	28.74%	3038%	23.2%

5.1.4 What are the specific support services/facilities available for Students from SC/ST, OBC and economically weaker sections

SXC is a minority College that has special admission policies for SC, ST, OBC, economically weaker, and differently-abled. SXC offers services at three levels: securing admission, moving towards adjustment and marching towards excellence.

Securing of admission: During the admission process there are separate admission rooms allotted and a Management person scrutinizes their forms. Student volunteers are trained to help these candidates at the time of admission. They are given guidance, counselling, explained the career prospects, and if need be the forms are filled for them.

Move towards adjustment: All our ST and most our SC and OBC students come from rural areas. Initially there are adjustment problems. Hence the College offers an ‘Educational Plus’ programme which is spread over three years that helps them to understand urban culture and compare it with the rural culture from which they have come. The programme was initially funded by Catholic Relief Service and it is a model programme for the rest of India. The executed programme module has been published in the form of a book (Education Plus ISBN: 978-93-80066-41-7) which other institutions can adopt.

Move towards excellence: Students with the above background are offered various tailor made programmes to ensure that they are at par with mainstream students. They are offered special coaching classes in their subject by faculty/ senior students. This helps them to understand the subject and to prepare for examinations. The COP in English is organised largely for this group. Before the introduction of CBCS, Gujarat University had a ‘B’ stream English compulsory course for those students who had completed their schooling without English as a subject. Later it was abolished by the University. At SXC, ST/SC/OBC

and others are encouraged to opt for Computer as a second elective to make them computer literate.

They are helped in training for various sports, and athletics. They are nominated to various committees for extracurricular activities of the College. They are also trained in areas like time management, goal setting etc. The College also celebrates Indigenous day, Utkarsh day on campus.

They have been supported financially to pay their College fees, buy books, secure bus passes, pay up mess bills etc. The College also helps them to get scholarships from the Government. There is a special cell called Jagrat that ensures the all round development of these students by organising various programmes for personality development etc. It is a three year module which has been successfully conducted for the last two rounds. The College has also published a manual for their training programme.

One of the College faculty (Fr Vinayak Jadav) initiated a magazine called *Adilok* which gives visibility and voice to the issues, customs and practices of the tribals of Gujarat. Another faculty (Dr Dilip Vasava), himself a tribal, is the manager of *Adilok*. It was published from SXC campus initially for three years.

Students with physical disabilities

SXC has 24 physically challenged students. It also has a cell called Utkarsh which takes care of their needs. The College has made a special policy to ensure that a challenged student who has applied is given a chance to study the subject of her/his choice. Remedial English classes are offered to them, besides regular classes. Special programmes are organised for them. Every year there is a one day seminar cum gathering of all College going challenged students of the city on our campus. During College programmes, they are given a chance to perform on stage. Motivational talks by former students (Ms Nandini Raval, Dr Shilpa Das, Mr Tarak Luhar etc.) have been held by the Campus Ministry. They had transportation facilities for a year. But those were discontinued by the association because of other pressing needs. So the College decided to help them financially for their transport needs (partial rickshaw fare is given). There are two full-time, qualified counsellors employed to take care of their various needs.

	2010-11	2011-12	2012-13
No. of students admitted	5	17	3

Overseas students

SXC has overseas students from Africa, America, Nepal, and Bhutan. There are three students from Burundi studying at SXC under the aegis of International Jesuit Alumni Association. SXC also has students from

Afghanistan sent via the Central Govt. Some come on their own. All overseas students are helped by SXC to complete their formalities (getting the necessary documents from the University, eligibility etc.) before they are admitted. The College also has a special orientation for overseas students to explain the rules and regulations, and the cultural environment of the College. SXC has been trying to organise programmes in order to bring them together and get into the mainstream of the College.

Students to participate in various competitions/National and International

All Xavierites are encouraged to take part in various competitions. Special allowances are made for such students. They are exempted from attending classes on the days of the competition. Compliance system is in place to ensure that they are at par with the rest of the students in academics in case if they have to remain absent from regular teaching on account of extra training. SXC spends money on training them (sports and extracurricular activities). Students represent the College at the West Zone, Inter-Zonal, and National levels. They also compete in other competitions of the University. They also participate in competitions organised by other colleges and corporate houses. Shalin Patel of SYBSc has bagged the first prize at the National games in 100 metre dash in 2012, and the bronze medal in 100m in Sri Lanka last year.

Besides taking part in academic competitions, students do participate in academic festivals: Bioutsav'13 which was hosted by SXC in 2012-13 on our campus, Minaxi Lalit Quiz competition, English essay writing competition, and Economics Society Festivals organised by Economics Societies of various colleges in Bangalore, Delhi and Mumbai. About 12 students attend the last mentioned competition every year. The International Year of Chemistry was celebrated with various competitions where SXC students participated.

Medical assistance to students: health centre, health insurance etc.

SXC usually depends on the health care facilities of the University health centre for minor needs. In special cases, students have been referred to doctors associated with the College. Financial aid is also given to needy students. Cases of sports related injuries are referred to one of the orthopaedic doctors associated with SXC. The ladies hostel has their own consultant doctor.

Organizing coaching classes for competitive exams

Since 2007, the department of Biochemistry has been conducting coaching classes for National level competitive exams. However, in 2011, the Govt of Gujarat assisted the College to systematise the programme with financial assistance. Hence the College extended the same training to students of neighbouring colleges as well. The result is so encouraging that 96.5% are doing higher studies in good grade Universities.

Since this year, SXC has restarted training students for GPSC, UPSC examination. It also initiated NET exam training in a collaborative MoU with KB Institute Kadi, Gujarat and 26 students underwent the training and 22 for UPSC/GPSC with UGC funding. Dr Nirmal Desai and Dr Atul Makwana gave talks on nuances of NET exam preparations at various places.

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

The College has special programmes for Spoken English which is offered mostly to students who come from rural areas. Every year about 120 students (this year 110) opt for this programme. Computer literacy programme and 14 career oriented programmes are offered which help in skill development. Personal Growth Oriented Programme is offered to all the students. It aims at developing interpersonal skills. Students of Jagrat are offered many two day programmes where they are taught communication skills, goal setting, personal management, and organisational skills etc.

	2009-10	2010-11	2011-12
Spoken English	145	152	125

Support for “slow learners”

Several departments (Physics, Chemistry, Biochemistry, Economics, Gujarati) of the College regularly organise remedial and support classes for weaker students. The mentoring system was set up for slow learners where a faculty looks into the academic issues of a student after evaluating the performance in examinations. Some departments have set up ‘each one teach one’ support system with help of the brighter students. Additional assignments in order to assist in preparing notes for the academic year, regular tests, and preparation based on question papers solving of the University examinations of previous years are regularly conducted by several departments. The department of Economics conducts simulation examination where a question paper of the University is given to students as though it were a real examination. This has helped some of the weaker students to secure first class. For differently-abled students special arrangements are made by way of writers, readers etc. Compliance was introduced for students who are inclined to skip/ not attend classes. This helps them to revisit the subject and cover the topics in time.

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

Several departments organize study tours to institutions of higher learning to ensure that they are at an advantage. The department of Physics conducted a study tour to Adani Power, Adipur, Chemistry to CSMCRI, Bhavnagar Biochemistry to Concord Biotech, Gujarati to LD Institute of Indology, Psychology to Forensic Laboratory, Gandhinagar and Centre for Environmental Education, Ahmedabad, Economics to the Sabarmati Riverfront Project, Ahmedabad, Biology to Indroda Park, Gandhinagar, Ahmedabad City Gardens, Mount Abu,

and Sawantwadi, GCRI, Science City, and ISRO. Internship is compulsory for students of IC and BT. Some of the COPs have projects which the students have to carry out in other institutes/ labs (Counselling, Nutrition and Dietetics). Some of them take summer training in TIFR, NCBS, IISc, JNU, IIM, IDBI bank and other top institutes in India. Students of Economics have also gone to the London School of Economics and to China for summer training. Students have also gone on student exchange programmes of Gujarat University and three have gone to Japan (Nilakshi Devi, Ananya Rao and Sonali Chauhan). Three students (Kushal Chand and Unnati Desai to Russia; Rashmi Gulia to Singapore) were selected for student exchange programme under NCC.

Publication of student magazines

There are two publications by students at SXC. The students of Journalism publish XAP, a quarterly. XAP has also published it daily during the cultural festival and the youth festival. Many students find this as a good medium for developing their literary talents. Many students maintain blogs, which is an effective source for voicing their concerns and thoughts. Students of Backpack Journalism, a certificate course offered in collaboration with Marquette University, produced a series of movies and uploaded these on the web as an ejournal. Students also contribute articles to *Adilok*.

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

Students of the vocational course have a course in entrepreneurial skills and they have implemented the same by setting up two student-run companies named Xplant and XOIC. Xplant produces tissue cultured ornamental plants and markets the product. They have a separate cell for planning, executing, and marketing managed entirely by them. The team from Marquette University that visits SXC has been studying these student run companies and providing valuable suggestions for further development.

XOIC is a student company that produces colourful candles, petroleum jelly, detergents, customised candles, etc. and sells them. These are activities conducted to help student know the intricacies of entrepreneurship, develop skills related to it, and translate what they have learned in classrooms into action.

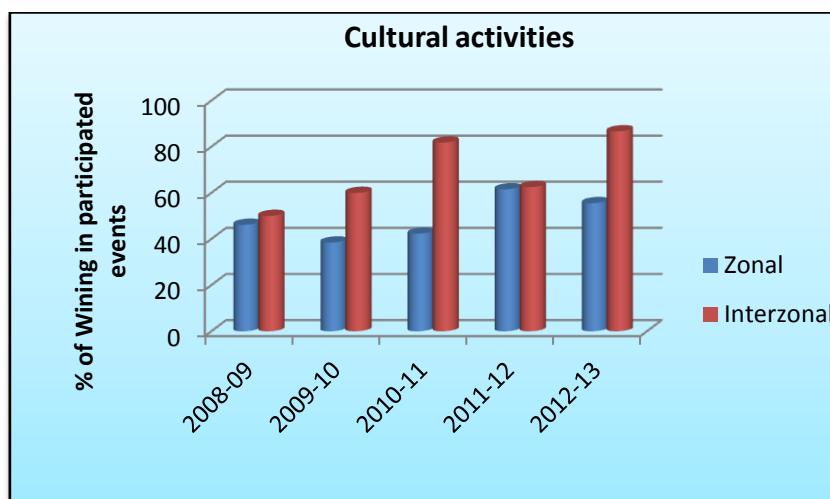
In 2011, GSBTM trained 10 students of Biochemistry in entrepreneurship at Entrepreneurship Development Institute, Ahmedabad. The tribal students linked with *Aadi aushadi* are trained to market their products especially at the traditional food festival held at the IIM every year.

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.

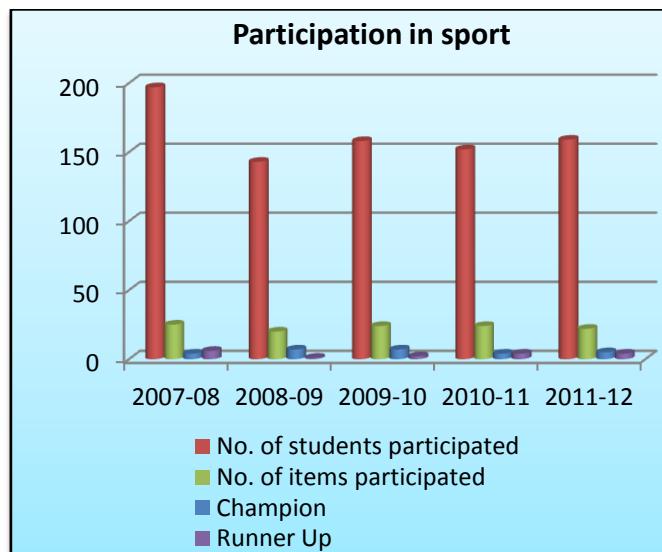
College also admits students who may be academically weak but are strong in sports and extracurricular activities. At admission time a data base is created of the skills, and proficiency of the students. This is checked by experts. This data base is used to design 24 different courses which are offered to all students in the first 15 days (75 hours) of the academic year. On completion of this course, the best from each group are selected by an expert panel for the University Youth festival. This training offers every student an exposure to these activities and gives them a chance to learn and get trained under experts. On completion of this course, they are also given a participation certificate by the College. As part of the International Year of Chemistry, more than 160 students participated in quiz, poster making and live demonstration competitions organized by the department of Chemistry.

Table shows the student participation in the inter zonal and national youth festivals

Zonal	2008-09	2009-10	2010-11	2011-12	2012-13
No. of events	26	26	26	26	27
No. of participants	52	50	52	50	48
Won in	12	10	11	16	15
Interzonal					
No. of events	26	26	12	26	26
No. of events participated	12	10	11	16	15
Won in	6	6	9	10	13
National					
No. of events	-	-	2	-	2
No. of participants	-	--	13	-	6
Won in			0		2



The College has an auditorium, an open-air theatre, and a room for co-curricular activities. In order to promote student participation in sports SXC has separate grounds for football, basketball, volleyball, cricket, paleta, tennis, table tennis, tennis, hockey, a 400m track, and necessary items for weight exercises. It has a full time sports faculty and coaches for athletics, basketball, football, hockey and cricket etc. The College uses the swimming pool facility of Ahmedabad Municipal Corporation for aquatic practices.



At the beginning of the year, students are chosen for various sports activities and training is given for University level competitions. The performance of the College in the last five years is given below.

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
No. of students participated	197	143	158	152	159	180
No. of items participated	25	20	24	24	22	25
No. of items won						
Champion	4	7	7	4	5	2
Runner Up	6	1	2	4	4	13
No. of students selected for West Zone Inter University	30	26	30	24	27	26

College allows flexibility in examinations and provided academic support to students who have reached the National level. Sports uniform and kit is provided all sports persons and financial assistance to students who have special dietary requirement. Achievement is recognised with certificate, awards, and scholarships on the Annual Day.

Sports persons may remain absent from regular classes and compensate the classes by completing compliances to cope with studies. One of our students has participated in the National level athletics and won awards. The

College has retained the General Championship at the University level for the last 20 years.



- 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, GATE / CAT / GRE / TOFEL / GMAT / Central /State services, Defence, Civil Services, etc.*

The department of Biochemistry initiated a capacity building programme in 2007 where second and third year students were trained to crack the national competitive examinations. In 2011, GSBTM, under the umbrella of DST began funding this venture and various Science colleges of Ahmedabad and Gandhinagar districts were also offered this facility. This programme trains students to develop skills of analysis, communication, interview, deductive logic etc. This programme enables them to target top National institutes for advanced studies and last year, 96.5% participants have secured admission in top Universities in India through competitive examinations.

There is a sizable number of students who attempt GATE / CAT / GRE / TOFEL / GMAT / Central /State services, Defence, Civil Services etc. SXC has two PG departments (MA English and MSc Chemistry). Since 2012, SXC has a MoU with KB Institute Kadi, Gujarat for training students in UGC-CSIR and NET examination. About 26 took the training. SXC also has restarted GPSC and UPSC examination training and 22 students take advantage of this facility. Once a student graduates from the College, it is difficult to track him/her. So the College has not been maintaining records regarding the success rate in these examinations. Dr Atul Makwana gave two talks on study techniques and exam preparation to Utkarsh students. Dr Nirmal Desai gave a talk on preparation of NET Chemistry exam preparations at

SOS to PG final students. Prof Francis Christy coordinated a State level CAT online exam in Jan 2013 in which 29 students participated.

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

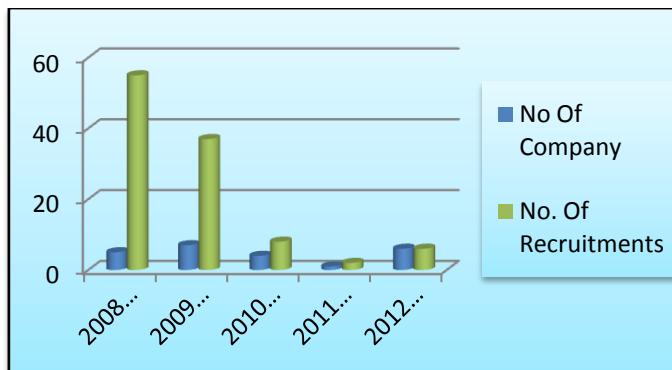
The College has two fulltime trained Management appointed counsellors. Several students, ex-students, and faculty make use of the facility and expertise of the counsellors. Students are counselled in personal matters and input is given on handling relationships. The counsellors also offer a course in Personal Growth Oriented Programme (PGOP) to the entire College where students go through a process on how to deal with personal life and relationship with friends, family, and society. The manual prepared by the PGOP is in the process of being published. When required, students are referred to professional counsellors. Some of the help involves students and their family getting together.

Academic and career counselling is offered by faculty and HoDs at the appropriate time of the calendar year. The College has a Career Cell that offers career guidance. It also offers training in resume writing, group discussions, and interviews. The cell organizes campus interviews for placement.

A three day training in mentoring was offered to a select group of faculty by the Director of Learning Circle, a human resource training centre, Nasik. The Women's Development Cell caters to women faculty and students. Out of the five faculty members of the department of Psychology, two have specialized in Counselling. Special counselling services are offered to women (Urja), differently abled (Utkarsh), backward communities (Jagrat) etc.

5.1.9 *Does the institution have a structured mechanism for career guidance and placement of its students? If 'yes', detail on the services provided to help students identify job opportunities and prepare themselves for interview and the percentage of students selected during campus interviews by different employers (list the employers and the programmes).*

SXC is an undergraduate College. A large number of students opt for higher studies after graduation rather than immediate placement. However, the College has a Career Cell which organises various training programmes on group discussions, interviews, CV writing, etc. It also conducts campus placements. The details of placements are given below. The College office has biodata forms which any recruiting company can browse through. There are some students who appear for the campus interviews, and are selected but opt for further studies. However, the very fact of being selected is a morale booster for them. Last year some of the companies that came to the campus for recruitment are Google, Infosys, Wipro, TCS, etc.



Career cell focuses more on training and guiding rather than organising career fairs. Most students focus on higher studies rather than taking up a job after graduation.

Year	Date	Name of Company	No. of Participated Students	No. of Recruitments
2008	22/1/2008	WIPRO BPO	34	15
	22/1/2008	Thermax, Pune	-	3
	22/8/2008	E-tech	-	24
	30/8/2008	Argusoft	8	7
	-	IIM-A	-	6
2009	3/3/2009	WIPRO BPO	19	19
	3/3/2009	Mahindra Finance	38	-
	7/3/2009	SNL Financial India Ltd.	21	3
	1/6/2009	Sterlite	8	8
	16/12/2009	Abellon Clean Energy	10	3
	-	Oxygen Healthcare	15	2
	-	Thermax	-	2
2010	13/1/2010	O2H	-	1
	-	Teach For India	-	2
	-	Google	-	3
	-	Oxygen Healthcare	-	2
2011	5/8/2011	Google	70	-
2012	2/3/2012	Google	100	--
		TCS(Ignite)	50	--
		Teach for India	35	02
		Careernet(pepBiz)	150	Results awaited
2013		iGate	6	None
		Zydus Research Centre	35	06

5.1.10 Does the institution have a student grievance redressal cell? If yes,

list (if any) the grievances reported and redressed during the last four years.

The College has a Grievance Redressal Cell. Students and faculty are allowed to express their grievances anonymously to the Management in writing. A suggestion box is kept outside the Principal's office. The Management takes action depending on the gravity of the grievance. Many times, the grievance is retyped by the Principal and given to the concerned person or department for evaluation and follow up. At times, concerned persons have been called up by the Principal for clarification and appropriate action.

Grievances are mostly regarding infrastructure. For example, the College had restricted the multiple entry points to the campus on account of vandalism. This caused inconvenience to students who had to walk from the University bus stop which is 500m away. They wanted the gate closer to the academic building opened so that they do not have to walk much. The gate was opened with immediate effect. There were complaints about washroom facilities and College constructed two washrooms in the main building. Another grievance was regarding library timing. The timing was inconvenient for many students. This was also addressed.

There is a Student Council which collects and communicates grievances to the Principal. Students can also hand in their grievances to the HoDs, the Management, Campus Ministry counsellors. Staff can also approach Campus Ministry with their grievances and for appropriate action.

There is also a structure set up where the aggrieved person can approach the next level of authority like the Manager or members of the Board of Trustees.

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

The College has a Women's Development Cell to take care of such eventualities. The counsellors too are available. Special programmes are held on 8th March, the International Women's Day, to conscientize staff and students about these issues. Thus, the approach is proactive and preventive, not just curative. Information is also given during the orientation programme held at the beginning of the academic year.

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

In order to prevent this menace, the College organizes orientation for new students conducted by senior students. This gives a chance to the two groups to interact in a healthy atmosphere. Since a platform is provided for such interaction, SXC students do not indulge in the unhealthy practice of ragging. In case of any eventualities, there is a committee to look into these. The anti-ragging committee is constituted

according to the guidelines of UGC/ Univ. Moreover, students are informed during orientation programme about ragging and punitive action that would follow. Student representatives from each class ensure that ragging is not done in any department. There was a complaint once and a committee was set up at that time to take necessary steps.

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

Many welfare schemes such as lending books, financial aid to buy books, pay college fees, get bus passes, and pay mess bill is available for economically weaker students. At the beginning of the year a student has to apply for financial help. The applications are scrutinised and money is disbursed accordingly. Besides that there are departments who help needy students within the department financially and otherwise. Jagrat students were supported in training and scholarships through the CRS project. About 230 of girl students in Science were supported financially by Global Giving Scheme.

	2008-09	2009-10	2010-11	2011-12
(Actual no. of beneficiaries in bracket) Amount in Rs.				
State Govt.	(130) 808880	(285) 1267683	(350) 999680	(162) 173310 (FY only)
Central Govt	0	0	0	0
FAEA	(93) 4.7%	(4) 13813	0	(2) 26770
Foreign (UDAN)	0	(91) 1100000	(53) 580000	(86) 1522999
Institutional	(1) 1762	(8) 25500	(175) 498950	(150) 584362
Total no. of students	1971	1814	1901	1717
Total Amount Disbursed	810642	2381496	2078630	2307441

5.1.14 Does the institution have a registered Alumni Association? If 'yes', what are its activities and major contributions for institutional, academic and infrastructure development?

The Old Xavierite Association (TOXA) conducts activities such as blood donation camps, annual garba celebrations. Income from garba nights of last three years is ≈ 3 lakhs. TOXA has been contributing regularly to improve the infrastructure facility in the College. In the past TOXA had helped in the installing of a lift, improving the library infrastructure and in beautifying the campus. Past students have been helping the College sponsoring programmes. One of the alumni, Mr. Janmajey Vyas, sponsors a cricket tournament in memory of Bro. Lobo. He also donated Rs. 10 lakhs for the library extension. An Intercollege Football Open tournament originally started by one of the

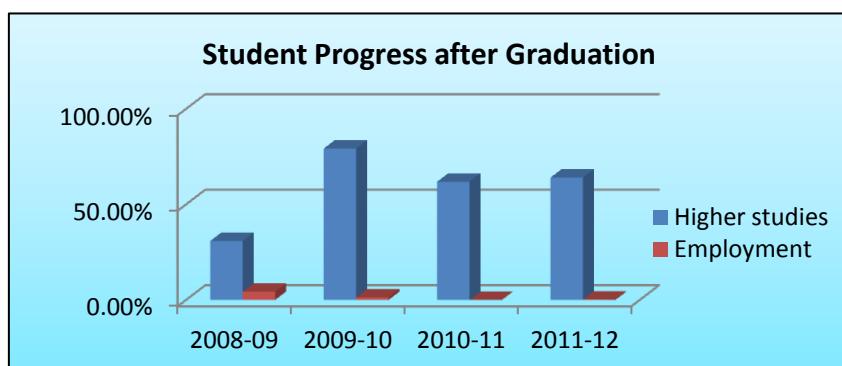
alumni in memory of his father is now taken over by the Ahmedabad District Football Association (ADFA). Past students also sponsor NSS activities and help in judging intercollegiate quiz competitions. The annual A.R. Sen Seminar held by the department of English is sponsored by one of the alumni (Rs. one lakh). Some past students have been offering coaching in cricket, tennis, hockey and basketball to our students. Siddharth Assembly Hall was partly sponsored by the family of an alumnus. During the Culfest, the last day is “TOXA Night” and a competition named ‘Voice of Xavier’s’ is held on that day where past students participate. Some of the alumni also contribute money to Campus Ministry.

We are an international body, running educational institutions across the globe. Keeping this in mind, we have alumni associations not only at the local but also at the State, National, and International levels. TOXA is a member of all of them. TOXA sponsors orientation and farewell programmes, thus ensuring that the association is known among the current students. At the farewell they ask students to join TOXA.

5.2 Student Progression

- 5.2.1 Providing the percentage of students progressing to higher education or employment (for the last four batches) highlight the trends observed.**

Student progression	2008-09 (%)	2009-10 (%)	2010-11 (%)	2011-12 (%)
Total	861	583	572	783
UG to PG	(266) 30.8%	(462) 79.2%	(354) 61.8%	(502) 64.1%
Employed Campus selection	(37) 4.3%	(8) 1.37%	0	(2) 0.25%



It is very evident from the above line graph that in the past four years there is an upward trend among students to go for higher studies.

- 5.2.2 Provide details of the programme wise pass percentage and completion rate for the last four years (cohort wise/batch wise as stipulated by the university)? Furnish programme-wise details in comparison with that of the previous performance of the same**

institution and that of the Colleges of the affiliating university within the city/district.

2010-11	Economics	English	Psycho	Gujarati	Sanskrit
Absent/ Cancelled With held	3	2	0	2	0
Fail	3	1	5	4	0
Pass	4	4	4	9	1
Second	23	51	20	1	4
First	15	15	20	0	0

Total	48	73	49	16	5
2011-12	Economics	English	Psycho	Gujarati	Sanskrit
Absent/ Cancelled With held	1	1	2	0	1
Fail	1	0	12	0	0
Pass	14	7	4	3	0
Second	23	41	28	12	4
First	13	15	16	2	6
Total	52	64	62	17	11

2010-11	Biochem	Botany	Chemist	Physics	Maths	Stat	Zool
Absent/ Cancelled With held	1	0	0	0	5	1	0
Fail	0	1	6	6	3	2	2
ATKT	0	0	0	0	0	0	0
Pass	2	0	4	4	8	4	1
Second	24	8	81	62	26	18	7
First	47	14	32	39	32	18	22
Total	54	23	113	111	74	43	32

2011-12	Biochem	Botany	Chemist	Physics	Maths	Stat	Zool
Absent/ Cancelled With held	0	1	2	2	0	0	0
Fail	0	1	2	6	8	6	2
ATKT	3	0	3	0	0	0	1
Pass	2	0	5	3	11	6	0
Second	7	4	29	21	8	11	3
First	31	8	18	8	11	11	4
Total	43	14	59	40	38	34	10

In completion rate, it is noticed that a large number leave from FYBSc. These leave to join professional courses such as engineering, medicine, para-medicine, pharmacy, PTC, nursing etc. and so are not dropouts as such.

Incoming Freshers in the Arts Faculty					
Year	No. of students admitted	No. of students enrolled	No. of students left before enrolment	No. of students appeared in University Exams	No. of students departed after enrolment
2008-09	278	231	47	227	4
2009-10	321	281	40	260	21
2010-11	286	274	12	255	19

Incoming Freshers in the Science Faculty					
Year	No. of students admitted	No. of students enrolled	No. of students left before enrolment	No. of students appeared in University Exams	No. of students departed after enrolment
2008-09	915	655	260	634	21
2009-10	558	375	183	282	93
2010-11	485	330	155	306	24

The College has kept up its top position at the State level and is also considered one of the top 50 Colleges at the national level.

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

Most departments encourage and academically support students to secure admission in institutes of higher learning. We have a Career Cell in the College which helps students either go for higher studies or get employment after graduation. They also organise programmes to help students write CV, and train them in group discussions and interviews. Certain departments also conduct mock interviews, GD tests etc. to help students. Both for admission to higher education and for jobs, students need various certificates and documents from the College. The College provides these without undue delay. The faculty also provides recommendation letters to worthy students.

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

Different departments conduct remedial classes for weaker students. The department of Physics has conducted training in solving model University examinations papers. The departments of Biochemistry, Chemistry, and Physics have conducted remedial classes for weaker students to cope up with studies. Students who fall short of the required number of practicals have been helped by additional practical sessions to induct them into regular system by the departments of Chemistry and Biochemistry. Extra classes, quizzes, question bank, snap tests, support from peer groups, group study, mentoring system, compliance, regular test, writing practice, solving question papers, are some of the proven methods employed by various departments to support weaker students. SXC also offers psychological support

through the two trained counsellors and faculty. Many students are supported financially to complete their studies (mess fees, tuition fees, books, travelling etc). Different departments have also introduced mentoring. For example, each faculty of Chemistry is allotted five students from FY, SY and TY for mentoring. This helps as a bridge between student and faculty for their academic as well as overall growth.

5.3 Student Participation and Activities

5.3.1 List the range of sports, games, cultural and other extracurricular activities available to students. Provide details of participation and program calendar.

SXC believes in the all-round development of its students. In order to achieve its goal, various sports, cultural and other extracurricular activities are available to students. *Sports:* The College has a 400m track, facilities for field and track events, separate grounds for football, basketball, volleyball, cricket, paleta, tennis, hockey, and facilities for weight exercises. College also has facilities for table tennis, boxing and karate. SXC uses the municipal swimming pool for aquatic training.

There is a separate room for NSS activities. The NCC programmes are coordinated by the sports in charge.

Cultural: The annual Culfest of SXC is a time for students to showcase their cultural talents. We have an in-house auditorium and an open air theatre where the cultural activities are held. SXC conducts, quizzes, traditional dances, mime, skits, elocution, debates, just a minute (JAM), antakshari etc. as part of its cultural training.

In all these activities SXC participates at the College, University, State, and National levels. Normally, all these events begin sometime in August and go on till late November. SXC Culfest is held in the 3rd week of December. National events are held after the University events.

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.

No. of students benefitted/participated					
	2008-09	2009-10	2010-11	2011-12	2012-13
Cultural: Zonal	52	50	52	50	48
West Zone	26	30	24	27	26
Sports	143	158	152	159	180
NCC	1	2	4	4	3
NSS	4	4	4	4	4

5.3.3 How does the college seek and use data and feedback from its graduates and employers, to improve the performance and quality of the institutional provisions? The annual garba nights and alumni night at Culfest are occasions to keep in touch with our alumni. This creates an atmosphere of belongingness and alumni feel free to offer feedback.

Campus interviews are an occasion for us to get feedback from employers.

Our students are expected to get sponsorships for various programs. They go to various employers as former students for sponsorships: This is another occasion when we get feedback from them. The students share these experiences with the faculty guides for these cultural events and they in turn communicate important feedback to the management.

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 students of journalism have a quarterly magazine, Xavier's Ahmedabad Periodical (XAP), which highlights the activities of the College. Students from different departments contribute their view and articles to XAP. During the youth festival and cultural festival, XAP is published daily with technical and financial support from a leading daily of Gujarat, *Sandesh*. One of the owners is an alumna of the College and an executive member of TOXA.

In 2011, during the 33rd PTCA conference, students published a collection of 33 abstracts based on the research work they had done. Students are also encouraged to do research and publish findings in scientific journals or in seminars.

There are two notice boards placed on the ground floor where students can pin up their creative works – articles, poems, and paintings etc.

The College has a UG research culture where researchers make posters. These posters displayed in public and the research papers are bound and copies preserved.

The Journalism course has an ejournal. SXC also has a departmental day when posters related to the respective departments are displayed.

Adilok is a Government recognised publication (ISSN: 2250-1517). Some students and faculty write articles for *Adilok*. At the end of the workshop by ICRW on "Piloting Integrated Youth Based Stigma and Discrimination Curriculum in Higher Education", the students presented an exhibition of posters and staged a play for the entire college.

Not just publications but also other materials are brought out by the students. Tissue cultured plants prepared by students of Voc. Biotechnology have been exhibited at a number of places. They even had a stall during Vibrant Gujarat 2013 and at the Science city during the Children's Science Congress (2009-10). Our students were officially invited to both.

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

Gujarat University does not permit colleges to have student elections. However, SXC believes that it is important to have a student body involved in quality. Consequently we have a Student Cell for Quality (SCQ). Students of a particular class select one from among them who they think is capable of voicing their concerns to the Management and able to work towards improving quality. This committee meets periodically and deals with issues related to quality.

They have also help during the admission process by orienting students, do the spade work of youth festival, keep tackle political issues affecting the student body, issues related to the municipality, academics etc. They have been helpful in approaching the AMC for permission that affected their academic life (obtaining BU permission for the library building). The SCQ also provides practical training in dealing with officials.

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

The SCQ periodically meets in order to ensure that their concerns are addressed. In the ragging committee as well as in Women Development Cell there is a student member. Student involvement is very high during the admission process, and the organisation of co-and extracurricular activities. The cultural activities of the College that culminate in the annual cultural festival (Culfest), is totally organised and conducted by student body.

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

TOXA is the alumni association of the College. It meets regularly and plans programmes, and raise funds for the College. The annual College garba is organised by TOXA. There is a nodal person appointed by management to coordinate the activities.

Every Saturday, retired faculty and staff (an informal association called The Old Xavierite Teachers' Association - TOXTA) come to College for a couple of hours to interact and socialise among themselves, with the present staff and the Management. In our new building we have provided a room for them. Every year there are programmes such as Annual Day, Cultural Festival, talks, and seminars to which retired faculty are special invitees. A few also come in as resource persons during workshops and conferences. Some of them have instituted

awards for various categories. There is also a special Fr Donald Dias award (in honour of one of the former Principals of the College) that is given to a former student or faculty who continues to render valuable service to the College. Every year, some alumni or former faculty gets this award.

Some alumni conduct programmes on campus. Recently one of our alumna (Ms Nandini Raval) organised a cricket batch for the visually challenged. There are alumni who network with us for the benefit of the student body and the institution. We give our grounds and facilities to them either free of cost or at a nominal charge. Prof Rawat, a faculty and alumnus of the first batch, uses the facilities of the College to organise annual gatherings of his samaj.

The College has established a custom of calling all those who retire during that particular year as Guests of Honour at the Annual Prize Distribution. At the time of Deepavali, the Principal sends greetings to all of them, thus ensuring that the contact is kept. All departments have a cordial relationship with retired faculty and interact with them regularly.

Any other relevant information regarding Student Support and Progression which the college would like to include.

- ✓ The mission of SXC is the overall development of its students.
- ✓ SXC has taken a conscientious policy option to provide inclusive education to all (weak, bright, women, men, rich, poor, SC, ST, minority, majority, physically able and challenged). The data of the past 20 years or so underscores the success of this deliberate policy option.
- ✓ SXC not only admits students, but also takes care of them. There are many activities to ensure that they develop their mental, physical, aesthetic, social, and spiritual potentials.
- ✓ Various modules are offered to students to excel academically, and to nurture attitudes of integrity, hard work, honesty, fairness, and tolerance in them.
- ✓ SXC promotes transparency in its dealings and involves student and faculty participation in the overall running of the College.
- ✓ SXC establishes a family spirit among all its members (Management, staff, students). This gets stronger with each passing year and remains so even after they leave College. This is evident from the number of retired faculty and former students who visit the campus, and bond with its staff and students.

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 seek to serve institution's traditions and value orientations, vision for the future, etc.?*

The goal of SXC is to provide students with an environment for the all round development of their mental, physical, aesthetic, social, and spiritual potentials, together with the attitudes of integrity, hard work, honesty, fairness, and tolerance, so that they give of their very best. Excellence in these fields is to be interpreted in terms of putting the skills developed in each at the service of the socially discriminated groups in our country with a view to setting up a society where all have equal opportunity as children of God. (*Prospectus, Arts and Science, St Xavier's College, page 4.*)

The mission statement defines the institution's distinctive character in terms of addressing the needs of society, and the students it seeks to serve. SXC though a minority institute, admits students from all sections of society without discriminating on the basis of caste, class, sex, and religion. It also admits a fairly large number of Christian, SC, OBC, ST, and challenged students to cater to the needs of different sections of society.

The mission statement also defines the institution's distinctive character in terms of the institution's traditions and value orientations. SXC is rooted in a 500 year old Jesuit tradition of academic excellence and all round development. It has a holistic approach to life. In terms of its future vision, SXC also tries to inculcate in its students the values enshrined in our nation's Constitutions: patriotism, dedication, freedom, service, honesty, discipline, tolerance and leadership.

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

St. Xavier's College is a Jesuit College and is part of a network of nearly 150 higher education institutions across the world managed by the Jesuits. At the global level the International Committee for Jesuit Higher Education (ICJHE), is headed by a Secretary for Higher Education (SHE) who reports to the head of the Jesuit Order, the General of the Society of Jesus.

The Provincial who heads the Jesuits working in Gujarat has an annual review with the heads of institutions and also attends the Province level meetings on Higher Education which are held 3-4 times a year. This body acts as a watchdog for ensuring proper implementation of the Values, Vision, and Mission at the Province level. A similar system is operative all over the world vis a vis Jesuit educational institutions.

Thus a robust, effective structure has been set in place to ensure that quality in terms of service is converted to excellence in each of its units of higher education. It also ensures the implementation of the vision and mission of each institution while making these relevant to the changing times and circumstances.

In recent times, the Society of Jesus has brought out two documents related to education:

- a) *Characteristics of Jesuit Education, and*
- b) *The Ignatian Pedagogy*

which spell out the operationalization of Jesuit vision and mission. At SXC, three seminars were held to enable faculty and staff to imbibe the spirit of these documents.

In terms of structures, SXC has a Governing Body which is made up of the senior leadership of the College. The Provincial of the Gujarat Province is its ex-officio President. The Rector of the Jesuit community is the Vice-president, the Principal of the College is the ex-officio Secretary of the Trust. The senior leadership also includes the Deans and the Rector of men's hostel.

The Principal and the Governing Body shoulder the responsibility of ensuring that the vision and mission of the College are adhered to. Developmental plans are discussed and decided at the Governing Body meeting which is held at least twice a year. The body discusses, evaluates and plans for the future, discussing the feasibility and relevance of ideas that help the College to grow. It also looks at and approves the audited Statement of Accounts.

At the next level, the College has a 'Governing Council' also called the "Collegemen". It is made up of all the Jesuits who are actively involved in the College. The group has been meeting regularly every Tuesday. The meetings are used by the Principal to brief the group about events and happenings and to seek advice on important matters.

Apart from the regular weekly meetings, the group of collegemen has an extended three day annual meeting at which there is an evaluation of the year gone by and planning for the year that lies ahead. The Principal proposes the calendar during this annual meeting. Once accepted, it is proposed to the entire College in June, before the commencement of the new academic year. After making corrections, if any, it is announced to the students on 15th June, the first day of classes. Changes, if necessary, are made after the University declares its own calendar.

At the third level is the Academic Council that comprises of the Heads of Departments. It meets on a regular basis every week to plan the ongoing running of the College. Implementation of policies is now

carried forward by the HoDs who deal with the day to day administration in collaboration with the teaching and non-teaching members of the department.

The Principal as ex-officio Chairman of both councils, plays a key role in ensuring communication among the various components of the senior leadership. Thus, an effective two way communication system from the local up to the international level is in place.

It should be noted that the College has had a change in leadership with the retirement of Fr (Dr) Vincent Braganza S.J. who retired as Principal on October 30, 2012. The new Principal is Fr. (Dr) Robert Arockiasamy S.J. The new structure comprises a team of four Vice Principals, one each of for Arts, Science, Research and Quality, and co-curricular activities.

It is significant to note that two of the four Vice Principals are non Jesuits, which is a first in the history of the College. It marks a significant step which is in keeping with the Jesuit vision to empower faculty by entrusting them with leadership positions.

6.1.3 *What is the involvement of the leadership in ensuring The policy statements and action plans for fulfilment of the stated mission*

Jesuit tradition ensure quality in terms of service which is translated to excellence in higher education. It also ensures the implementation of the vision and mission, making them relevant to the changing times and circumstances. The two recent documents *Characteristics of Jesuit Education, and The Ignatian Pedagogy* spell out the operationalization of Jesuit vision and mission. The College prospectus also highlights the Vision-Mission, and the policies to achieve this (*Prospectus, pg 4 onwards*).

The key participants in the strategic planning at SXC are: at the global level the General of the Order, the Secretary for Higher Education, the Secretary for Higher Education of the South Asian Assistancy, the Province Secretary of Higher Education, and the College Principal, followed by the Governing Council (Collegemen) and the Administrative Council (Heads of Departments).

The Province level higher education meeting also provides a reference point to envisage and identify challenges, advantages, and blind spots on the way to strategizing and implementation to ensure fulfilment of the key policies and strategies which are laid down at the global or assistancy (national) level. These are then further contextualized by the Governing Council for implementation at the specific local level of the College. The Principal then meets with the Administrative Council (HoDs) and works out the strategies and plan of action.

Formulation of action plans for all operations and incorporation of the same into the institutional strategic plan

Action plans are developed and implemented by the HoDs in collaboration with the department. Action plans for other groups like Campus Ministry, Jagrat, etc. are also done along the same lines. Each department also meets at the beginning of each term/semester, midway through the term/semester and at the end of the term/semester to evaluate and plan ahead. These plans are brought to the Academic Council by the HoDs and from there to the Governing Council.

Interaction with stakeholders

The leadership interacts with stakeholders at each of the levels described above. The Principal meets students directly to deal with their issues and to listen to their grievances/suggestions. The faculty can also meet the Principal directly. The Principal was assisted by the Deans who deal with students who have difficulty in academic, discipline, co-curricular activity or personal matters. There is a Dean of Alumni. The Principal himself is the President of the Alumni Association called The Old Xavierite Association (TOXA).

Campus Ministry is another level through which the top leadership engages with the stakeholders. This cell also deals with students at the level of counselling and guidance, personal as well as collective interactions (like Growth Workshops, etc.).

Proper support for policy and planning through need analysis, research inputs and consultations with the stakeholders

The feedback from the stakeholders is taken at the end of the academic year in a written format and collected by the HoD. This is tabulated by the HoD and a copy is given to the faculty concerned. The Principal then meets each faculty with her/his file and has a one-to-one interaction with her/him about the data generated, the feedback given, the lessons learnt, the action plan designed.

Reinforcing the culture of excellence

Various programmes, activities, courses of the College are evaluated at various levels (departmental, Academic Council and Governing Council) so to ensure that excellence is not only sought to be attained, but also every activity is looked at from the perspective of how it could have been more effectively and meaningfully done.

The College has also sought, wherever possible, to train its leadership and faculty to equip themselves with skills to deal with Quality and Excellence issues. SXC decided to apply for the IMC Ramkrishna Bajaj National Quality Award for 2010-2011 under the Education Criteria for Performance Excellence. The faculty were trained for the same at a one day workshop after which the College underwent the evaluation process.

Both the former Principals have been connected with bodies dealing with Excellence at the highest levels. Fr Francis Parmar S.J. was a member of the General Council of the NAAC. Fr (Dr) Vincent Braganza S.J. was trained to be an IMC Ramkrishna Bajaj National Quality Award auditor. People with such exposure could always motivate faculty and reinforce the culture of excellence.

Champion organizational change

Keeping in mind the fact that the organizational set up is for excellence, periodic changes are made in the set up. The College has changed its system from two Vice-Principals to four deans to four Vice Principals. The Management ensures constant evaluation and makes administrative changes to improve quality and move towards excellence.

6.1.4 *What are the procedures adopted by the institution to monitor and evaluate policies and plans of the institution for effective implementation and improvement from time to time?*

The College evaluates new policies or programmes and their implementation. This evaluation is carried out at various levels which include the departmental level, from where the feedback is forwarded to the Academic Council level. From here the feedback is forwarded to the Governing Council by the Principal. The system works both ways, thus monitoring effective implementation and also suggesting improvements from time to time.

Some examples of policies which have been adapted thanks to constant monitoring include (a) change in the College timings: timings were changed to a common timing for both Arts and Science: 10a.m. to 5p.m. (b) The system of ‘compliance’ whereby students can compensate absence at lectures/practicals by creative methods wherein the faculty ensures that learning has taken place despite the student’s physical absence. The grading system for compliance has been modified several times taking into account suggestions emerging from students and faculty.

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

SXC is part of an international education network that interacts in a very structured fashion, enabling passing on of knowledge, information and experience gained. It is inherent to the very nature of the management of SXC that Jesuits who are faculty are sent for higher studies where they are supported, encouraged and facilitated to cover new areas in their studies, so that these will be introduced in the College. The table below gives a list of Jesuits, who form the top Management, the studies done by them, and the resulting departments or courses/projects set up by them on joining the College:

Name of Jesuit	Courses Pursued	Degree awarded by	Courses/Projects Established
Fr. Jose Changanacherry	MS in Biochemistry	Scranton & Cornell University	B.Sc. Biochemistry
Fr Francis Parmar	MS in Sociolinguistics	Georgetown University	Linguistic
Fr. Vincent Braganza	M.Sc. Electronics Post Doc. in Biotechnology	Pune University Loyola University of Chicago	Certificate in Solid State Electronics B.Sc. Vocational Biotechnology
Fr. Vincent Saldanha	MS in Applied Linguistics PGDTE	Georgetown University CIEFL (Hyderabad)	B.A. with Functional English (Voc.) Certificate Course in Spoken English (COP)
Fr. Lancelot D'Cruz	Ph.D. in Botany	Gujarat University.	Ethnobotany component in syllabi Ethnobotany related, social projects.
Fr. Robert Arockiasamy	Ph.D. in Economics	Gujarat University	Applied research in Economics.
Fr. Vinayak Jadav	MA in Journalism	Marquette University	Certificate Course in Journalism (COP)

Dr CJ Clement, Dr Sebastian V, have undertaken training in Jesuit education methodology. Dr Pinky Desai, Dr Nirmal Desai, Prof Artikumar, Dr Momin M, Dr Sebastian V, and Dr Kushnuma Banaji visited Loyola Chennai to study the autonomous system of education. Many faculty are trained in workshops and seminars such as PGOP, ICRW etc. to take the College forward. Three faculty were also trained in Jesuit leadership. The Jesuits also provide the leadership in their respective departments leading in the number of seminars attended, publications, projects carried out, etc.

6.1.6 How does the college groom leadership at various levels?

The College grooms top leadership by ensuring that Jesuits in the College have the necessary qualifications to assume leadership in the near or distant future. It ensures that they have a sound and relevant academic foundation, while also training them in leadership, in the Jesuit vision-mission, in management skills etc. Two of them attended a “Jesuit Leadership” programme spread over a two year period involving a series of workshops. The Management always prepares the second line of leaders.

Leadership is also groomed at various levels such as Vice Principals, HoDs, Librarian, Sports Director, various faculty, and the administrative staff etc. They are given ample freedom to operate in their field and offered training so that leadership qualities are nurtured. All the HoDs were introduced to strategic action planning by Dr TV Rao of IIMA. Newly inducted faculty are trained in ‘Jesuit Way of Proceeding’ and in Ignation Pedagogy.

In keeping with the current emphasis on ‘Empowering non Jesuits to take up leadership positions in Jesuit institutions’, selected faculty are deputed for specific training workshops related to leadership. Three

faculty recently attended a programme on Heroic Leadership based on Jesuit spirituality and offered by a renowned motivational guru, Chris Lowney, the author of Heroic Leadership.

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

SXC follows a de-centralized leadership model. The College is actually managed at the level of its departments. Each HoD manages the department in terms of its day to day running by ensuring collaboration of the teaching and support staff. The departments are coordinated through the Academic Council by the Principal who thus ensures the smooth running of both the Arts and Science streams of the College. Co-curricular activities, sports, NSS, COPs etc. are co-ordinated almost autonomously by faculty under the direction of the Principal and Vice Principals.

The other units of the College also have operational autonomy. A senior Management person is associated with each of the units like Jagrat, Utkarsh, Urja, Campus Ministry, etc. Since these units involve students from various departments, the activities of these units need to be coordinated and this is done by the Principal.

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

The College provides for participation of both students and faculty in its running and management. The three tier system comprising of a Governing Council, Academic Council and a Student Council ensures that students and faculty are constantly consulted. The same structure permits SXC to get feedback and feel the pulse of the stakeholders. It also serves to communicate clearly to the stakeholders the vision-mission and the concerns of the management.

6.2 Strategy Development and Deployment

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

The institution has a formally stated quality policy. This policy on overall development and excellence is developed and driven in a systematic manner.

The key policies and strategies which are laid down at the global or assistance (national) level are brought to the Governing Council where the various strategies are further adapted for implementation at the specific local level of the College.

SXC is a minority College where 50% of the seats are reserved for Catholics, Christians, SC, ST and OBC. Hence, beginning from the admission process wherein the disadvantaged sections of society (social, economic or minorities) are provided special access for

admission, the College strives to follow up and mentor every student from these groups. Jagrat SC/ST students), Utkarsh (challenged students), Urja (women's cell), etc. are geared to helping students to adjust to the College environment and to excel academically as well as other areas.

The College has been at the forefront in helping these groups to adapt and excel. The creation and successful implementation of an 'Education Plus Programme' called 'Youth Leadership Development' was a collaborative endeavour involving Jagrat students, a group of faculty and the College. SXC also has the honour of being the only educational institution in the country to be selected by the I.C.R.W for a UNDP-funded programme on "Piloting Integrated Youth Based Stigma and Discrimination Curriculum in Higher Education" wherein a group of 17 faculty were trained as master trainers for a group of 64 students.

The bar of excellence has been raised to a higher level with the College making it mandatory for every student to undergo a three day "Personality Growth Oriented Programme" (PGOP), specially designed and implemented by the Campus Ministry cell along with selected faculty.

Of course, academic excellence is a prime concern with provisions made for planned teaching, transparent evaluation, and regular reviews. It involves analysis of result patterns and taking remedial action both at the individual or group level. The same applies to excellence in sports and extra-curricular activities.

It should be noted that review is also done in the local, national and global levels.

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

The College does have a perspective plan of development. Attainment of autonomy is central to this plan. The College hence embarked on a strategy to implement this plan. The steps in the strategy included:

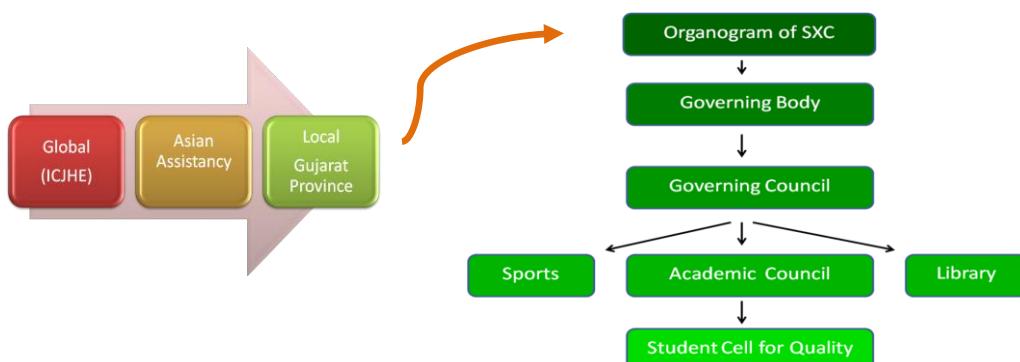
- ✓ Beginning a process of setting up adequate infrastructure for autonomy.
- ✓ Strengthening the College's research and outreach programmes.
- ✓ Preparing, empowering and motivating the faculty and students for autonomy.
- ✓ Strengthening linkages with other Jesuits institutions and foreign universities.
- ✓ Widening the choice of courses/ options available to students.

6.2.3 *Describe the internal organizational structure and decision making processes.*

SXC has a 'Governing Council' team called the "Collegemen" made up of all the Jesuits who are actively involved in the College. The

group meets once a week to discuss important matters pertaining to the College. Important decisions related to implementation of policies, programmes, accounts etc. are brought to the Governing Council and discussed before presenting these to the Academic Council. At the end of the academic year, the Principal proposes the calendar for next academic year. Once accepted, it is proposed to the entire College in June, before the commencement of the new academic year. After making corrections, if any, it is announced to the students on 15th June, the first day of classes. Changes, if necessary, are made after the University declares its own calendar.

The Academic Council that comprises of the HoDs meets on a regular basis, every week, to plan the ongoing running of the College. Implementation of policy is now carried forward by the HoDs who deal with the administration of the department in collaboration with the teaching and support staff.



Structures:

President- Vice President- Board of Trustees (GB)- Governing Council
 Board of Trustees- Governing Council
 Principal- Vice Principals- HoDs
 HoDs- faculty and administrative staff of the departments
 Principal – Vice Principals – OS – administrative staff
 Principal – Vice Principals – committee coordinators – faculty and student committee.

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

Teaching & Learning

One of the strategies for quality improvement in education is the introduction of new courses and programmes. Despite the limitations faced by SXC (due to its not being autonomous), the College has introduced, with the approval of the UGC, vocational courses and the career oriented programmes. In the Arts section, Functional English is a vocational course, and in the Science stream, Industrial Chemistry and Biotechnology are vocational courses. These vocational courses are oriented towards entrepreneurship and hence require collaborations beyond the campus. SXC has therefore developed a network of connections with various industries. To facilitate the process of

training the students in entrepreneurship, two ‘companies’ – Xplant and XOIC have been set up as student-run enterprises (of BT and IC) on campus.

14 UGC sponsored, University approved Career Oriented programmes (COPs) have been successfully designed and conducted by the College over the last 6 years. Two of these were added in 2011-12.

The College, through the Convergence scheme of IGNOU, also offer 5 programmes ranging from Certificate courses to a Master’s in Social Work (MSW).

Reference books and text books, and internet resources are among the most important foundations for teaching-learning. Thanks to UGC grants, all departments and hence all faculty have access to Internet facilities in the department. The campus is also Wi-Fi enabled so faculty can use their laptops as well on campus.

Faculty are also trained in the use of new teaching-learning technologies (NPTEL Training/ Flash Programme training/ English speaking course etc.) and most Science departments have purchased LCD projectors for effective teaching. COP has a video camera. Provision has also been made for common audio-visual and computer rooms as part of this strategy.

Mentoring is an important aspect of current day educational pedagogy and the College through the ‘Education Plus programme’ conducted with the CRS, trained about 20 of its faculty to acquire skills in mentoring. This has helped in mentoring students as also in their follow up.

Research & Development

The College has encouraged research at the undergraduate level in a very big way. The programme for under graduate research in the Biosciences which was open to ten students, has now been expanded. It has been extended to include five students of every Arts and Science department of the College. Sixty three students completed research projects in 2011-12. This is a strategic move to develop scientific temper in students.

The Jesuit Management has invested in setting up the Xavier Research Foundation (XRF) to coordinate scientific research on campus. The fact that the former Principal of the College, Fr (Dr) Vincent Braganza himself an eminent researcher, was also the Director of the XRF ensured that the needs of the undergraduate students were effectively met. The Principal is ex-officio Vice President of XRF.

The College has a policy that mandates all faculty to complete their doctoral studies while encouraging others to do further research. To achieve this, faculty are given a work space, resources are released in

time and accounting is done by the account office. They are supported through advanced training, statistical software, provided with support staff, special leave is granted for attending seminars and paper presentations, and achievements are specifically mentioned during the annual day.

With a view to having meaningful, collaborative research among the various Jesuit institutions campus, the Xavier Research Foundation, the Behavioural Science Centre (BSC) and Gurjarvani (the Communications Centre), the Jesuit leadership has appointed an Animator for Research on campus. As an outcome of this vision, SXC organised a seminar on ‘Education: A step towards Inclusiveness’. It is also working towards, nurturing ‘scientific temper’ in rural schools as a pilot project.

Community engagement

The top leadership of the College is involved in science-based, community oriented engagements, involving the tribals and medicinal plants in Dediapada (South Gujarat) and tribal women entrepreneurship through rose tissue culture in Bhiloda (North Gujarat). Through these externally funded projects, students and faculty of various departments are provided a means of interaction with the local communities.

The XCD (Xavier Centre for Development) continues to function from the campus engaging students from the neighbourhood slums in remedial learning. Field work is included into COP programmes (like Rural Development). The “Youth Leadership Programme” developed by SXC and the CRS has entire modules on Rural exposure. These programmes offer students a real life exposure.

Human resource management

When the College employs faculty who do not have a Ph.D., SXC has a policy of asking the person to complete Ph.D. in five years. It also has a policy of organizing ongoing training or deputing faculty and staff for such training elsewhere. Funds are earmarked for the same. The counsellors too organize periodic programmes for faculty and staff. Systems for constant monitoring and evaluation are in place. The Staff Credit Cooperative Society advances salary in case of need, and gives loans. These are some of the welfare schemes for healthy human resource management.

Industry interaction

Interaction with industry is essential in any contemporary educational strategy and this has been factored into the vocational courses (Biotech and IC have a one month internship) as well as into several COPs (like Foreign Trade Management, Rural development, etc.). Internship was introduced in order to give students a hands-on experience and exposure to office culture.

Industry leaders, especially alumni and/or their families, have regular interactions with particular departments during the academic sessions and also with the final year students through the Career Cell. This helps them to select the best for their workplace and gives us an opportunity to train students to meet the expectations of industry.

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?*

In order to ensure flow of information from the College to the Management and other stakeholders, and from the Management and other stakeholders to the College, the Principal presents the annual report before the entire College at the Annual Day function. He enumerates success stories and innovations at that time. He also presents these to the Governing Body. There is also an annual three day meeting of members of the Governing Council directly involved in the College to share information and make adequate changes.

6.2.6 *How does the management encourage and support involvement of the staff in improving the effectiveness and efficiency of the institutional processes?*

The Management ensures that all faculty understand and share the Vision and Mission of the College. This is achieved through periodic training programmes, transparency of policies, and a sharing of responsibilities. This helps foster a sense of ‘ownership’ which is expressed in terms of belonging to the ‘Xavier Parivar’ (Xavier family). The gathering of all faculty (Arts and Science) and all the administrative staff over tea and snacks during the recess on Saturdays helps in fostering this. It also provides an important, though informal, forum for information sharing among the Xavier Parivar members.

The Management also endeavours to create a core team of HoDs to empower the Academic Council to work together as a coherent unit. The 2-day Strategic Action Planning workshop for the Academic Council members (HoDs) on March 9-10, 2012, was a step in this direction. The HoDs in turn have made systematic efforts to create teams at the departmental level. Through sharing of responsibilities at every level (preparing examination schedule, maintaining discipline on campus, participating in various committees etc.) opinions are sought and taken into account when decisions are made. This ensures that every stakeholder feels part of the institutional process.

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

Resolutions made in 2012-13 (present academic year)	Status of implementation
Academic schedule for first quarter drawn up	Implemented as per plan.
College will reopen on June 15, 2012 and talent workshops to be held till June end.	Twenty four workshops held and certificates given to the participating students.

List of new rates for food items as presented by the canteen manager	Discussed and approved/modified.
Dates for the ICRW program proposed	Programs completed as per schedule.
Management to lay down procedures for recruitment to teaching, Class III and Class IV posts.	Procedures discussed and approved in meetings on July 10, 17 and 24, 2012.
Screening of students for Management scholarships.	Second & third years discussed and approved on Sept 11, 2012.
Students whose University forms were withdrawn but were taken back under pressure from student unions and at the request of the Vice Chancellor.	Discussion took place but final decision left to the Principal.
Increase in salary to employees of the College Trust.	Approved for implementation with effect from June 2012.
Application for reaccreditation to be sent.	Application sent.
Policy for holding socials in College.	Guidelines laid down for implementation.
Proposed hosting of the Zonal Youth festival.	Approved by University and College Management (July 2012).
Principal authorised to meet the Municipal Commissioner regarding the B.U. card of the new College building (July 24, 2012) and the fine claimed by the AMC.	Principal met Commissioner. Students team also meets him. Principal receives mail that BU card is ready. College went to court over the water tax fine.
Schedule for mid-term exams (August 2012)	Mid-term exams held as scheduled.
Proposed Intercom system for College: plan and quotation presented.	Discussed but not approved for implementation (Sept 2012).
Information about the interviews and the candidates proposed to be selected (August-September 2012).	Management approves and authorizes Principal to proceed with appointments.
To hold the Annual TOXA Garba .	Garba held on October 21-22, 2012.
Schedule drawn up for first term/ semester internals in November 2012.	Exams held as scheduled.
Basketball court requires urgent repairs.	3 proposals received but decision pending.
Purchase of an eco-chullah for the Men's hostel mess (Rs 15,000).	Approved and purchased.
Proceed with signing of contract regarding appointment of Class IV employees through the Contractor.	Contract signed by new Principal in Dec 2012.
Initiate the process for autonomy: apply for University NOC; prepare the faculty; formally apply for autonomy.	University NOC obtained in January 2013. Faculty team sent to visit autonomous colleges (Dec 2012). Team presents findings to entire faculty (Jan 2, 2012). Faculty workshop on autonomy (Jan 10, 2012).
Restructuring of administrative set up: Deans to be replaced by Vice Principals.	Four Vice Principals appointed including two non-Jesuits, a first in the institution's history.

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?

Yes, Gujarat University does make provision for according the status of autonomy to an affiliated College.

St Xavier's College has been applying for autonomy to the Government of Gujarat, and the Gujarat University since the last 33 years. Despite repeated attempts to get autonomy during the two phases of accreditation and reaccreditation, nothing materialized. The College finally decided to seek legal redressal and approached the Gujarat High Court. The Honourable High Court asked the Govt of

Gujarat to issue the NOC to the College by November 6, 2012.

On receiving the NOC from the State Govt, the College proceeded to apply for an NOC from the affiliating University. It has received the same in January 2013. A seven-member team of faculty were deputed to study autonomous colleges in Tamil Nadu in December 2013. The findings of the team were shared with the entire College faculty at a one day workshop on January 2, 2013. A follow up workshop on Autonomy was held on January 10, 2013 conducted by Fr (Dr) Ignacimuthu S.J., former Vice Chancellor of Madras University and of Bhartiyar University. The College is now once again formally applying for autonomy to the UGC.

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 has placed a suggestion box outside the Principal's office where grievance notes are dropped. This enables students, staff, alumni, parents, and public at large to drop in a note concerning any matter related to any aspect of the College. The Principal periodically attends to these. Depending on the matter, the Management, the HoDs, concerned faculty are contacted. After interactions and discussions at the appropriate level, corrective action is taken.

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?*

During the last four years, two cases were filed by the Institution and one case was filed against the Institution.

Cases filed by the Institution: Case No: 1.

St Xavier's College is a grant-in-aid College. In spite of repeated representations over the last 15 years, the Govt. had not sanctioned any posts. Therefore the College approached the Gujarat High Court in 2012 seeking justice. The College was granted 17 posts as adhyapak sahayak, 23 administrative posts, and 3 posts as peons under a contract system (SCA 3239 of 2012).

Cases filed by the Institute: Case No: 2.

St Xavier's College has been applying for autonomy to the Govt. of Gujarat, and the Gujarat University since 33 years. Despite repeatedly representing the matter to the education and State authorities, autonomy was not forthcoming. The College approached the Gujarat High Court in this matter and Govt was asked to issue the NOC by November 6, 2012 (SCA 6158 of 2012).

Cases filed against the Institute: Case No: 3.

The College has appointed gate keepers on a temporary basis. Over a period of time, the institution realised that they are a source of

nuisance on campus as they were involved in malpractices and failed to provide security. Hence the institution terminated their services after sufficient and periodic warning. However, two of them have gone to Court and the case is sub-judice (SCA 13370 of 2012).

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?

The College had in place a questionnaire for feedback. A majority of questions deal with individual faculty, but a couple of questions relate to the institution in general. This feedback is analyzed for action. Similarly the feedback received from the suggestion box is also analyzed. Two meetings per year of the staff are held to get such feedback. The feedback is put before the members of the Governing Council, who are directly involved in the College, for deliberation during their annual three day meeting. Policy decisions are made, communicated and implemented.

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 activities were conducted for both faculty and administrative staff with a view to staff development.

- ✓ The faculty of every department have been encouraged to attend subject-related seminars. Duty leave is granted for the same purpose and the HoDs ensure that students are meaningfully engaged when the faculty are absent.
- ✓ SXC in collaboration with the XRF held the 33rd Annual meeting of the PTCA.
- ✓ The department of Physics held two National Seminars under the title: “Physics for Tomorrow”
- ✓ A special Seminar of the Arts stream on ‘Education: A step towards Inclusiveness’ was held on February 1, 2013.
- ✓ Hands on training in Advanced Molecular Biology, Analytical techniques in Chemical and Biological Sciences, Proteomics and Immunological Techniques, Advanced Analytical Techniques like IR, GC Spectroscopy and HPTLC, DNA Barcoding, Applications of Atomic Absorption Spectroscopy etc are offered to enhance the professional development of the faculty.
- ✓ A faculty research seminar is held every year. Five to eight oral presentations are made using ppt, and 12 written papers are published in the College annals annually.
- ✓ Course on Advanced techniques in Flash (department of Physics) was conducted.
- ✓ Every year seminars/get togethers are conducted for the administrative staff.
- ✓ A 2-day faculty workshop: “A SWOT analysis of the Youth

Leadership Programme” involving 12 faculty was conducted by the Director of Learning Circle, a centre for leadership training programme on July 31 & August 1, 2010 at Prashant, Ahmedabad.

- ✓ A two day exposure programme for the Jagrat faculty involved in the ‘Youth Leadership Programme’. It included a visit to Dediapada on November 17- 18, 2010.
- ✓ A one day workshop: A final evaluation of the ‘Youth Leadership Programme’ was conducted for 19 faculty and some invited alumni on February 20, 2011 at Bhadreshwar, Ahmedabad.
- ✓ 18 faculty of the College attended the 3-day TOT workshop on June 30, July 1 & 2, 2012 as part of the ICRW project on “Piloting Integrated Youth Based Stigma and Discrimination Curriculum in Higher Education” on the College campus.
- ✓ The faculty of the department of Biology organized a field visit to SERENITY, a Nature Interpretation Centre for Environment.

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 institutional strategy for faculty empowerment includes organizing training programmes, deputing staff for training programmes and making funds available for these. The following programmes were held in the last five years:

- ✓ The College in collaboration with the XRF held the 33rd Annual meeting of the PTCA.
- ✓ A special Seminar of the Arts stream on ‘Education: A step towards Inclusiveness’ was held on February 1, 2013.
- ✓ SXC in collaboration with XRF organized the following seven workshops to enhance the professional development of faculty.
 - Hands on training in Advanced Molecular biology, Ahmedabad, 27 – 29 Dec, 2012
 - Hands-on training on Analytical Techniques in Chemical and Biological sciences, 29 -30th May, 2012
 - Hands-on training on Molecular Biology Techniques, March 2011
 - Workshop on Proteomics and Immunological Techniques – Xavier Research Foundation, Ahmedabad in collaboration with Helini Biomolecules, Chennai, March – 2010
 - Workshop on Advanced Analytical Techniques like IR, GC Spectroscopy and HPTLC, 2009
 - Advanced Molecular Biology Techniques – Xavier Research Foundation in collaboration with Helini Biomolecules, Chennai – 2009
 - HPTLC–Procedure, Data Analysis and Interpretation, 2008

- National Level Seminar on DNA Barcoding: Its Power and Practice; Xavier Research Foundation in collaboration with Paul Herbert Center for DNA Barcoding and Biodiversity Studies, Aurangabad, 7 -8 Dec, 2012
- Seminar on Applications of Atomic Absorption Spectroscopy, August 2010
- ✓ An annual staff research seminar which provides a platform for faculty to present their research work to peers is also held in the first week of March. As part of this event twelve papers are published in the “Xavier’s Research Annals” every year. These are sent to all the Jesuit institutions of Higher Education in India.
- ✓ The Campus Ministry has conducted different programmes for administrative staff enrichment. Snehmilan, staff seminars, teacher’s day celebration, growth workshop, feast day celebrations, staff Christmas get together etc. These are motivational programmes for them.
- ✓ Two personality development camps for faculty to train them conduct personality development camps for students, were held in the past three years.
- ✓ Training programmes have been offered to various faculty. Table shows the programme details.

Beneficiary	Programme
Faculty	Biotechnology training
Physics	Training in Flash
Sanskrit	English Speaking course
Administrative staff	Workshops and Seminar
Administrative staff	Attended seminar in Petlad Growth work shop
Faculty	TOT workshop (ICRW)
Peons and ad hoc staff	Get together
All staff	Christmas get together

The College also deputes its faculty to attend training programs at the State and National levels. Under the Knowledge Consortium of Gujarat (KCG), an initiative of Govt of Gujarat, faculty (8) and staff (1) have taken training in ‘Academic and Administrative Audit’, an academic quality enhancement programme.

Leadership programme attended at Pune (Fr Vincent Braganza S.J, Sr Mary James, Dr Sebastian V).

To develop the feeling of belonging to Xavier Parivar, the Management visits faculty and staff at home on occasions. This also helps to develop good relations. The Principal sends Diwali greetings to all faculty and staff and Christmas greetings to Christian faculty.

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

Annual Performance Index (API) is mandatory for all faculty. The API evaluates a faculty under the following three categories: Teaching, Learning & Evaluation related Strategies; Co-Curricular, Extension and Professional Development Activities; Research and Academic Contribution. Scores are assigned for introducing newer and participative teaching methodologies, e-learning, contribution in various boards, research output etc. There is a minimum required score that has to be obtained by each faculty for promotion and increment.

The College also obtains feedback from the students on each faculty at the end of the academic year. The feedback received is reviewed by the HoD, and if required, an interaction between the two takes place. All feedback files are handed over to the concerned faculty. S/he goes through the feedback forms individually, and summarizes her/his response in a format prepared by the Governing Council. S/he then submits this format at a personal meeting with the Principal who reviews her/his performance. The Principal uses this format to encourage, caution and, if needed, express concern and even warn the faculty, concerning not just the academic commitment but also any other matters related to the College environment, not contained in the formats.

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?*

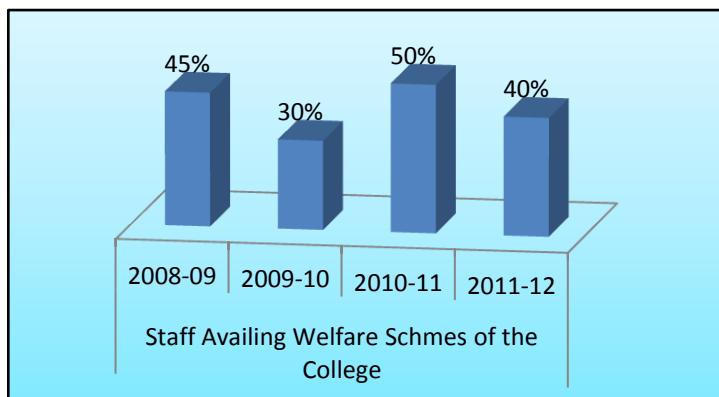
The API (Annual Performance Index) is scrutinised by the Principal on behalf of the Management and he sends the consolidated report to the Dept. of Higher Education at Gandhinagar. A copy of the API is kept at the documentation room of the College. Based on the API, the Principal encourages faculty to do better or suggests areas for improvement. Based on the analysis, the Management is considering organising a workshop on interpersonal relationships with assistance from the Campus Ministry.

6.3.5 *What are the welfare schemes available for teaching and non teaching staff? What percentage of staff have availed the benefit of such schemes in the last four years?*

The College staff (both teaching and administrative) runs a Credit Society which has several welfare schemes for the benefit of its 60 members. These include providing soft loans for buying grains and oil, and long term loan of upto Rs.3.5 lakhs for a duration of five years. The details are given below:

Type of Loan	2008-09	No.of Bene.	2009-10	No.of Bene.	2010-11	No.of Bene.	2011-12	No.of Bene.
Long Term Loan	14,30,000	11	20,00,000	10	22,75,000	13	17,50,000	12
Special Loan	1,46,508	6	60,000	4	2,40,000	10	2,15,000	9
Oil & Grain Loan	1,41,677	10	70,000	4	1,30,000	7	60,000	3
Total Amount	17,18,185		21,30,000		26,45,000		20,25,000	

Advance salary, especially when there is a delay in reimbursing salary from the side of Govt, interest free loans from the



Management, help for education of children, special prizes meant specifically for wards of staff, special admission policy for their wards, residential facility (earlier SXC had offered residential facility to its class-IV employees at Gil Nagar, 3 kms away from the College premises. Later, financial assistance was given to them to build their own houses) are also offered.

6.3.6 What are the measures taken by the Institution for attracting and retaining eminent faculty?

The ambience, work culture, freedom, opportunities for actualising oneself, respect and appreciation, freedom of expression, impartial and just dealings are some of the hallmarks of SXC which attract faculty to remain loyal in spite of getting very lucrative financial offers from outside. They are also given special facility for research, timetable adjustment for research work, allowed to go for post doctoral fellowships, and interact with industries and other research institutes. They are given special leave facility and financial incentives for participation in seminars. Special mention is made in the Annual Report. Hence no faculty has left the institute in the last five years.

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?

Monitoring of the use of available finances is under the overall purview of the Trust which scrutinizes the audited statement of accounts and the upcoming budgetary plans of the College annually.

The Governing Council does a more detailed exercise involving the same during its annual 3-day meeting. It has the College Treasurer, a Jesuit, who monitors the daily transactions, the investments of the College Trust finances, etc.

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.*

Financial accountability is at two levels; through Government auditors who visit the College for a thorough evaluation of money received and spent, and the Charity Commissioner who receives copies of the audited statements of accounts of the Trust. A recognized Chartered Accountant does the annual review and analysis of the accounts for presentation to the Charity Commissioner. There is no practice of the Charity Commissioner deputing reviewers unless some discrepancy in the accounting system is perceived.

The College Trust accounts are also reviewable by the Income Tax authorities, since the Trust is a not-for-profit charitable trust. There is no note of disapproval or any pending litigation, either before the Charity Commissioner or the Income Tax authorities. Government auditors, on the other hand, send a report following their review and it is common practice for them to claim recoveries. The Government audit has been completed till 2007. The table below shows that between 2004 to 2007 no recoveries have been claimed by the Government.

TABLE			
Particulars	2004-2005	2005-2006	2006-2007
Staff Pay-packet	2,30,88,894.00	2,29,15,943.00	2,49,58,947.00
Library A/c.	11,427.00	10,498.00	67,680.00
Lab. A/c.	78,981.00	1,32,738.00	52,277.00
Bldg. Maint.	71,474.00	71,474.00	71,474.00
Approved Miss.	91,950.00	95,782.00	1,16,768.00
Remarks	Grant Recovery Nil	Grant Recovery Nil	Grant Recovery Nil
TOTAL:	2,33,42,726.00	2,32,26,435.00	2,52,67,146.00

At the internal level there is a full time Treasurer appointed through the Xavier Kelavani Mandal, the parent body. He keeps an eye on financial transactions on a day- to- day basis and gives his report annually. External auditing is done with M. A. Shah & Co., Anand, Chartered Accountants.

6.4.3 *What are the major sources of institutional receipts/funding and how is the deficit managed? Provide audited income and expenditure statement of academic and administrative activities of the previous four years and the reserve fund/corpus available with Institutions, if any.*

The Institution receives funding in the form of fees, grant from Govt. bodies such as UGC, DBT, CPE, DST/GSBTM, grant from NGOs, TOXA and other external bodies such as Alboan, Global giving, Alumni, Industries, and CRS. The parent body makes up for the deficit as and when required.

The audited statements of a/c will be made available to the Peer Team during the visit.

6.4.4 *Give details on the efforts made by the institution in securing additional funding and the utilization of the same (if any).*

The institution seeks funding from various GOs and NGOs. Some of them are, UGC, ICRW, DBT, DST/ GSBTM, ALBOAN, Alumni, Industries, Global giving, CRS etc.

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?

We, like all other institutions run by our parent body across the globe, have always had an IQAS. Post accreditation and reaccreditation, we have kept on revamping the same, adding elements from the guidelines given by NAAC. During the first two years after the reaccreditation (2007-2009) the College had set up an IQAC according to the guidelines given by NAAC. It had the following members: Principal as Ex-Officio, Coordinator, a Management member, a member each from Arts and Science stream, OS and a Secretary.

With the change of Principal in 2009, the institution decided to modify the suggestions given by NAAC which was much more inclusive. It had to have Management, Faculty, Staff, Students, Civil Society representatives etc. This was later curtailed due to difficulties encountered by colleges. Keeping in mind the need of democratized society, the College has once again reorganized the IQAC and expanded it to allow for a quality assurance board consisting of members of the Governing Council, Heads of departments, and student representatives from each class. This adds up to 56 members. The functions of this three-layered structure is:

- ✓ To ensure quality.
- ✓ Appreciate innovation in teaching by individuals and departments.

- ✓ Documentation of healthy practices.
- ✓ Challenge individuals to perform better.

The IQAC meets departments to instil the values of reflection and evaluation among faculty. From 2007-09, the College also promoted faculty evaluation three times a year. This helped faculty to have a mid-term evaluation and to change course if required.

Under the umbrella of IQAC, the Governing and Academic Councils met weekly (separately), while the Student's Council met on a monthly basis. By being the link person between all the three bodies, the Principal was able to take up issues of quality and address them.

b. How many decisions of the IQAC have been approved by the management/ authorities for implementation and how many of them were actually implemented?

The IQAC proposed the following to the Management.

- i. Systematise faculty evaluation. IQAC came up with various evaluation formats in English and Gujarati. It also proposed an evaluation form for lab supervisors as SXC had many temporary faculty and staff till 2011. It also proposed an evaluation format for the administrative strengths of HoDs.
- ii. IQAC proposed to conduct faculty evaluation for the entire College in order to maintain fairness and uniformity. (Thus the evaluation would not be administered by the HoD but by the IQAC itself).
- iii. IQAC proposed examination reforms. One of the reforms suggested was computer based online examination for all students.
- iv. IQAC proposed workshops for faculty improvement (Stress management, Documentation, Strategic Action Plan).
- v. The Governing Council approved a standard format for student evaluation of faculty in 2010.

The Management approved and implemented faculty evaluation. However, the evaluation is conducted by the HoDs and then submitted to the IQAC for analysis. Examination reforms as suggested by IQAC were limited only to the third year students due to infrastructure limitations. Workshops were conducted on stress management and on strategic action planning.

c. Does the IQAC have external members on its committee? If so, mention any significant contribution made by them.

There were external members in the past. We have not included any external member in the present IQAC. We plan to reconstitute IQAC according to NAAC norms in near future.

d. How do students and alumni contribute to the effective functioning of the IQAC?

Incorporating students from each class to IQAC has helped in effective functioning. The class representative meets the student body once every two weeks or as and when required. This SCQ works as the mediator between the Management and student body. During College functions, they maintain discipline and attendance. They have also taken up matters with Ahmedabad Municipal Corporation to get justice for the College and the student body.

e. How does the IQAC communicate and engage staff from different constituents of the institution?

IQAC always works towards excellence and all round development of students at SXC. Usually communication is through notices or implementation is through HoDs. IQAC had organised a training workshop on SAP which helped departments to plan for the future. Each faculty is engaged in designing her/his annual teaching plan and HoDs are motivated to conduct activities that address the all round development of students.

In the past, though there were evaluations by individuals, a counsellor used to have random sample evaluation for the purpose of cross checking. This way, IQAC engage staff from different constituents of the institution.

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 operationalisation.

The Governing Body has an extended meeting once a year to discuss innovations, extensions and to give direction to the College. The Governing Council, and the Academic Council meet weekly to implement and to review. The same is communicated to the other faculty and the administrative staff. This mechanism has ensured smooth implementation of the planned 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, the institute provides training to its staff for effective implementation of the quality assurance procedures. The following are the details and impact:

- ✓ Dr. Vincent Braganza is a trained IMC Ramkrishna Bajaj National Quality Award auditor. The exposure to such an award helped SXC to aspire for benchmarking in the country and to opt for an evaluation by the above committee.
- ✓ Five faculty have been sent for trainings on 'Academic and Administrative Audit' in an effort to improve the quality of education. It was conducted by Knowledge Consortium of Gujarat. This has created awareness and helped faculty to strive for quality.
- ✓ Three Faculty have been trained in Heroic Leadership, an

innovative leadership programme based on Jesuit tradition. This has created a renewed understanding of the College environment and helped to work more towards developing interpersonal relationships in departments.

- ✓ Three Faculty have been trained in Ignatian Pedagogy, an innovative education methodology based on Jesuit tradition. On their return, they trained the department of English in Ignatian Pedagogy.
- ✓ The College, for the first time, decided to apply for the IMC Ramkrishna Bajaj National Quality Award 2010-11 under the Education Criteria for Performance Excellence. As part of this process, a team of three faculty attended a training workshop in Mumbai. A one day workshop was then held for the entire College faculty by experts from Mumbai. The Bajaj Committee visited the College for its on site evaluation and subsequently, the College was awarded with a certificate of merit.
- ✓ Four laboratory staff attended a day long State level workshop on ‘Changing Scenario of New CBCS and Semester System In Higher Education’.

6.5.4 Does the institution undertake Academic Audit or other external review of the academic provisions? If ‘yes’, how are the outcomes used to improve the institutional activities?

Yes, the College has undertaken external review of the academic provision by the IMC Ramkrishna Bajaj National Quality Award in 2010-11 under the Education Criteria for Performance Excellence. The evaluative report submitted by the peer team has helped the institute to benchmark and thus strive towards excellence. In this context, a two day workshop on strategic action plan (SAP) was held for HoDs under the guidance of a Management expert Dr T.V. Rao, at Gandhinagar. This helped faculty to devise a plan to achieve short term goals. HoDs shared their visions and plans with each other and had them peer reviewed.

6.5.5 How are the internal quality assurance mechanisms aligned with the requirements of the relevant external quality assurance agencies/regulatory authorities?

The IQAC collects, evaluates and submits its report to NAAC every year. However, owing to the experimentation with the 3-tiered and extended IQAC, the College has not submitted the annual AQAR for 2009-10 and 2010-11 in time.

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 institution conducts three examinations under the regular system where the University asks for only two. For those students with CBCS, two exams are conducted where the University requirement is one. SXC also carries out assignments, quizzes based on the subject taught, weekly, biweekly tests, field trips, seminars etc to review teaching and

learning process. These activities are systematised in the curriculum and students know when these are conducted in advance. The marks assigned are 25% of their final marks and an additional 5% is added for regularity and discipline to make it 30%. The University external marks cover the other 70%. Hence there is continuous internal assessment of students taking place at SXC.

Students are made aware of this at the time of joining the College and strive towards obtaining the maximum benefits.

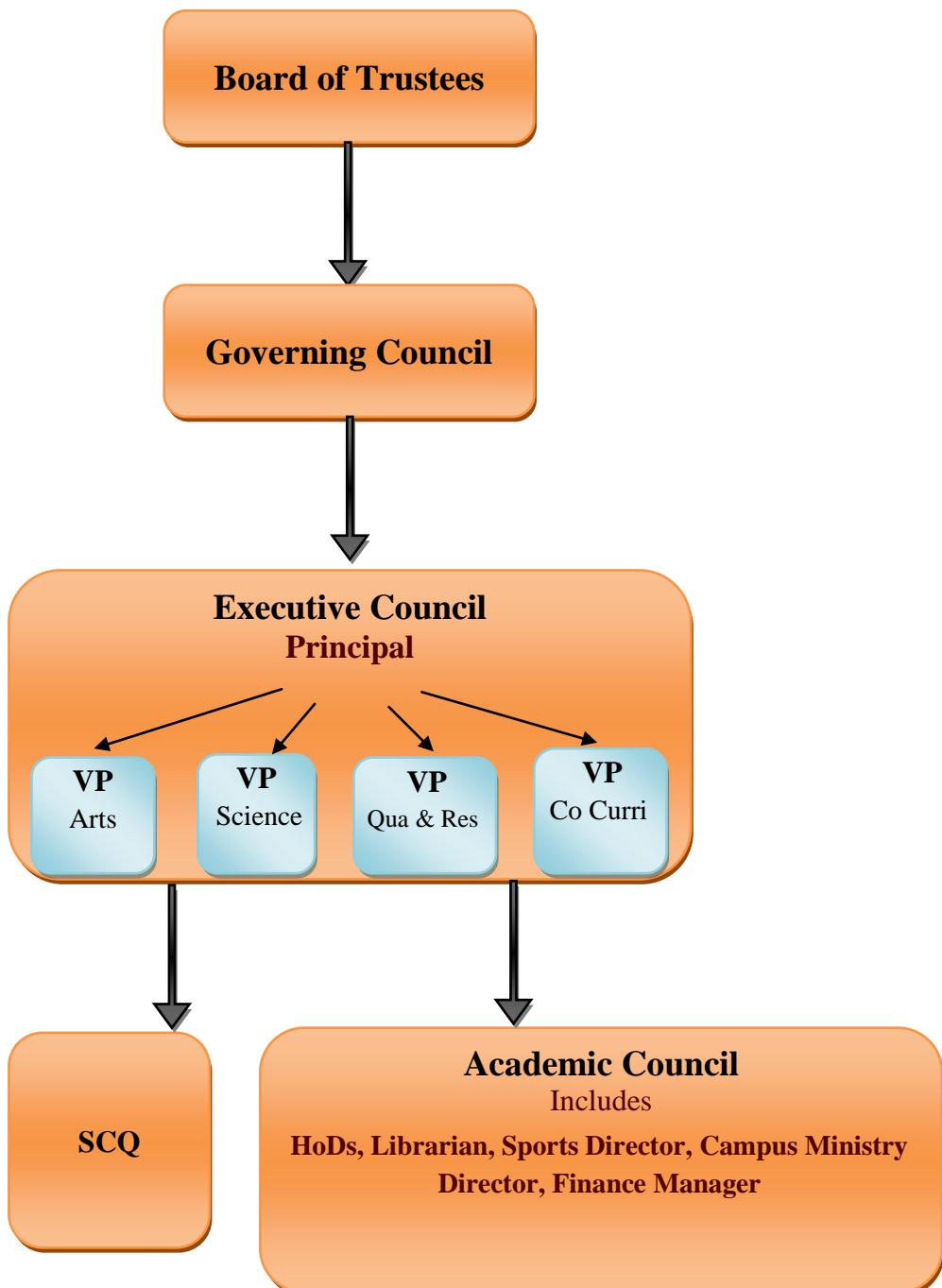
6.5.7 *How does the institution communicate its quality assurance policies, mechanisms and outcomes to the various internal and external stakeholders?*

At the time of admission students and parents are expected to read through the College prospectus. The same is also available on the College website. At the beginning of the academic year, this is explained by the Principal during the general assembly. During the orientation programme which follows, freshers in batches of 20-30 are given an opportunity to have their questions clarified by the student volunteers. Moreover, information is communicated to the students in the form of classroom notices.

Any other relevant information regarding Governance Leadership and Management which the college would like to include.

The college is moving more towards decentralising power and moving towards participatory governance. In this regard, four new Vice Principals have been appointed (Vice Principal of Arts, Vice Principal of Science, Vice Principal for Quality and Research, and Vice Principal for Co Curricular activities). It is significant to note that two of the four Vice Principals are non Jesuits which is a first in the history of the College. It marks a significant step which is in keeping with the Jesuit vision to empower faculty by entrusting them with leadership positions. The Proposed Organogram for SXC regarding governance is as follows:

Organogram of SXC



CRITERIA VII: INNOVATIONS AND BEST PRACTICES

7.1 Environment Consciousness

7.1.1 Does the Institute conduct a Green Audit of its campus and facilities?

Environment and environmental consciousness is one of the thrusts of SXC. SXC has a sprawling 26 acres campus with rich biodiversity. In 2006 as part of the Golden Jubilee celebrations of the College, landscaping was done. In the last four years the College has planted over 300 trees on the campus as part of its “green Xavier’s” initiative. Over the last few years, ‘Ecological Niches’ have been set up on campus housing over 800 species of plants including ornamentals, forest species, medicinal plants. It has a botanical garden, a cactus house, two huge lawns, and over 700 trees.

7.1.2 What are the initiatives taken by the college to make the campus eco-friendly?

The College has taken many initiatives to make the campus eco-friendly and conserve energy.

- ✓ With a view to reducing electricity consumption, a 15 panel solar system was installed in 2009 at the cost of Rs 14 lakhs, to power the lights and fans in the Science laboratories for Physics, Chemistry, Biology, Biochemistry and Electronics. The system is capable of providing alternate source of energy for an average of three and half hours a day. The system has been set in place to provide 5.2 KW, and should lead to at least 20% savings in electricity bills besides heading towards an eco-friendly green environment. SXC plans to extend the facility to classrooms after upgrading the basic power storing unit.
- ✓ A set up to collect 20,000 lts. of rain water which works as single stage distilled water for Chemistry practicals was also put in place from the beginning of the College in 1956. Though the system is not in place at present, we would like to install it in the near future as the cost of a litre of single distilled water today is about. Re.1/-
- ✓ Currently SXC has a coordinated gas distribution system which minimises wastage. The College also has a full-time gas mechanic.
- ✓ The College also has installed four water harvesting systems in specific areas of the campus with a view to harvesting rain water for recharging the groundwater. The College also has a full-time plumber to ensure that there is no water leakage and repair work is carried out in time. In terms of water conservation, thanks to vast open grounds, water is allowed to collect during the rainy season. Ground water percolation takes place. A sign of this is that in the last three years we have not had to lower the pipes of our tube wells. The Principal’s residence also boasts of a rain water harvesting system to collect water for use in gardening. A system is also in place to collect water from the bathing rooms of the men’s hostel for watering the lawns.

- ✓ To minimize the usage of paper the size of the examination answer book has been reduced to eight pages and four pages (from the 20 pages used earlier). For the third year students, one of the three examinations is conducted online. This reduces paper usage. In the College canteen plastic cups have been replaced by paper cups.
- ✓ Efforts have been made by the College towards safe waste disposal mechanisms. All laboratories have been instructed to separate waste into degradable and non degradable for disposal, minimise the use of plastics, ensure safe disposal of biological materials, use the incinerator, and the compost pit etc. Electronic waste materials such as old computers and other electronic gadgets are currently stored in a room in the College premises.
- ✓ In order to reduce pollution and unnecessary wastage of vehicle fuel the College does not allow four wheelers by students on campus. The campus is also smoke free.
- ✓ Our commitment to saving energy has two further expressions. All classrooms have been provided with an MCB outside to make it convenient to switch off lights and fans not in use at given times of the day. In order to reduce electricity consumption all laboratories have been provided with CFLs in place of the traditional tube lights and bulbs, and electronic regulators have been used to replace electric controls. The classrooms and labs are painted using a lighter shade so as to increase illumination.
- ✓ Also, in order to reduce overheads on electricity, the computer labs are not provided with AC. Only servers which occupy a small area are provided with an AC environment to reduce any downtime instances.
- ✓ The College has also converted from a gas plant in which a petroleum by product (heptane) was converted to gas and piped to the various science laboratories. The average cost of fuel for this purpose per year was in the range of 6-8 lakhs. This system has been abandoned and LPG cylinders, safely placed in cages outside the laboratory areas, are used to pipe gas to the laboratories. The data relative to the increasing costs of LPG, indicate a financially profitable decision. With the advent of piped natural gas possibilities of CNG gas were explored since it is considered more environment friendly. However, at the current market price it is costlier than the LPG option.
- ✓ Ground areas not dedicated to sports have been converted into ecological niches which are mini-forests containing plants from all over Gujarat, and from other parts of the country. This makes our 26 acre campus an attractive green campus.



- ✓ A special Green House with facilities to take care of special plants is also an expression of our environmental consciousness. This is coupled with a Cactus House which was set up to demonstrate the beauty of nature in cacti which are otherwise perceived as lowly in the popular view. Satellite pictures of the College show it as one of the greenest areas of the city.



Hazardous waste management

At the moment SXC is not dealing with hazardous wastes such as medical or radioactive waste. However, we have chemical and microbial waste arising from routine practicals. Laboratory supervisors are instructed to separate degradable waste from non degradable. The former is disposed in a compost pit on campus. The latter is disposed in the collection van of the Ahmedabad Municipal Corporation.

7.2 Innovations

7.2.1 Give details of innovations introduced during the last four years which have created a positive impact on the functioning of the college.

Online examination and exam reforms

The College introduced MCQ type online examination for all subjects for third year students. MCQ type examination was introduced also for first and second year students (using a paper and pencil). This educational innovation was tried in SXC because of most competitive examinations have this pattern. This has created a positive impact on faculty and students. They have become more conscious of focusing on fundamentals and on the nuances of a subject which are essential for setting papers and answering MCQs. The Gujarat University with descriptive question format in the annual examination, has introduced MCQ in its exam pattern since last two years, after seeing that SXC had introduced MCQ in its examination.

Compliance system

The College introduced ‘compliance’ system as an academic reform. According to the University system of education every student must have 75% physical presence in all classes in order to appear for the year end /semester-end examination. Though SXC insists on 100% attendance, students may be absent for various personal reasons. In order to ensure that learning has taken place, a student has to meet the faculty whose classes s/he has missed, and take up an assignment/ viva to demonstrate that s/he has learned the matter. This has created greater

understanding between students and faculty, and improved relationships.

Decentralised system of admissions

Each department is involved in admitting 30 students who will major in that particular subject. A student, at the time of admission, purchases a form and then proceeds to a room allotted to the subject in which h/she wishes to major. The faculty of that particular department are available for consultation and guidance. They interact with the student and finally propose the names of those whom they have selected to the Principal for admission. Students belonging the SC, ST, OBC and minority communities have a special counter where they are counselled by a core team of trained faculty including senior members of the Management.

In keeping with the decentralization trend, the College Management has, for the first time in the history of the College, appointed four Vice Principals. Another first is that two of the four are non Jesuits: one is the Vice-Principal for Quality and Research, and the other for Co-curricular activities.

7.3 Best Practices

7.3.1 Elaborate on any two best practices as per the annexed format (see page) which have contributed to the achievement of the Institutional Objectives and/or contributed to the Quality improvement of the core activities of the college.

Two of our best practices were published earlier by NAAC. The details are given below:

- a) Using infrastructure & Learning Resources for Social Transformation. July, 2004.
- b) Using the College infrastructure & Learning Resources for Social Transformation in far-flung rural areas. Nov, 2005.

Best practices for the current cycle

Best Practice: 1

1. Title of the Practice

Building responsible human beings through Personal Growth Oriented Programme (PGOP).

2. Goal

At SXC there are many options that help the all round development of students at SXC. We believe in ‘wholeness’ and ‘wellness’. Many programmes are offered to realize this dream. However, the desired result is achieved only if students acquire the capacity to integrate the learning. The Personal Growth Oriented Programme helps each student discover self, others, and God. This discovery helps them to broaden their view of life, helps to integrate their daily activities and develop healthy

relationships so that each one becomes a gift: a gift to oneself, a gift to others, and a gift to God. It is with this goal that the PGOP is offered to all students at SXC.

3. The Context

A meaningful survival in society depends on the depth of relationships: relationship with oneself, with others, and with God. During adolescence one discovers, explores and experiments with new relationships that can be lasting and rewarding. The counsellors felt that the students of SXC need support and guidance in handling relationships. Many were unable to initiate, handle, and foster meaningful relationships. This could be at home or in their friend circle. A broken relationship resulted in bitterness and poor performance in academics. The College felt the call to inculcate a value system based on good, healthy relationships. PGOP is the outcome of this.

4. The Practice

PGOP is a three year programme. It exclusively focuses on process rather than product. In the first year, students are taken through an experience of discovering oneself: 'I am a gift. I want to know myself—my shadows and strengths'. This is done through various activities where one connects with one's earliest years and recaptures the energy within. During this process, the student is led to reflect on the strengths of the family and the environment. This invites one to discover God in one's own way.

The theme of the second year is: 'You are a Gift'. The various activities are geared towards sensitizing one to the recognition that 'Others are Gifts' as well. We need the other to know our strengths and shadows. Growing together promotes wholeness and wellness. We accept the 'giftedness' of others through 5 A's. These are Acceptance, Approval, Appreciation, Affirmation and Acknowledgement. This is communicated through role plays, simulation games and participatory activities. At the end of the third day, a student is made aware of the unique role s/he plays in society, being called to, along with others, make the world a better place.

The third year programme focuses on "Relationships". These relationships promote harmony, discipline, respect and self-esteem. It is in relationships that one experiences brokenness and healing. Through various activities and group work students are invited to look into the values that foster relationship: Trust, Openness, Acceptance, Forgiveness, etc. A participatory study on RBA (Relationship Bank Account) helps the student reflect on what builds and what breaks relationship. The three year programme helps one grow in self awareness, build self esteem, grow in understanding and in respect for self and others. In short, it helps one to grow as a person who is encouraged, enhanced and empowered to improve the quality of one's personal, family and social life.

Every day six to seven hours are spent together and about 60 hrs are spent in 3 years. This is a significant component in the educational formation which SXC is offering to its students.

5. Evidence of Success

Success can be tangible and non-tangible. The success of PGOP is seen in the increase in the number of students who have attended the programme as the years go by and in the attitudinal change in students.

This programme helps handle many of the relationship issues that arise from a lack of ‘identity’. Students come back to the counsellors at a later stage to say that PGOP has sown the seed of transformation in them. It has also helped many students to accept and handle authority issues at home/outside. They do come back and say ‘thank you’, because their relationship with family members and friends has become more meaningful after going through PGOP.

The non-tangible result is more like planting acorns for future; it is character formation. The real asset of a nation is its citizen. Building good citizens is nation building. It is a step towards excellence in life.

When colleges in our neighbourhood came to know about PGOP, resource persons were invited to conduct the same programme for their students and faculty. SXC faculty have spread the fragrance of PGOP even to schools as far as Rajkot and Surat.

The PGOP has also impacted the faculty. Faculty who have participated and/or conducted it are elevated to the ‘aha’ or ‘wow’ experience. All those who have seriously opted for this programme are touched by this experience. This has brought about an attitudinal change in many faculty too. They have become more tolerant, understanding, self giving and others oriented.

6. Problems Encountered and Resources Required

PGOP has resulted from a felt need at SXC. A programme had to be designed that is non-academic, interactive, without the use of chalk and board, and gripping. The designing took many months of reflection, sharing and discussions. The core team went through the experience after designing the course and analysed the outcome from a participant’s perspective and made necessary changes. The programme runs on Saturdays, Sundays and on public holidays. Initially, it was difficult to get resource persons and students who were willing to sacrifice their holidays. The programme was largely offered by the core team that designed it. Though the team tried to involve more faculty the level of commitment and ownership of the programme was missing in some. Some of the resource persons were product oriented rather than process oriented. This resulted in completing the modules rather than leading the participants through an experience of self discovery.

7. Notes (Optional)

The programme focuses on transforming people by touching the core of an individual. Therefore, the result of PGOP is not immediate. It is yet to come. The core team is very hopeful of transforming many more lives in the future.

Best Practice: 2

1. Title of the Practice

Undergraduate Research: A move to reach out to the less privileged.

2. Goal

SXC believes that the progress of a nation depends heavily on its scientific achievements. This can be attained only if a student is actually translating into action what s/he has learned in the theory class. In order to nurture the inquisitive mind, foster scientific thinking, develop a critical mind set, achieve academic excellence and attain global competencies, research is offered to undergraduate students at SXC. It was initiated to give a cutting edge to advanced learners and to orient research towards society thus contributing to the nation's development. Research at SXC has the vision of lab to land trajectory so that significant socio-economic change can be achieved over a period of time.

3. The Context

UG research began in an organised manner at SXC way back in 1990s. It began with one or two students being selected for research. The University programme for UG students was heavily focused on academics. Students completed their graduation without any hands-on experience. This was a lacuna in their education. In order to bridge this gap, and to help them to correlate experiments with what they have learned as well as with the problems in society, this exercise was initiated. In those days, the College had no infrastructure and a bare minimum of finances to initiate such a programme. It was only the visionary leadership of the College which motivated this impetus for research.

4. The Practice

Every year, five students are selected from each department after a test and an interview. Those selected are expected to work a minimum of three hours per day for a year outside their class schedule. They read advanced journals, comprehend the issues and come up with a problem to be addressed in their research. Students formulate the hypotheses, design experiments and execute these using available technologies. They have a mentor to guide them. A lot of freedom is given to them to explore the issue, do experiments and use instruments.

Each student is allocated \approx Rs.3000 to meet the expenses. They are also given an endowment and a research award to motivate them. At the end of one year, they compile their research findings into a thesis. During the research award ceremony, parents and well wishers are invited and a silver medal is given to each research student.

Research not only teaches them the nuances of scientific thinking, but also inculcates values of perseverance, coping with failure, dealing with colleagues, striving for excellence and becoming national assets.

5. Evidence of Success

Below is an *indicative* list of research carried out by students from various departments:

Biochemistry/Biotechnology

- 2008-12
1. Plant Tissue Culture, Elicitation, Phytochemical Analysis, Protein profiling, anti oxidant assays
 2. Prefabrication of a Culinary ‘Chimera’ using Garlic Creeper (*Adenocalymma alliaceum*) and Ginger (*Zingiber officinale*)
 3. Using Plant Tissue Culture Methods to Increase the Production of Anti-cancer Phytochemicals by *Hemidesmus indicus*
 4. Aphotic Property of Aloe: Bringing to light the role of 2,4- D and Kinetin for callus induction and a revelation of the inner gel matrix through HPTLC
 5. Micropropagation and Phytochemical Analysis- *Argyreia boseana* and *Cissampelos pareira*

Chemistry

- 2008-12
1. Organic Synthesis, Micro fuel Cell
 2. Simultaneous drug determination, Azo dye degradation, Hydroxamic acid synthesis, Characterization of Antimicrobial compounds, herbal drug for Eczema.
 3. Simultaneous drug determination, Azo dye degradation

Industrial Chemistry

- 2008-12
1. Synthesis of Schiff Base and their metal complexes, Silver Nano particles, Drug synthesis, Green chemistry methods for synthesis.
 2. Azo dye synthesis, Extraction of Nickel from chocolates, Presence of different compounds in different food items.
 3. Organic synthesis & Extraction of compounds

Physics/ Electronics

- 2008-12
1. Phase Transition, Nano crystals, Nano particles of Molybdenum and Nickel, Composite polymers, Innovative densitometry
 2. Ozone distribution, Nano crystals, Nano particles of Molybdenum and Nickel, Composite polymers, Innovative densitometry

Mathematics

- 2008-12
1. EMI system, Cubic Spline interactions, Graph Trees
 2. Analysis using various mathematical models.
 3. EOQ model, Polar curves and their applications, Divisibility criteria

Statistics

- 2008-12
1. Statistical analyses of Education system, Radio subscribing in Ahmedabad, Tourism, Status of Education in Universities, Retain Pharma marketing.
 2. Statistical Analysis of leading brands, stocks, Cell phone customers, Eating out in Ahmedabad.
 3. Statistical Analysis of various social issues.

Botany

- 2008-12
1. Ethnomedicine & Folklore of various tribes of India, IPRs in Botany
 2. Ethnomedicine and folk lore, Green House, Mughal Gardens of Delhi.

3. Ethnomedicines.

Zoology

2008-12

1. Soft Shelled Turtle, Endophytic microbes

Economics

2008-12

1. Economic climate of Afghanistan
2. Factors affecting Sugar price hike, Media and Economics

English

2008-12

1. JRR Tolkien, Shakespeare

Gujarati

2008-12

1. Analysis of works of authors like Sundaram, Joseph Macwan, Short stories, Jayant Khatri, Krishna Bhakti in Gujarati literature.
2. Modern Gujarati Literature, Idioms in Gujarati, Development of Gujarat post independence

Sanskrit

2008-12

1. Kalidas, Shiv Puran, Upanishads
2. Valmiki, Malvikagnimitram

Psychology

2008-12

1. Anxiety and depression in parents of neuro developmentally deficient kids

Students do present their findings in the form of posters at State/National seminars. They also participate in poster competitions. At the recently held 33rd Annual PTCA meeting in Ahmedabad students published abstracts. Based on the initiative at SXC Gujarat University has started an annual initiative where students from all disciplines of Science of all colleges across Gujarat present posters at a “Science Excellence Poster Competition”.

Subjects which are more open to social interventions have produced interesting results. Third year Botany researchers, Manoj Vasava and Shailesh Vasava (June 2009) completed their research projects related to cultivation of medicinal plants in their own tribal area (Dediapada) through the Aadi aushadhi project. Both of them subsequently worked for Aadi aushadhi for 2 years (2009-2011) as field supervisors. This is an example of a linkage involving student research, academics (botany), extension and career choice.

Students have been motivated to get admission into some of the top Science institutes in the country and abroad, and some of them are eminent scientists today. Dr Aakansha Singhvi was in Rockefeller University, Avani Mehta is in Caltech, USA, Stuti Mehta was at Oxford, Gopi Shah is in Max Plank, Germany, Aanchal Bhatia and Mehrab Modi are in NCBS, Bangalore (these are just a few).

The actual result is yet to come. It is the development of a scientific temper, a research aptitude, and a culture which is rooted in scientific reasoning.

6. Problems Encountered and Resources Required

The problems encountered are many. Infrastructure development is the biggest limp. Most of the equipment is expensive. Hence, we had to approach other philanthropic institutes for certain advanced analysis.

In the Indian set up, students do research only at PG level. UG level research is a concept which is difficult to implement given the tight academic schedule unique to higher education in India. There are many more constraints: time slot, finances, motivated students, etc. No funding agency is willing to invest money in UG research because the myth is ‘good research cannot come out from UG students’. It is a journey against all odds!

7. Notes (Optional)

Annual maintenance of instruments is an issue. Chemicals and finances are other hurdles one may encounter in replicating the practice in other places.

8. Contact Details

Name of the Principal: Dr Robert Arockiasamy, S.J.

Name of the Institution: St Xavier's College

City: Ahmedabad

Pin Code: 380 009

Accredited Status: A+

Work Phone: 079-26308057

Fax: 079-26303740

Website: www.sxca.edu.in

e-mail: xavierscollege@jesuits.net

Mobile: 09427026600 (Principal)

08000175529 (IQAC Coordinator)

e-mail: sebastian.vadakan@sxca.edu.in

*Evaluative Report
of the Departments*

Department of Economics

1. **Name of the department:** Economics
2. **Year of Establishment:** 1961
3. **Names of Programme/Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)**
The department offers:
 - ✓ BA in Economics (Gujarati Medium)
 - ✓ BA in Economics (English Medium)
 - ✓ COP in Foreign Trade Management (FTM)
4. **Names of Interdisciplinary courses and the departments/units involved**
The department of Economics currently does not offer any interdisciplinary courses because Gujarat University does not have any such programme. However, the COP in FTM enrolls students from various departments of Arts and Science as well as few students from other colleges.
5. **Annual/ semester/choice based credit system (programme wise)**
The department has to follow the University pattern. Since the last two years the University has adopted the semester system. Currently only the third year students are following the Annual System, while the first year and the second year students are into the semester system.
6. **Participation of the department in the courses offered by other departments**
Teachers of the department conduct occasional lectures in Economics for students of other departments and students of the Economics department join COP courses offered by other departments, more particularly COP in Hardware Maintenance, Journalism, Communicative English and Counselling. Faculty have assisted the Campus Ministry in conducting the soft skill training sessions in the Personality Growth Oriented Programme.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.**
In the present structure of the University there is no scope to participate in the courses offered by other departments. However, we do assist the Campus Ministry in conducting the soft skill training sessions in the Personality Growth Oriented Programme for students of Economics.
8. **Details of courses/programme discontinued (if any) with reasons**
The department has not discontinued any programme.

9. Number of Teaching posts (as on February 1, 2013)

	Sanctioned	Filled
Associate Professors	4	4
Asst. Professors	0	0
Adhyapak Sahayak	1	1

10. Faculty profile with name, qualification, designation, specialization

Name	Qualification	Designation	Specialization	No. of Years of Experience	Ph.D. Students guided in last 4 years
Dr K. I. Patel	MA, Ph.D.	Associate Prof.	Agricultural Economics	37	4
Dr Robert Arockiasamy	MA, Ph.D.	Principal	Trade and Investment – Macro economic analysis	27	
Dr Pinky Desai	MA, Ph.D. MBA	Associate Prof.	IPR – Pharmaceutical industry, FTM	22	
Dr Ami Shah	MA, M.Phil.	Associate Prof.		21	
Prof Vijay Dhandhukiya	MA, M.Phil. SLET, Ph.D.	Adyapak Sahayak	Environmental Economics	5 months	

11. List of senior visiting faculty

There is no visiting faculty.

12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty.

Currently there is one temporary faculty delivering about 12% lectures. This faculty is appointed to handle work load after one member of the department was appointed as Principal of the College in November. In the earlier two years one temporary member was appointed during each of the two years to handle the workload after the demise of a staff member. A post was sanctioned in August – September 2012 and Prof. Vijay Dhandhukiya was appointed in October, 2012.

13. Student -Teacher Ratio (programme wise)

Academic Year	Teacher – student ratio (Gujarati Medium)	Teacher – student ratio (English Medium)
2012-13	1: 20	1:50

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

Department does not have a peon. Department depends on the common peon assigned to the Arts department.

15. **Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D./ M.Phil./PG.**

Currently three faculty are with doctorate and two with M.Phil. One of them is pursuing doctorate in Economics.

16. **Number of faculty with ongoing projects from a) National b) International funding agencies and grants received.**

There are no ongoing funded projects. But, one project which Dr Robert carried out for Ministry of Commerce and Industry, GOI in 2008 was funded. It was a joint project with Dr. Mohanty a fellow at RIS Delhi and the grant for the entire project was Rs. 4.5 crores. Dr. Robert received a fund of Rs. 35 lakhs. His ongoing project is pertaining to an explorative study on formation of BRICS as an emerging trade block. This project is not funded.

17. **Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received**

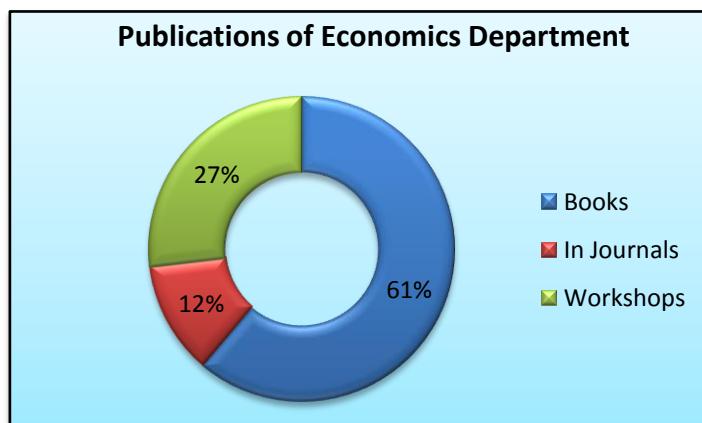
In the current period the department doesn't have projects funded by any of these funding sources but in the earlier period, the department had one Ph.D project funded by UGC and another one by ICSSR.

18. **Research Centre /facility recognized by the University.**

The department uses the facilities at XRF. Undergraduate research students selected from Economics, pursue their projects at XRF.

19. **Publications**

Details given at the end of this document on Economics



20. **Areas of consultancy and income generated**

- ✓ Dr Pinky Desai Offered Consultancy to Sky Quest Technology Consulting Private Ltd., Ahmedabad, in the year 2008.
- ✓ Helped in formation of the syllabus for “the post graduate diploma in Intellectual Property and Technology Management” at National Academy for Agricultural Research Management,

Hyderabad. She was also offered to teach the course as a visiting faculty but the logistics and timings could not be worked out. This consultancy was honorary and no income was involved.

21. **Faculty as members in**

- a) National committees b) International Committees c) Editorial Boards
✓ No one currently

22. **Student projects**

- a) Percentage of students who have done in-house projects including inter departmental/programme/

About 10% from English medium SY batch of 2009 and 10% from TY batch of 2009 conducted a survey for a DST supported project of XRF in the Ode taluka of Bhiloda district of Gujarat.

- b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/other agencies

Almost 80% students of first and second year combined of the economics department (english medium) do a project of 120 hours in any export house or with custom house agents or with freight forwarders as a requirement of the COP in FTM. They have done projects with Adani Exports which is a star trading house, Nirma industries, Arvind Industries, Siyaram, Torrent, Shipping companies, freight forwarders, CHAs, and many others.

23. **Awards/ Recognitions received by faculty and students**

Five students each year are being awarded research fellowships which also includes a medal. Moreover, the top rankers of each year, viz. FY, SY and TY, have been awarded Merit Certificates for excellence in the subject.

Year	Rank Position		
	FY	SY	TY
2009-10	3 rd ,7 th ,10 th , 16 th ,43 rd	4 th ,5 th ,32 nd , 35 th ,45 th	
2010-11	1 st ,21 st ,23 rd ,48 th	1 st ,3 rd ,4 th ,5 th , 6 th ,7 th ,13 th ,17 th , 21 st ,28 th	20 th ,21 st
2011-12	11 th ,29 th ,42 nd	5 th ,7 th ,14 th ,20 th , 26 th ,27 th ,28 th	13 th ,32 nd ,33 rd , 45 th ,50 th

24. **List of eminent academicians and scientists/ visitors to the department**

Dr Sudarshan Iyengar (Vice Chancellor, Gujarat Vidyapith) visited the department as part of a state level seminar.

25. Seminars/ Conferences/Workshops organized & the source of funding

The department has jointly organised a state level seminar on 'Education: A step towards Inclusiveness'.

26. Student profile programme/course wise: (2012-13)

Name of the course/programme	Applications received	Selected	Enrolled (Guj & Eng med.)			Pass percentage
			M	F	T	
BA						
2010		76	36	40	76	
2011		68	32	36	68	
2012		71	36	35	71	
COP FTM	(English Medium Only. Arts and Science students)					
2010	45	43	25	18	43	55%
2011	45	39	16	23	39	73%
2012	40	33	15	18	33	

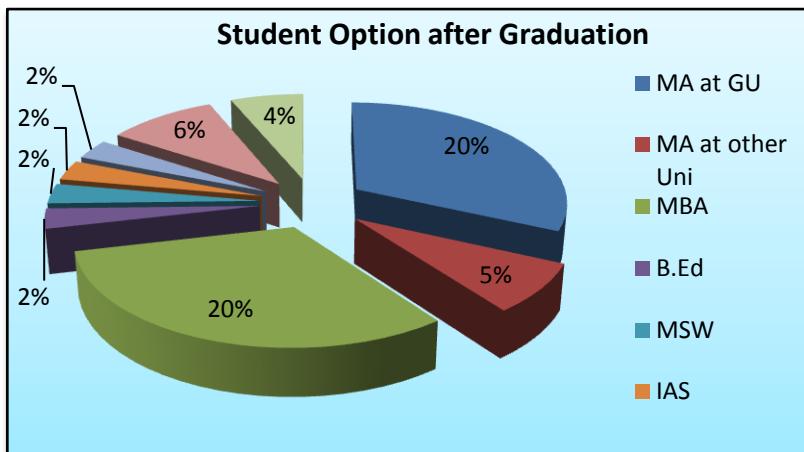
27. Diversity of Students (2011-12)

Name of the course	% of students from the same state	% of students from other states	% of students from abroad
BA			
2010	67.42 (Eng. Med. only)	5 (Eng. Med. only)	27.58
2011	92.8 (Eng. Med. only)	5 (Eng. Med. only)	2.2
2012	90.6 (Eng. Med. only)	5 (Eng. Med. only)	4.4
COP FTM			
2010	68	5	37
2011	92.5	5	2.5
2012	86	5	9

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defence services, etc.?

In a period of five years, about 30 students who passed MA from the university after completing their BA from SXC, appeared for NET/SLET examinations. Three have cleared so far. About 10 students joined civil and defence services in five years.

29. Student progression



30. **Details of Infrastructural facilities**
- Library:** There are 3687 books in the central library. COP has a separate library with 50 books and a fund of Rs. 20,000 already is sanctioned for purchase of more books.
 - Internet facilities for Staff & Students:** The department has an internet portal for staff members and Wi-Fi accessibility. The students can avail internet facility for referencing in the College library.
 - Class rooms with ICT facility:** The department uses the common AV Room facility as and when required.
31. **Number of students receiving financial assistance from college, university, government or other agencies:**
This academic year (2012-13) thirteen students are receiving financial assistance from the management fund.
32. **Details on student enrichment programme (special lectures /workshops/seminar) with external experts**
- ✓ In the last three years, 70% students of the economics department attended the Personality Growth Oriented Programme, designed and conducted by the Campus Ministry of the College.
 - ✓ Three experts in the area of environment, co-operatives, and micro-finance were invited to talk to students of second and third years in 2009, 2010 and 2011.
 - ✓ Two international experts had addressed our students in 2010 and 2011.
 - ✓ Teachers facilitate in organizing class room quizzes, discussions and seminars.
 - ✓ Every year at least 3 expert lectures are arranged for the students of FTM in the areas of international marketing, international finance and logistics management.
 - ✓ Students are also motivated to participate and every year 5-10 students have participated in national level inter collegiate economic – festivals organized by colleges like, SRCC, Delhi, Hindu College, Delhi, SXC, Mumbai and Christ College, Bangaluru.

- ✓ In the past five years, 3 students from the department went to Japan on a cultural exchange programme of the Gujarat University; four have taken training under professors of IIM; one student attend a summer training programme of LSE in China.
 - ✓ The students' Core Committee of the college has 30-40% student members from the economics department. This committee organizes various co-curricular and extra-curricular activities and thereby students of the department have learnt and developed organizational and managerial skills.
33. **Teaching methods adopted to improve student learning**
 Members of the department engage in a range of pedagogical practices such as:
- ✓ The department engages students in different ways to improve learning. Quizzes, seminars, assignment, discussions and tests have become regular features of class room learning. Besides, some students prepare projects and research papers in a variety of subjects, talks by foreign students about their respective economies are held. Work book activities are also given.
34. **Participation in Institutional Social Responsibility (ISR) and Extension activities**
 The departmental staff members and students are involved in various social awareness programme of the College.

No	Programme	Participation
1	NCC	1 faculty
2	ICRW's Stigma reduction in HIV AIDS	1 faculty 13 students
3	PGOP	2 faculty ≈ all students
4	Jagrat	1 faculty All SC/ST students
5	NSS	1 faculty

35. **SWOC analysis of the department and Future plans**

Strengths

Proactive nature of teachers and students are the biggest strength of the department. The healthy teaching and interaction practices are also strengths of the department. Qualifications and varied expertise of teachers is an added strength. The expertise ranges from agricultural and environmental economics to WTO, IPR, Pharmaceutical Industry and Trade and Investment. A successfully running COP has given a competitive strength to the department. Teachers are engaged in a variety of activities extending from Jagrat, Utkarsh and NSS, HIV related Stigma reduction to research extension programme in remote regions of Gujarat like Bhiloda. Besides, teachers are always available for mentoring of students.

Students of the department bag top ranks in the University exams and every year there are about 15-20 students in the first fifty scorers. Several students of the department have attended national festivals of Economics, have worked as assistants with professors of IIM; few have participated in national and international workshops /seminars conferences; have written research papers/projects. A few have attended summer training programme at national or international organizations and many have participated in co-curricular and extra-curricular activities and social service works. Three students went for cultural exchange programme to Japan and Europe. Most students have attended the Personality Growth Oriented Programme. Some staff members and students possess / have acquired good organizational and managerial abilities/skills.

Weaknesses

One identified weakness is that not all teachers are engaged in research and not all are bilingual. The department doesn't have much interaction with departments of other colleges and doesn't organize national seminars or inter collegiate activities and these add to our weakness. Staff research is not shared much and peer reviews are not done within the department.

Opportunity

We see the fast changing nature of economic activities in the world as an opportunity to give many insights to the students. We have many students from other states and few from other countries which is in itself an opportunity for the students to learn.

Challenges

Our constraints pertain to inadequate resources within the department like, internet access for students, projector facilities, fewer journals in the library etc. Regular teaching/learning of 18 hours per week, COP classes, Mentoring, Co-curricular, Extra, curricular and extension activities add up to a lot of work leaving very little time or virtually no time for major research work on part of teachers as well as students.

Future plan: We plan to promote greater research among staff and students. We also plan to have regular interactions within the department to share our research work and maintain a small updated library in the department room.

Publications

Contribution in Books

1. Canis J., Arockiasamy R. and Dabhi J. *Savings / Credit Cooperatives – Women's Empowerment in Gujarat*.Gujarat Sahitya Prakash, Anand. 2012.

Research Papers

1. Arockiasamy R. 2008. *India-Mexico Preferential Trade Agreement*. A Report for the Mexican Government.

2. Mohanty, S. K and Arockiasamy R. 2008. *Potential of Manufacturing Sector Exports*. A Report for the Ministry of Commerce and Industry, Government of India.
3. Arockiasamy R. 2008 “*Foreign Direct Investment and Economic Development*”. *Research Annals, St. Xavier’s College, Ahmedabad*.
4. Arockiasamy R. 2009. *Towards A New East Asian Economic Integration: Trends, Potentials and Challenges for an Emerging Pan-Continental RTA*. A Report for the Ministry of Commerce and Industry, Government of India.
5. Arockiasamy R and Jimmy D. 2009. *Assessment of Education Policy and Implementation of Jesuit Province of Patna*. A Report for the Patna Province.
6. Arockiasamy R. 2010. *Foreign Capital and Economic Development in Sub-Saharan Africa*. A Report for the Ministry of Commerce and Industry, Government of India.
7. Arockiasamy R and Jimmy D and Priyanka C. 2011. Right to Food Campaign in Gujarat. A Study Report for Behavioral Science Centre.
8. Arockiasamy R and Jimmy D. 2011 *Migration of Children from Rajasthan as Child-Labourers*. A Study Report for Behavioral Science Centre.

Conferences/ Workshops

1. Arokiasamy R, 2013. Education: A step towards inclusiveness, SXC.Ahmedabad.
2. Desai P. J., 2009. “Exclusive Rights v/s Inclusive Growth: IRPS for Indian Agri”. Paper presented in the National Level Conference on Agri Business Opportunities and Challenges organized jointly by “The Department of Economics of Sri M.M. Ghodasara Mahila Arts and Commerce College, Junagadh” and “Junagadh Agricultural University, Junagadh”.
3. Desai P. J., 2009. Receiving & Imparting Training for The Personality Growth Oriented Courses of Xavier’s.
4. Desai P.J., 2007. Knowledge Economy, Patents and Issues Before the Indian Pharmaceutical Industry, St.Xaviers College, Ahmedabad.
5. Desai P.J., 2008. “Knowledge Economy: Patents & Issues before the Indian Pharmaceutical Industry” Paper presentation, organized by L.J. Institute of Management Studies, Ahmedabad.
6. Ami Shah., paper presentation in National seminar on sustainable development in Gujarat success or failure, 2010.

7. Desai P. J., 2009. Participated in One day State Level Seminar on Statistical Computing with MS Excel, Open Office Calc and SPSS conducted at GLS Institute of Computer Technology in association with Department of Statistics, Gujarat University. 2009.
8. Desai P.J., 2007. Participation in National Workshop on Information Science, Research Methodology & Future of Canadian Studies, at James Reaney Canadian Study Centre,Gujarat University, 2007.
9. Desai P.J., 2008. participation in Programme on Intellectual Property Summit – organized by Ahmedabad Management Association.
10. Desai P.J., 2008. Participation in International Colloquium “Inclusion and Exclusion: Exposing Issues and Practices” – organized by Liverpool Hope University.
11. Desai P.J., 2008. Participation in Conference held at IGNOU and presented paper entitled “TRIPs Challenges before the Indian Pharmaceuticals Industry and Government for Sustainable Development.”
12. Desai P.J., 2008. Participation in Brainstorming Session to develop a course curriculum on “Intellectual Property & Technology Management in Agriculture” Organized by NAARM (National Academy of Agricultural Research Management).
13. Desai P.J., 2011, participated in National Conference on Physics for Tomorrow, St. Xaviers, Ahmedabad.
14. Desai P.J., 2011, participated in IMC RBNQA Criteria workshop, St. Xaviers College, Ahmedabad.
15. Desai P.J., 2011, contribution as Resource Person, Personal Growth Oriented Programme, St. Xaviers, Ahmedabad.
16. Ami Shah., performance in receiving and imparting training for the Personality Growth Oriented Course 2010, SXC, Ahmedabad.
17. Shah. Ami, 2010. Participation in the Vaanche Gujarat Abhiyaan and Orientation of various initiatives of commissionerate, Gujarat University, Ahmedabad.
18. Shah. Ami, 2010. Participation in Academic and administrative Audit, Dept.of Education, Govt. of Gujarat.
19. Dhandhukiya. V., 2012. *Educational status analysis and related issues in Gujarat with special reference to SC. ST and Minority community.* UGC sponsored National seminar. P G Department of Economics. S P University. VV Nagar. Anand.

20. Dhandhukiya. V., 2012. *Small Scale Industries- with special reference to IT industries in Gujarat, India.* UGC sponsored National seminar. Gujarat P G Department of Economics. S P University. VV Nagar. Anand.
21. Dhandhukiya. V., 2011. *Sustainable development in Gujarat.* National Seminar. G H Patel Institute of Business Management (MBA). S P University VV Nagar. Anand.
22. Dhandhukiya, V., 2011. *Climate Change and Fundamental Issues.* UGC sponsored National Seminar on Climate change issues. Challenges and mitigations I. V Patel college of Commerce. Nadiad.
23. Dhandhukiya, V., 2011. *Computer Hacking: Threats to Security System.* UGC sponsored National seminar. SMT. S I Patel Ipcowala College of commerce. Petlad.
24. Dhandhukiya, V., 2010. *Small scale Industries with special reference to IT Industries in India.* National seminar, G H Patel Institute of Business Management (MBA), S P University VV Nagar. Anand.
25. Dhandhukiya, V., 2010. *Gujarat Economy- Past, Present and Future.* 40th Gujarat Economic Conference. Shri. P H Umrv Arts and Commerce college. Kim Surat.
26. Dhandhukiya, V., 2009. *Urbanization problem and solution* UGC sponsored State Level Seminar. Anand Commerce College. Anand.
27. Dhandhukiya, V., 2008. *Rural Development in Gujarat- problems and possibilities.* UGC sponsored State Level Seminar. THE K N S B L Arts and Commerce College. Kheralu. North Gujarat.
28. Dhandhukiya, V., 2008. *Black Money in India.* N. S Patel Arts college . Anand.
29. Dhandhukiya, V., 2008. *Economic Development and Environmental Issues.* UGC sponsored State Level seminar. M. R Desai Arts and E. E Laher Kosadia Commerce College. Chikhali. Valsad.
30. Dhandhukiya, V., 2008. *Impacts of social injustice on Economy.* Social Justice and Rights Department Gandhinagar Sponsored Seminar. P G Dept. of Political Science S P University. VV Nagar. Anand.

Resource Person

1. Desai Pinky, Resorce person at PGOP, SXC, Ahmedabad.
2. Desai Pinky, Resource person for visiting members of Marquette University, School of Management. Delivered a lecture on the Planning of Indian Economy.
3. Desai Pinky, Resource person, at MICA, Ahmedabad, 2008.
4. Desai Pinky, Resource person at Nirma Institute of Management Studies, Ahmedabad, 2008.

5. Desai Pinky, Resource person at B. K. School of Business Management, Ahmedabad, 2007-10.
6. Ami Shah, Resource person at PGOP, Shri Harivallabhdas Kalidas Arts College, Ahmedabad.

Department of English

1. **Name of the department:** Department of English
2. **Year of Establishment:** 1955
3. **Names of Programme / Courses offered**
 - ✓ BA in English
 - ✓ MA in English
 - ✓ Voc. Functional English
 - ✓ COP in English Speaking and Communication Skills
4. **Names of Interdisciplinary courses and the departments/units involved**

Though the department is not offering any inter departmental programme, the department takes care of compulsory English of Arts and Foundation Courses in English for all Science students.
5. **Annual/ semester/choice based credit system (programme wise):**

The department has been following the University pattern since the year of its establishment. Currently only the third year students are following the annual system, while the first year and the second year students of BA and the MA students are into the semester system as the University introduced the CBCS structure from 2011 onwards.
6. **Participation of the department in the courses offered by other departments**

The department takes care of compulsory English of Arts and Foundation Courses in English for all Science students.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.**

The department is not offering any collaborative course at present
8. **Details of courses/programme discontinued (if any) with reasons**

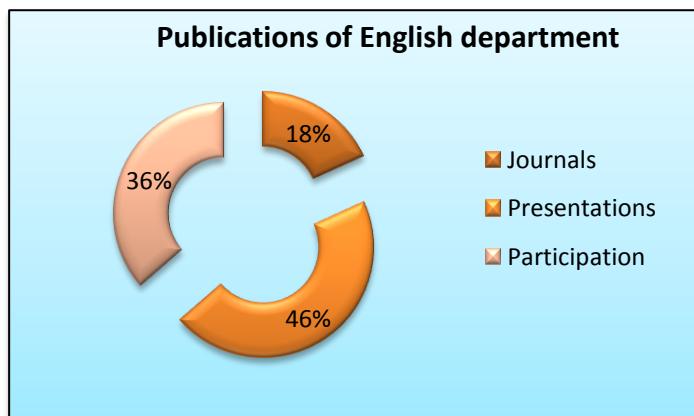
The department has not discontinued any programme
9. **Number of teaching posts**

	Sanctioned	Filled
Associate Professors	3	3
Adyapak Sahayak	2	2
Management appointed	2	2

10. **Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D. / M. Phil. etc.)**

Name	Qualification	Designation	Specilization	No. of Years of Experience	Ph.D. Students guided in last 4 years
Dr Sarvar V. Sherry Chand	MA, Ph. D.	Associate Professor, HOD	Shakespearean Studies; Women's Studies	27	3
Prof. Vincent Gabriel Saldanha, S.J.	MA, MS, M.Phil.	Associate Professor, Dean	Linguistics	27	NA
Prof. Arti Kumar	MA, M.Phil., PGCTE	Associate Professor, MA Prof. in Charge	British Drama; ELT	27	NA
Prof. Amarsinh M. Vasava	MA, Ph. D. (ongoing)	Adhyapak Sahayak	Tribal Literature	5	NA
Prof. Saurabh Vaishnav	MA, M.Phil.	Adhyapak Sahayak	American Literature	1	NA
Prof. Susan Vivien George	MA, Ph.D. (ongoing) NET	Management Employee	Children's Fiction, American Literature	7	NA
Prof. Cornelia-Catrinel Dunca	MA, Ph.D. (ongoing)	Honorary Management Employee	Gender and Sexuality Studies	3	NA

11. **List of senior visiting faculty**
 a) Dr Indira Nityanandam
 b) Dr Jean D'Souza
 c) Dr Madhusudan Mukherjee
 d) Dr Nirzari Pandit
12. **Percentage of lectures delivered and practical classes handled(programme wise) by temporary faculty**
 50% are by Adyapak Sahayak and ad hoc faculty.
13. **Student -Teacher Ratio (programme wise)**
 UG: 40:1
 PG: 17:1
 English Compulsory: 250:1
14. **Number of academic support staff (technical) and administrative staff; sanctioned and filled**
 Currently we do not have administrative staff. The department depends on the common staff allotted for the entire Arts faculty.
15. **Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ M.Phil./PG**
 One of the faculty has Ph.D., three have M.Phil. degree. Two are pursuing Ph.D.
16. **Number of faculty with ongoing projects from a) National b) International funding agencies and grants received**
 Currently we do not have any ongoing project.
17. **Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received.**
 Currently we do not have any ongoing project.
18. **Research Centre /facility recognized by the University**
 The faculty make use of the INFLIBNET facilities of the College for research.
19. **Publications**



Details of publications are attached at the end of this document on English department.

20. **Areas of consultancy and income generated**

- ✓ Fr Vincent Saldanha SJ offered a 3-week course in Communication Skills, CEPT, Ahmedabad, 2011–12.
- ✓ Fr Vincent Saldanha SJ Coordinated 3 courses (Communication Skills, Print Media, New Media), NIEM; also functioned as resource person for the Print Media, NIEM, Ahmedabad, 2012–13.
- ✓ Fr Vincent Saldanha SJ is a consultant and Resource person for staff training.
- ✓ Prof Arti Kumar has been appointed as an examiner for Business English (level 1,2,3), Young Learners of English, Key English Test, and Preliminary English Test of Cambridge University.

21. **Faculty as members in**

National committees b) International Committees c) Editorial Boards.

Currently none of the faculty are engaged in any such committees.

22. **Student projects**

Percentage of students who have done in-house projects including inter departmental/programme

- a) Our PG students do a project (seminar) every semester which has an oral presentation as well. In the final semester they do a mini-dissertation followed by a presentation. All this is part of requirement. So 40 students have been doing projects every semester. At the UG level, four students have been doing projects every semester from 2010-1013.
- 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**

- ✓ Fr Vincent Saldanha SJ has been appointed as the Vice Principal of Arts.
- ✓ Dr Arti Kumar has been appointed as an examiner for Business English (level 1,2,3), Young Learners of English, Key English Test, and Preliminary English Test of Cambridge University.
- ✓ Five students each year are being awarded research fellowships which also includes a medal. Moreover, the top rankers of each year, viz. FY, SY and TY, have been awarded merit certificates for excellence in the subject.

Year	Rank Position		
	FY	SY	TY
2009-10	8 th ,9 th ,31st		
2010-11	38 th	18 th , 34 th	
2011-12	27 th ,33 rd ,34 th		

24. **List of eminent academicians and scientists/ visitors to the**

department

As part of AR Sen seminar, sociologist and Director of Gandhi Ashram, Dr Tridip Sudrud and Dr Suguna Ramanathan visited the department.

25. Seminars/ Conferences/Workshops organized & the source of funding

The department jointly organized a seminar, “Education: A step towards inclusiveness” in 2013. It was a UGC sponsored seminar.

26. Student profile programme/course wise:

Name of the Course/programme	Applications received	Selected	Enrolled		Pass percentage
			M	F	
BA in English	80	60/ yr	15	40	
MA in English	80	40/ Yr	6	34	
Voc. Functional English	50	30/ Yr	10	20	
COP in (ESCK)	140	125/ yr	50	75	

27. Diversity of Students

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad
BA in English	89%	10%	1%
MA in English	100%	-	-
Voc. Functional English	90%	10%	-
COP in (ESCK)	100%	-	-

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?

We have not been maintaining data regarding these examinations. However, SXC has begun a training course in GPSC, UPSC, and NET since this year.

29. Student progression

Student progression	Against % enrolled
UG to PG	50%
PG to M.Phil.	5%
PG to Ph.D.	5%
Ph.D. to Post-Doctoral	
Employed	All get employed

30. **Details of Infrastructural facilities**
- a) **Library:** The College library has 11339 books in English Language and Literature. The department library has about 500 books and an additional 50 books in the Women's Cell library.
 - b) **Internet facilities for Staff & Students**
Faculty uses internet facility available in the computer lab. The students can avail internet facility for referencing in the College library.
 - c) **Class rooms with ICT facility**
As and when required, the department uses the common AV Room of the College.
 - d) **Laboratories**
Department has an English digital language Learning lab (DELL) that can house 24 students with a specially assigned server.
31. **Number of students receiving financial assistance from college, university, government or other agencies:**
Nil
32. **Details on student enrichment programme (special lectures / workshops / seminar) with external experts**
- ✓ About 10–20 books are bought each year for the College library.
 - ✓ Annual AR Sen memorial lectures are held every year (except 2011 and 2012).
 - ✓ Student seminars are conducted for PG twice a year.
 - ✓ Students of the PG programme have participated in the Paper Writing Competition organized by MSU, Baroda and returned with prizes.
33. **Teaching methods adopted to improve student learning**
- ✓ Use of audio-visual materials
 - ✓ Dramatization, quizzes, games and role-plays
 - ✓ Student presentations, panel discussions and research papers by students
 - ✓ Use of cartoon films to teach spoken English
 - ✓ Use of English movies to teach nuances of pronunciation
 - ✓ Use of films version of classics in literature as teaching aid.
34. **Participation in Institutional Social Responsibility (ISR) and Extension activities**

No	Programme	Participation
1	ICRW's Stigma reduction in HIV AIDS	1 faculty 3 students
2	PGOP	3 faculty ≈ all students
3	Jagrat	2 faculty
5	Animal lovers	5 students 1 faculty

35. SWOC analysis of the department and Future plans

Strength

- ✓ Very committed faculty
- ✓ Departmental library
- ✓ Issue of personal books to students
- ✓ PG centre
- ✓ Mentoring and follow up of weaker students
- ✓ Over 95% of passing rate
- ✓ Involvement in extra curricular activities

Weakness

- ✓ Only 71% full time faculty
- ✓ Lack of good visiting faculty for PG
- ✓ We do not have a computer in the department
- ✓ We do not have a large enough departmental room

Opportunities

- ✓ The demand for English and skill is large
- ✓ Fast growing
- ✓ To encourage to do research by PG students

Challenges

- ✓ The level of incoming students is so far poor so that it is a real challenge try to lift them up to a really good critical level
- ✓ Almost 40% of students come from the vernacular medium so teaching becomes a real challenge.

Publications

1. Vaishnav, Saurabh. 'Existentialism in *A Farewell to Arms*, ' in *Research Expo*, Vol 2, Issue 3, Sept 2012.
2. Kumar, Arti. 'Technology and the Path to Critical and Aesthetic Response,' in *ELT Quarterly*, Vol 3–4, 2011.
3. George, Susan Vivien. 'William and the Defence of Childhood,' in *St. Xavier's College, Research Annals*, 2011.
4. Dunca, Cornelia-Catrinel. 'Cloistered Selves--Tiptoeing through Conflicting Spaces in The Diary of Mira Yagnik' in proceedings, 'The Changing Image of Woman in Indian Literature', State-level seminar, 2010.

Presentations

1. Sarvar V. Sherry Chand. 'Dialogues: On the Precarious Nature of Perverse Desire,' at 'Feminist Interventions in the Social Sciences,' International conference, CSSS, Kolkata, 2013.

2. Sarvar V, Sherry Chand. ‘Cultures of Peace: Writing the Feminist Future,’ organized by Zubaan and IIT, Gandhinagar, 2012.
3. Sarvar V. Sherry Chand. ‘Modes of Communication in Julius Caesar,’ Talk, HLBBA Institute, Ahmedabad, 2012.
4. Sarvar V. Sherry Chand. ‘William and the Defence of Childhood’ Staff Research Seminar, St. Xavier’s College, Ahmedabad, 2011.
5. Sarvar V. Sherry Chand. ‘Queer Pairings: Slash/Theory,’ International Seminar ‘Theory at Work,’ BHU, Varanasi, 2011.
6. Sarvar V. Sherry Chand. ‘The Lesbian Art of Detection, or the Kate Martinelli Clues,’ at the Young Researchers’ Workshop, EFLU, Hyderabad, 2011.
7. Sarvar V. Sherry Chand. ‘A Fantasy of Queer Psychic Spaces,’ National Queer Conference, Sappho, Kolkata, 2011.
8. Sarvar V, Sherry Chand. ‘Locating Internets’, workshop, CISRAW, Ahmedabad, 2011.
9. Sarvar V, Sherry Chand. ‘In Search of the Yellow Brick Road,’ National Seminar on Women’s writing in English,’ Visnagar, 2010.
10. Sarvar V, Sherry Chand. ‘Technology and the Path to Critical and Aesthetic Response’, International Conference on Interactive Media in Pedagogy,’ HM Patel Institute of English Training and Research, Vallabh Vidyanagar, and ELTAI, 2010.

Resource Person

Fr Vincent Saldanha SJ

1. Conducted a Staff Training Workshop for School Staff, North Gujarat, 2011–12.
2. Conducted 3 Retreats for Sisters and Fathers 2011–12.
3. Conducted a 3-day Staff workshop, ITI Baroda, 2012–13
4. Conducted a 2-day School Staff workshop, Wadia School, 2012–13.
5. Conducted two eightdays retreats.
6. Coordinated 3 courses (Communication Skills, Print Media, New Media), NIEM; also functioned as resource person for the Print Media, NIEM, Ahmedabad, 2012–13.
7. In charge of COP (Communication Skills); 2008–ongoing.
8. Taught courses in Public Speaking and Communication Skills for COP courses (FTM and Creative Arts); 2008–ongoing.
9. Resource Person for a 3-week course in Communication Skills, CEPT, Ahmedabad, 2011–12.
10. Trainer for trainers for PGOP programme, 2011–12.
11. Resource person for PGOP programme, 2011–13.

Participation

Prof. Arti Kumar

1. Attended a 2-day workshop on ‘Autonomous Colleges’ at Loyola College, Chennai, 2012
2. Participated as expert in ‘Validation of curriculum for skill development,’ organized by the National Institute of Technical Teachers’ Training and Research, Bhopal, 2011
3. Attended five professional development workshops for teachers and trainers of English, organized by the British Council and ELTAI, at Ahmedabad International School, 2011
4. Attended a ‘Workshop on CBCS in English: Curriculum and Examination’, organized by UGC—Academic Staff College and the Board of Studies, English, Gujarat University, 2011
5. Participated in a seminar on ‘How to Do Research in Education and Social Sciences,’ organized by ELTAI, 2010
6. Participated in the UGC National Seminar “Kamala Das, A Tribute,’ organized by the Department of English, Gujarat University, 2010
7. Participated in the training programme on ‘Business Communication Course,’ organized by AMA, Ahmedabad, 2008
8. Participated in an International Meet on ‘Creativity and Literature,’ organized by HM Patel Institute of English Training and Research, Vallabh Vidyanagar, 2008

Prof. Saurabh Vaishnav

1. Attended ‘A Short Term Course on Research Paper Writing in Languages,’ organized by UGC—Academic Staff College, GU, Ahmedabad, 2010

Prof. Susan Vivien George

1. Attended a talk by Gayatri Chakrabarty Spivak at MS University, Baroda, 2011
2. Taught English Language and Communication Skills for the COP (English Language and Communication Skills) course, 2007–2008
3. Edited Vinodinee Nilkanth’s translated works, 2008
4. Publication Manager and Editor, XAP (English); 2007–10

Prof. Cornelia-Catrinel Dunca

1. Visiting faculty for courses on ‘Narrative Theory’ and ‘Queer Studies’ at the National Institute of Design, Ahmedabad; 2009–ongoing.
2. Participated in a 7-day workshop and presented ‘The National, the Cosmopolitan, the Cyborg: Intersections in the Myth of the Indian Lesbian’ at the Cultural Studies Workshop organized by the Centre for Studies in the Social Sciences, Kolkata, at Jaipur, 2011.
3. Participated in ‘Cultures of Peace: Writing the Feminist Future,’ organized by Zubaan and IIT, Gandhinagar, 2012.

Department of Gujarati-Hindi

1. **Name of the department:** Gujarati-Hindi
2. **Year of Establishment:** 1956
3. **Names of Programme/Courses offered**
 - ✓ BA in Gujarati
 - ✓ COP in Journalism
 - ✓ A certificate course in Back Pack Journalism in Collaboration with Marquette University, Wisconsin.
4. **Names of Interdisciplinary courses and the departments/units involved**

The department of Gujarati-Hindi currently does not offer any interdisciplinary courses because Gujarat University does not have any such programme.
5. **Annual/ semester/choice based credit system (programme wise)**

The department has to follow the University pattern. Since the last two years the University has adopted the semester system. Currently only the third year students are following the Annual System, while the first year and the second year students are into the semester system.
6. **Participation of the department in the courses offered by other departments**

In the present structure of the University there is no scope to participate in the courses offered by other departments. However, we do assist the Campus Ministry in conducting the soft skill training sessions in the Personality Growth Oriented Programme for students of Gujarati-Hindi.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.**

Department collaborates in conducting a certificate course in Back Pack Journalism of Marquette University, Wisconsin.
8. **Details of courses/programme discontinued (if any) with reasons**

The department has not discontinued any programme.
9. **Number of Teaching posts**

	Sanctioned	Filled
Professors	0	0
Associate Professors	2	2
Assistant Professors	1	1
Visiting	2	2

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
Fr Francis Parmar	MA, MS, MTh	Former Principal Associate Professor	Sociolinguistics	(1986-2008) 22 yrs
Prof. Veenaben Sheth	MA	Retired	Linguistic	-
Prof. P. U. Makwana	M.A. NET	Associate Professor	Biography	16
Prof. Vinayak Jadav	NET MA in Journalism	Asst. Prof.	Literary Journalism	6 months
Prof. Anil M. Parmar	MA, B.Ed./M.Phil.	Associate Professor		18 Yrs.

11. List of senior visiting faculty

There are two visiting faculty, Prof. RR Parmar and Ms. Sunitaben Chaudhary.

12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty

40%

13. Student -Teacher Ratio (programme wise)

The current student: teacher ratio is 16:1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

No separate support staff is sanctioned for this department. However, as per need, the common support staff is made available.

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ M.Phil./PG.: M.Phil.

One of the faculty has registered for Ph.D., another has M.Phil. The third faculty has PG.

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received

Currently we do not have any ongoing project.

17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received

Currently we do not have any project.

18. **Research Centre /facility recognized by the University**
Nil
19. **Publications:** Detail at the end of this report on the department of Gujarati-Hindi
20. **Areas of consultancy and income generated**
Nil
21. **Faculty as members in a) National committees b) International Committees c) Editorial Boards**
One of the faculty was the Chairman of BoS for Gujarati in the Gujarat University.

One of the faculty is the editor of Doot, a popular monthly in vernacular. He also edits Adilok a magazine to voice the concerns of the tribals.
22. **Student projects**
Students of SY are involved in UG Research Projects. More than 10 students completed their projects during the last five years. Some examples of student projects are given below.

2009-10	Modern Gujarati Literature, Idioms in Gujarati, Development of Gujarat post independence
2010-11	Analysis of works of authors like Sundaram, Joseph Macwan, Jayant Khatri, Krishna Bhakti in Gujarati literature.

23. **Awards/ Recognitions received by faculty and students**
One of the faculty was the Chairman of BoS for Gujarati in the Gujarat University.
24. **List of eminent academicians and scientists/visitors to the department**
Nil
25. **Seminars/ Conferences/Workshops organized & the source of funding**
The department participated with other Arts departments of the College in organising a state level seminar on “Education: A step toward Inclusiveness”.
26. **Student profile programme/course wise: (2012-13)**

Name of the Course/programme	Applications received	Selected	Enrolled		Pass Percentage
			M	F	
UG Gujarati	32	32	22	10	
COP in Journalism		75			
Back pack Journalism		27			

27. Diversity of Students

The Department has a large numbers of students from remote villages, SC, ST, and economically less privileged.

	SC	ST	OBC	General	Girls
2011-12	2	16	19	15	
2012-13	5	24	16	20	24

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad
BA in Gujarati	100%	0%	0%
COP in Journalism			
Back pack Journalism			

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?

Five students passed NET, 1 student passed GPSC.

29. Student progression

Student progression	Against % enrolled
UG to PG	40%
PG to M.Phil.	No data
PG to Ph.D.	No data
Ph.D. to Post-Doctoral	No data
Employed	
Campus selection	
Other than campus recruitment	No data
Entrepreneurship/Self-employment	No data

30. Details of Infrastructural facilities

- a) **Library:** Books are housed in the central library. There are 8879 book in Gujarati and 4591 books in Hindi.
- b) **Internet facilities for Staff & Students:** The department has an internet portal for staff members and Wi-Fi accessibility. The students can avail internet facility for referencing in the College library.
- c) **Class rooms with ICT facility:** The department makes use of the common facilities of the College.

31. Number of students receiving financial assistance from college, university, government or other agencies

From College no students receive financial help.

32. Details on student enrichment programme (special lectures/workshops/ seminar) with external experts

Study tour and visit has been arranged every year to LD Institute of Indology. Students visit *pols* of Ahmedabad.

Students of Jagrat have rural and urban exposure as part of their training. This is a kind of enrichment programme.

33. Teaching methods adopted to improve student learning

By use of Audio/Video cassettes, guest lectures, class presentation, compliance, assignments, educational tours, visits of literary institutions. The department houses a large collection of audio cassettes meant for visually challenged students.

The department (faculty and students) with the assistance of Gurjarvani, a media centre, prepared a video programme based on the biography of the Gujarati poet, Akho in 2012.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities

The departmental staff members and students are involved in various social awareness programmes of the College.

No	Programme	Participation
1	ICRW's Stigma reduction in HIV AIDS	1 faculty
2	PGOP	2 faculty ≈ all students
3	Jagrat	1 faculty ≈ all students
4	NSS	6 students

35. SWOC analysis of the department and Future plans

Strength

Taking care of the academics of most physically challenged students

Weakness

Lack of motivation of students

Lack of computer knowledge

Opportunities

Many openings in journalism and TV

Advantage in GPSC, UPSC examinations and in Govt jobs.

Challenges

Fewer students opt for Gujarati language. Hence motivating students is difficult.

Publications

Contribution in Books

1. Jadav, V., editor, Doot.
2. Jadav, V., editor, Adilok.
3. Chaudhary, S., Agney by Ramesh Chandra Shah, Translated to Gujarati, Gujarat Sahitya Akademi, 2002.
4. Chaudhary, S., Deewar mein ek kidhaki rehti thi by Vinod Kumar Shulka Translated, Gujarati-Deeval ma ek bari hati, Sahitya Akademi Delhi, 2004.
5. Chaudhary, S., Sanrachnawad anusanrachnawad parchyakavyashatra by Devesh, Translated, Shatiya Akadami Delhi, 2011.

Seminars attended

1. Makwana, P.U., National Seminar-Mahakavi Abhivandana Samaroha, L.D Institute of Indology, Ahmedabad, 6-7 October 2012.
2. Makwana, P.U., One day workshop IMC RBNQA Criteria St.Xavier's College, Ahmedabad, 29th March, 2011.
3. Makwana, P.U., Seminar to celebrate Tagore's 150th Birth Anniversary, 15th October 2011.
4. Makwana, P.U., One day National Level Seminar Gujarat Vishvakosh Bhavan, Ahmedabad, 11th March, 2011.
5. Jadav, V., International conference on literary jouranalism studies in Toronto (Caneda), 2012.
6. Jadav, V. International workshop, 'Heroic Leadership' by Chris Lowney, Pune, 2012.

Resource Person

1. Makwana, P.U., Personality Development workshop, Yuva Parishikshan Kendra, SXSS, PAX Society (Odhav Farm), 12 May 2012.

Department of Psychology

1. **Name of the department:** Psychology
2. **Year of Establishment:** 1955
3. **Names of Programme/Courses offered**
 - ✓ BA in Psychology (Gujarati Medium)
 - ✓ BA in Psychology (English Medium)
 - ✓ COP in Counseling
4. **Names of Interdisciplinary courses and the departments/units involved**

The department of Psychology currently does not offer any interdisciplinary courses because Gujarat University does not have any such programme.
5. **Annual/ semester/choice based credit system (programme wise)**

The department has to follow the University pattern. Since the last two years the University has adopted the semester system. Currently only the third year students are following the Annual System, while the first year and the second year students are into the semester system.
6. **Participation of the department in the courses offered by other departments**

In the present structure of the University there is no scope to participate in the courses offered by other departments. However, we do assist the Campus Ministry in conducting the soft skill training sessions in the Personality Growth Oriented Programme for students of Gujarati-Hindi.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.**

Currently we are not offering any course collaboration with other universities. Some students go to Prabhat Foundation for mentally Challenged children and render their services.
8. **Details of courses/programme discontinued (if any) with reasons**

The department has not discontinued any programme.
9. **Number of Teaching posts**

	Sanctioned	Filled
Professors	0	0
Associate Professors	3	3
Assistant Professors	0	0
Adhyapak Sahayak	1	1
Ad hoc	0	1

10. Faculty profile with name, qualification, designation, specialization

Name	Qualification	Designation	Specialization	No. of years of Experience
Dr. Khushunuma Banaji	Ph.D.	HoD, Associate Professor	Clinical Psychology	22
Dr. Profina Christian	Ph.D.	Associate Professor	Industrial Psychology	17
Dr. Arifa Mansuri	Ph.D.	Associate Professor	Clinical Psychology	16
Dr. Arti Oza	Ph.D., GSLET	Adhyapak Sahayak	Clinical Psychology	02

11. List of senior visiting faculty

Prof. Tatpar Joshipura is coming to teach as a visiting faculty this year. In 2011-2012 we had Prof. Archita Pradhan and Prof. Himval Pandya as visiting faculty.

12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty

	2009-10	2010-11	2011-12	2012-13
A Division	45%	45%	45%	45%
B Division	22.5%	22.5%	22.5%	22.5%

13. Student -Teacher Ratio (programme wise)

The current student: teacher ratio is 82:1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

No separate support staff is sanctioned for this department. However, as per need, the common support staff is made available.

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ M.Phil./PG, M.Phil.

All the four departmental members hold Ph.D. degrees. One visiting faculty is pursuing his M.Phil. degree.

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received

The department has a project from UGC.

17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received

Faculty	Duration	Title	Funding agency	Amount (Rs.)
SXC	2012-13	Ethical values of college professors	UGC	1,25,000

18. Research Centre /facility recognized by the University
Nil.

19. Publications: Detail at the end of this report on the department of Psychology.

20. Areas of consultancy and income generated

Dr Khusunuma Banaji

- PG teaching at Gujarat University since 2008
- PGDCP at Gujarat University since 2008
- Career Oriented Programme on Counseling granted by UGC.
- Practice as a Clinical Psychologist

Dr Profaina Christian

- PG teaching at Gujarat University and L.D. Arts college since 2008
- Career Oriented Programme on Counseling granted by UGC.

Dr Arifa Mansuri

- PG teaching at Gujarat University since 2008
- PG teaching at C.U.Shah and S.V. Arts college.
- Teaching Psychology to nursing students at Civil Hospital and J.G. College of Nursing

Dr Arti Oza

- UGC sponsored Diploma Course of Counseling at Shree L.N.C.Mehta Arts college, Ahmedabad to teach special clinical psychology
- PG teaching at L.D. Arts College, C.U.Shah Arts College and S.V. Arts College.
- City Plus Acting Institute of film & television, Gandhinagar (Bachelor and Master Level): delivered lectures on acting and psychology. No income was generated.

21. Faculty as members in a) National committees b) International Committees c) Editorial Boards

- Prof. Dr. Khushnuma Banaji has been appointed in the syllabus committees for modification of FYBA, SYBA & TYBA syllabus at Gujarat University.
- Dr. Arti M. Oza has been appointed by Knowledge Consortium of Gujarat (KCG) on the committee which is preparing a common

syllabus for all the colleges of Gujarat based on CBCS pattern in the year 2012 -2013.

22. Student projects

- a) Percentage of students who have done in-house projects including inter departmental/programme/**

2009-10

No.	Name	Guided By	Research Title
1.	Ms. Sudipti Nair	Dr. Khushnuma Banaji	A study of Maternal Anxiety and Depression in families where children suffer from Neuro–Development problem.
2.	Mr. Aurko Chatterjee	Dr. Khushnuma Banaji	The integrated learning tool.
3.	Ms. Veli Mehta	Dr. Khushnuma Banaji	A comparative study of Anxiety levels of boys and girls of English and Gujarati Medium studying in Government granted and private schools of Ahmedabad.

2010-11

No.	Name	Guided By	Research Title
1.	Mr. Krunal Khatri	Dr. Profaina Christian	A comparative study of Need for guidance among the Boys and Girls studying in High school
2.	Ms. Faiza Mansuri	Dr. Arifa Mansuri	A study of anxiety among Muslim women with reference to age and employment

2011-12

No.	Name	Guided By	Research Title
1.	Ms. Archana Thawani	Dr. Khushnuma Banaji	Anxiety level of parents having Autistic children.
2.	Ms. Kajal Dave	Dr. Khushnuma Banaji	Eating disorder in women.
3.	Mr. Kanshin Munshi	Dr. Profaina Christian	Relationship between face book and frustration in different age group.
4.	Mr. Aman Chaudhary	Dr. Arifa Mansuri	A study of effect of parents' occupation on the vocational interest of their children.

- 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

Dr Khushunuma Banaji was awarded ‘Achiever’s Award’ by Ushta-te Foundation for service in Education, Psychology and Counseling. The award comprised of a trophy and a certificate.

Dr Arefa Mansuri was awarded by Mansuri Youth Development Committee.

Five students each year are being awarded research fellowships which also includes a medal. Moreover, the top rankers of each year, viz. FY, SY and TY, have been awarded merit certificates for excellence in the subject.

Year	Rank Position		
	FY	SY	TY
2009-10	3 rd ,7 th ,10 th , 16 th ,43 rd	4 th ,5 th ,32 nd , 35 th ,45 th	
2010-11	1 st ,21 st ,23 rd , 48 th	1 st ,3 rd ,4 th ,5 th , 6 th ,7 th ,13 th ,17 th , 21 st ,28 th ,	20 th ,21 st
2011-12	11 th ,29 th ,42 nd	5 th ,7 th ,14 th ,20 th , 26 th ,27 th ,28 th	13 th ,32 nd ,33 rd , 45 th ,50 th

24. List of eminent academicians and scientists/ visitors to the department

Prof. Yogen Bhatt delivered lecture with power point presentation on ‘The life of Sigmund Freud’.

Dr. Dipti Nayak delivered lecture and power point presentation on ‘Mental Health’ (2009).

A seminar was conducted by CEE Center for Environmental Education on Noise and its effects (2009).

Dr. Bhavesh Lakdavala (Lakdavala) from B.J. Medical college delivered lecture on ‘Mental Health’ (2012).

25. Seminars/ Conferences/Workshops organized & the source of funding

The department has jointly organised a seminar on ‘Education: A step towards Inclusiveness’.

26. Student profile programme/course wise: (2012-13)

Name of the course/programme	Applications received	Selected	Enrolled (Guj & Eng med.)			Pass percentage
			M	F	T	
2012-13						
Guj. Medium (FY)		29	11	18	29	
Guj. Medium (SY)		24	8	16	24	
Guj. Medium (TY)		23	10	13	23	
Eng. Medium (FY)		49	6	43	49	
Eng. Medium (SY)		35	7	28	35	
Eng. Medium (TY)		46	6	40	46	

27. Diversity of Students (2011-12)

Name of the course	% of students from the same state	% of students from other states	% of students from abroad
BA			
2012-13	95%	5%	0%
COP			
2012-13	95%	5%	0%

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defence services, etc.?

Nil

29. Student progression

Two students (Sudipti Nair, Aurko Chattirjee) were selected by Google during campus placement.

30. Details of Infrastructural facilities

- a) **Library:** There are 3395 books in the central library. COP has a separate library.
- b) **Internet facilities for Staff & Students:** The department has an internet portal for staff members and Wi-Fi accessibility. The students can avail internet facility for referencing in the College library.
- c) **Class rooms with ICT facility:** The department uses the common AV Room facility as and when required.

31. Number of students receiving financial assistance from college, university, government or other agencies: Nil

32. Details on student enrichment programme (special lectures / workshops / seminar) with external experts

Experts from various areas of Psychology have been invited to deliver lectures and conduct workshops for students

Prof. Yogen Bhatt delivered lecture with power point presentation on ‘The life of Sigmund Freud’.

Dr. Dipti Nayak delivered lecture on ‘Mental Health’ (2009).

A seminar was conducted by Center for Environmental Education on Noise and its effects (2009).

Dr. Bhavesh Lakdavala (Lakdavala) from B.J. Medical College delivered a lecture on ‘Mental Health’ (2012).

Twelve Students have been sent to attend the one day workshop on Body Language, Time management and Emotional Intelligence organized by School of Psychology, Gujarat University, Ahmedabad (12th Sept. 2010).

Students also attended National workshop on Effective Parenting organized by School of Psychology, Gujarat University, Ahmedabad (Feb 2010).

Twenty one Students were also given chance to participate & attend a seminar on Psychological problems of Youth organized by Kanoriya Hospital on 7th Jan. 2012

One student (Archana Mauthy) also made paper presentation in an International Conference organized by IAAP at Kerala under the guidance of Dr Arefa Mansuri in 2012

Teaching methods adopted to improve student learning

Members of the department engage in a range of pedagogical practices such as:

Group discussion, assignments and paper presentation are some of the teaching methods employed by the departmental members

Role play and audio – visual methods including movies are also used to enable the students gain an in-depth understanding of the curricular topics

Field visits have been arranged for the students to get a first hand experience and clarity of the study related concepts. These visits are as follows:

- Forensic Laboratory, Gandhinagar
- Center for Environment Education (CEE), Ahmedabad
- Mental Hospital, Ahmedabad
- Mother Teresa’s Orphanage, Ahmedabad

Class test are conducted at regular intervals to help the students know their capacities and improve accordingly

Subject related experts are invited to give their inputs on technical topics

34. Participation in Institutional Social Responsibility (ISR) and Extension activities

Dr Khushnuma Banaji

- Conducts Teacher Training workshops on regular basis affiliated to Gujarat board.
- Conducts PGOP in St Xavier's college & also other colleges.
- Delivered many lectures as a resource person at BISAC, Gandhinagar.
- Regularly gives counseling service in Parsi community
- She has also done online counseling for 10th , 12th students which are linked with Sandesh Press and School of Psychology, Gujarat University, Ahmedabad.

Dr Profaina Christian

- Offers her services as a COP coordinator and helps in conducting activities in Prabhat Foundation – a center for mentally challenged children at the St. Xavier's College, Ahmedabad.
- Conducts Teacher's Training programme affiliated with Gujarat Board.
- Delivered many lectures as a resource person at BISAC, Gandhinagar.
- She is a member of the Pastorate communities of Christ Church, Mirzapur.
- She is also a treasurer in the Church Mahila Mandal.
- Conducted a workshop on counseling on Women Welfare at Gandhinagar (2011).
- She also conducted a workshop on Women Empowerment at Kachhi Samaj.

Dr Arti Oza

- Delivered lecture as a resource person at one day seminar on 'Research report' organized by P.G. Center, C.U.Shah Arts College, Laldarwaja, Ahmedabad on 20th April 2011.
- Delivered a lecture as a resource person at a workshop on 'Skills for parent of students with special needs' organized by Gujarat Kelavani Trust, Ahmedabad and RCI (Rehabilitational Council Of India) New Delhi on 19th October 2011.
- Delivered many lectures as a resource person at BISAC, Gandhinagar.
- Delivered many guest lectures to Primary school teachers (Gujarat board affiliated Surendranagar distreict) on the subject of Mental Health among Children.

- Conducted many Mental Health training programme for special teachers.
- Delivered a guest lecturer on ‘Mental illness, DSM- IV & Mental Health’ to the under graduate students of Smt. S.R. Mehta Arts College, Ahmedabad on 10th September 2009.

35. SWOC analysis of the department and Future plans

Strength

- All the departmental members are holding a Ph.D. degree.
- All departmental members are conducting research at under graduate level.
- All departmental members are also have a good rapport with the students.
- Personal counseling is also undertaken for needy students.
- Members of the department are trained and conduct Personality Growth Oriented (PGOP) workshops regularly for students.
- Our department has successfully been conducting Career Oriented Programme in Counseling under the co-ordinatorship of Dr. Profaina Christian.

Weakness

- Lack of a separate Psychology laboratory as we have been sharing it with the statistics department.
- Lack of laboratory assistant/ peon which creates lots of administrative problems during practicals.
- Unable to conduct local/ state/national level seminars.
- Unable to have a permanent tie up with any institution for social service.

Opportunity

- Good internet facility.
- Facility for computer software (SPSS) is provided on the campus.
- Two departmental members had the opportunity to complete their Ph.D. programme.
- Management gives permission to take PG lecturers/ BISAC lecture to all departmental members.
- Management motivates departmental members to engage PGOP workshops in other colleges.
- Departmental members are encouraged to participate in various extension programme.

Threats

- Less number of students opting for Arts subjects.
- This results in a chance that a faculty member may become surplus.

Strategic Action Plan

Academic Planning (Goals)

- Focus on monitoring the academically weak students

- Help students on a one to one basis where a senior bright student helps the junior weak students so that they become equally accomplished in the subject.
- A special mentoring by bright students to foreign students who are having a language handicap.
- Planning to celebrate ‘Psycho-week’ by organizing talks from well known/experts in our subject as well as other activities including quiz, field trips/visits.

Research Goals

All professors of the Psychology department assist students in under graduate research. We now plan to motivate students to present research papers at local and state level conferences.

Extension Service Goals

- COP in counseling has tied up with ‘Prabhat’ Institute for mentally challenged students (for CP, MR, Autistic children). They have been rendering their services for the last three years. These students work with children at school (Xavier Research Foundation) as well as conduct home visits, where they also meet parents to work out a plan as to how to deal with these children.
- From this year onwards, we are planning to include all interested students in these activities even if they are not a part of this group.
- Members of the department have been regularly conducting PGOP sessions for College students. Besides this, would also like to conduct the same PGOP course for other college students so they too benefit from the same.

Publications

Contribution in Books

1. **Oza, A.,** 'History of Psychology', Akshar Publication, Ahmedabad, 2011-12.
2. **Oza, A.,** The comparative study of depression level among the parents of MR children. Published in 'Manovigna na sansodhan patro', Divine Publication, Ahmedabad, 2012, ISBN No. 978-93-81002-68-1, pp: 1-5.
3. **Oza, A.,** "Jati na sandarbhma Neuroticism na praman no tulnatmk abhyas", Published in: 'Manovigna na sansodhan patro -1', Divine publication, Ahmedabad, 2008.
4. **Christian, P.,** "Study of guidance need among adolescent of employed & unemployed mothers" Published in 'Issue on parenting and adolescent', Prism Books, India, ISBN: 978-93-82037-04-0, 2012.
5. **Mansuri, A. J.,** "Female Foeticide: A psychomedical perspective" Published in Manovignana Sansodhan Patro -3, Divine Publication, ISBN: 978-93-81002-66-7, 2012.
6. **Mansuri, A. J.,** "Bal Vikas -1" (Child Development) for SYBA Sem III students for Nirav Prakashan, ISBN: 978-93-82514-17-6, 2012.

Research Papers

1. **Oza, A.**, “The correlative study of health and emotional adjustment level among the adolescent” ‘Research Aaj Tak’ Vol.1 No.1 April to June 2012, ISSN 2278-2001
2. **Banaji, K.**, “A study of Gender difference – In Emotion Maturity and Frustration level of Adolescent students” ‘Research Annals of Xavier’s Ahmedabad; St. Xavier’s College, Ahmedabad, March 2012.
3. **Banaji, K.**, “A study of Gender difference – In Emotion Maturity and Anxiety level of Adolescent students” Published in ‘Research Annals of Xavier’s Ahmedabad; St. Xavier’s college, Ahmedabad, March 2010.
4. **Banaji, K.**, “Adjustment rises in Adolescents suffering from Cerebralplasy As compared to Normal” Published in: ‘Research paper of Psychology – 2 ’, Divine Publications, Ahmedabad, October, 2009.
5. **Banaji, K.**, “Obesity in childhood: A Psycho-Dynamic Perspective” Gujarat Journal of Psychology, Ahmedabad, March 2008.

Conferences/ Workshops

1. **Mansuri, A. J.**, Presented scientific paper entitled “Study of Social Support received by men & women with reference to family structure” during “The 13th International and 44th National Conference of The Indian Academy of Applied Psychology” Vivekanand Arts, Sardar Dilipsingh Commerce and Science College, Aurangabad”. 2009.
2. **Mansuri, A. J.**, Participated in a workshop on Adolescent Personality Measurement organized by Department of Psychology, Gujarat University, Ahmedabad. 2009.
3. **Mansuri, A. J.**, Participated in National Level Seminar on Communication and Counseling organized by the Department of Psychology, Gujarat University, Ahmedabad. 2009.
4. **Christian, P.**, “Counseling Sessions on behalf of Border Wives Welfare Association”, BSF Campus, Chiloda Road, Gandhinagar. 16th July 2011.
5. **Christian, P.**, Attended the Brain at Work workshop held at Ahmedabad Management Association, Ahmedabad. 23rd January 2011.
6. **Mansuri, A. J.**, Presented a paper on “ A Study of the Behavioural Problems faced by the Primary school Children watching violence on TV as rated by Their Mothers” Attended U.G.C. at the State Level Seminar on “ In Light Of Psycho-Socio Concept The Violence Within Country Is To What Extent Condemnable Or Harmful To The Society At Large”. 2009.
7. **Mansuri, A. J.**, Presented a paper “A Study of Self-Perception and Parent-Child Interaction”, National Seminar on Parenting, Adolescence and Academic Achievement, Dept. of Psychology, Smt. M.M. Shah Mahila Arts College, Kadi. 2-3 March 2011.
8. **Mansuri, A. J.**, “Psychological well being of the housewives of BSF Jawans and the Housewives of civilian men”, International Conference on “Applied Psychology in Transforming Education and Management Sciences in the Context of Globalization”, TIST, Ernakulam, Kerala, 2012.
9. **Mansuri, A. J.**, “A Study of Emotional Intelligence of High School Boys and Girls”, International Conference on “Applied Psychology in Transforming Education and Management Sciences in the Context of Globalization”, TIST, Ernakulam, Kerala, 2012.

10. **Mansuri, A. J.**, “Effects of the Home Environment on Emotional Intelligence of the High School Students”, International Conference on “Applied Psychology in Transforming Education and Management Sciences in the Context of Globalization”, TIST, Ernakulam, Kerala, 2012.
11. **Mansuri, A. J.**, Presented a paper “The study of the effects of parental occupation on the personality of college going students”, International Conference on “Applied Psychology in Transforming Education and Management Sciences in the Context of Globalization”, TIST, Ernakulam, Kerala. 15-17 June 2012.
12. **Christian, P.**, Presented a paper on A study of stressful events and distress of Arts Graduate Shrimad Rajchandra Ashram, Mohangadh, Dharampur, 2011.
13. **Banaji, K.**, Presented a paper “A Study of Gender Differences in Emotional Maturity and Frustration Level of Adolescent Students”, National Conference on Child Development: Multidimensional Approach, Post Graduate Diploma in Counseling Psychology, Gujarat University, Ahmedabad, 2012.

Resource Person

Banaji, K., Personality Growth Oriented Programme, Shri Harivallabhdas Kalidas Arts College, Ahmedabad, 27-28 December 2011.

Department of Sanskrit

1. **Name of the department:** Sanskrit
2. **Year of Establishment:** 1957
3. **Names of Programme / Courses offered**
 - ✓ BA in Sanskrit
 - ✓ COP in Journalism
 - ✓ Ph.D. in Sanskrit
4. **Names of Interdisciplinary courses and the departments/units involved**

The department of Sanskrit currently does not offer any interdisciplinary courses because Gujarat University does not have any such programme.
5. **Annual/ semester/choice based credit system (programme wise)**

The department has been following the University pattern from the year of its establishment. Currently only the third year students are following the Annual System, while the first year and the second year students are into the semester system as the University introduced the CBCS structure from 2011 onwards.
6. **Participation of the department in the courses offered by other departments**

Though the department does not directly participate in the academic course of other departments, we do assist the Campus Ministry in conducting the soft skill training sessions in the Personality Growth Oriented Programme.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.**

Currently the department is not having any collaboration for courses.
8. **Details of courses/programme discontinued (if any) with reasons**

The department has not discontinued any programme
9. **Number of Teaching posts**

	Sanctioned	Filled
Professors	0	0
Associate Professors	3	3
Asst. Professors	0	0

10. Faculty profile with name, qualification, designation, specialization

Name	Qualification	Designation	Specialization	No. of years of Experience	No. of Ph.D. Students guided last 4 years
Dr. Shuchita Mehta	M.A. in Sanskrit & Prakrit & Ph.D.	Head, & Associate Professor	Indian Philosophy, Indian Poetics, Classical Literature & Indian Music	23 years	Completed:3 Submitted:1
Dr. Urmil Shah	M.A, B. Lib Ph.D.	Associate Professor	Vedic Literature, Classical Literature.	22 Years	Completed:2 Submitted:1 M.Phil. Completed:2 Submitted:1
Dr. Ishwar Mehra	M.A., Ph.D	Associate Professor	Indian Poetics& Classical Literature	17 Years	

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 (programme wise): 5: 1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

Currently we do not have administrative staff. The department depends on the common staff allotted for the entire Arts faculty.

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ M.Phil./PG.

All faculty have Ph.D.

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received

There is no ongoing project.

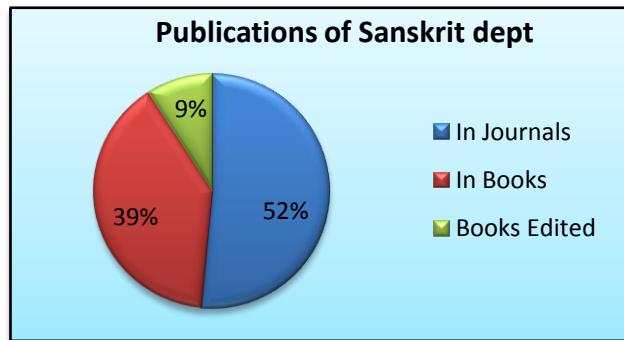
17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received

One Major Research Project was funded by UGC, from June-2007 to April, 2010. Total Grant: Rs. 6,34,600/-

18. Research Centre /facility recognized by the University

Nil.

19. **Publications**
 Details of publication are attached at the end of this section of Sanskrit.



20. **Areas of consultancy and income generated:**
 Nil
21. **Faculty as members in a) National committees b) International Committees c) Editorial Boards**
 Dr Shuchita Mehta has been nominated as a member of the Sanskrit Board of Studies by Gujarat University since, 2012.
 Dr Urmī Shah has been nominated as a member of the Board of Studies, by Somnath University.
22. **Student projects**
 - a) **Percentage of students who have done in-house projects including inter departmental/programme**
 On an average 1-5 students per year

Sanskrit	
2009-10	Valmiki, Malvikagnimitram
2010-11	Kalidas, Shiv Puran, Upanishads

 - 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 Urmī Shah, nominated on the Executive and Academic Council, Rajbhavan, Gandhinagar, 2011.

Some of our students have been in the list of top 50 at the University. In 2010, 50th rank in FY, 1st, (Ms Mana Shah), 28th and 33rd ranks in TYBA were from Sanskrit department.

List of eminent academicians and scientists/ visitors to the department:
 Dr R Raj Singh, Professor of Philosophy, Brock University, Canada.

24. **List of eminent academicians and scientists/ visitors to the department**
 Dr R Raj Singh, Professor of Philosophy, Brock University, Canada.
25. **Seminars/ Conferences/Workshops organized & the source of funding**

- a) **National:** Department collaborated in the UGC sponsored seminar, “Education: A step towards Inclusiveness”.
- b) **International:** A Seminar was organized by the Sanskrit Department in which the key note address was delivered by Dr R. Raj Singh, Professor of Philosophy, Brock University, Canada. 60% of the expenses was funded by Sanskrit Academy of Gujarat.

26. **Student profile programme/course wise (in 2012-13)**

Name of the Course/programme	Applications received	Selected	Enrolled		Pass percentage
			M	F	
			M	F	
BA Sanskrit		21	10	11	
COP					

27. **Diversity of Students**

The Department has a large numbers of students from remote villages, SC, ST, and economically less privileged. The department does not get any students from abroad.

28. **How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?**

Once students complete the programme; it is difficult to keep track of them. So the department does not have any data.

29. **Student progression**

Student progression	Against % enrolled
UG to PG	50%
PG to M.Phil.	
PG to Ph.D.	
Ph.D. to Post-Doctoral	
Employed	
Campus selection	
Other than campus recruitment	
Entrepreneurship/Self-employment	

30. **Details of Infrastructural facilities**

- a) **Library:** The library has 2893 books for Sanskrit. It also has audiocassettes for visually challenged students.
- b) **Internet facilities for Staff & Students:** The department has Wi-Fi accessibility. Faculty uses internet facility at the common computer laboratory. The students can avail internet facility for referencing in the College library.

- c) **Class rooms with ICT facility:** The department makes use of the common facilities of the College.
31. **Number of students receiving financial assistance from college, university, government or other agencies.** Nine
32. **Details on student enrichment programme (special lectures / workshops / seminar) with external experts:** Nil
33. **Teaching methods adopted to improve student learning**
✓ Guest lectures are arranged and Audio cassettes are used to make the topics interesting.
✓ Educational tours, visit to other literary institutions.
✓ Department houses a large collection of audio cassettes meant for visually challenged students.
34. **Participation in Institutional Social Responsibility (ISR) and Extension activities**
The departmental staff members and students are involved in various social awareness programmes of the College.
35. **SWOC analysis of the department and Future plans**
- Strength**
- ✓ All the departmental members have a Ph.D. degree.
 - ✓ Departmental members regularly present research papers at State, National and International conferences.
 - ✓ Departmental members remain actively involved in research.
 - ✓ Departmental members get involved in extracurricular activities.
- Weakness**
- ✓ As the medium of teaching is not Sanskrit, students are not benefitted much with the richness of the subject.
 - ✓ Very few students opt for Sanskrit. Hence day by day the number of students are decreasing.
 - ✓ Most of the students are from the weaker sections, and are job oriented. Very few students are subject oriented.
- Opportunities and Challenges**
- ✓ Getting students to opt for Sanskrit as the major subject, and to keep them motivated.
 - ✓ Foreign students want to take a course in Sanskrit. This has to be explored.

Publications

Books

1. **Mehta, S.,** Tattvopaplavasimha (Ed), ISBN -978-81-7110-365-2, Published by Parimala Publication, New Delhi, 2010.
2. **Mehta, S.,** Raghuvamsha (Ed), Published by Parshva Prakashan, 2007.

3. **Shah, U.**, Nigamakalpataru (Ed), Published by Sanskrit Seva Samiti, Ahmedabad, 2012.
4. **Shah, U.**, Mahakavi Bhasa, Divine Publication, May. 2008.
5. Mehta, S., Mandukya Upanishad nu Abhinna Anga – Gaudapada Karika’s Vaitathya Prakarana’ in ‘Upanishado’ Parshva Publication, Ahmedabad, 2008.
6. **Mehta, S.**, Bhasa’s Vision of Life in the field of Spirituality’, in ‘Sanskrit Literature’, Published by Parshva Publicationj, Ahmedabad, 2009.
7. **Shah, U.**, Rasa and Uniqueness of Sanskrit Drama, Somaiya Publication Pvt, 2011.
8. **Shah, U.**, Social Consciousness in the Ramayana, Proceedings of H.K.Arts college, April -2009.
9. **Shah, U.**, Human Rights between the employer and the employed, in ‘Dharmashastra& Human Rights, pp. 116-129, New Bhartiya Book Corporation, New Delhi.
10. **Shah, U.**, Places of Worship & State in Kautilya, in ‘Vachaspativaibhavam’ A felicitation, pp. 1200- 1205. Published by D.K.Printworld, New Delhi, 2011.
11. **Mehta, S.**, State Craft in the Vedas, in Felicitation Vol. of Dr. G.V. Patel, Published by Sanskrit Sewa Samiti, 2011.

Journals

1. **Mehta, S.**, The concept of Amruta in the Upanishads, Journal of the Oriental Institute, Vadodara, Vol- LVI - Sep- 2006- June-2007.
2. **Mehta, S.**, The Practical Approach of the Ethical Principles of the Upanishads, Journal of Gujarat Research Society, Vol- LII, January- June-2007.
3. **Mehta, S.**, The concept of Jivanmukti in Vidyaranya’s Jivanmukti viveka, Journal of Gujarat Research Society-Vol- LIII, January- June-2008.
4. **Mehta, S.**, Premlakshana Bhakti of the saint Poet Narasimha Mehta, Research Annals of Xavier’s, Ahmedabad- March-2008.
5. **Mehta, S.**, The Veantic Thought in the works by Kalidasa and Bhavbhuti, Research Annals of Xavier’s , Ahmedabad, March-2009.
6. **Mehta, S.**, Sannyasa and Tyaaga in the Gita, Research Annals of Xavier’s, Ahmedabad- Vol-9, March, 2012.
7. **Mehta, S.**, Naturalism in Indian Philosophy, Proceedings of IJAS, Vol- 05, Number-01, ISSN- 1943-6114- Sep, 2012.
8. **Shah, U.**, Sanskrit as a Tool to New Pedagogy in the Modern India, Proceedings of World Sanskrit Conference, New Delhi, 2008.
9. **Shah, U.**, Shulka in Indian Tradition, Journal Of Oriental Research Institute, Vadodara, Vol-59, No-1,2. Sep – Dec. 2009.
10. **Shah, U.**, Queens of Ramayana, in ‘Sumangali’ Journal of Women’s Studies, Vol-1. Shree Lalbahadur Shastri Sanskrit Vidyapith, New Delhi, March-2010.
11. **Shah, U.**, Humanism and Religion, Souvenir of Silver Jubilee Celebration of Gurudharma Pracharna Samiti, Ahmedabad.
12. **Shah, U.**, Ethics as reflected in the teachings of Vidura and Kunika, Journal of Anantacharya Indological Research Institute, Vol-10 2011-2012.

Presentations

1. **Mehta, S.**, Sanyas and Tyaag in the Gita, Staff Research Day, St. Xavier's College, Ahmedabad, 3 March 2012.
2. **Mehta, S.**, Problem of 'Action' in Indian Philosophy, 22-25 May 2012.
3. **Mehta, S.**, National Conference on Women's Development in 21st century, Gujarat University, 2010.
4. **Mehta, S.**, Aesthetic Pleasure: A unique synthesis of the Upanishadic thought and Indian poetics, 18th International Congress of Aesthetics, Beijing, 2010.
5. **Mehta, S.**, The problem of the world in Samkara's philosophy, 2010. The Brock Philosophy Society.
6. **Shah, U.**, Position of women as reflected through the Sulka, The Asiatic society of Mumbai, August, 2010.
7. **Mehra. I.L.**, National Sanskrit seminar, J.Z. Shah & H.P.Desai Commerce College, Amroli, Surat, 2010.
8. **Mehra. I.L.**, 'Bharatiya Darshana', State level seminar, The Chanasma Nagarik Sahakari Bank Arts & B.A. Patel & D.B. Vyas College, Chanasma, 2010.
9. **Mehra. I.L.**, attended state level workshop, Departmet of Sanskrit, Gujarat University, Ahmedabad, 2010.
10. **Mehra. I.L.**, Saskritwikipedia, Department Of Sanskrit, Gujarat University, Ahmedabad and Sanskrit Bharati, Gujarat, July 2012.

Department of Biochemistry

1. **Name of the department :** Biochemistry
2. **Year of Establishment:** 1979
3. **Names of Programme / Courses**
The department of Biochemistry offers:
 - ✓ BSc in Biochemistry
 - ✓ Vocational Biotechnology
 - ✓ COP in Nutrition
 - ✓ COP in Bioinformatics
4. **Names of Interdisciplinary courses and the departments/units involved**
The Biochemistry department and the Vocational cell work hand in hand for the Vocational Biotechnology course.
5. **Annual/ semester/choice based credit system (programme wise)**
The department has been following the University pattern from the year of its establishment. Currently only the third year students are following the annual system, while the first year and the second year students are into the semester system as the University introduced the CBCS structure from 2011 onwards.
6. **Participation of the department in the courses offered by other departments**
One of the faculty has designed and conducted soft skill classes for Arts students. Five of the faculty (two of them have retired in 2011) in conjunction with Campus Ministry have also conducted soft skill training sessions in the Personality Growth Oriented Programme for students of all other departments.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.**
The department had collaborative project with Central Michigan University, USA for a safety water project. The staff and students had gone to selected areas of the city, checked the potability of water and made the residents aware of sanitation required for good health and prevention of water borne diseases. The Central Michigan University students had developed a system to purify water, which they were to distribute in the areas where water was found to be of poor quality.
8. **Details of courses/programme discontinued (if any) with reasons**
The department has not discontinued any programme. On the contrary the department is in the process of offering a diploma and advanced diploma in Nutrition and Dietetics.

9. Number of Teaching posts (as on February 1, 2013)

	Sanctioned	Filled
Associate Professors	2	2
Adhyapak Sahayak	3	3

10. Faculty profile with name, qualification, designation, specialization

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
Dr. S. S. Shah (Retired in Oct 2011)	MSc., Ph.D.	Associate Professor/ Ex - HOD	Nutrition	33 inclusive of 10 yrs PG Teaching	-
Ms. Jyotna Narula (Retired in Oct 2011)	MSc.	Associate Professor	Microbiology	32 inclusive of 10 yrs PG Teaching	-
Dr. Vincent Braganza (Retired in Oct 2012)	MSc., Ph.D.	Associate Professor (Ex Principal)	Biochemistry (Protein Chemistry)	26 inclusive of 12 yrs PG teaching	Completed 1 Submitted 2 Ongoing 5
Dr. Sebastian. V.	MSc., Ph.D., SLET	Associate Professor (HoD)	Molecular Genetics	15 inclusive of 10 yrs PG Teaching	Applied for guideship
Dr. Suresh P Thacker	MSc., Ph.D.,NET	Associate Professor	Biotechnology	15	-
Dr. Sudeshna Menon	MSc., Ph.D.	Adhyapak Sahayak	Life Sciences (Secondary Metabolites)	16	-
Prof. Shital Doshi	MSc, NET	Adhyapak Sahayak	Biochemistry	0.6	-
Prof. Kinjal Desai	MSc, NET	Adhyapak Sahayak	Biotechnology (Pharmacognosy)	0.6	-
Dr Minal Madhav	MSc., Ph.D.	Ad hoc	Biochemistry	2	

11. List of senior visiting faculty

In fulfilment of the COP on Nutrition and Dietetics, several faculty from different colleges conduct lectures:

Name	Qualification	Designation	Specialization	Teaching Experience
Dr Ajit Pandya	MSc Ph.D.	Associate Professor	Nutrition	21
Prof Diti Chokshi	MSc Ph.D.	Associate Professor	Nutrition	20
Dr Soni	MSc Ph.D.	Associate Professor	Nutrition	

12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty

During the academic years of 2010 - 12, the management had employed a teaching assistant to handle laboratory sessions. Dr Minal Madhav was given the responsibility of sharing work load of permanent faculty members of the department during laboratory sessions as the teacher-student ratio was highly skewed. However, in this academic session, three adhyapak sahayaks were appointed due to which services of the temporary faculty member was discontinued.

The department takes the help of a peon, Mr. Suraj (management employee – ad hoc) for day to day help in the department for cleaning and washing of glassware etc.

13. Student -Teacher Ratio (programme wise)
BSc Biochemistry Programme

Academic Year	Student:Teacher ratio
2011 – 12	68:1
2012 - 13	45:1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

There are two laboratory assistants, one peon and an adhoc peon.

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ M.Phil./PG.

Currently three faculty have doctorate and two are pursuing their doctoral studies in Biochemistry.

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received

Name	Duration	Title	Fundng agency	Amount
Dr Vincent Braganza	2012-13	Employment through innovation and entrepreneurship	ALBOAN Foundation, Spain	27,00,000
Dr Vincent Braganza	2010-12	Support for Entrepreneurial and Managerial Development of SMEs through Incubators	Ministry of Micro, Small & Medium Enterprises (MSME), GOI	64,00,000
Dr Vincent Braganza	2009-10	Upliftment of Agricultural Practices among the farmers through Plant Tissue Analysis Laboratory	Gujarat Horticulture Mission	9,00,000
Dr Vincent Braganza	2007-10	Isolation & characterization of hydrocarbon degrading microbes from various ecological sources	Neko Resources Pvt. Ltd.	15,00,000

Dr Vincent Braganza	2008-11	Empowerment of women in rural areas through micropropagation of flowering plants	DST- WOS- B	10,00,000
SXC	2011-13	Ethics and Environment	UGC	1,25,000

A project on pollution levels in the city of Ahmedabad is being carried out in the department, which is UGC funded.

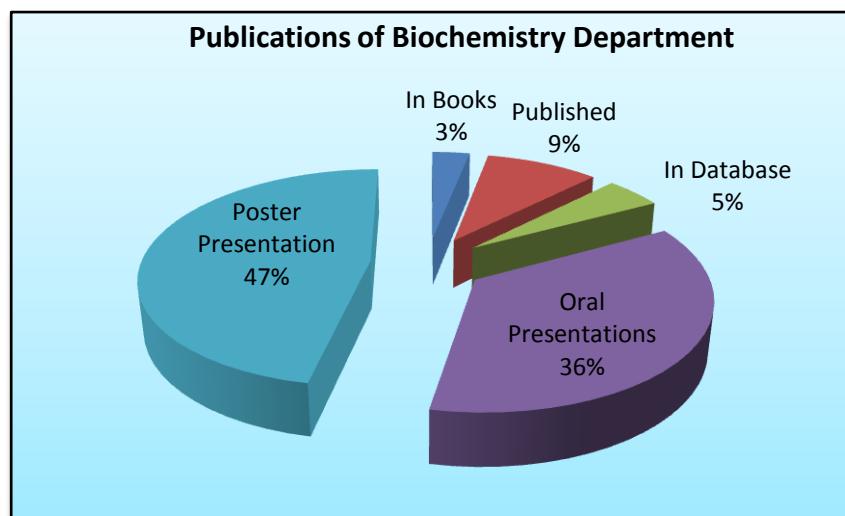
17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received

We do receive funding for chemicals under DBT Star College scheme and CPE. In 2011, GSBTM, under the umbrella of DST funded SXC towards the capacity building programme. Under this programme, the department coordinated with six Science colleges of Ahmedabad and Gandhinagar districts and the capacity building programme was organised. This programme trains students to develop skills of analysis, communication, interview, deductive logic etc. This programme enables them to target top national institutes for advanced studies.

18. Research Centre /facility recognized by the University

Xavier Research Foundation, a sister concern of SXC, is located on the College premises. It has a research infrastructure that is open for the faculty. Several faculty of the College from Chemistry, Biology and Biochemistry have completed/pursuing their Ph.D. at XRF. Undergraduate research students selected in Biochemistry, Vocational Biotechnology and Industrial Chemistry pursue their projects at XRF. The research facilities enable experiments in Plant Tissue Culture, Microbiology, Molecular biology, Chemical Sciences, Phytochemistry, Protein Purification and Animal experimentations. Faculty benefited for research from the department of Biochemistry are Dr Vincent Braganza, Dr Sebastian, Dr Sudeshna Menon, Prof Kinjal Desai, and Prof Shital Doshi.

19. Publications



20. **Areas of consultancy and income generated**
- Dr Vincent Braganza is in the screening of projects for MSME and he also offers his consultancy to Intas Pharma on Biosafety.
 - Dr Sebastian V is in the screening of projects for MSME
21. **Faculty as members in**
a) National committees b) International Committees c) Editorial Board

Fr (Dr) Vincent Braganza S.J

- ✓ Fellow of Gujarat Science Congress
- ✓ Member of Plant Tissue Culture Association of India
- ✓ Selected by the British High Commission for Inward Mission on Higher Education 2009.
- ✓ Member of the Expert Committee UGC to award development grants for the state of Maharashtra.
- ✓ An observer of IMC Ramakrishna Bajaj Quality Awards
- ✓ Examiner in NAAC Accreditation teams
- ✓ Committee member of Biosafety and Ethics at INTAS, Ahmedabad
- ✓ Associated and Board member of Eklavya School, Ahmedabad
- ✓ Editorial Board member of Plant Cell Molecular Biology and Biotechnology Journal
- ✓ Member, MSME

Dr. Sebastian V

- ✓ Member of Board of Studies for Biochemistry of Gujarat University

Dr. S. P. Thacker

- ✓ Member, Nutrition Society of India

22. **Student projects**
- a) **Percentage of students who have done in-house projects including inter departmental/programme/**

Students of the third year are given opportunities to be inducted into undergraduate research projects after a systematic screening process. External experts are invited to evaluate the shortlisted students. Every year five students are selected. The department being associated with Vocational Biotechnology is able to select 10 students.

These students' projects are funded by the college and on completion are awarded a certificate at a special function organized by the research centre. This academic year due to availability of research funds, 10 more students have been inducted into small research projects. Thus, 15 - 30% students have done in-house projects every year.

b) Percentage of students placed for projects in organizations outside the institution i.e. in Research laboratories / Industry / other agencies

About 50 to 60% students of Biochemistry department are Vocational Biotechnology students. Every year since its introduction as a course promoted by the UGC in 1995, the student of Vocational Biotechnology in fulfilment of the course have to go to institutions or industries for a summer internship during their first year or second year for a period of 20 to 30 days (8 hours per day). These projects enable the students to get an insight into applications of various theories and instruments used in these institutions and industries along with a know-how of the working environment. The students have to submit a training report, which is evaluated and the grade is included in the certificate given to each student on completion of the 3 years of course.

23. Awards/ Recognitions received by faculty and students

- ✓ Fr Vincent Braganza was awarded Vidya Rattan Gold Medal Award for "Outstanding Achievement in the Field of Education".
- ✓ Fr Vincent Braganza was awarded Rajeev Gandhi Education Excellence Award by the International Institute of Education & Management for "Outstanding Achievement in the Field of Education".
- ✓ Fr Vincent Braganza was awarded The Bharat Vidhya Shiromani Award and a certificate of Education Excellence for his role in the field of Education.
- ✓ Fr Vincent Braganza was awarded the T. K. Gajjar Memorial lecture in 2008-09.
- ✓ Prof. Kinjal Desai was awarded the LUMC Clinical Pathological Lab (PM Shift) fellowship for undergraduate research in 2008.
- ✓ Ten students each year are being awarded research fellowships which also includes a medal. Moreover, the top rankers of each year, viz. FY, SY and TY, have been awarded merit certificates for excellence in the subject.

24. List of eminent academicians and scientists/ visitors to the department

Fr. Vincent Braganza S.J, who is a member of the Plant Tissue Culture Association of India, was given an opportunity to host the 33rd PTCA Annual Meeting and the National Symposium at SXC. This National Seminar was organized by the Xavier Research Foundation, Vocational Biotechnology Cell and the department of Biochemistry. Several eminent speakers of Plant tissue Culture of India were invited to give talks.

The following were the eminent scientists who were invited for the Symposium

Name of the scientist	Position	Affiliated Institute
Dr. S. Maheshwari	Emeritus Professor	Jaipur National University
Dr. A. R. Mehta	Retd Professor, Founder and Member, Advisory Board	National Agriculture University, Navsari Sun Agrigenetics, Vadodara
Dr (Fr) Leo D'Souza	Director	Kupper Biotech Centre, St Aloysius College, Mangalore
Dr. Vibha Dhawan	Executive Director	TERI, New Delhi
Dr. P. B. Kavi Kishore	Retd Professor	Osmania University, Hyderabad
Dr. Neera Bhalla Sareen	Professor	University of Delhi South Campus Benito Juarez Road, Daula Kuan, New Delhi -110021, India
Dr. S.K. Sen	Professor	Advanced Lab for Plant Genetic Engineering Indian Institute of Technology Kharagpur
Dr. J. P. Khurana	Professor	Department of Plant Molecular Biology, University of Delhi South Campus Benito Juarez Road, Daula Kuan, New Delhi -110021, India
Dr. S. Natesh	Scientist H	Department of biotechnology, New Delhi
Dr. Anjan Bannerjee	Scientist	IISER, Pune
Dr. S.K. Apte	Professor	BARC, Mumbai
Dr. Kaza Krishnamurthy	Retd Professor	NCL, Pune
Dr. Pious Thomas	Professor	Indian Institute of Horticultural Research, Bangalore
Dr. Ramalaxmi Datta	Principal Scientist	Vivekananda Institute of Biotechnology, Nimpith, West Bengal
Dr. S. R. Thengene	Retd Scientist	NCL, Pune
Dr. Subramanian	Professor	S.P. University, Vallabh Vidyanagar
Dr Alok Dhawan	Professor	Director, Ahmedabad University
Mr AK Saxena	Director	GSBTM

25. Seminars/ Conferences/Workshops organized & the source of funding

a) National Level

National Symposium on Impact of Plant Tissue Culture on Advances in Plant Biology and 33rd PTCA Annual Meeting, Jan 19 -21, 2012. The Symposium was organized with the help of funding by UGC, DBT, GUJCOST, NABARD, IOB, BOB, and INSA

Workshops

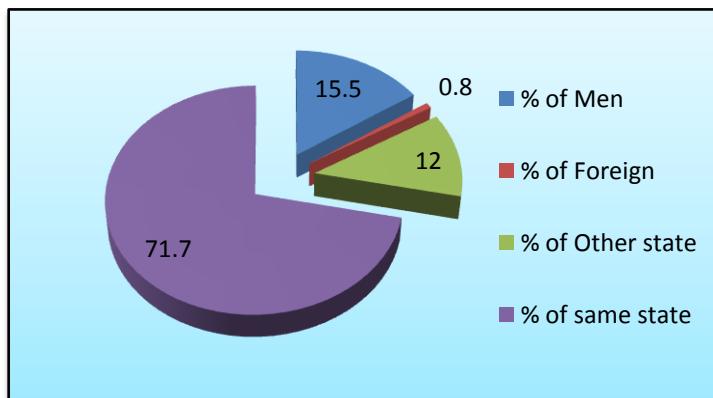
- Capacity building workshop for SY and TY students, sponsored by GSBTM, 2011-12.
- Capacity building workshop for TY students, sponsored by GSBTM, 2012-13.
- 24th Annual GIBiON Science Competition, January, 2013, sponsored by GSBTM.

26. Student profile programme/course wise (2012-13).

Name of the Course/programme	Applications received	Selected	Enrolled		Pass percentage
			M	F	
UG Biochemistry	450	49	07	42	
Voc. Biotechnology	800	49	12	37	
COP in Nutrition and Dietetics					

The department has always had a high female to male ratio. This could be attributed to more girl students taking up biology in their 12th Standard and an inclination towards research as a career option.

27. Diversity of Students (2011-12)



28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?

The GSBTM workshop initiated by the department from 2011 has been helpful in enabling more students to crack the MSc. and Ph.D. entrance examinations.

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13*
No. of students trained	23	30	28	18	57	37
Admitted	TIFR:1 NET 1	TIFR:1 NCBS:1 NET 1	JNU (JEE):4 NET 14	JNU (JEE): 3	TIFR:2 IIT:1 JNU (JEE):4	IISER: 2 NCBS: 3 TIFR: 1

*These students have cleared the first phase of selection.

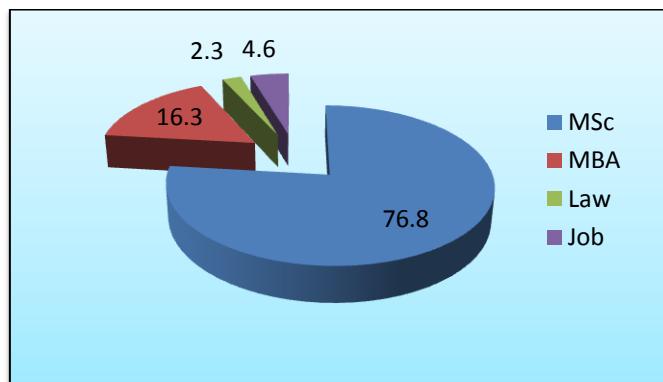
The performance of students in the academic year 2011 -12 are as under:

Institutes	
TIFR	2
IIT	1
JNU	4
MSU	3
VIT	3
Nirma University	5
Gujarat University	12
Other Universities	3

29. Student progression

Student progression 2011-12 batch	Against % enrolled
UG to PG	93%
Employed	7%

The chart below is an indication of student progression trend in the last five years.



30. Details of Infrastructural facilities

- a) **Library:** 210 books are maintained in the departmental library and the other 1372 books are in the central library. Vocational Biotechnology has 164 books.
- b) **Internet facilities for Staff & Students:** The department has an internet portal for staff members and Wi-Fi accessibility. The students can avail internet facility for referencing in the College library. The research students selected are given internet facility at Xavier Research Foundation.
- c) **Class rooms with ICT facility:** The department owns a portable LCD projector, which enables the faculty and students to give powerpoint presentations for teaching and seminars respectively.

The department also has an OHP and Projection Microscope.

- d) **Laboratories:** The department has three fully equipped laboratories that can accommodate 30 – 40 students each.

31. **Number of students receiving financial assistance from college, university, government or other agencies:**

Only one student is receiving financial assistance from the management fund.

32. **Details on student enrichment programme (special lectures / workshops / seminar) with external experts**

Lectures by past students: Dr Aakangsha Singhvi (Rockefeller University), Ms Sejal Davla, Ms Gopi Shah (MPI, Germany), Dr Yash Hemanji (Birmingham University), Ms. Riddhi Shah (Birmingham University).

Lecture on “Heart development in zebra fish through fluid motion” by Mr Vikas Trivedi (Caltech).

33. **Teaching methods adopted to improve student learning**

The following steps have been taken up by the department to enhance student learning:

- ✓ Laboratory workbooks are being given to students in the printed form from this year onwards.
- ✓ *Movies:* To learn and teach subjects. For example, a movie like Lorenzo’s Oil is used for teaching the nuances of fatty acid metabolism. This enables to understand scientific concepts in a larger perspective.
- ✓ *Quizzes:* Subject based quiz is conducted once a particular unit is completed.
- ✓ Revision using power point: This enables covering a lot of topics in a shorter duration. Moreover, the visuals help in understanding the concept better.
- ✓ *Book reading:* This activity has been introduced to inculcate reading habit among students.
- ✓ *Mini projects:* This has enable students to learn designing experiments and give an idea of research methodologies. (eg: Adulteration in milk samples from Ranip area/ Phytoremediation using *Brassica juncea*).
- ✓ Seminars by students on topics related to the subject: This activity increases the knowledge base of the students along with improvement in communication skills.
- ✓ Mock spot tests and theory tests for improving performances in practical examinations.
- ✓ *Biweekly exams:* This enables the students to have a reality check on whether their concepts are clear and updated.
- ✓ Notice board dedicated to articles, recent scientific developments, scientists’ contributions to the field etc. is an approach that improves the subject knowledge and general knowledge. This activity also builds curiosity in students and that can be a way of increasing their reading habits.

- ✓ Study tour to Concord Biotech
 - ✓ *Workbook*: To learn difficult concept through doing and interacting.
- 34. Participation in Institutional Social Responsibility (ISR) and Extension activities**
- The departmental staff members and students are involved in various social awareness programmes of the College.

No	Programme	Participation
1	NCC	1 student
2	ICRW's Stigma reduction in HIV AIDS	1 faculty 45 students
3	PGOP	3 faculty ≈ all students
4	Jagrat	1 faculty 3 students
5	Water Sanitation Project	1 faculty 10 students
6	Animal lovers	At least 4 students

35. SWOC analysis of the department and Future plans

Strengths	Weakness	Opportunities	Challenges
Library	Student Teacher Ratio	Research	Motivating students to read outside of the curriculum
Good laboratory for course work	Lab facilities needed for research	Summer workshop (Capacity building)	Complacency
Teaching faculty competent	Explore other institutions	Linkages or Collaborations	Mentoring and reaching out to all students
Loyal, availability	Syllabus restriction	Placements: field in demand	Research funding
Demand for subject (45 :1)	No benchmarks	Consultancy	Management of time for both teaching and research
Good result output	Not much involvement in extracurricular activities	Potential for conducting PG Course	Creating awareness of the subject due to increased seats in the professional courses
Good placement scope	Representation in Board of Studies minimum	Innovative teaching methodologies	Bridging industry – academia gap
COP offered	Alumni database not updated	Publications	Research publications

Publications

Contribution in Books

1. **Sebastian, V.**, Youth Leadership Development Programme ‘Education Plus’, Gujarat Sahitya Prakash, Anand, 2011.
2. **Sebastian, V.**, Subramanium, R.B. (2009). Biotechnology in Plant Improvement. P.C. Trivedi (Ed). Molecular markers in plant genome analysis. Chapter contributed. Pioneer publishers, Jaipur.

Research Papers

1. Kavita Kshirsagar & **Braganza, V. J.**, (2012). Micropropagation of Rosa damascena Mill. Through transverse thin cell layer culture. South Asian Journal of Experimental Biology. Vol 2, Issue 4.
2. Bhatt R.J., **Braganza, V. J.**, and Ghosh S.K.Characterization of a glycolipid biosurfactant produced by *Pseudomonas aeruginosa* strain XRF-4 isolated from indian oil field. *Bioresource Technology communicated ref. No.BITE-D-10-01892R1*
3. Gohel, H. R., **Braganza, V. J.**, and Ghosh S.K.Thermophiles as a biotic tool to increase the rate of conventional biogas production. ISBN-978-93-80867-31-1.
4. **Sebastian, VA.**, D'Cruz, L., Subramanian, RB and **Braganza, V. J.**, (2010). Assessment of genetic diversity within and among populations of Tylophora rotundifolia using RAPD markers. *Gene conserve*, 9 (36): 94-117.
5. **Sebastian, VA.**, Subramanian, RB., D'Cruz, L and **Braganza, V. J.**, (2010). DNA barcodes for certain endangered Indian Tylophora species. *Gene conserve*, 9 (38): 222-246.
6. **Sebastian Vadakan.**, R.B. Subramanian & **Braganza, V. J.**, (2007) Identification of specific genetic markers for *Tecomella undulata* (Sw.) Seem. Proceeding of National Symposium on Plant Biotechnology: New Frontiers, (eds) Kukreja AK *et al.*, CIMAP, Lucknow. 492-494.

International database (NCBI)

Sebastian Vadakan., GU060630

Sebastian Vadakan., GU060631

Sebastian Vadakan., FJ890375

Paper/ Poster Presentations

1. Gayatri K. Vaidya & **Braganza, V. J.**, (2013) Inclusive Biodiversity Management and Conservation of Indigenous Knowledge with the Help of Forest Dwellers State Level Seminar on Conservation of Biodiversity and Environment: A Challenge organised and Hosted by Biology Department, K. K. Shah Jarodwala Maninagar Science College, Ahmedabad on 5th January, 2013.
2. Gayatri K. Vaidya & **Braganza, V. J.**, (2012).Engaging Tribal Youth in Plant Tissue Culture for Environmental Conservation. Presented at the National Symposium on Impact of Plant Tissue Culture on Advances in

- Plant Biology, held at St. Xavier's College, Ahmedabad between 19th – 21st January, 2012.
- 3. Sudeshna Menon, S. K. Ghosh, **Braganza, V. J.**, (2012), Enhanced *in vitro* production of saponins in cell suspension cultures of *Gymnema sylvestre* R. Br. Due to temperature stress. Presented at the National Symposium on Impact of Plant Tissue Culture on Advances in Plant Biology, held at St. Xavier's College, Ahmedabad between 19th – 21st January, 2012.
 - 4. Kavita Kshirsagar & **Braganza, V. J.**, (2012), Transfer of Technology To Empower Rural Women and Promote Entrepreneurship. Presented at the National Symposium on Impact of Plant Tissue Culture on Advances in Plant Biology, held at St. Xavier's College, Ahmedabad between 19th – 21st January, 2012.
 - 5. Gayatri Vaidya & **Braganza, V. J.**, (2011), Rutin accumulation in *Hemidesmus indicus* R. Br. at various stages of *in vitro* differentiation. Presented at National Symposium on Evolving Paradigm to Improve Productivity from Dynamic Management and Value Addition for Plant Genetic Resources from 13th to 15th October-2011.
 - 6. Betsy I. Gohil, Utpal S. Joshi, Gayatri Vaidya, **Braganza, V. J.**, (2011). Synthesis of TiO₂ based dye sensitized solar cell for clean energy. Presented at the National Conference on Physics for Tomorrow, organized by the Department of Physics and Electronics, St. Xavier's College, Ahmedabad, 3rd & 4th March, 2011.
 - 7. Gayatri K. Vaidya & **Braganza, V. J.**, (2011), Bioaccumulation of phytochemicals *in vitro* of *Argyreia boseana* Santapau & Patel, Presented at the Gujarat Science Congress, Science City, Ahmedabad on 26th- 27th February, 2011.
 - 8. Hardik Gohel, **Braganza, V. J.**, & S.K.Ghosh (2011), Thermophiles in the process of Biogas production, Presented at the XXV Gujarat Science Congress “Theme: Chemistry in the service of society” on 26th to 27th February, 2011 organized by Gujarat Council of Science City (Department of Science & Technology, Government of Gujarat) & Gujarat Science Academy, Ahmedabad .
 - 9. Rushi J. Bhatt, **Braganza, V. J.**, & S.K. Ghosh (2011), Isolation and characterization of crude oil degrading and biosurfactant or bioemulsifier producing microbes from various oil fields of Gujarat, Presented at the XXV Gujarat Science Congress Gujarat Science Academy AHMEDABAD.
 - 10. Rushi J. Bhatt, **Braganza, V. J.**, & S. K. Ghosh (2011), Isolation and characterization of a novel biosurfactant produced by *Bacillus sp.* and it's application in various fields, Presented at the National symposium on “Biochemistry: Recent Advances in Molecular Research” on 20th February, 2011 organized by department of Biochemistry, Saurashtra University, RAJKOT.
 - 11. **Braganza, V. J.**, (2010), People- Plant Tissue Culture Linkages : Explorations of a technology in Pursuit of Development, Presented at the National Symposium of Plant Tissue Culture Association of India held at the University of Calcutta, 2nd – 5th March, 2010

12. **Sebastian. V.A., Braganza, V. J.**, and Subramanian, RB. DNA barcodes for certain endangered Indian Tylophora species. International conference on Aromatic MedicinalPlants (AROMED- 2010) Lucknow.
13. **Sebastian. V.A., Braganza, V. J.**, and Subramanian, RB. Identification of genetic markers in endangered Tylophora fasciculata for biodiversity conservation. International conference, Banasthali University, Oct. 2008.
14. **Sebastian. V.A., Braganza, V. J.**, and Subramanian, RB. Utilisation of species specific markers for resolving taxonomic issues involving ethnomedicinally significant species of Tylophora. National conferene, Shri RK Parikh arts and science college, Petlad,, Gujarta. Spt. 2008.
15. **Sebastian. V.A., and Braganza, V. J.**, Preliminary assessment of genetic diversity in endangered Tylophora fasciculata for species conservation, staff research day, St Xavier's College, 2007.
16. Gayatri K. Vaidya, and **Braganza, V. J.**, (2008) Comparative study of wild and tissue cultured plants of *Hemidesmus indicus* Roxb. to check clonal and phytochemical fidelity. Presented at the International Conference on Molecular Biology and Biotechnology, Banasthali Vidyapeeth, Jaipur, 19th- 21st October, 2008.
17. Rushi J. Bhatt, **Braganza, V. J.**, and Sandip Kumar Ghosh (2008). Expression of a hydrocarbon degrading plasmid in marine bacteria to address marine oil spill problemsPresented at the International Conference on Molecular Biology and Biotechnology, Banasthali Vidyapeeth, Jaipur, 19th- 21st October, 2008.
18. Gayatri K. Vaidya & **Vincent J. Braganza** (2007) Plantlet Regeneration and *In vitro* Tuberization, Comparative Phytochemical Analysis and RAPD Fingerprinting in *Curculigo orchioides* Gaertn. Published in the proceedings of the Asia Pacific Conference of Plant Tissue Culture and AgriBiotechnology.
19. Gayatri K. Vaidya, & **Braganza, V. J.**, (2009), Hands on Exposure to Biosciences Technologies to Promote Micro and Small Scale Enterprises among Educated Unemployed, Lead paper presented at the International satellite symposium on Global University Extension Network held at the Zoology Department, Allahabad University, Allahabad, October 09- 15, 2009.
20. Gohel, H. R., Ghosh, S. K., and **Braganza, V. J.**, (2009), Biodiesel production from yeast biomass by direct transesterification Presented at the International Conference on Challenges in Biotechnology and Food Technology Annamalai University, 8th - 10th October, 2009.
21. Gayatri K. Vaidya & **Braganza, V. J.**, (2008), Comparative analysis of *in vitro* regeneration response and phytochemical profiling of five different ecotypes of *Curculigo orchioides* Gaertn. Presented at 17th APSI Scientists Meet & National Level Conference on Perspectives and Present Scenario in Plant Sciences Research organized at the Institute of Sciences, Fort, Mumbai
22. Gayatri K. Vaidya & **Braganza, V. J.**, (2008), *In vitro* germination and direct and indirect organogenesis of an ethnomedicinally important plant *Indigofera tinctoria* L., Presented at the UGC sponsored Conference on Taxonomy Teaching and Research: Relevance in National Context, organized by Shri R. K. Parikh Science College, Petlad, 27th September, 2008.

23. Gayatri K. Vaidya & **Braganza, V. J.**, (2008), Presence of some Hepatoprotective compounds in callus cultures of *Argyreia boseana* Sant. & Pat. Presented at the 22nd Gujarat Science Congress, held at Bhavnagar University, Bhavnagar, 09th March, 2008.

Poster Presentations

1. **Sudeshna Menon, S.K.Ghosh & Braganza, V. J.**, Production of Saponins in cell suspension cultures of *Gymnema sylvestre* R.Br. Presented at a National Seminar on Recent Developments in Secondary Plant Metabolite Research, held at Jamia Hamdard University, New Delhi between 19th - 20th March, 2012.
2. Gayatri K Vaidya & **Braganza, V. J.**, (2012), Study of Bioflavonoid Rutin in relation to ethnomedicinal properties of three different plants species. Presented at a National Seminar on Recent Developments in Secondary Plant Metabolite Research, held at Jamia Hamdard University, New Delhi between 19th -20th March, 2012.
3. Ankita Upadhye & **Braganza, V. J.**, (2012), *In vitro* callus growth in *Andrographis paniculata* L., a medicinal plant, Presented at the National Symposium on Impact of Plant Tissue Culture on Advances in Plant Biology, held at St. Xavier's College, Ahmedabad between 19th – 21st January, 2012.
4. Chinar Shah & **Braganza, V. J.**, (2012), *In vitro* propagation of *Bauhrevia diffusa* L.: a multi tasker specis, Presented at the National Symposium on Impact of Plant Tissue Culture on Advances in Plant Biology, held at St. Xavier's College, Ahmedabad between 19th – 21st January, 2012.
5. Pooja Shah & **Braganza, V. J.**, (2012), *In vitro* micropropagation of *Calotropis procera* L. Presented at the National Symposium on Impact of Plant Tissue Culture on Advances in Plant Biology, held at St. Xavier's College, Ahmedabad between 19th – 21st January, 2012.
6. Anupam Joshi, Gayatri K. Vaidya & **Braganza, V. J.**, (2012), Vermicompost production using contaminated tissue culture media waste, Presented at the National Symposium on Impact of Plant Tissue Culture on Advances in Plant Biology, held at St. Xavier's College, Ahmedabad between 19th – 21st January, 2012.
7. Aara Patel, Gayatri K. Vaidya & **Braganza, V. J.**, (2012), Using Plant Tissue Culture Methods To Increase The production of Anti-cancer Phytochemicals by *Hemidesmus indicus* (L.) R. Br. Presented at the National Symposium on Impact of Plant Tissue Culture on Advances in Plant Biology, held at St. Xavier's College, Ahmedabad between 19th – 21st January, 2012.
8. Bansari Shah, Meghna Chakraborty, Gayatri K. Vaidya & **Braganza, V. J.**, (2012) Plant Extracts: AN approach towards anti microbial activity, Presented at the National Symposium on Impact of Plant Tissue Culture on Advances in Plant Biology, held at St. Xavier's College, Ahmedabad between 19th – 21st January, 2012.
9. Nakshi Desai & **Braganza, V. J.**, (2012), Phytochemical Approach in Green Synthesis of Silver Nanoparticles using leaves of *Terminalia catappa*. Presented at the National Symposium on Impact of Plant Tissue

- Culture on Advances in Plant Biology, held at St. Xavier's College, Ahmedabad 19th – 21st January, 2012.
- 10. Kavita Kshirsagar & **Braganza, V. J.**, (2011), An improved micropropagation system of *Rosa damascena* Mill. Through thin layer culture, 32nd PTCA (I) meeting and National Symposium on Recent Advances in Plant Tissue Culture and Biotechnology held at MN Institute of Applied Sciences, Bikaner, 4th - 6th February, 2011.
 - 11. Gayatri K. Vaidya & **Braganza, V. J.**, (2011), Efficient *in vitro* propagation, callus regeneration and validation of Plumbagin in an anti cancer plant *Plumbago zeylanica* L. Presented at the National Symposium on Recent advances in Plant Tissue Culture and Biotechnological Researches in India. Held at MN Institute of Applied Sciences, Bikaner from 4th - 6th February, 2011.
 - 12. Mahesh V. Sorathia, Gayatri K. Vaidya, Atul Makwana & **Braganza, V. J.**, (2010). Antimicrobial activity of *Cassia angustifolia* L. Presented at the National Conference on Recent innovations in oil and food technology (RIOFT) held at Department of Food Technology and Divisions of Oils, Fats & Waxes technology, North Maharashtra University, Jalgaon-425001 on 23rd August, 2010.
 - 13. **Sudeshna Menon**, Kavita Kshirsagar, Chandni Bhatt and **Braganza, V. J.**, (2011). Micropropagation of *Nyctanthes arbor-tristis* L. and antibacterial potentials of its *in vitro* cultures and leaves. 32nd PTCA (I) meeting and National Symposium on Recent Advances in Plant Tissue Culture and Biotechnology held at MN Institute of Applied Sciences, Bikaner, 4th - 6th February, 2011.
 - 14. Gayatri K. Vaidya & **Braganza, V. J.**, (2010), Rapid *In Vitro* Multiplication and Accumulation of Phytochemical Compounds at Various Stages of Growth in *Hemidesmus indicus* R. Br. Presented at the 31st National Symposium and PTCA meeting held at the University of Calcutta, Calcutta, 2nd - 5th March, 2010.
 - 15. Gayatri K. Vaidya & **Braganza, V. J.**, (2010), Secondary metabolite production and *in vitro* accumulation of phytochemicals in Callus cultures of *Argyreia boseana* Santapau & Patel, Presented at the International Conference on Aromatic and Medicinal Plants' AROMED' Held at CIMAP, Lucknow, 21st - 24th February, 2010.
 - 16. Kavita Kshirsagar & **Braganza, V. J.**, (2010), Enhanced rate of *in vitro* shoot multiplication in *Nyctanthes arbor-tritis* L. through the use of Adenine Sulphate in nutrient media, Presented at the International Conference on Aromatic and Medicinal Plants' AROMED' Held at CIMAP, Lucknow, 21st - 24th February, 2010.
 - 17. Rushi J. Bhatt, Sandip K. Ghosh, **Braganza, V. J.**, (2010), Characterization of Glycolipid Biosurfactant produced by *Psuedomonas aeruginosa* strain XRF-4 isolated from Gujarat Oil Field, Presented at The National Symposium on 'Biotechnology Led Paradigm Shift' Held at Vallabh Vidya Nagar on 24th January, 2010.
 - 18. Hardik Gohel, Sandip K. Ghosh & **Braganza, V. J.**, (2010), Yeast- an alternate feedstock for biodiesel production, Presented at The National Symposium on 'Biotechnology Led Paradigm Shift' Held at Vallabh Vidya Nagar on 24th January, 2010.

19. Hitaswee Raval and **Braganza, V. J.**, Preliminary phytopharmacological studies in *Jatropha curcas* L. Presented at the state level seminar on Current Trends in Environmental Sciences, Held at Department of Biological and Environmental Sciences, NVPAS college of Pure and Applied Sciences, Vallabh Vidya Nagar, Anand. 20th September 2008.
20. Hardik Gohel, **Braganza, V. J.**, Sandip K. Ghosh (2008), Mycodiesel-Biodiesel from yeast, Presented at the state level seminar on Current Trends in Environmental Sciences, Held at Department of Biological and Environmental Sciences, NVPAS college of Pure and Applied Sciences, Vallabh Vidya Nagar, Anand. 20th September 2008.
21. Vikram Shetty and **Braganza, V. J.**, (2008), Effect of salt concentration on *in vitro* morphology of *Brassica juncea* L. Presented at the state level seminar on Current Trends in Environmental Sciences, Held at Department of Biological and Environmental Sciences, NVPAS college of Pure and Applied Sciences, Vallabh Vidya Nagar, Anand. 20th September 2008.
22. Ruchi Jani and **Braganza, V. J.**, (2008), Hydrocarbon stress proteins in thermophiles, Presented at the state level seminar on Current Trends in Environmental Sciences, Held at Department of Biological and Environmental Sciences, NVPAS college of Pure and Applied Sciences, Vallabh Vidya Nagar, Anand. 20th September 2008.
23. Rushi J. Bhatt, **Braganza, V. J.**, & S. K. Ghosh (2008), Rhizoremediation of Hydrocarbon contaminated soil using mono and multi plant species , Presented at the state level seminar on Current Trends in Environmental Sciences, Held at Department of Biological and Environmental Sciences, NVPAS college of Pure and Applied Sciences, Vallabh Vidya Nagar, Anand. 20th September 2008.
24. Dhara Desai and **Braganza, V. J.**, (2008), Preliminary study on assessing presence of Abrusosides in Callus of *Abrus precatorius* L. Presented at the state level seminar on Current Trends in Environmental Sciences, Held at Department of Biological and Environmental Sciences, NVPAS college of Pure and Applied Sciences, Vallabh Vidya Nagar, Anand. 20th September 2008.
25. Gayatri K. Vaidya & **Braganza, V. J.**, (2008), *In vitro* multiplication, phytochemical studies and anti microbial studies of two species of genus *Ocimum* Presented at the state level seminar on Current Trends in Environmental Sciences, Held at Department of Biological and Environmental Sciences, NVPAS college of Pure and Applied Sciences, Vallabh Vidya Nagar, Anand. 20th September 2008.
26. Gayatri K. Vaidya and **Braganza, V. J.**, (2008), Comparative study of wild and tissue cultured plants of *Hemidesmus indicus* Roxb. To check clonal and phytochemical fidelity. Presented at the International Conference on Molecular Biology and Biotechnology, Banasthali Vidyapeeth, Jaipur, 19th- 21st October, 2008.
27. Rushi J. Bhatt, **Braganza, V. J.**, and Sandip Kumar Ghosh (2008), Expression of a hydrocarbon degrading plasmid in marine bacteria to address marine oil spill problems, Presented at the International Conference on Molecular Biology and Biotechnology, Banasthali Vidyapeeth, Jaipur, 19th- 21st October, 2008.

28. Gayatri K. Vaidya & **Braganza, V. J.**, (2008), *In vitro* propagation and RAPD Fingerprinting of three different species of Chrysanthemum: The Christmas flower plant. Presented at the 29th PTCA meeting, held at Mohanlal Sukhadia University, Udaipur, 8th - 10th March, 2008.
29. Kavita Kshirsagar & **Braganza, V. J.**, (2008), Presented at the 29th PTCA meeting, held at Mohanlal Sukhadia University, Udaipur, 8th - 10th March, 2008.
30. Sudeshna Menon, S. K. Ghosh & **Braganza, V. J.**, (2008), Presented at the 29th PTCA meeting, held at Mohanlal Sukhadia University, Udaipur, 8th - 10th March, 2008.

Conferences/ Workshops

1. **Sebastian Vadakan.**, Workshop on 'IMC RBNQA Criteria' organized by St. Xavier's College, Ahmedabad in collaboration with Ramkrishna Bajaj National Quality Award Trust, March 2011.
2. **Sebastian Vadakan.**, Workshop on 'Academic Audit' conducted by Knowledge Consortium of Gujarat. Gandhinagar, October 2010.
3. **Sebastian Vadakan.**, Participated in a national workshop on 'Ignatian Pedagogical Paradigm and social action' conducted by Xavier Institute of Education, Mumbai. Jan 2009.
4. **Sebastian Vadakan.**, Participated in a workshop on 'Advanced Molecular Analysis Techniques' conducted by Xavier Research Foundation. March 2009.
5. **Sebastian Vadakan.**, Participated in a seminar on 'Women in Science: Careers in Science' organised by Indian Academy of Sciences and St. Xavier's College, Ahmedabad. Sept 2008.
6. **Sebastian Vadakan.**, Participated in 'Science Excellence-2008' organised by GUJCOST and Gujarat University. Jan 2008.
7. **Thacker S. P.**, Recent Trends in Microbial Technology, Department of Microbiology and Biotechnolgy Centre, MSU, Vadodara, 2012.
8. **Thacker S. P.**, Workshop on Advanced Molecular Analysis Techniques, The Xavier Research Foundation. 2009.
9. **Thacker S. P.**, Participation in Paper reading/Poster Presentation Competition, Dept. of Botany, Gujarat University & Gujarat Council of Science & Technology, 2008.
10. **Thacker S. P.**, "Silencing the Message: miRNA and siRNA's", Society of Biological Chemists, 2008.
11. **Patel, A.G.**, Role Of Laboratory Staff In Changing Scenario Of New CBCS and Semester System In Higher Education, Shri R.K. Parikh Arts and Science College, Petlad, 2012.
12. **Shah, B.D.**, Role Of Laboratory Staff In Changing Scenario Of New CBCS and Semester System In Higher Education, Shri R.K. Parikh Arts and Science College, Petlad, 2012.

Resource Person

1. **Thacker S. P.**, Performance in receiving and imparting training for the Personality Growth Oriented Course 2010, SXC, Ahmedabad.

2. **Thacker S. P.**, Resource Person at Gujarat State Biotechnology Mission (GSBTM) workshop, Dept. of Biochemistry, SXC, Ahmedabad, 2012
3. **Menon, S.**, Resource Person at Gujarat State Biotechnology Mission (GSBTM) workshop, Dept. of Biochemistry, SXC, Ahmedabad, 2012. PGOP, SXC College, Ahmedabad 2009-13.
4. **Desai K.**, Resource Person at Gujarat State Biotechnology Mission (GSBTM) workshop, Dept. of Biochemistry, SXC, Ahmedabad, 2012.
5. **Sebastian V**, Resource Person at Gujarat State Biotechnology Mission (GSBTM) workshop, Dept. of Biochemistry, SXC, Ahmedabad, 2012.
6. **Sebastian V**, Resource Person at Gujarat State Biotechnology Mission (GSBTM) workshop, Dept. of Biotechnology, MN Sheth Science College, Patan, 2012.
7. **Sebastian V**, Resource Person, PGOP, SXC, Ahmedabad.

Students' Research Biochem./Biotech.

2011-12

Name	Title
Anupam Joshi	Prefabrication of a Culinary 'Chimera' using Garlic Creeper (<i>Adenocalymma alliaceum</i>) and Ginger (<i>Zingiber officinale</i>)
Chinar Shah	Boerhavinton B: A Venturous Multi Tasker Compound
Shailee Patel	<i>Linum usitatissimum L.</i> : Toxic to Microbes, Beneficial to Humans
Nakshi Desai	Green Phytochemical Approach to Synthesize Silver Nanoparticles from <i>Terminalia catappa</i> and its magnificent Anti Microbial Property
Shaunka Deota	The Earthy Odour of Geosmin has its Effects on Nature
Pooja Sharma	Callus Induction and Properties of Milky Weed (<i>Calotropis procera</i>)
Shanaya Shah	Selenium Hyper-accumulation in Broccoli (<i>Brassica olearacea</i> Var. <i>Italica</i> L.), its Effects and its Anti-cancer Properties
Meghna Chakraborty	<i>Nerium oleander</i> : A Toxic Life- Saver
Ankita Upadhye	<i>Andrographis paniculata</i> : A Potent Multitasker
Bansari Shah	<i>Asparagus racemosus</i> : A Tonic for Females

2010-11

Name	Title
Aara Patel	Using Plant Tissue Culture Methods to Increase the Production of Anti-cancer Phytochemicals by <i>Hemidesmus indicus</i>
Madhvi Joshi	<i>In Vitro</i> studies and quantification of active compounds from <i>Hemidesmus Indicus</i> (L) R.Br by HPTLC which can be used to cure cancer.
Sweta Patel	Micropropagation and anti-oxidant activity of <i>Plumbago zeylanica</i>
Terence Christy	Micropropagation of <i>Withania somnifera</i> to explore its anti cancer potential
Diana Engineer	Aphotic Property of Aloe: Bringing to light the role of 2,4- D and Kinetin for callus induction and a revelation of the inner gel matrix through HPTLC
Kanisha Shah	<i>In Vitro</i> Study of <i>Azadirachta indica</i> (A. Juss) for the extraction of Azadirachtin a novel compound for Cancer treatment
Tisha Patel	Process for Inducing Secondary Metabolite Production in Plant Cultures and Means Thereof
Rimpy Bhatt	Micropropagation of <i>Centella asiatica</i> L.
Khushbu Panchal	<i>In vitro</i> cultivation of <i>Ocimum sanctum</i> L. for quantify the presence of Eugenol- an anticancer phytochemical
Niyati Sudhalkar	<i>In vitro</i> callus induction and phytochemical substantiation of Berberine- an anti-cancner compound in <i>Tinospora cordifolia</i>

2009-10

Name	Title
Jyaysi Desai	Potential Periwinkle: A Natural Approach Towards the Treatment of Cancer
Shishir Baliyan	<i>Polyalthia longifolia</i> : A Plant with Hidden Potential Against Cancer
Nilay Shah	Targeting Cancer Using <i>Hemidesmus indicus</i> R. Br.
Aditi Kotdawala	Preliminary Phytochemical Explorations of <i>Zingiber officinale</i> (Ginger)
Sonal Thakur	Preliminary Explorations of <i>Azadirachta indica</i> for Anti Cancer activity
Anura Shodhan	<i>In vitro</i> Regeneration and Validation of Plumbagin Accumulation at various stages of growth
Roby Verghese	Micropagation of <i>Tinospora cordifolia</i>
Astha Bhardwaj	Preliminary Micropagation and Anti Bacterial Analysis of <i>Asparagus racemosus</i>
Priya Vyas	<i>In vitro</i> Phytoaccumulation of Anti-cancer Compounds in <i>Withania somnifera</i> (L.) Dunal.
Nidhi Sheth	Tulsi: Queen of Medicinal Herbs
Nancy Abraham	Micropagation of <i>Centella asiatica</i>

2008-09

Name	Title
Ishira Nanavaty	<i>Cissampelos pareira</i> and <i>Argyreia boseana</i> - A primary study
Mansi Dave	Micropagation of HPTLC Analysis of Two Medicinal Plants- <i>Hemidesmus indicus</i> & <i>Holostemma sp.</i>
Oushee Ouseph	Micropagation and HPTLC analysis of <i>Curculigo orchiooides</i> Gaertn.
Aanchal Bhatia	Micropagation and Phytochemical Analysis- <i>Argyreia boseana</i> and <i>Cissampelos pareira</i>
Dweipayan Goswami	Micropagation of HPTLC Analysis of Two Medicinal Plants- <i>Hemidesmus indicus</i> & <i>Holostemma sp.</i>
Simmi Verghese	Micropagation of HPTLC Analysis of Two Medicinal Plants- <i>Hemidesmus indicus</i> & <i>Holostemma sp.</i>
Jyoti Jose	Micropagation and HPTLC analysis of <i>Curculigo orchiooides</i> Gaertn.
Neelam Navlani	Micropagation and Phytochemical Analysis- <i>Argyreia boseana</i> and <i>Cissampelos pareira</i>
Megha Shah	Micropagation and HPTLC analysis of <i>Curculigo orchiooides</i> Gaertn.
Suhani Palkhiwala	Micropagation and Phytochemical Analysis- <i>Argyreia boseana</i> and <i>Cissampelos pareira</i>

2007-08

Name	Title
Angana Nanavaty	Cultivation of Oyster Mushrooms during Summer months
Jainy D. Shah	Thermophiles
Kinjal Desai	Biodiesel
Vikram Shetty	Isolation and fusion of Protoplast
Hitaswee Raval	<i>Jatropha</i> Biodiesel
Ruchi Jani	Thermophiles
Gopi Shah	Protoplast Isolation and Fusion
Dhara Desai	Artificial Sweetener

Department of Biology

1. **Name of the department :** Biology
2. **Year of Establishment:** 1956
3. **Names of Programme / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)**

The department offers:

- ✓ BSc in Botany
- ✓ BSc in Zoology
- ✓ COP in Gardening and Landscaping

4. **Names of Interdisciplinary courses and the departments/units involved:**

The department of Biology currently does not offer any interdisciplinary courses. However, the two courses (Botany and Zoology) are handled under the same department.

5. **Annual/ semester/choice based credit system (programme wise)**

The department has been following the University pattern from the year of its establishment. Currently only the third year students are following the Annual System, while the first year and the second year students are into the semester system as the University introduced the CBCS structure from 2011 onwards.

6. **Participation of the department in the courses offered by other departments**

Three of the faculty (Dr Lancelot D'Cruz, Prof. Jagruti Parmar and Prof. Amit Koshti) are involved in conducting the elective course on Environmental Science, which is offered to all the students of Semester II. Three faculty (Dr Sharad Sondarva, Dr Momin and Dr Lancelot D'Cruz) designed and conducted the elective paper on Biodiversity in Semester III. Dr Lancelot has assisted the Economics department in dealing with topics of Biodiversity and Environmental Economics.

Dr Lancelot D'Cruz, Dr K. J. Dubal and Prof. Jagruti Parmar have assisted the Campus Ministry in conducting the soft skill training sessions in the Personality Growth Oriented Programme for students of Biology.

Prof. Robin Parmar, Prof. Jagruti Parmar and Dr Lancelot D'Cruz participated in the ICRW programmeme on Stigma reduction.

7. **Courses in collaboration with other universities, industries, foreign institutions, etc.**

Dr Lancelot D'Cruz is the coordinator for the five IGNOU programmes under the Convergence Scheme of IGNOU. He also has

collaboration with NGOs such as Jivan Thirth, Sky Quest and Manthan for extension programme in rural areas of South Gujarat. He collaborates with a Social Donor Agency, Alboan, Spain for extension activities.

8. Details of courses/programme discontinued (if any) with reasons
The department has not discontinued any programme.

9. Number of Teaching posts (as on February 1, 2013)

	Sanctioned	Filled
Associate Professors	6	6
Asst. Professors	0	0
Adhyapak Sahayak	2	2

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
Dr Sharadkumar V. Sondarva	Ph.D.	Associate Professor/ HoD	Zoology	22
Dr Lancelot D'Cruz	Ph.D.	Associate Professor	Ethanobotany	18
Dr M. D. Momin	Ph.D.	Associate Professor	Zoology	18
Dr. Kinnari J. Dubal	Ph.D.	Associate Professor	Botany	20
Prof. Robin M. Parmar	Registered for Ph.D.	Associate Professor	Zoology	17
Dr Maulik Gadani	Ph.D.	Associate Professor	Botany	14
Prof. Jagruti Parmar	M.Phil.	Adhyapak Sahayak	Botany	05
Prof. Amit J. Koshti	M.Phil., Registered for Ph.D.	Adhyapak Sahayak	Zoology	04 months

11. List of senior visiting faculty

Dr M.R. Almeida, Blatter Herbarium, Mumbai has accompanied the students on Botanical study tours to Sawantwadi and Mt Abu and has delivered lectures at SXC.

12. Percentage of lectures delivered and practical classes handled

(programme wise) by temporary faculty.

The department has been inviting past students who had an excellent academic record to conduct classes for COP, Gardening and Landscaping. They have engaged 70% of the lectures and practicals in this course.

The department takes the help of a retired peon, Mr Musabhai Christy (an ad hoc management employee) for day to day help in the department for organising Botany practicals.

13. Student -Teacher Ratio (programme wise)
BSc Biology Programme

Academic Year	Teacher – student ratio Botany	Teacher – student ratio Zoology
2011 – 12	1: 35	1 : 30
2012 - 13	1: 30	1 : 30

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

The department has a lab assistant, a plant collector, a lab peon and an ad hoc peon.

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ M.Phil./PG.

- Currently five faculty are with doctorate and two are pursuing doctorate in Zoology while one is pursuing in Botany.
- One of them has attended 2 refresher courses during this cycle of reaccreditation.

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received.

Faculty	Duration	Title	Funding agency	Amount (Rs.)
Dr Lancelot D'Cruz	2012-13	Socioeconomic development and traditional medicinal knowledge protection in Relwa, Dediapada and Nani singloti villages. Phase V.	Social Donor Agency, Spain	36,00,000
Dr Lancelot D'Cruz	2012-13	Networking and Ongoing Formation of Rural School Teachers.	Social Donor Agency, Spain	1,50,000
Dr Lancelot D'Cruz	2011-12	Socioeconomic development and traditional medicinal knowledge protection in Relwa, Dediapada and Nani singloti villages. Phase IV.	Social Donor Agency, Spain	25,00,000
Dr Lancelot D'Cruz	2009-11	Socioeconomic development and traditional medicinal knowledge protection in Relwa, Dediapada and Nani singloti villages. Phase III.	Social Donor Agency, Spain	76,00,000
Dr Lancelot	2007-09	Socioeconomic development	Social Donor Agency,	67,00,000

D'Cruz		and traditional medicinal knowledge protection in Relwa, Dediapada and Nani singloti villages. Phases I & II.	Spain	
Dr Kinnari Dubal	2008-13	Ocean set-II to Mangrove studies in gulf of Kutch and gulf of Khambhat	SAC, ISRO	11,00,000
			Total	21650000

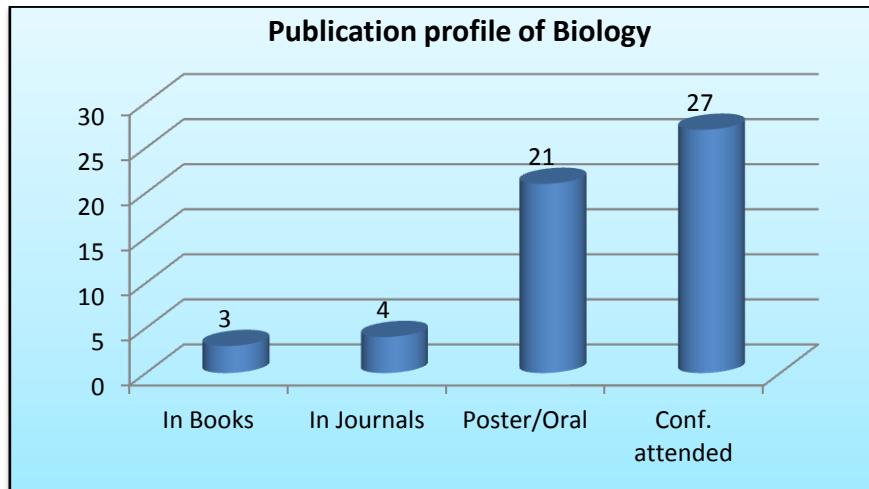
17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received

We do receive funding for chemicals under DBT Star College scheme and CPE.

18. Research Centre /facility recognized by the University.

Xavier Research Foundation, a sister concern of SXC is located on the College premises. It has a research infrastructure that is open for the faculty. Two of our faculty (Dr Lancelot D'Cruz and Dr Momin) have utilised the facilities of XRF to complete their Ph.Ds. Some of the undergraduate students have utilized the facilities at the XRF to carry out their UG projects or even the Botany final year project. The research facilities enable experiments in Plant Tissue Culture, Phytochemistry, and Animal experiments.

19. Publications



20. Areas of consultancy and income generated

- ✓ Dr Lancelot D'Cruz is a member of the Ethics Committee of the Nagpal Eye Foundation, Ahmedabad.
- ✓ Dr Lancelot D'Cruz is a member of IBIOME Ethics Committee (as Theologian-scientist). Rs 0.6 lakhs.

21. Faculty as members in

- a) National committees b) International Committees c) Editorial Boards**

Dr Lancelot D'Cruz

- Member of the Board of Studies, Botany, Gujarat University (third term 2012-2015).
- Member of the Advisory Board for the Manthan Narmada Lok Vigyan Kendra at Rajpipla.
- Member trustee of Jeevan Tirth NGO, Koba, Gujarat.
- Served on the Advisory Committee for the National Conference on “Plants in Relation to Man & Biosphere” held at the Blatter Herbarium-Department of Botany, St. Xavier’s College, Mumbai on November 16-17, 2007.

Dr. S. V. Sondarva

- Member of the Board of Studies, Zoology, Gujarat University (4th term 2012-2015).

22. Student projects

a) Percentage of students who have done in-house projects including inter departmental/programme/

All students of the third year Botany are given an opportunity to carry out a project. Later students present their findings in the annual examination. They also present their findings in the form of a thesis.

b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories / Industry / other agencies

Some students have done projects in Plant Tissue culture at XRF. A few have done projects in the field under the guidance of a faculty.

23. Awards/ Recognitions received by faculty and students

Dr Lancelot D'Cruz

- ✓ FELLOW of the ‘Society of Ethnobotanists’ (July 2011).
- ✓ Invited to present a paper at the International Workshop on “Herbal Medicinal Plants and Traditional Herbal Remedies” organized by the Non-Aligned Movement Science and Technology Centre (NAM S & T Centre) at Hanoi, Vietnam on Septmeber 20-21, 2007.
- ✓ Served on the Advisory Committee and also delivered an invited lecture on “People-Forest-Laboratory-Industry Linkages for Socio-Economic Development and Traditional Medicinal Knowledge Protection in the Dediapada Forests of South Gujarat” at the Centenary celebrations of the Blatter Herbarium and the National Conference on “Plants in Relation to Man & Biosphere” held at the Blatter Herbarium-Department of Botany, St. Xavier’s College, Mumbai on November 16-17, 2007.

Prof Amit Khosti

- ✓ Won the 1st prize (2008) by A.G.Teacher’s College for delivering best Science annual lesson.

- ✓ Won the 1st prize in oral presentation at state level UGC sponsored seminar, held on at Maninagar Science College, Ahmedabad.

Students

- ✓ Sonali Chauhan of T.Y.BSc (Bot) was selected for the Indo-Japan student exchange programme (by Gujarat University) and studied in Japan for 3 months in 2009.
- ✓ Daly Thakkar (TYBSc) won the First Prize in Botany for her oral presentation at the Science Excellence 2008 competition held at the Gujarat University on January 5, 2008.
- ✓ Ranjit Kujur (TYBSc) participated in the National Conference on “Plants in Relation to Man & Biosphere” held at the Blatter Herbarium-Department of Botany, St. Xavier’s College, Mumbai on November 16-17, 2007.
- ✓ Five students each year are being awarded research fellowships which also includes a medal. Moreover, the top rankers of each year, viz. FY, SY and TY, have been awarded Merit Certificates for excellence in the subject.

Year	Rank Position		
2009-10	FY	SY	TY
Botany		4 th	10
Zoology		38 th	36
2010-11			
Botany			9,40,
Zoology			12,23,34
2011-12			
Botany		1 st , 48 th	
Zoology	6,11,17	2,3,6,14,21, 24,40,41,45	47

24. List of eminent academicians and scientists/ visitors to the department

Dr. Marselin Almeida associated with Blatter Herbarium, Mumbai visited in 2011, 2010, 2008 and accompanied students on the study tour of Mt Abu & Sawantwadi as the resource person.

25. Seminars/Conferences/Workshops organized & the source of funding

The department has not organised any seminars during this reaccreditation period. There are plans to organize a National Seminar in collaboration with other Departments like Biochemistry in the near future.

26. Student profile programme/course wise: (2012-13)

Name of the Course/programme	Applications received	Selected	Enrolled M F	Pass percentage
UG Botany		39	75% F	
UG Zoology		40	70% F	

The department has always had a high female to male ratio. This could be attributed to more girl students taking up biology in their 12th Standard and an inclination towards research as a career option.

27. Diversity of Students (2011-12)

We get a considerable number of students from economically weaker sections.

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defence services, etc.?

Currently the department of Biology is conducting an under graduate programme. Once students pass out, it is difficult to track their progress.

29. Student progression

Student progression in Botany	Against % enrolled			
	2008-09	2009-10	2010-11	2011-12
UG to PG	24/31(77%)	9/12(75%)	19/23(82%)	13/14(92%)
PG to M.Phil.	6/31 (19%)		-	-
PG to Ph.D.	3/31 (9%)	-	-	-

The data on student progression for Botany shows an increasing percentage of Botany students going for post graduation. This is significant as students at entry point were with average grades. There is a progressive improvement seen over their three years of graduation, leading to an increased progression for PG studies.

30. Details of Infrastructural facilities

- a) **Library:** There are about 200 books of Botany and 350 books of Zoology in the departmental library. Books are also housed in central College library which has 1920 books in Botany and 1876 books in Zoology. There are also 448 reference books.
- b) **Internet facilities for Staff & Students:** The department has an internet portal for staff members and Wi-Fi accessibility. The students can avail internet facility for referencing in the College library.
- c) **Class rooms with ICT facility:** The department owns a portable LCD projector, which enables the staff and students to give powerpoint presentations for teaching and seminars respectively. Department also has an OHP and Projection Microscope.

- d) Laboratories:** The department has two fully equipped laboratories that can accommodate 70 – 80 students each. One for Botany and another for Zoology.
31. **Number of students receiving financial assistance from college, university, government or other agencies:**
This year (2012-13) eight students have been receiving financial assistance; nine received help in 2011-2012 and eleven students were helped in 2010-2011.
32. **Details on student enrichment programme (special lectures / workshops / seminar) with external experts**
✓ Field trips & study tours (cf. # 33).
✓ **Students attend Plant Taxonomy Workshop** organized by the BNHS (Bombay Natural History Society) at SERENITY, Ahmedabad (April 2012). FOUR students.
✓ **Interactions organized with alumni of the Dept:** [Dr. Monika Christian, Sonali Chauhan, Shirin Querishi, Prachi Patel (Canada), Einstein Varghese (Australia), Dr. Pratiksha Patel, interacted with the Botany students during their visit to SXC].
✓ Arpit Gamit (TYBSc) presented a poster ‘**Some significant medicinal plants from our Sawantwadi tour**’ in the Science Excellence 2010 Competition held at the Gujarat University in January 2010.
✓ Arpit Gamit (T.Y.B.Sc) presented a poster on ‘**Studies on Some Ethnomedicinal Plants Used by the Gamit tribals in South Gujarat**’ at the Student’s Project Convention held at Gujarat University in October 2009)
33. **Teaching methods adopted to improve student learning**
Members of the department engage in a range of pedagogical practices such:
✓ Field trips (to Indroda Park, Gandhinagar, Ahmedabad city gardens, local zoo, etc.)
✓ Study tours to Mt Abu (2012, 2011, 2010, 2008) and Sawantwadi (2007, 2009) with Botany experts like Dr M. R. Almeida and Mr Santosh Yadav.
✓ Visits to eminent institutes like Cancer Research Institute, Gujarat Science City, Forensic Science laboratory, ISRO.
✓ Student seminars, student presentations and weekly class tests.
✓ Use of multimedia, OHP for classroom instructions.
✓ Studying in the lap of nature.
34. **Participation in Institutional Social Responsibility (ISR) and Extension activities**
The departmental staff members and students are involved in various social awareness programmes of the College.

No	Programme	Participation
1	NCC	3 students
2	ICRW's Stigma reduction in HIV AIDS	3 faculty 3 students
3	PGOP	3 faculty All students
4	Jagrat	2 faculty 20 students
5	Aadi Aushadhi	15 students

Dr Lancelot D 'Cruz

- Is co-ordinator of **JAGRAT**, a cell that caters to the needs of the SC/ST students of the College.
- He is coordinator of a programme on “Stigma Reduction related to HIV AIDS in Higher Education Curriculum”: a 1 year project by the **I.C.R.W.** (International Council for Research on Women).
- He has coordinated the project on Medicinal plant cultivation in the tribal areas of south Gujarat. The project is entitled: ‘Socioeconomic development and traditional medicinal knowledge protection in Relwa, Dediapada and Nani Singloti villages. Phase V is in progress.
- He is also coordinating a project on ‘Networking and Ongoing Formation of Rural School Teachers’.
- He also co-ordinated the programme with C.R.S. for **Youth Leadership** [2006-2010], and the **UDAAN** scholarship scheme for girls [2009-2011].
- He is also the coordinator for the Convergence scheme of **IGNOU** under which programmes like MSW, CHR, CTE, PGDAC and PGJMC are conducted.
- He also offered his service as the Dean of Second Year & Third Year Science students of the College (2008-2012). He is currently the Vice-Principal (Science).
- He is also co-ordinator of **Tarumitra** (Environment Cell of Xavers).

35. **SWOC analysis of the department and Future plans**

Strengths	Weakness	Opportunities	Challenges
Highly competent faculty	Not a cohesive working unit	Build up a good herbarium.	Need to bifurcate the dept into Botany and Zoology
Committed support staff		Organize more interaction between Aadi aushadhi and SXC	Motivating the faculty into a team.
Expertise in	Lacuna of	Aadi aushadhi	Attracting

diverse areas like ethnobotany, Remote sensing, toxicology	Dynamic leadership	project could link up with Biochemistry, Chemistry and Economics departments.	students from schools through interaction with urban and rural schools.
Very strong extension linkages	Poor documentation	Offer more subject electives in Biology (horticulture, medicinal plants, forensic science, etc.) to other students.	Investment in infrastructure to take care of the department's bioresources.
Some excellent blending of science and social interventions	Need to host a Seminar/Workshop	Organize more talks, workshops.	More publications, more research projects from all faculty.
Excellent collections of plants, butterflies, herbarium,etc		More field visits and learning in the field.	Producing subject learning materials.
Organize quality field trips, study tours		Projectors in the labs and e-teaching materials.	
Subject electives offered; have been appreciated		Interaction with other colleges including SXC, Mumbai.	

Publications

Contribution in Books

1. **D'Cruz. L.,** Youth Leadership Development Programme 'Education Plus' (2011) Gujarat Sahitya Prakash, Anand.
2. **D'Cruz. L.,** (2010). "Socioeconomic Development and Traditional Medicinal Plant Knowledge Protection: Dediapada, South Gujarat" published in 'Sustainable Use of Medicinal Plants' by R.N.Pati, Abhijeet Publications, New Delhi, 2012.
3. **D'Cruz. L.,** (2009). Socioeconomic Development and Traditional Medicinal Knowledge Protection in Relwa, Dediapada and Nani Singlotti Villages. In: Proceedings of the International Workshop on "Herbal Medicinal Plants and Traditional Herb Remedies" organized by NAM S & T Centre at Hanoi, Vietnam.

Research Papers

1. Sebastian, VA., **D'Cruz. L.**, Subramanian, RB and Braganza, VJ. (2010). Assessment of genetic diversity within and among populations of *Tylophora rotundifolia* using RAPD markers. *Gene conserve*, 9 (36): 94-117.
2. Sebastian, VA., Subramanian, RB., **D'Cruz, L.**, and Braganza, VJ. (2010). DNA barcodes for certain endangered Indian *Tylophora* species. *Gene conserve*, 9 (38): 222-246.
3. Kirti D'souza, Glory Christian, **D'Cruz. L.**, and Vincent Braganza (2006) In vitro conservation of some ethno medicinal plant species of the Dediapada Forests of South Gujarat. Published in Proceedings of National Symposium on Plant Biotechnology: New Frontiers (2005), CIMAP, Lucknow. Editors: A.K.Kukreja et al (2007). Pp. 238-243.
4. **D'Cruz. L.**, (2007). Ethnobotanical Studies on Leguminous plants of Dediapada forests. In: Ethnobotany, volume 19 (1 & 2).Pp.73-77.

International database (NCBI)

GU060630
GU060631

Paper/ Poster Presentations

1. **D'Cruz. L.**, and Francis Macwan (2012). "Value addition to traditional knowledge for the betterment of the adivasi community: the Aadi Aushadhi model" at the XXXV All India Conference of the India Botanical Society on "Role of Plants and Microbeses for the betterment of mankind in the changing climate" held at MSU, Vadodara on December 8-10, 2012.
2. **D'Cruz. L.**, (2012). "Integrating Scientific Research with social interventions to change lives: the Aadi Aushadhi paradigm" at the National Conference on "Research in Plant Sciences" held at Talod on October 19-30, 2012.
3. **Gadani, M. H.**, Effect of Pyramid on Seed Germination, Staff Research Day, St. Xavier's College, Ahmedabad, 3 March 2012.
4. **D'Cruz. L.**, (2012): "Globalizing Traditional Vasava medicine into an economic, conservation-oriented and sustainable enterprise: the Dediapada model" at the 12th International Conference of Ethnopharmacology' held at Kolkatta from February 17 to 19, 2012.
5. **K. J. Dubal.**, V.P. Panchal, 2011, "Study the Impact of Sediment Dynamics on the Coastal Habit of Kori Creek region", St. Xaviers, Ahmedabad.
6. **K. J. Dubal.**, V. P. Panchal, 2011, "Monitoring Grassland of Rapar taluka using Remote Sensing Technique", St. Xaviers, Ahmedabad
7. **D'Cruz. L.**, (2011): "An Economic and Conservation-Oriented Enterprise through management of and value addition to traditional knowledge: the Dediapada paradigm" at the International Conference on Life Science' held at Ambaji from November 10 to 13, 2011.

8. **D'Cruz. L.,** & Francis P.Macwan: “An Economic and Conservation-Oriented Enterprise through management of and value addition to traditional knowledge: the Dediapada paradigm” at the National Symposium on ‘Evolving Paradigm to Improve productivity from Dynamic Management and Value Addition for Plant Genetic resources’ at the Department of Botany, Gujarat University, Ahmedabad from October 13 to 15, 2011.
9. **D'Cruz. L.,** (2010). “Conservation of Ethnomedicinal Biodiversity through an Economic and Conservation-oriented, Sustainable Enterprise: the Dediapada experience” at the International Conference on Folk and Herbal Medicine held at Udaipur, Rajasthan from November 25 to 27, 2010.
10. **D'Cruz. L.,** (2010). “Ethnobotanical studies leading to an economic and conservation-oriented, sustainable enterprise: the Dediapada experience” at the National Symposium on ‘Cultural & Ecological Aspects of Plant diversity of Coastal India with Thrust on Conservation” organized by the A.P.T (Dehradun) and Society of Ethnobotany and held at Sawantwadi from September 22-24, 2010.
11. **D'Cruz. L.,** (2010). “Reducing threats through an economic and conservation-oriented sustainable enterprise: the Dediapada experience” at the National Symposium on ‘Medicinal Plants: A Promising Resource of the Country’ held at Department of Biosciences, VNSGU, Surat on June 9-10, 2010.
12. **D'Cruz. L.,** (2010). “Socioeconomic Development and Traditional Medicinal Plant Knowledge Protection: Dediapada, South Gujarat” at the First International Conference on Conservation marketing and Patenting of Medicinal Plants (ICCMP) held at Raipur, Chattisgarh from March 14 to 17, 2010.
13. **D'Cruz. L.,** (2010). “Transforming Tribal Healers into Entrepreneurs: the Dediapada experience” at the International Conference on ‘Global Warming: Agriculture, Sustainable Development and Public Leadership’ held at Gujarat Vidyapith, Ahmedabad from March 11 to 13, 2010.
14. **D'Cruz. L.,** (2010). DNA Barcodes for certain endangered Indian Tylophora species” by V.Sebastian, R.B. Subramanian, L.D'Cruz and V.J.Braganza at the International Symposium on Current Status and Opportunities in Aromatic & Medicinal Plants held at Lucknow, India from February 21 to 24, 2010.
15. **D'Cruz. L.,** (2009). “Ecological Niches as Learning Resources” at the 6th International Conference on Hands-on Science (HSCI2009) held at Science City, Ahmedabad from October 27 to 31, 2009.
16. **D'Cruz. L.,** (2007): People-Forest-Laboratory-Industry Linkages for Socio-Economic Development and Traditional Medicinal Knowledge Protection in the Dediapada Forests of South Gujarat at the Centenary celebrations of the Blatter Herbarium and the National Conference on “Plants in Relation to Man & Biosphere” held at the Blatter Herbarium, Department of Botany, St. Xavier’s College, Mumbai.
17. **D'Cruz. L.,** (2007). Socioeconomic Development and Traditional Medicinal Knowledge Protection in Relwa, Dediapada and Nani Singlotti Villages. International Workshop on “Herbal Medicinal Plants and

- Traditional Herb Remedies” organized by NAM S & T Centre at Hanoi, Vietnam.
18. **Koshti, A.J.**, Oral paper presented in xxiv Gujarat Science Congress, 2010 at Ahmedabad.
 19. **Koshti, A.J.**, Oral paper presented in VIGYAN PARISHASD, SCIENCE EXCELLENCE, 2011 at Ahmedabad.
 20. **Koshti, A.J.**, Oral paper presented in xxv Gujarat Science Congress, 2011 at Ahmedabad.
 21. **Koshti, A.J.**, Oral paper presented and **achieved first prize** in the UGC sponsored state level seminar on “Conservation of biodiversity and environment: a challenge” at Maninagr Science college, Ahmedabad on 5 th January, 2013.

Conferences/ Workshops

1. **Gadani, M. H.**, 18 March 2012, National Seminar- Bio-musicology, Music Therapy and their Medical Implementation, Government P.G. College, Sector-39, Noida.
2. **Gadani, M. H.**, 2008. participation in Paper reading / Poster presentation competition – organized by Dept. of Botany, Gujarat University & Gujarat Council on Science & Technology.
3. **Gadani, M. H.**, 2008. participation in one day workshop on Application of HPTLC in Herbal Chemistry – organized at Loyala Centre for Research & Development, St. Xaviers College, Ahmedabad
4. Gadani M. H., Participated in U.G.C. Sponsored Spring Training on Taxonomy and Applications of Grasses (ST-TAG 2009). 2009.
5. **Gadani, M. H.**, Participated in the Workshop on Scouting, Documentation and Dissemination of Grassroot Innovations and Traditional Knowledge-2009 (SCODO:GI & TK-2009) organized by Department of Botany, University School of Sciences, Gujarat University, Ahmedabad and National Innovation Foundation, Ahmedabad. 2009.
6. **Gadani, M. H.**, Attended National Seminar on “ Response to Eco-Biological Components to The Phenomenon of Global Warming (NSREG – 2009) organized by Department of Zoology, DSB Campus, Kumaun University, Nainital in collaboration with Indian Academy of Environmental Sciences, Haridwar . 2009.
7. **Gadani, M. H.**, participation in the spring training on plant identification and nomenclature, by Gujarat University Botanical Society (GUBS), 2007
8. **Gadani M.H.**, participation in International Seminar on Changing Scenario in Angiosperm Systematics, 2007
9. **Gadani M.H.**, participation/poster presentation on Plants in Relation to Man & Biosphere, at St.Xaviers College Mumbai, 2007
10. **Parmar, R.**, 5th-7th March, 2011 participated in the Workshop on Bioinformatics Introduction, Sequence Submission, Homology Modeling, Insilico Genome Analysis- Ganpat University, Mehsana.
11. **Parmar, R.**, 28th-30th July, 2011 participated in the training programme Biodiversity Conservation-Sardar Patel Institute of Public Administration, Ahmedabad.

12. **Parmar, R.**, 21st-25th November, 2011. Attended National Workshop on “Computational Models, Tools and Techniques in Bioinformatics”-Sardar Vallabhbhai National Institute Of Technlogy, Surat.
13. **D'Cruz. L.**, Participated in the AYUSH sponsored Seminar on ‘Herbal Drugs’ held on January 22, 2011 at the K.B. Institute of Pharmaceutical Education and Research at Gandhinagar.
14. **D'Cruz. L.**, Participated in a workshop on “Strategic Planning” organized by ALBOAN from November 10-13, 2010 at Jeevan Darshan, Vadodara.
15. **D'Cruz. L.**, Participated in the “Sensitivity Training” organised by Initiatives and Interventions (a Nonprofit Professional Society) at Mussoorie, Uttranchal from April 12 to 16, 2010.
16. **D'Cruz. L.**, Completed a 1-day Training Course on Good Clinical Practice in accordance with the ICH-E6 Guidelines & Schedule Y organized by Investigator’s Forum on May 2, 2009.
17. **D'Cruz. L.**, Workshop on ‘Scouting, Documentation and Dissemination of Grassroots Innovations and Traditional Knowledge’ (SCODO: GI & TK-2009) on July 16, 2009 at the Department of Botany, Gujarat University, Ahmedabad.
18. **D'Cruz. L.**, Participated in the Spring Training on “Plant Identification and Nomenclature” held at the Botany Department, University School of Sciences, Gujarat University, Ahmedabad. (March 28 to 30, 2007).
19. **Koshti, A.J.**, One day seminar “Nanotchnology; Human Resouce Development perceptive in Gujarat” sopnsored by Gujarat Council on Science & Technology) on 11th February, 2006 at Gandhinagar.
20. **Koshti, A.J.**, “Frontiers in biomedical technologyparticipated in ”, one day seminar held on 26th February,2007 at zoology department , Gujarat University, ahmedabad.
21. **Koshti, A.J.**, “Second seminar on Modern Laboratory Techniques” sponsored by Gujarat cancer research institute, Ahmedabad on January 06, 2007.
22. **Koshti, A.J.**, “Seminar on Biodiversity and wild life conservation” organized by Forest Department, Gujarat State, on October 7, 2010 at Ahmedabad.
23. **Koshti, A.J.**, “Current trends and recent advancement in herbal drugs” one day national level seminar sponsored by AUSH, New Delhi held at Gandhinagar on 22nd January 2011.
24. **Koshti, A.J.**, “save the girl child” a state level seminar organized by Department of Zoology, Gujarat University, Ahmedabad.
25. **Koshti, A.J.**, Participated in “Biotechnology lecture series and workshop” organized by Human Genetic Centre, Gujarat University, Ahmedabad on 27 to 29 December, 2011.
26. **Koshti, A.J.**, Participated in two days workshop cum seminar on “Alternatives to use of animals in biosciences” Organized by department of zoology during 22nd & 23rd September, 2010.
27. **Koshti, A.J.**, Participated in “Sundervan’s Marine Camp, Beyt Dwarka” during 10th December to 13th December, 2007 organized by Centre for environment education (CEE), Ahmedabad.

Resource Person

1. **Gadani, M. H.**, Performance in receiving and imparting training for the Personality Growth Oriented Course 2010, St.Xaviers College, Ahmedabad.
2. **Gadani, M. H.**, invitation as a speaker,2010., Kendriya, vidyalaya, ONGC, Chandkheda
3. **D'Cruz. L.**, Delivered an invited lecture on “Tribal people’s indigenous medicinal practices at the Seond JEMAI National Adivasi festival held at TUDI, Waynad, Kerala from December 6-19, 2012.
4. **D'Cruz. L.**, Conducted a 6-day Workshop on ‘Eco-spirituality’ at Sugadh, Gandhinagar from November 19-24, 2012.
5. **D'Cruz. L.**, Conducted a one day programmeme on ‘Ecological Concerns & Spirituality’ for the Gandhinagar archdiocese on February 12, 2012 at Gandhinagar.
6. **D'Cruz. L.**, Invited by Vigyan Prasar to participate in a round table meeting at Science City in Ahmedabad on September 15, 2011 for development of a kit on Biodiversity.
7. **D'Cruz. L.**, Delivered a lecture on ‘Eco-spirituality’ for a group of medical Sisters of Our Lady of Pilar at Matruchaya, Nadiad on September 19, 2011.
8. **D'Cruz. L.**, Invited as a consultant for a round table workshop on “Climate Change and its impact on livelihood of rural farmers” organized by Holistic Child Development India (HCDI) and held at the B.S.C, Ahmedabad on June 25, 2011.
9. **D'Cruz. L.**, Conducted a 1-day training programmeme on “Medicinal plant cultivation” for the Mahila Mandal (women’s group) of Pimpri, Dangs, Gujarat at Jeevan Dhara Dispensary, Dangs on May 28, 2011.
10. **D'Cruz. L.**, Conducted a 2-day workshop on ‘Eco-spirituality’ for the sisters of Koregaon Park on March 5-6, 2011.
11. **D'Cruz. L.**, Participated in a radio discussion on Gyan Vani (IGNOU) on ‘World Food Day’, October 16, 2010.
12. **D'Cruz. L.**, Delivered an invited lecture entitled “People-Forest-Laboratory-Industry Linkages for Socio-economic development and Traditional Medicinal Knowledge Protection in the Dediapada forests of south Gujarat” at the U.G.C. sponsored State level Conference on ‘Ethnobotany and Biodiversity: the natural biological capital of the earth’ held on August 8, 2009 at the Shri U.P.Arts, Smt.M.G.Panchal Science College, Pilvai.
13. **D'Cruz. L.**, Invited as Evaluator to the Ahmedabad District level Children’s Science Congress held at Gujarat Vidyapeth, Ahmedabad on November 19, 2009.
14. **D'Cruz. L.**, Invited as Evaluator to the 17th National Children’s Science Congress held in Ahmedabad, Gujarat from 27 to 31 December, 2009.
15. **D'Cruz. L.**, Delivered an invited lecture on “Biodiversity” at a 1-day Workshop held for the N.S.S. students of Sadguna C.U. Arts College for Girls on March 24, 2008.

Students' Research: Biology.

Botany projects

1. Studies on Some Ethnomedicinal Plants of Dangs' by Fulchand Gavit & Fulesh Kokni (S.Y.B.Sc), UGC student research project, 2011-2012.
2. Setting up of a Seed Collection of Ethnomedicinally Significant Plants by Khusbhoo Kumari, Kshama Shah & Sruthi Philip (S.Y.B.Sc), UGC student research project, 2011-2012
3. Intellectual Property Rights and Ethnobotany by Akshay Brijbhushan & Omkar Acharya (S.Y.B.Sc), UGC student research project, 2011-2012
4. Studies on Some Ethnomedicinal Plants of Songadh taluka' by Sandip Gamit & Anjita Gamit (S.Y.B.Sc), UGC student research project, 2009-2010.
5. 'Studies on Some Significant Ethnomedicinal Plants Used by the Gamits of Songadh taluka' by Smita Gamit (S.Y.B.Sc), UGC student research project, 2009-2010.
6. 'Studies on Some Ethnomedicinal Plants Used by the Gamit & Kokni tribals of Vyara taluka ' by Jokina Gamit (S.Y.B.Sc), UGC student research project, 2009-2010.
7. 'Studies on Some Ethnomedicinal Plants Used by the Gamit tribals in South Gujarat' by Arpit D. Gamit (S.Y.B.Sc), UGC student research project 2008-2009.
8. 'Studies on Cultivation of Medicinal Plants at Dediapada in South Gujarat' by Manoj Z Vasava and Shailesh B Vasava (T.Y.B.Sc) UGC student research project 2008-2009.
9. 'Setting up of the Carpology Museum and an Analysis of the Uses by Vasava Tribals of Dediapada in South Gujarat' by Shaily L Kapadia, Shimoli J Bhatt and Hitaxi A Shah (T.Y.B.Sc), UGC student research project 2008-2009

Department of Chemistry

1. **Name of the department:** Chemistry
2. **Year of Establishment:** 1956
3. **Names of Programme / Courses offered**
 - ✓ B Sc Chemistry
 - ✓ M Sc (Organic Chemistry)
 - ✓ PGDAC (Post Graduate Diploma in Analytical Chemistry)
 - ✓ COP (Instrumental Chemical Analysis)
 - ✓ Ph D in Physical, Analytical Chemistry
4. **Names of Interdisciplinary courses and the departments/units involved**

The Chemistry department and the vocational cell work hand in hand for the vocational Industrial Chemistry course.
The PGDAC is an IGNOU course under the Convergence scheme.
5. **Annual/ semester/choice based credit system (programme wise)**

The department has been following the University pattern from the year of its establishment. Currently only the third year students are following the annual system, while the first year and the second year students are into the semester system as the University introduced the CBCS structure from 2011 onwards.
6. **Participation of the department in the courses offered by other departments**

One of the faculty has designed and conducted soft skill classes for Arts students. These soft skill classes were taken as a fulfilment of foundation courses for the Arts stream students. Six of the department staff members in conjunction with the Campus Ministry have also conducted soft skill training sessions in the Personality Growth Oriented Programme for students of Chemistry department.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.**

We are offering PGDAC as an IGNOU course under the Convergence scheme.
8. **Details of courses/programme discontinued (if any) with reasons:**

The department has not discontinued any programme
9. **Number of Teaching posts**

	Sanctioned	Filled
Professors	0	0
Associate Professors	6	6
Asst. Professors	1	1
Adhyapak Sahayaks	2	2

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D. / M. Phil. etc.,)

Name	Qualification	Designation	Specialization	Exp/ Years	Ph. D.
Dr Atul Makwana	M Sc , Ph.D., GSET	Asso. Prof & Head	Organic	17	Applied for Guide ship
Dr Nirmal Desai	M Sc., Ph.D., Post Doc	Asso. Prof	Organic	18	Applied for Guide ship
Prof D V Katara	M Sc.	Asso. Prof	IPC/Inorganic	15	
Prof. Francis Christy	M Sc.	Asso. Prof	Physical	15	
Prof Bijal Shah	M Sc.	Asso. Prof	Physical	15	
Dr Mallika Sanyal	M Sc., Ph.D.	Asso.Prof & PG. Prof. In Charge	Physical	14	4 pursuing
Prof Dilip Vasava	M Sc.	Assit. Prof	Organic	5	
Dr Pranav Trivedi	M Sc., Ph.D.	Adhypak Sahayak	Organic	3-4 (IC)	
Dr Devang Pandya	M Sc. , Ph.D.	Adhypak Sahayak	Inorganic/ Organic	10	

11. List of senior visiting faculty: (PG department)

Dr J C Vora, Dr J J Vora, Dr Vikram Panchal

Prof Aalap Shah, Prof.Unnati Nayak, Prof. R K Rathava, Dr Rina Shah

12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty: NA

13. Student -Teacher Ratio (programme wise):

The current teacher student ratio is FY (29:1); SY (12:1); TY (8:1)

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled:

There are two Lab Assistants, two laboratory peons, one store keeper, one gas mechanic.

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/

M.Phil./PG.:

Currently six faculty with doctorate, one with Post Doctorate, two are pursuing doctorate and one of them is a Ph.D. guide.

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received

Name	Duration	Title	Amount (Rs.)
Prof Francis Christy	2009-13	Sensitive and powerful alternative to study the complexation of macrocyclic ligands especially the family of thiocalixarene	85000
Dr Pranav M Trivedi	2011-13	Glittering candles with glowing pictures	641000

17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received:

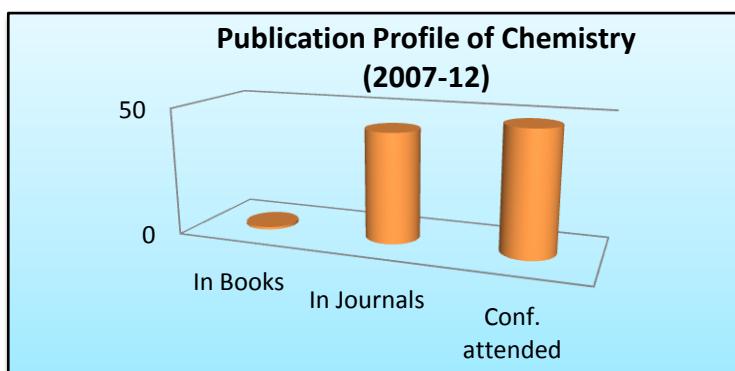
- Prof Francis Christy has received a grant of Rs 85000 in 2009 for a minor research project from UGC.
- Dr Dilip V Vasava has completed soil testing of more than 15000 samples from Viramgam Taluka under the project of “Soil Testing Project / Soil Health Card” funded (12 lakhs) by the Gujarat Government.

18. Research Centre /facility recognized by the University:

Xavier Research Foundation, a sister concern of SXC is located on the College premises. It has research infrastructure that is open for the faculty. Several faculty of the College from Chemistry has completed/pursuing their Ph.D. at XRF. Undergraduate research students selected in Chemistry, Vocational Industrial Chemistry pursue their projects at XRF. The faculty who have benefited for research from the department of Chemistry are Dr Nirmal Desai, Dr Atul Makwana, Dr Dilip Vasava, Prof Francis Christy, and Prof Bijal Shah.

19. Publications

Details at the end of the document on Chemistry



20. Areas of consultancy and income generated: NA

a) **Faculty as members in a) National committees b) International Committees c) Editorial Boards**

- ✓ Dr Atul H. Makwana is a member of the Board of Studies (Chemistry). Three other faculty from the department of Chemistry Dr Nirmal Desai, Dr Mallika Sanyal and Dr Atul Makwana have contributed in syllabus preparation/modifications for Gujarat University.
- ✓ Dr Nirmal Desai, Prof Francis Christy and Dr Atul Makwana are life members of ACTI [The Association of Chemical Technologists (India). Dr Atul Makwana is Joint Secretary of ACTI –Ahmedabad.

21. Student projects

a) **Percentage of students who have done in-house projects including inter departmental/programme:**

- ✓ 22 UG students have competed research projects and five are working in the current year.
- ✓ All 30 M Sc Sem IV (2011-12) students have completed their dissertation and industrial training as a part of their Gujarat University syllabus requirements.

b) **Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories / Industry / other agencies:**

- ✓ All 30 M Sc Sem IV (2011-12) students have completed their industrial training in various Chemical based industries.

22. Awards/ Recognitions received by faculty and students

Ten students each year are being awarded research fellowships which also includes a medal. Moreover, the top rankers of each year, viz. FY, SY and TY, have been awarded merit certificates for excellence in the subject.

23. **List of eminent academicians and scientists/ visitors to the department**
Nil

24. **Seminars/ Conferences/Workshops organized & the source of funding**

a)National b)International

Regional: The Chemistry department organized a one day seminar on 17th Dec 2011 to celebrate the International Year of Chemistry 2011. One Lakh was funded by UGC.

25. Student profile programme/course wise

Name of the Course / Programme (refer question no. 4)	Applications received	Selected	Enrolled	
			M	F
FYBSc Sem I			115	143
SYBSc Sem III			45	63
TYBSc			36	39
M Sc Sem I			15	15
M Sc Sem III			19	15

26. Diversity of Students

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad
FYBSc Sem I A and B Div			
SYBSc Sem IV			1/108
TYBSc			
M Sc Sem II			
M Sc Sem IV			

27. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?

No data available

28. Student progression

Student progression	Against % enrolled
UG to PG	60%
PG to M.Phil.	--
PG to Ph.D.	6/60 i.e. 10 %
Ph.D. to Post-Doctoral	--
Employed	
Campus selection	8/150 (last 5yr)
Other than campus recruitment	
Entrepreneurship/Self-employment	

29. Details of Infrastructural facilities

a) **Library:** The departmental library has 360 books. The rest is in central library (4292 books). There are 3 journals as well.

b) **Internet facilities for Staff & Students**

The department has an internet portal for faculty and Wi-Fi accessibility. The students can avail internet facility for referencing in the College library.

c) **Class rooms with ICT facility**

The department owns a portable LCD projector, which enables the faculty and students to give power point presentations for teaching and seminars respectively. Department also has an OHP.

d) **Laboratories:**

Three labs: Intake capacity is 200.

30. Number of students receiving financial assistance from college, university, government or other agencies:

No data available

31. Details on student enrichment programme (special lectures /

workshops / seminar) with external experts:

- ✓ Four popular lectures were arranged
- ✓ Study tour / Industrial visit
- ✓ TY seminars/assignments
- ✓ IYC 2011
- ✓ CAT online exam
- ✓ Quiz/Poster competitions
- ✓ Chemistry Society meetings

32. Teaching methods adopted to improve student learning:

In addition to regular classroom blackboard teaching method, the use of LCD/OHP / seminars/study tours / industrial trainings / competitions / popular lectures / assignments /question paper solving etc. are used to improve student learning.

33. Participation in Institutional Social Responsibility (ISR) and Extension activities

Chemistry faculty are involved in PGOP / Jagrat / Adilok / Utkarsh / Admission process / youth festival / or any unassigned work for the good of students and society.

No	Programme	Participation
1	NCC	1 student
2	ICRW's Stigma reduction in HIV AIDS	1 faculty 6 students
3	PGOP	3 faculty ≈ all students
4	Jagrat	1 faculty 3 students
5	Adilok	1 faculty 10 students

34. SWOC analysis of the department and Future

Strength

The department has BSc Chemistry, MSc (Organic Chemistry) PGDAC (Post Graduate Diploma in Analytical Chemistry) COP (Instrumental Chemical Analysis) IC. Also involved in PGOP, Utkarsh, Jagrat, syllabus forming at University level/ helping other institutions. Students opt for Chemistry at UG/PG level because this is the only department with UG and PG facility in Science at SXC.

Weakness

Not having enough trained lab staff. Not having well equipped lab for PG and separate research laboratory for faculty and students.

Opportunities

If given labs and other requirements, more research, publications projects, industrial collaborations leading to over all subject improvement, placement opportunities and overall growth of our students will be take place.

Publication

Books

1. Trivedi, P., Photosensitized isomeric bromoanilines and isomeric toludienes: Photosensetized Reaction. Publisher: LAP LAMBERT Academic publishing. ISBN-10:3659116068. ISBN-13 9783659116063.

Publications: Journals

1. N C Desai, Nayan Bhatt, Mukesh Kumar & Atul Makwana, "Synthesis, characterization and antimicrobial activity of some 3-(2-(1H-benzo[d]imidazol-2-yl)phenyl)-2-arylthiazolidin-4-ones" Indian Journal of Chemistry Vol.50B, July 2011, pp.941-945
2. N. C. Desai, Amit M. Dodiya, Atul H. Makwana "Antimicrobial screening of novel synthesized benzimidazole nucleus containing 4-oxothiazolidine derivatives" Med Chem Res (2012) 21:2320–2328, DOI 10.1007/s00044-011-9752-8
3. N.C. Desai, V.V. Joshi, K.M. Rajpara, Atul H. Makwana Article in press. A new synthetic approach and in vitro antimicrobial evaluation of novel imidazole incorporated 4-thiazolidinone motifs. Arabian Journal of Chemistry (2012), <http://dx.doi.org/10.1016/j.arabjc.2012.10.020>
4. N C Desai, Atul H. Makwana, K M Rajpara "Synthesis and study of 1,3,5-triazine based thiazole derivatives as antimicrobial Agents" Journal of Saudi Chemical Society (2012). PII: S1319-6103(12)00193-7. DOI: <http://dx.doi.org/10.1016/j.jscs.2012.12.004>. Reference: JSCS 507 doi: <http://dx.doi.org/10.1016/j.jscs.2012.12.004>
5. Desai N.D., "Simultaneous C- and N- alkylation of 2-oxo-4,6-diaryl-1,2,3,4-tetrahydropyridine-3-carbonitrile under solid liquid phase transfer conditions" *Synthetic Communications* 40: 540–550, 2010
6. Desai N.D., "A simple and expedient method for the synthesis of ethyl 3-amino-4,6-diarylthieno[2,3-b]pyridine-carboxylate" *J. Heterocyclic Chem.*, 2009, 46, 1349.
7. Desai N.D., "A novel strategy for the synthesis of 2-amino-4,6-diarylnicotinonitrile." *Arkivoc*, 2009, (ii), 76-87.
8. Desai N.D., "An Efficient Approach to the Synthesis of ethyl 3-amino-4,6-diaryl furo[2,3-b]pyridine-2-carboxylate" *Synthetic Communications*, 2009, 39, 3126–3140.
9. Desai ND., "An Improved protocol for Thorpe Reaction: Synthesis of 4-Amino-1-Arylpyrazole using Solid-Liquid Phase Transfer Catalyst" *Synthetic Communications* 2008, 38, 309-315.
10. Desai N.D., "Synthesis and interconversion of isomeric pyrrolotriazolopyrimidines" *Heteroatom Chemistry*, 2007, 18, 265-273.
11. Christy, F., "Conductometric Studies on Cation-Crown Ether Complexes": A Review *Critical Reviews in Analytical Chemistry* ISSN: 1040-8347
12. Deepak S. Jain, Gunta Subbaiah, Mallika Sanyal, Vinod K. Jain, Pranav Shrivastav. A rapid and specific approach for direct measurement of pravastatin concentration in plasma by LC-MS/MS employing solid phase extraction. *Biomedical Chromatography*, 2007, 21, 67-78.
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 - 22. Bhavin N. Patel, Naveen Sharma, **Mallika Sanyal**, Aparna Prasad, Pranav Shrivastav. High throughput LC-MS/MS assay for 6-methoxy-2-naphthylacetic acid, an active metabolite of nabumetone in human plasma and its application to bioequivalence study. *Biomedical Chromatography*, **2008**, 22, 1213-1224.
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- metabolite O-desmethyltramadol in human plasma by LC-MS/MS. *Journal of Pharmaceutical and Biomedical Analysis*, **2009**, 49, 354-366.
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27. Manish Yadav, Puran Singhal, Sailendra Goswami, Umesh C. Pande, **Mallika Sanyal**, Pranav Shrivastav. Selective Determination of Antiretroviral Agents Tenofovir, Emtricitabine and Lamivudine in Human Plasma by a Validated Liquid Chromatography Tandem Mass Spectrometry Method for Bioequivalence study in Healthy Indian Subjects. *Journal of Chromatographic Science*, **2010**, 48, 704-713.
28. Pranav S. Shrivastav, Shailesh M. Buha, **Mallika Sanyal**. Detection and quantitation of beta-blockers in plasma and urine. *Bioanalysis*, **2010**, 2(2), 263-276.
29. Jignesh M. Parekh, Rajendrasinh N. Vaghela, Dipen K. Sutariya, **Mallika Sanyal**, Manish Yadav, Pranav S. Shrivastav. Chromatographic separation and sensitive determination of teriflunomide, an active metabolite of leflunomide in human plasma by liquid chromatography tandem mass spectrometry. *Journal of Chromatography B*, **2010**, 878, 2217-2225.
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32. Dinesh H. Patel, Naveen Sharma, Mukesh C. Patel, Bhavin N. Patel, Pranav S. Shrivastav, **Mallika Sanyal**. Analysis of a second generation tetracycline antibiotic minocycline in human plasma by LC-MS/MS. *Bioanalysis*, **2011**, 19, 2177-2194.
33. Dinesh H. Patel, Naveen Sharma, Mukesh C. Patel, Bhavin N. Patel, Pranav S. Shrivastav, **Mallika Sanyal**. Application of a rapid and sensitive liquid chromatography-tandem mass spectrometry method for determination of bumetanide in human plasma for a bioequivalence study. *Journal of Pharmaceutical and Biomedical Analysis*, **2012**, 66, 365– 370.
34. Jignesh M. Parekh, Dipen K. Sutariya, Rajendrasinh N. Vaghela, **Mallika Sanyal**, Manish Yadav, Pranav S. Shrivastav. Sensitive, selective and rapid determination of bupropion and its major active metabolite, hydroxybupropion in human plasma by LC-MS/MS: Application to a bioequivalence study in healthy Indian subjects. *Biomedical Chromatography*, **2012**, 26, 314-326.

35. Jignesh M. Parekh, Dhaval K. Shah, **Mallika Sanyal**, Manish Yadav, Pranav S. Shrivastav. Development of an SPE-LC–MS/MS method for simultaneous quantification of bosentan and its active metabolite hydroxybosentan in human plasma to support a bioequivalence study. *Journal of Pharmaceutical and Biomedical Analysis*, **2012**, 70, 462-470.
36. Daxesh P. Patel, Primal Sharma, **Mallika Sanyal**, Puran Singhal, Pranav S. Shrivastav. Challenges in the simultaneous quantitation of sumatriptan and naproxen in human plasma: Application to a bioequivalence study. *Journal of Chromatography B*, **2012**, 902, 122-131.
37. Daxesh P. Patel, Primal Sharma, **Mallika Sanyal**, Puran Singhal, Pranav S. Shrivastav. Highly sensitive and rapid ultra performance liquid chromatography-tandem mass spectrometry method for the determination of nifedipine in human plasma and its application to a bioequivalence study. *Biomedical Chromatography*, **2012**, 26, 1509–1518.
38. Dinesh H. Patel, Naveen Sharma, Mukesh C. Patel, Bhavin N. Patel, Pranav S. Shrivastav, **Mallika Sanyal**. LC–MS/MS assay for olanzapine in human plasma and its application to a bioequivalence study. *Acta Pharmaceutica Sinica B*, 2012, 2(5), 481–494.
39. D.G. Shah and P.M. Trivedi; Pysico-Chemical Analysis of Bore Wells and Open Wells Drinking Water of Kathalal Region; Current World Environment, Vol. **6**(2), 287-290 (2011)
40. D. G. Shah and P. M. Trivedi; Preparation, characterization of nanometer SnO₂; Pelagia Research Library; Der Chemica Sinica, 2012, 3(4):1002-1008.
41. **Pandya D. R.** and Vora J. J. “Synthesis, characterization and antimicrobial activity of alkaline earth metal complexes”, Der Chemica Sinica(Pelagia Research Library) Volume 3: Issue 2: 2012, Page No: 421-425.
42. **Pandya D. R.** and Modh P.H. “Synthesis, characterization and Catalytic study of Novel salen type 2, 2'-(ethane-1, 2-diyldinitrilo)bis(phenylacetic acid) complexes of Zn and Cd”, , Der Chemica Sinica,(Pelagia Research Library) 2012, 3(3):663-666.
43. **Pandya D. R.** and Modh P.H. “Antimicrobial study of Novel salen type 2,2'-(ethane-1,2-diyldinitrilo)bis(phenylacetic acid) complexes of Zn and Cd”, , Der Chemica Sinica,(Pelagia Research Library) 2012, 3(3): 663-666.

Participation

1. **Katara D.V.**, Participation in the National Seminar on Emerging Trends in Supramolecular Research, at University School of Sciences, Gujarat University, 2007.
2. **Shah B.A.**, Participation in The National Seminar on Emerging Trends in Supramolecular Research, at University School of Sciences, Gujarat University, 2007.
3. **Christy F.A.**, Participation in National Seminar on Emerging Trends in Supramolecular Research, at University School of Sciences, Gujarat University, 2007.
4. **Sanyal M.**, Participation in national Seminar on emerging Trends in Supramolecular Research, at University School of Sciences, Gujarat University, 2007.

5. **Makwana A. H**, Invited to work as visiting lecturer in Department of Chemistry, Bhavnagar University, Bhavnagar. 2009.
6. **Christy F.**, Workshop on Advanced Molecular Analysis Techniques organized by The Xavier Research Foundation. 2009.
7. **Shah B. A.**, Participated in the “International Conference on Environmental Issues in Emerging and advanced Economics: Canada, India” organized jointly by Department of Chemistry and James Reaney Canadian Centre, Gujarat University, Ahmedabad. 2009.
8. **Shah B. A.**, Participation in Paper presentation on “Frontier Advances in Chemical Sciences” – organized by U.G.C., 2008.
9. **Shah B. A.**, Participation in Seminar on “Emerging Trends in Chemical Sciences” Organized by Gujarat Council on Science & Technology, 2008.
10. **Katara, D.V.**, Participation in Seminar on “Emerging Trends in Chemical Sciences” – organized by Gujarat Council on Chemical Sciences, 2008.
11. **Christy, F.**, Participation in seminar on “Frontier Advances in Chemical Sciences” Organized by U.G.C., 2008.
12. **Sanyal, M.**, Participation in Seminar on “Frontier Advances in Chemical Sciences” Organized by U.G.C., 2008.
13. **Christy, F.**, participation in conference on Colouration: Science and technology 2010, ACTI &GDMA, Ahmedabad.
14. **Christy, F.**, Imparting training for the Personality Growth Oriented Course 2010, ST.Xaviers College, Ahmedabad.
15. **Sanyal, M.**, Participation in workshop Research methodology for investigating natural and synthetic drugs with special reference to the use of sophisticated instruments, 2010, Kachchh University, Bhuj.
16. **Sanyal, M.**, Invitation for conducting lectures on Polarography,2010., Dept. of Chemistry,K.S.K.V. Kachchh University, Bhuj.
17. **Sanyal, M.**, Delivered lectures to MSc Sem2 , Department of Chemistry,K.S.K.V. Kachchh University, Bhuj.2010.
18. **Makwana. A.H.**, Invitation for paper setting, 2010. Chemistry Paper2 Fy B.sc , Gujarat University
19. **Makwana. A.H.**, Contribution as resource person in Personality Growth Oriented Course 2010-11, St. Xavier’s College, Ahmedabad.
20. **Makwana.A.H.**, Invitation to present as a visiting lecturer, 2010. Dept. of Chemistry, Bhavnagar University, Bhavnagar.
21. **Christy, F.**, Pranav S. Shrivastav, 2011, “Conductometric Studies on Cation-Crown Ether Complexes: A Review”, Critical Reviews in Analytical Chemistry
22. **Christy, F.**, 29th March 2011 Participation in one day Workshop on IMC RBNQA Criteria organized by St.Xaviers College in collaboration with Ramkrishna Bajaj National Quality Award Trust.
23. **Christy, F.**, 22nd January 2011, Participation in the “Industry-Academia Congregate-2011”, Ahmedabad.
24. **Christy, F.**, 31st October-5th November 2011, participated in One week Training and Capacity Building Programme in Chemistry, Ahmedabad Management Association.
25. **Christy, F.**, 24th December 2011 participation in the UGC Sponsored One day Colloquium on “Chemistry: Our Life Our Future” Ahmedabad.
26. **Christy, F.**, 3rd-4th March 2011 participated In National Conference on Physics For Tomorrow St.Xavier’s College,Ahmedabad

27. **Shah B. A.**, 3rd-4th March, 2011 participated in National Conference on Physics for Tomorrow-St.Xavier's College, Ahmedabad.
28. **Shah B. A.**, 29th March, 2011 participated in one day workshop on IMC RBNQA Criteria-St.Xavier's College, Ahmedabad.
29. **Shah B. A.**, 8th October, 2011 participated in a workshop on Analytical techniques For Biological and Chemical Sciences-II-St.Xavier's College, Ahmedabad.
30. **Shah, B.**, 24th Dec, 2011 participated in One Day Colloquim on "Chemistry: Our Life Our Future", Ahmedabad.
31. **Shah B. A.**, 31stOct-5th November 2011 Training and Capacity Building Programme in Chemistry Ahmedabad Management Association, Ahmedabad.
32. **Sanyal, M.**, 17-18 June 2012, M.Sc-SEM-II (Physical) Chemistry Practical Examination, K.K.Shah Jarodwala Maninagar Science College, Ahmedabad
33. **Sanyal, M.**, 19 June 2012, M.Sc Part-I First/Second Semester Chemistry Practical Examination, Gujarat Univeristy, St. Xavier's College, Ahmedabad
34. **Sanyal, M.**, 24 December 2011, Chemistry: Our Life Our Future, Department Of Chemistry, School Of Sciences, Gujarat University, Ahmedabad
35. **Sanyal, M.**, 9-10 December 2011, M.Sc Part-I First Semester Chemistry Analytical Practical Examination of Gujarat University, St. Xavier's College, Ahmedabad
36. **Sanyal, M.**, 31 October-5 November 2011, Training and Capacity Building Programme in Chemistry, Knowledge Consortium of Gujarat
37. **Sanyal, M.**, 19 November 2011, M.Sc Semester I & III Examination, Department of Chemistry, Bhavnagar University, Bhavnagar
38. **Sanyal, M.**, 17 November 2011, M.Sc Semester-I/III Practical Examinations, Chemistry Department, University School of Sciences, Gujarat University
39. **Katara D. V.**, Receiving & Imparting Training for The Personality Growth Oriented Courses of Xavier's, 2009.
40. **Shah B. A.**, & Imparting Training for The Personality Growth Oriented Courses of Xavier's, 2009.
41. **Makwana A H.**, Receiving & Imparting Training for The Personality Growth Oriented Courses of Xavier's, 2009.
42. **Sanyal, M.**, Performance in receiving and imparting training for the Personality Growth Oriented Course 2010, St.Xaviers College, Ahmedabad.
43. **Christy, F.**, 5-13th April, 2012, served as a resource person in the Gujarat State Biotechnology Mission (GSBTM), Gandhinagar.
44. **Atul H Makwana** won Second prize in Oral presentation in a National Conference at Palanapur on 2nd and 3rd Feb 2013.
45. **Dilip Vasava**, Dr Pranav Trivedi, Dr Devang Pandya Presented their papers in National Conference at Palanapur on 2nd and 3rd Feb 2013.
46. **Shah B. A.**, Dr Mallika Sanaya and Prof Francis Christy presented Poster/ participated in National Conference at Palanapur on 2nd and 3rd Feb 2013.

Department of Mathematics

1. **Name of the department:** Mathematics
2. **Year of Establishment:** 1955
3. **Names of Programme / Courses offered**
 - ✓ BSc in Mathematics
4. **Names of Interdisciplinary courses and the departments/units involved:** N.A.
5. **Annual/ semester/choice based credit system (programme wise)**
 - ✓ F.Y. B.Sc.(semester-CBCS)
 - ✓ S.Y. B.Sc.(semester-CBCS)
 - ✓ T.Y. B.Sc.(Mathematics Annual pattern)
6. **Participation of the department in the courses offered by other departments:**
Currently we do not have a participative course
7. **Courses in collaboration with other universities, industries, foreign institutions, etc. :**
The department does not run a course in collaboration with other universities. However, faculty is visiting faculty for the MSc. (Mathematics) at R. A. College of Bhavan's, affiliated to Gujarat University.
8. **Details of courses/programme discontinued (if any) with reasons:**
 - Till last year in SY BSc. there was an optional paper-mathematics-5 (computer oriented numerical analysis). After the introduction of semester system by University, this paper was removed.
9. **Number of Teaching posts**

	Sanctioned	Filled
Professors	0	0
Associate Professors	2	2
Adyapak Sahayak	2	1
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
Dr.S. Prasanna	M. Sc., Ph. D.	Professor	Mathematics	32 years (Retired from Oct. 2011)
Prof. U. M. Prajapati	M. Sc.	Associate Professor	Mathematics	25 years at UG and 10 years at PG Visiting
Prof. S. W. Patel	M. Sc.	Associate Professor	Mathematics	19 years and 10 years at PG Visiting
Prof. P. G. Patel	M. Sc., M.Phil.	Adyapak Sahayak	Mathematics	3 years

11. **List of senior visiting faculty**

Dr S. Prasanna (June 2011-Jan. 2013)

Dr I. H. Sheth (2012-13)

12. **Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty**

Name	Duration	% of Theory lecture	% of practical classes
Dr. S. Prasanna	June 2011- Oct. 2011	11%	
Dr. I. H. Sheth	Jan.2013- April.2013	11%	
Ms. Priya Doshi	June 2011-till today	-	40%
Ms. Reshma Pillai	June 2012 –till today	5%	25%
Ms. Het Mankad	Oct. 2011- Oct.2012	11%	20%

13. **Student -Teacher Ratio (programme wise)**

Year	No of Students having Mathematics Subject		
	F.Y	SY	TY
2011-12	1:67	1:45	1:12
2012-13	FY	SY	TY
	1:67	1:37	1:15

14. **Number of academic support staff (technical) and administrative staff; sanctioned and filled:**

The department does not have any administrative staff.

15. **Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ M.Phil./PG. :**

One of the faculty has a Ph.D., another M.Phil., and two of them with PG.

16. **Number of faculty with ongoing projects from**

a) **National**

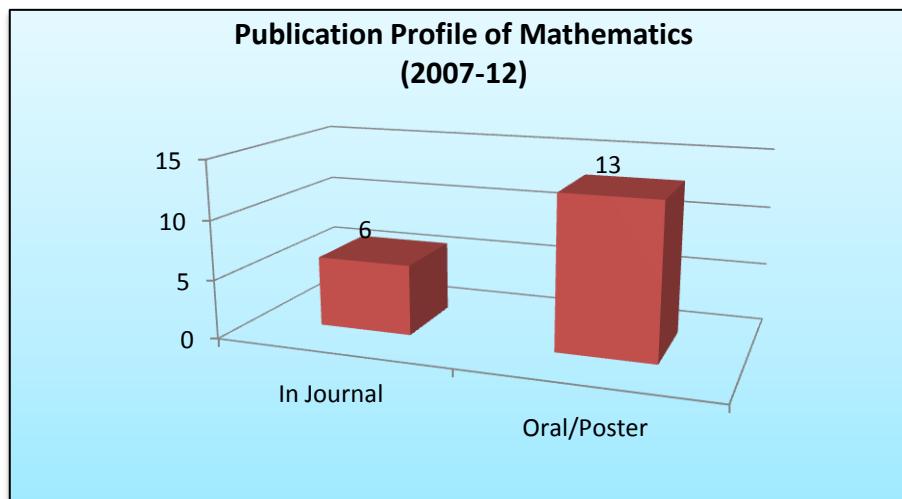
- i) One of the faculty has the ‘Mandhava Mathematics Competition’, funded by National Board of Higher Mathematic (from last three years)
- ii) One of the faculty has a project on ‘Workshop on Mathematical Models making’ from UGC.

17. **Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received**

The project on ‘Workshop on Mathematical Models making’ is from UGC.

18. **Research Centre /facility recognized by the University:** Nil

19. **Publications:** Details at the end of the session on Mathematics



20. **Areas of consultancy and income generated:** Nil

21. **Faculty as members in**

a) **National committees**

- Prof. U. M. Prajapati, is in the Mathematics Olympiad at HBCSE (TIFR) committee.

b) **International Committees:** Nil

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

Year	Name of the achiever	Achievement
2011-12	Laxmi Chitra	Gold Medalist
2010-11	Shikha Jain	Gold Medalist
2009-10	Monika	Gold Medalist
2008-09	Shweta Sighal	Gold Medalist
2010-11	Shah Hena R(TY)	nd 2 Rank at Uni
2010-11	Iyer Laxmi Chitra (SY- MS)	st 1 Rank at Uni
2009-10	Shah Het (FY)	First in Prof. A. R. Rao Competition
2010-11	Shah Het (SY)	First in Prof. A. R. Rao Competition
2011-12	Shah Het (TY)	Third in Prof. A. R. Rao Competition
2010-11	Shah Het (TY)	First in poster Presentation at Science Excellence ‘The Pappus Chain Theorem’.
2011-12	Shah Het (TY)	Second in paper Presentation at Science Excellence ‘Ternary Expansion & the Cantor set’.
2010-11	Shah Het (SY)	3rd Rank in 42nd National Mathematics Talent Competition conducted by AMTI
2010-11	Shah Het(SY)	2 nd Mathematics Elocution Competition conducted by Mathematics Department, St. Xavier’s College
2010-11	Goswami Vaishali(FY)	Second in Prof. A. R. Rao Competition
2008-09	Anal (TY)	First in Presentation at Science Excellence
2010-11	Bhargav Suthar(TY)	First in Poster Presentation
2010-11	Laxmi Chitra(SY)	1 st Mathematics Elocution Competition conducted by Mathematics Department, St. Xavier’s College

Over and above, we have been consistently bagging being in the first 50 of the University result.

Year	Rank Position		
	FY	SY	TY
2009-10	2 nd ,3 rd	1 st ,13 th ,20 th	3 rd ,25 th ,26 th , 33 rd
2010-11		1 st ,3 rd ,7 th ,36 th	1 st ,2 nd ,4 th ,11 th , 16 th ,17 th ,22 nd , 38 th ,44 th ,47 th ,49 th ,
2011-12	22 nd ,24 th ,25 th ,	11 th ,33 rd ,44 th	1 st ,3 rd ,7 th ,36 th

- Prof. S. W. Patel was awarded a certificate as subject coordinator for Mathematics in Gujarat State from BISAG.
- Het Shah (TY) won 3rd prize and Devarshi Raval got consolation prize in Prof. A. R. Rao Mathematics Competition held by Gujarat Ganit Mandal. Bhargav Suthar (TY), Rishabh Modi (TY), Pooja Upadhyay (TY) and Parulben Pandya (TY) got certificates for passing the same competition.
- Vaishali Goswami (TY) got second rank at the same competition at the TY level. (2012-'13)
- Vaishali Goswami (TY) (8th rank) and Miral Munjani (FY) (4th rank) got a certificate at the same competition.
- Het Shah (TY) presented a talk “How to find cube root using ordinary calculator” at the Gujarat Ganit Mandal Conference.
- Prof. U. M. Prajapati is appointed as Regional Coordinator for Mathematics Olympiad for Gujarat Region by National Board for Higher Mathematics (NBHM) from August-2011.
- Prof. U. M. Prajapati is appointed as Coordinator for Madhava Mathematics Cometition for Gujarat University and surrounding Region by National Board for Higher Mathematics (NBHM) from August-2011.
- Prof. U. M. Prajapati is appointed as a member of Board of Studies for Mathematics by Gujarat University in 2012.

24. List of eminent academicians and scientists/ visitors to the department:

- Prof. Elon Lindenstrauss is an Israeli mathematician, and a winner of the 2010 Fields Medal and professor at Princeton University and the Mathematics Institute at the Hebrew University.
- Dr. Nimish Shah, TIFR, Mumbai and Ohio University - USA
- Dr. Riddhi Shah, TIFR, Mumbai and JNU , New Delhi
- Prof. I H Sheth, Ex-Head, Department of Mathematics, School of Science, Gujarat University
- Dr. Shashikant Sharma, ISRO, Ahmedabad
- Mr. P K Vyas, Joint Editor, Suganitum (A Mathematics magazine)
- Prof. N N Roghelia, Associate Professor (Ex-Head), Department of Mathematics, M.G. Science Institute, Ahmedabad
- Prof. K V Thaker, Associate Professor, Department of Mathematics, School of Science, Gujarat University

- Mr. Vishal Joshi, Post doctorate fellow at PRL, Ahmedabad
 - Prof. Sachin Gajjar, Government Polytechnic college, Ahmedabad
25. **Seminars/ Conferences/Workshops organized & the source of funding**
a) National: Nil
b) International: Nil
26. **Student profile programme/course wise**
- | Name of the Course / programme | Applications received | Selected | Enrolled | | Pass percentage |
|--------------------------------|-----------------------|----------|----------|----|-----------------|
| | | | M | F | |
| FYBSc. | | 42 | 17 | 25 | |
| SYBSc. | | 67 | 32 | 35 | |
27. **Diversity of Students**
We do not have enough data to provide this information accurately.
28. **How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?**
 - Raju Munsi an ex student of batch 2008, has cleared the defense services exam in 2011.
 - Many students have cleared IIT – entrance exam for P.G course in Maths.
29. **Student progression**
- | Student progression | Against % enrolled |
|---------------------|--------------------|
| UG to PG | 70% |
30. **Details of Infrastructural facilities**
 - Library:** The main library house 4160 books in Mathematics
 - Internet facilities for Staff & Students:** There is a computer in the department with internet facility for faculty.
 - Class rooms with ICT facility:** As and when required, common College facilities are used by the department.
 - Laboratories:** We use the common computer laboratory of the College.
31. **Number of students receiving financial assistance from college, university, government or other agencies:** Nil
32. **Details on student enrichment programme (special lectures / workshops / seminar) with external experts:**
The following dignitaries visited the campus and delivered talks and

interacted with students and faculty.

Sr	Name/institute of the speaker
1	Dr. Nimish Shah /Scientist TIFR
2	Dr. Riddhi Shah/ Scientist TIFR
3	Dr. Sashikant Sharma/ Scientist ISRO
4	Dr. I H Seth /Rtd. Professor Guj. Uni.
5	Prof. R N. Roghelia/ Rtd. Prof. M G Science Institute
6	Prof. K. V. Thakkar/ Maths. dept. Guj. Uni.
7	Prof. Elon Lindenstrauss Fields Medallist, “Dynamics and Geometry of Numbers” on 3 rd January, 2013

33. Teaching methods adopted to improve student learning

- ✓ Assignments are given to students for practice
- ✓ Seminars are conducted for students
- ✓ AV facility is used to discuss important and difficult topics in mathematics.
- ✓ Students are motivated to appear in the mathematics competitions such as A.R.Rao competition, Madhava Mathematics competition etc.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities

- ✓ Prof. U. M. Prajapati is involved in conducting
 - (i) Prof. A. R. Rao Spardha for FY and SY level
 - (ii) Madhava mathematics Competition
 - (iii) National Mathematical Talent Competition (by AMTI-Chennai) for UG students at national Level.
- ✓ Prof. U. M. Prajapati is the coordinator of Regional Mathematics Olympiad (State Level).
- ✓ Prof. Sanjay Patel has been working since 4 years as the subject coordinator in Mathematics for the ‘SANDHAN’ – BISAG TV programme run by KCG- the Govt. of Gujarat initiative.
- ✓ Prof. Sanjay Patel has participated for 10 days during December 2010-11 in Mathematics programme run by KCG- the Govt. of Gujarat initiative.
- ✓ Prof. Sanjay Patel has participated for 3 days during December 2010-11 in “Fluid Dynamics and its application” at M S University Baroda.
- ✓ Prof. Sanjay Patel has delivered a lecture on “Maths-Science Questionnaire programme” as the subject expert, sponsored by GUJCOST Gandhinagar for the 9th and 10th std. students.
- ✓ Prof. Sanjay Patel has contributed as a translator in the Mathematics terminology book published by Granth Nirman Board.
- ✓ Prof. Sanjay Patel was appointed as resource person for the curriculum designing of the newly introduced B.Sc. Ed. degree by the Gujarat government at IITE, Children University Gandhinagar.
- ✓ Prof. U. M. Prajapati, Mathematics Olympiad at HBCSE (TIFR).

35. SWOC analysis of the department and Future plans

Strength

- Good and in depth, student-oriented teaching.
- Willing to solve the difficulties (curricular/co curricular) of students
- Approachable to students

Weakness

- Small department. Two more faculty are required.
- Not available in the department for appropriate time.

Opportunities

- More number of seminars/workshops can be organized.
- Course preparation for entrance exams can be established.
- A COP for “Free mathematical software” can be introduced.

Challenges

- Small Department
- Not well equipped (Printer, Scanner, multimedia, LCD Projector and some minor facilities).

Publication

1. **Udayan Prajapati**, S. K. Vaidya, P. L. Vihol , 2009, *Some Important Results on Triangular Sum Graphs* , Applied Mathematical Sciences,,Vol. 3, 2009,no. 36,1763-1772.
2. **Udayan Prajapati**, S K Vaidya, 2011, *Some Results on Prime and k-Prime Labeling* , Journal of Mathematics Research ISSN 1916-9795 (Print) ISSN 1916-9809 (Online)Journal of Mathematics Research ISSN 1916-9795 (Print) ISSN 1916-9809 (Online).
3. **Udayan Prajapati**, S.K.Vaidya, 2011, *Fibonacci and Super Fibonacci Graceful Labelings of Some Cycle Related Graphs* , International J.Math. Combin. Vol.4(2011), 59-69.
4. **Udayan Prajapati**, Samir K. Vaidya, 2012 *Some Switching Invariant Prime Graphs* , Open Journal of Discrete Mathematics, 2012, 2, 17-20.
5. **Udayan Prajapati**, Samir K. Vaidya ,2012, *Some New Results on Prime Graphs* , Open Journal of Discrete Mathematics, 2012, 2, 99-104.
6. **Udayan Prajapati**, Samir K. Vaidya , 2013, Prime labeling in the context of duplication of graph elements, International Journal of Mathematics and Soft Computing Vol.3, No.1 (2013), 13 -20. ISSN Print : 2249 -3328, ISSN Online: 2319 -5215.

Presentations

1. Invited Talk by Prof. U. M. Prajapati “Some Graph Labeling”, at Govt. V. Y. T. PG, Autonomous College, Durg (Chhattisgarh) during UGC Sponsored National Workshop on Recent Trends in Graph Theory and Cryptography during 11-13 October, 2011.
2. Prof. U M Prajapati served as a resource person to make aware for

- Mathematics Olympiad to the students of SSC board toppers of various Districts of Gujarat Operation Programme on Science Olympiads at Gujarat Science City during September, during 2009 to 2012. (Four times).
3. Prof. U M Prajapati delivered a talk on “Mathematical Competitions and students’ training in Gujarat” at IISER, Pune on National Initiative in Mathematics (education (West Zone Conference) during 26-28 December-2011.
 4. Prof. U M Prajapati was invited Lectures for the students of Mathematics Olympiad of the District Chhattisgarh at Govt. V. Y. T. PG, Autonomous College, Durg(Chhattisgarh) during State Govt. sponsored during 20-21 January, 2012.
 5. Prof. U M Prajapati anchored at Annual Conferences of Gujarat Ganit Mandal at Amreli during November-2011 conducted “Prashna Sandhya” as an Anchor and Resource person.
 6. Prof. U M Prajapati delivered a lecture at AMA of KCG programmeme of Guj. Govt.
 7. Prof. U M Prajapati served as a faculty member and resource person to train the students of Mathematics Olympiad at National Level and to select the Indian Team for International Mathematical Olympiad at Homi Bhabha Centre for Science Education, Tata Institute of Fundamental Research (HBCSE-TIFR), Mumbai, during April-May about four weeks) each year during 2007 to 2012.
 8. Prof. U M Prajapati served in “Problem Solving in Mathematics (UGC-CSIR NET)” for the students preparing for UGC-CSIR-NET(**State Level**) at Mathematics Department, S.P. University Vallabh Vidyanagar during Decemebr-2011.
 9. Ancient Mathematics, a comparative view: Indian and Western on 22-24 October, V. Y. T. PG, Autonomous College, Durg (Chhattisgarh).
 10. An invited talk” Some solved and unsolved Problems in Mathematics” on 21st January, 2013 at St. Thomas PG College, Bhilai, Durg (Chhattisgarh).
 11. Prof. U M Prajapati served in “Problem Solving in Mathematics (UGC-CSIR NET)” for the students preparing for UGC-CSIR-NET(**State Level**) at Mathematics Department, S.P. University Vallabh Vidyanagar during 5th and 6th January -2013.
 12. Prof. U M Prajapati was invited Lectures for the students of Mathematics Olympiad of the State Chhattisgarh at Govt. Chhattisgarh College, Raipur (Chhattisgarh) during State Govt. sponsored during 18-19 January, 2013.

Mathematics: Student Project	
2009-12	Het Shah, Monika Khatri, Kushal Shah, EOQ model, Polar curves and their applications, Divisibility criteria
	Het Shah, Bhargav Suthar, Rawal Devarshi, Upadhyay Pooja, Veena Verma, Sakeena Bootwala EMI system, Cubic Spline interactions, Graph Trees
	Vasihali Goswami, Veena Verma, Heena Patel, Mansi Hedhac, Kusum Baldha, Types of Transformation, Application of Calculus to find volume of irregular solids.

Department of Physics-Electronics

1. **Name of the department:** Physics-Electronics
2. **Year of Establishment:** 1956
3. **Names of Programme / Courses offered**
 - ✓ BSc in Physics
 - ✓ BSc in Electronics
 - ✓ COP in Microprocessors and Photonics
4. **Names of Interdisciplinary courses and the departments/units involved:**
The department currently does not offer any interdisciplinary courses.
5. **Annual/ semester/choice based credit system (programme wise)**
The department has been following the University pattern from the year of its establishment. Currently only the third year students are following the annual system, while the first year and the second year students are into the semester system as the University introduced the CBCS structure from 2011 onwards.
6. **Participation of the department in the courses offered by other departments**
The department currently does not offer any interdisciplinary courses.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.**
Currently the department does not have a collaborative course with other universities.
8. **Details of courses/programme discontinued (if any) with reasons**
The department has not discontinued any programme.
9. **Number of Teaching posts (as on February 1, 2013)**

	Sanctioned	Filled
Associate Professors	12	12
Asst. Professors	1	1
Adhyapak Sahayak	1	1

10. **Faculty profile with name, qualification, designation, specialization**

Name	Qualification	Designation	Specialization	No. of Years of Experience
Dr Rajesh Iyer	Ph.D.	Associate Professor/ HOD	Nano Science and Atmospheric Science.	24 years

Dr TC Pandya	Ph.D.	Associate Professor	Solid State Phy	29 Years
Dr Arun Patel	Ph.D.	Associate Professor	Electronics and Physics Education	28 Years
Prof M C Patel	M. Phil.	Associate Professor	Quantum Mechanics	27 Years
Dr A J Trivedi	Ph.D.	Associate Professor	Remote Sensing	29 Years
Dr N D Ganguly	Ph.D.	Associate Professor	Atmospheric Physics	20 Years
Dr D G Trivedi	Ph.D.	Associate Professor	Remote sensing	27 Years
Dr Anita Sharma	Ph.D.	Associate Professor	Gas based sensors	18 Years
Dr Urvi Chaaya	Ph.D.	Associate Professor	Thin Films	20 Years
Dr J J Joshi	Ph.D.	Associate Professor	Colour Physics	20 Years
Dr M R Gadhwani	Ph.D.	Associate Professor	Nano Science and Magnetic Fluids, Nano Polymer Composites	20 Years
Dr CJ Clement	Ph.D.	Associate Professor	Theoretical Physics	18 Years
Dr S M Patel	Ph.D.	Associate Professor	Atmospheric Science	17 Years
Dr Sanjeev Gupta	Ph.D.	Adhyapak Sahayak	Theoretical Nano Science	6 months

11. List of senior visiting faculty

Mr. R. Kulkarni who is a Consultant microcontroller, Ahmedabad, is a visiting faculty for the COP in Microprocessors and Photonics.

12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty.

Currently we do not have any temporary faculty

13. Student -Teacher Ratio (programme wise)

Academic Year	Student -Teacher Ratio Physics	Student -Teacher Ratio Electronics
2012 - 13	45:1	25:1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

Supporting	Qualifications	Designation
Mr Raju Kalasava	Graduate	Laboratory assistant
Mr Hirabhai	Graduate	Laboratory assistant
Ms Hina Patel	Graduate	Laboratory assistant
Ramesh Kalal	12 th pass	Peon
Rajesh Vaghela	9 th pass	Peon

Ad hoc		
Mr Dinesh Vaghela		Peon

15. **Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ M.Phil./PG.**

Thirteen faculty are with doctorate. One of the faculty is with M.Phil.

16. **Number of faculty with ongoing projects from a) National b) International funding agencies and grants received.**

Faculty	Duration	Title	I/ N	Funding agency	Amount (Rs.)
Dr N D Ganguly	2009 onwards	Influence of Statosphere-Troposphere exchange on Ozone Variability	I	ISRO	4 Lakhs
Dr D G Trivedi	December 2009 to May 2012.	Microwave scattering properties of lunar regolith using chandrayaan-1 mini-sar data.	N	ISRO	600000
	September 2012 to April 2014.	Chandrayaan-1 Mini-SAR Data Analysis for Lunar Polar Region: Scattering mechanism database & preparation of morphological maps	N	ISRO	575000
Dr M R Gadhwani	Feb-2004 to Feb-2006	'Magnetic Properties of Textured Magnetic Fluid: Ionic & surfacted'. F-47-9/2003	N	UGC	60000
	Feb-2008-10	'Synthesis of Nano Magnetic Composites: Physical Properties' F-47-262/07	N	UGC	80000
Dr. Rajesh Iyer	March-2013-2016	Characterisation Of Aerosols, Black Carbon and Radiative Forcing Over Urban Environment Of Ahmedabad	N	SAC, Ahmedabad	18,75,000
				Total	35,90,000

17. **Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received**

Two of the projects of the department were funded by UGC: i) **F-47-9/2003** and **F-47-262/07**. We do receive funding for organising various

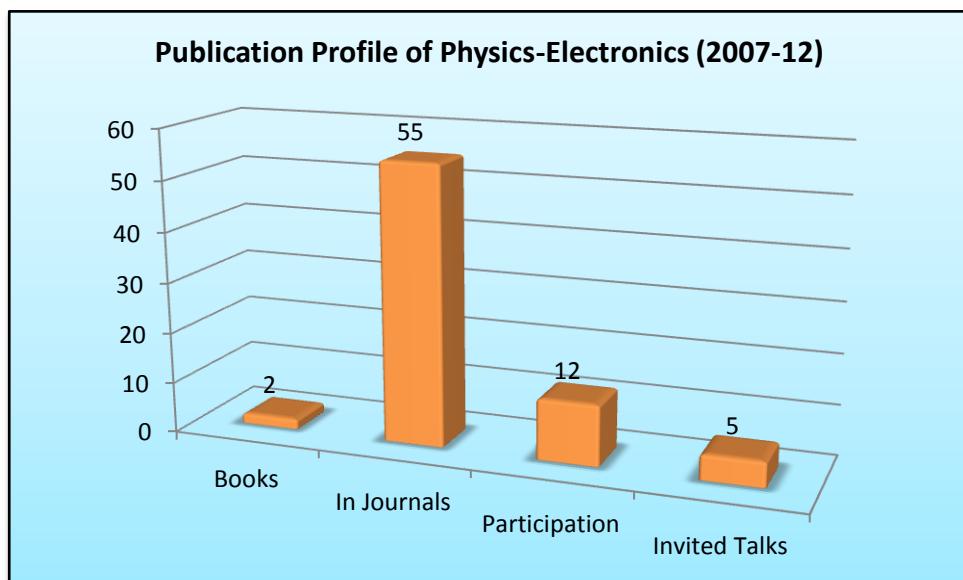
seminars and workshops from DBT, UGC, IAS, PRL and IPR.

18. **Research Centre /facility recognized by the University.**

Recently, the department has established a Nanotechnology laboratory. Faculty and students avail the facilities of other laboratories such as PRL, IPR, ISRO. Department has a very informal collaboration with these laboratories since many years.

19. **Publications**

See the end of this document on Physics.



20. **Areas of consultancy and income generated**

- ✓ Currently the department is not offering consultancy services.

21. **Faculty as members in**

a) National committees b) International Committees c) Editorial Board

- Dr AP Patel is in the BoS of Physics at the Gujarat University.
- Dr J J Joshi is in the BoS of Electronics at the Gujarat Univrsity.
- Dr N D Ganguly is Fellow member of The Society of Earth Scientists
- Dr N D Ganguly is life member of Indian Geophysical Union.
- Dr. M. R Gadhvi is a Scientific and Advisory committee member for Nagri Eye Research Foundation, Ahmedabad.
- Dr. M R. Gadhvi is a committee member in curriculum of Physics for Indian Institute of Teacher's Education, Gandhinagar.
- Dr. M. R Gadhvi is a committee member in Nanotechnology programmeme and Industrial Application by Higher Education Department, Gandhinagar.
- Dr. M. R Gadhvi is in reviewer panel of International Journal:

Material Sciences and Engineering-B , Elsevier (ISBN-0921-5107).

- Dr A J Trivedi is in the Board for checking proof of Std. 12 text book.
- Dr T C Pandya is a Fellow of Gujarat Science Academy
- Dr T C Pandya is an Executive Council Member of IAPT (Indian Association of Physics Teachers).

22. Student projects

a) Percentage of students who have done in-house projects including inter departmental/programme/

On an average 12 students from a strength of 60 in S.Y. from Physics and four students out of 20 from Electronics have carried out project in the last 3 years.

b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories / Industry / other agencies

8% of students have carried out projects from ISRO last year.

23. Awards/ Recognitions received by faculty and students

- Dr AP Patel has won the Indian Association of Physics Teachers (IAPT) four times in the past 4 years under the *Innovative Experimental* category.
- Dr T C Pandya has bagged the first prize and the third prize in the National level Competition for innovation in computer for Physics Education in the two consecutive years.
- Dr T C Pandya has bagged the third prize in the National level Competition for innovative Experiments in Physics.
- Dr T C Pandya was awarded Summer Research Fellowship 2007 (sponsored by INSA, IASc. and NASI) at BARC Mumbai.
- Dr T C Pandya was awarded Teacher Research Fellowship 2009 (sponsored by Physical Research laboratory).
- Dr M R Gadhvi was awarded Hungarian Fellowship 2010 (sponsored by Hungarian Scholarship Board).
- Dr MR Gadhvi chaired a session in an International Symposium SAMPADA-2008 at Pune, India.
- Dr Rajesh Iyer was awarded the first prize by ‘Material Research Society of India’ for the best research paper category in the year 2009 in the field of Material Science Research.
- Dr MR Gadhvi was awarded Summer Research Fellowship 2008 (sponsored by INSA, I.I.Sc. and NASI) at IISc, Bangalore.
- Dr M R Gadhvi was awarded Summer Research Fellowship-2007 (sponsored by INSA, I.I.Sc. and NASI) at IIT, Khanpur.
- Dr Nandita Ganguly is in ‘Who’s Who?’
- Dr Sanjeev Gupta is awarded Fulbright scholarship in 2012.
- Five students each year are being awarded research fellowships which also includes a medal. Moreover, the top rankers of each year, viz. FY, SY and TY, have been awarded merit certificates for excellence in the subject.
- Dr A P Patel was invited as an judge for the 13th Asian Physics

- Olympiad hosted by India held at New Delhi (2012).
- Dr A P Patel was selected to attend the PHYSWARE-Physics education workshop at ICTP, Italy (2010).
 - Dr AP Patel acted as a resource person at the Resource Generation Camp in designing experiments for the Physics Olympiad programme.

Year	Rank Position		
	FY	SY	TY
2009-10			
Physics	5 th ,	31 st ,43 rd ,	47 th ,
2010-11			
Physics	10 th ,22 nd ,46 th ,	20 th ,	41 st ,
2011-12			
Physics		15 th ,28 th , 42 nd ,50 th ,	20 th ,
Electronics		47 th ,	

24. List of eminent academicians and scientists / visitors to the department

As part of the national seminars and workshops, the following dignitaries visited and interacted with faculty and students.

Title of the seminar/conference/academic programme	Scientists who participated for Talks/lectures/panel discussion
Special Lecture on ‘ Polymer Science and High Performance Polymer’ 22-08-2008	Dr. Rohit Kumar H. Vora , Polymer scientist and Technolgy Advisor, Advance Polymer Research & Technologies, Pennsylvania, USA
National Conference on “Physics for Tomorrow : Advancements in Energy,Environmental Sciences, Material Sciences & Biophysics” 3-4March 2012	Shri Anil Razdan, Ministry of Power, Govt. of India Prof. G. K. Mehta, IUAC,New Delhi Dr. S. K. Malhotra, BARC, Mumbai Prof. N. S. Gajbhiye Vice Chancellor, Sagar Uni. Dr. U. S. Joshi, Gujarat University, Ahmedabad Dr. A Srinivasan, AIIMS, New Delhi Dr. Ajai, ISRO, Ahmedabad Prof. A. K. Singhvi, PRL, Ahmedabad Prof. V. Ramgopal Rao Prof K. N. Iyer, Saurashtra University Dr. P.K. Iyer, IIT, Guwahati
XXXVI Refresher Course in Experimental Physics 15 Feb. to 1 March 2012	Prof. R. Srinivasan, IAS, Bangalore Prof T. G. Ramesh ,NAL, Bangalore Dr. Venkataraman, IISc, Bangalore Dr. Prakash Chauhan, ISRO, Ahmedabad Prof Ganesh, IUC, Indore
Advanced BSc Programme	Dr Mani, IPR, Ahmedabad Dr Bhas Bapat, PRL, Ahmedabad Dr Raghavan Rangarajan, PRL, Ahmedabad
Seminar on “High Potential Research Areas in Physics” 31 January 2013	Prof. Milan Sanyal, SNIP, Calcutta Prof. A. K. Singhvi, PRL, Ahmedabad Prof.R. N. Singh, PRL, Ahmedabad Prof. P. N. Gajjar, Gujarat University, Ahmedabad Dr. Janardan, PRL, Ahmedabad Dr. Pallam Raju, PRL, Ahmedabad Prof. K. N. Joshi pura, S. P. Uni., Vidyanagar Prof Angom, PRL, Ahmedabad

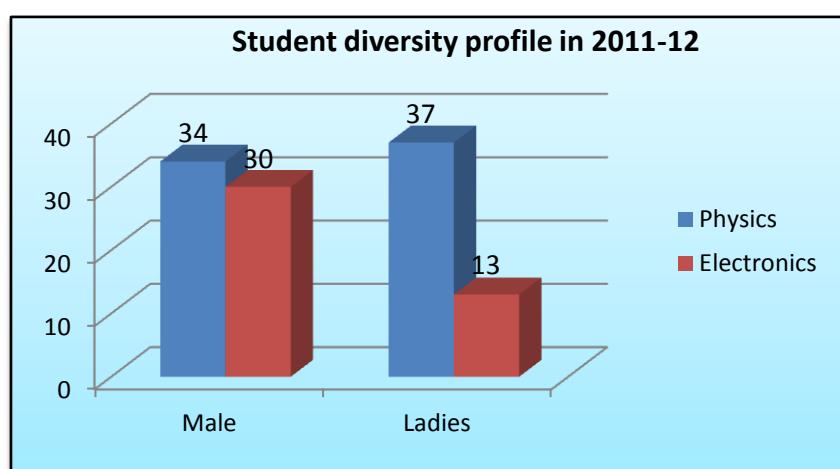
25. Seminars/ Conferences/Workshops organized & the source of funding

The department had organised one National Seminar, one National Conference one National Experimental Physics workshop and a state level workshop with funding from DBT (Dept. of Bio Technology), UGC, IAS (Indian Academy of Sciences), IPR (Institute for Plasma Research), PRL (Physical Research Laboratory) and GUJCOST.

26. Student profile programme/course wise (2011-12).

Name of the Course/programme	Applications received	Selected	Enrolled		Pass percentage
			M	F	
UG Physics	200	60	34	37	60
UG Electronics	70	25	30	13	45
COP in Photonics and Microprocessors	70	70			

27. Diversity of Students (2011-12)



28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defence services, etc.?

Four students have cleared JEST examination and joined IISER (Indian Institute of Science Education and Research) and TIFR. Five students have got high grades in GRE (Physics) examination. Two students have cleared IIT entrance examination for M.Sc.

29. Student progression

The students graduating from our department join a variety of careers. This includes Research, education, Govt. services, armed forces, marketing and many are entrepreneurs. Students have joined prestigious International Research Institutes/Universities like Max Planck Inst., Rochester University. About 50% of our students pursue M.Sc. We have not been maintaining any data. However, it is evident

- from the number of students who have taken TC that most of them progress towards MSc.
30. **Details of Infrastructural facilities**
- a) **Library:** There are 3980 books of Physics and 1259 books of Electronics in the central library. The department subscribes three journals of Physics.
 - i. Bulletin of Material Science (ISSN 0250-4707)
 - ii. Resonance (ISSN 0971-8044)
 - iii. Bulletin of IAPT (ISSN-2277-8950)
 - iv. Current Science (ISSN 0011-3891)
 - b) **Internet facilities for Staff & Students:** The department has an internet portal for faculty and Wi-Fi accessibility. There is also a Work Station for research. The students can avail internet facility for referencing in the College library.
 - c) **Class rooms with ICT facility:** The department owns a portable LCD projector, which enables the faculty and students to give power point presentations for teaching and seminars respectively. The department also has an OHP for enhancing teaching-learning.
 - d) **Laboratories:** The department has four fully equipped laboratories that can accommodate 70 students each. It also has dark rooms and two research laboratories: i) Material Science and ii) Computational, Amature Astronomy Club equipped with two reflection telescopes: i) Motorised and ii) Mechanical
31. **Number of students receiving financial assistance from college, university, government or other agencies:**
14 students are receiving financial assistance. Recently Dept. of Physics/Electronics has also set up a fund to help students seeking financial assistance. About 5 students have been benefited by this fund.
32. **Details on student enrichment programme (special lectures / workshops / seminar) with external experts**
- One National Conference, One National seminars, one National experimental workshop and one State level advanced B Sc workshop were conducted.
 - Mentoring of academically weaker students to score higher marks in the University examination by organizing a course for 6 weeks consisting of tests and inputs. 106 students from FY, 93 from SY and 67 from TY undertook the training.
 - We have an Astronomical club, where special programmes are organized for Sky Gazing and viewing special astronomical events like Meteor shower, Lunar and Solar eclipse and Venus Transit etc.
 - Encourage student to participate actively for scientific conference/seminar e.g. Poster/Oral presentation.
 - Centre for National Graduate Physics Exam (NGPE)-Ahmedabad Chapter.
 - Minaxi Lalit examinations

33. Teaching methods adopted to improve student learning

Members of the department engage in a range of pedagogical practices such:

- Study tours to
 - Adani Power, Mundra, Kuchh (Jan-2013)
 - Iron Factory-Electronic bike, Bhachau, Kuchh (2012)
 - Observatory at Mt Abu, Rajasthan (2011)
 - Visit to Institute of Plasma Research, Gandhinagar (2010)
 - Ferrofluid Laboratory, Bhavnagar University (2007)
- Student seminars, student presentations.
- Research activities
- Internship programme
- Industrial training
- Use of multimedia, OHP/LCD for classroom instructions
- Providing laboratory manual/work book with detailed explanation of experiments for FY Physics (Sem-I, II), FY Electronics (Sem-I) and SY Physics (Sem-III)

34. Participation in Institutional Social Responsibility (ISR) and Extension activities

The departmental staff members and students are involved in various social awareness programme of the College.

No	Programme	Participation
1	ICRW's Stigma reduction in HIV AIDS	1 faculty 4 students
2	PGOP	2 faculty
3	Jagrat	1 faculty 14 students
4	Student Activities	2 faculty

35. SWOC analysis of the department and Future plans

Strengths	Weakness	Opportunities	Challenges
Different areas of Specialization	Haven't explored the true potential of the staff in generating research findings	Starting a M.Sc. course in Phy. And Electronics	Get more funding for the department
All except one are Doctorates in Physics	Interdisciplinary work has not been initiated	Start more programmes related to schools	Set up Atm. Phy. Research Lab.
Many Co-Curricular activities are organised-for eg. Conferences, workshops and seminars of State and National scale	T.Y (Phy.) Lab. Needs a funding in the tune of approx. 10 Lakhs to set it right	Get more research Funds	Train our students for competitive examinations.
Has research tie ups with leading research institutes in the country	Lab. Assistants are not very efficient		
Dept has an astronomy			

club			
Facultys with high calibre in teaching			
Many ongoing research projects			
We work as one unit			
The Career Cell of the College is run by the Physics/Elec. Dept.			
Two out of three member committee looking after the entire Student activities of the college is from Phy/Ele Dept.			

Publications

Contribution in Books

1. **Ganguly N. D.**, "Atmospheric ozone: A natural umbrella" Popular book series- Mysteries of the Earth, published by Satish publishers, Earth Science India , C-207, Indira Nagar, Lucknow 226016 (UP).
2. **Ganguly N. D.** and Chris Tzanis., 'A case study of high surface ozone episodes at New Delhi in India' On the sustenance of Earth's resources (to be published by Springer, Germany, Mu.Ramkumar, Editor), (in press).
3. **Patel A.P.**, 'Science and Technology, Std. 1X and X, Published by Gujarat State Text Book Board, Gujarat State.
4. **Patel A.P.**, 'Physics' Std.X1 and X11 (Sem. 1,2,3 and 4) Published by Gujarat State Text Book Board, Gujarat State.
5. **Patel A.P.**, 'College Physics For F.Y.B.Sc. (Sem. 1 & 2)' Published by Nirav Prakashan.
6. **Patel A.P.**, 'College Physics For S.Y.B.Sc. (Sem. 3 & 4)' Published by Nirav Prakashan.
7. **Pandya T.C.**, 'Chandrayan Mission'. A Gujarati translation of the original book by Prof. Bhandari

Research Papers

1. **Rajesh Iyer**, Rucha Desai, R. V. Upadhyay; Low temperature synthesis of nanosized $Mn_{1-x} Zn_x Fe_2O_4$ ferrites and their characterizations Bulletin of Materials Science April 2009, Volume 32, Issue 2, pp 141-147.
2. **Rajesh Iyer**, Rucha Desai, R.V. Upadhyay; Low temperature synthesis of nanosized $Mn_{1-x} Cd_x Fe_2O_4$ ferrites and their characterizations Indian Journal of Pure & Applied Physics.
3. **Pandya T.C.**, K.D Joshi., Analysis of Equation of state and volume dependency of Thorium, Proceeding of the 52nd DAE Solid State Physics Symposium, Conf.Proc,767-768:2007.
4. **Pandya T.C.**, A simple approach to analyze the thermal expansivity of NaCl and KCl under the effect of high temperature. Proceeding of the 53rd DAE Solid State Physics Symposium , Conf.Proc,525-526 :2008 ISBN:978-81-8372-044-1

5. **Pandya T.C.**, Asim Shaikh,Apoorva Bhatt, Particle size effect on the compressibility of Nanocrystalline Germanium, Proceedings of the 55th DAE Solid State Physics Symposium, AIP Conf.Proc 1439,413-414,2011: doi:10.1063/1.3605910
6. **Pandya T.C.**, Nilesh Thakar, Apoorva Bhatt, Analysis of equations of state and temperature dependence of thermal Expansivity and bulk modulus for Silicon: Journal of Physics: Conference Series 377 (2012) 012097, IOP publishing:doi:10.1088/1742-6596/377/1/012097
7. Ranjan R., **Ganguly N. D.**, Joshi H. P. and Iyer K. N. 2007 Study of aerosol optical depth and precipitable water vapour content at Rajkot, a tropical semi-arid station. *Indian Journal of Radio and Space Physics*. **36** (1), 27 – 32.
8. **Ganguly N. D.**, 2007 Trend of tropospheric ozone in Indian forests from 1980 - 2000. *Current Science*, **93** (12), 1835 – 1839
9. **Ganguly N. D.**, 2008 Low level of stratospheric ozone near the Jharia coal field in India. *Journal of Earth System Sciences*, **117** (1), 79 – 82
10. **Ganguly N. D.**, 2008 Variation in Erythemal UV Dose for Indian cities as observed from Global Ozone Monitoring Experiment data. *Earth Science India* **1**(4), 288 - 299
11. **Ganguly N. D.**, 2009 Variation in atmospheric ozone concentration following strong earthquakes. *International Journal of Remote Sensing*, **30** (2), 349–356
12. **Ganguly N. D.**, and Iyer, K. N. 2009 Long-term variations of surface air temperature during summer in India. *International Journal of Climatology*, **29** (5), 735-746
13. **Ganguly N. D.**, and Iyer, K. N. 2009 Monitoring the success of implementation of Montreal Protocol in India with satellite measurements. *International Journal of Remote Sensing*, **30** (15), 3927–3941
14. **Ganguly N. D.**, 2009 Surface ozone pollution during the festival of Diwali. *Earth Science India*, **2** (4), 224 – 229
15. **Ganguly N. D.**, 2010 Influence of solar proton events during the declining phase of solar cycle 23 on the total ozone concentration in India. *International Journal of Remote Sensing*, **31**(2), 313–322 [10] **Ganguly N. D.** and Vincent, J. 2010 Long term trend, diurnal and seasonal variation of ozone at Indian Antarctic station Maitri, *Earth Science India*, **3** (3), 174-180
16. **Ganguly N. D.**, 2010 Stratosphere-Troposphere exchange events of ozone at Indian Antarctic station Maitri, *Current Science*, **99** (8), 1074 - 1079.
17. **Ganguly N. D.**, 2011 The impact of transported ozone - rich air on the atmospheric ozone content following the 26 January 2001 and 7 March 2006 Gujarat earthquakes. *Remote Sensing Letters* **2**(3), 195–202 (published online on 27/10/2010)
18. **Ganguly N. D.**, 2011 Long term variation of bromine oxide in India from GOME and SCIAMACHY instruments. *International Journal of Remote Sensing*, **32**(10), 2799–2810
19. **Ganguly N. D.**, 2011 Investigating the possible causes for changing climate in India with satellite measurements, *International Journal of Remote Sensing*, **32**(3), 687–700
20. **Ganguly N. D.**, and Tzanis C 2011 Study of Stratosphere-Troposphere exchange events of ozone in India and Greece using ozonesonde ascents.

- Meteorological Applications*, **18**, 467–474 published online in Wiley Online Library (wileyonlinelibrary.com; DOI: 10.1002/met.241)
21. **Ganguly N. D.**, 2012 “Comparative study of the influence of air pollution on UVI at Maitri in Antarctica and New Delhi in India” *ISRN Meteorology*, Article ID 315859, doi:10.5402/2012/315859.
 22. **Ganguly N. D.**, 2012 Influence of Stratospheric Intrusion on the Surface Ozone Levels in India *ISRN Meteorology*, Article ID 625318, doi:10.5402/2012/625318
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54. Prafulla K. Jha and **Sanjeev K. Gupta**, First principles lattice dynamical study of the cubic antiperovskite compounds AsNb₃ and SbNb₃, *Solid State Commun.*, 150,1650-1655,(2010).
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Participation

1. **Ganguly N. D.**, International symposium on aerosol – chemistry – climate interaction held from 20th -22nd November 2007, at Physical Research Laboratory, Ahmedabad.
2. **Ganguly N. D.**, National Space Science symposium 2008, held from 26th -29th February 2008, at Radio Astronomy Center, Ooty.
3. **Ganguly N. D.**, National Conference on Earth System Processes and Disaster Management; 15 - 17 September, 2009 at NCAOR Goa.
4. **Ganguly N. D.**, National Space Science symposium 2010, organized by ISRO from 23rd - 27th February 2010, at Saurashtra University, Rajkot.
5. **Ganguly N. D.**, TROPMET 2010, organized by the Ministry of Earth Sciences, IMD and IMS from 19th – 21st May, 2010 at Kolkata.
6. **Ganguly N. D.**, Advances in atmospheric remote sensing, weather prediction and climate change, 10 – 11 March, 2011 at S V University Tirupati.
7. **Ganguly N. D.** TROPMET 2011, held at Hyderabad from 14th – 16th December 2011 (Organized by Indian Meteorological Society).
8. **Ganguly N. D.**, National conference on satellite meteorology, held at IMD New Delhi, on 26 – 27 December
9. **Ganguly N. D.**, National Seminar on “Environmental Concerns and Sustainable Development: Issues and Challenges for India” Institute of Environment & Sustainable Development, Banaras Hindu University , 2-4th March, 2012
10. **Ganguly N. D.** 39th COSPAR Scientific assembly, International council of science (14 -22 July, 2012) at Mysore.
11. **Ganguly N. D.**, International Symposium on Atmospheres of Terrestrial Planets: observations and modeling, Physical Research Laboratory, Ahmedabad, 23-24 July 2012.
12. **Ganguly N. D.**, 49th annual convention of Indian Geophysical union at Pandit Deendayal Petroleum University, Gandhinagar, 29 – 31 October 2012.
13. **Trivedi, D.G.**, “Study of land characterization of Indian region at microwave frequency” paper was presented at MICRCOWAVE-2007 in one day seminar on “Microwave and its application” held at Ahmadabad on 21-01-2007 by Gujarat University.
14. **Trivedi, D.G.**, "Phenological Study of Indian Forests Using QuikscatKu-band Scatterometer Date" had been presented in Indian Conference on Microwave , Antenna, Propagation and Remote Sensing "InCMARS-2008" 9-11 December 2008.
15. **Trivedi, D.G.**, "Morphological features at lunar surface using mini SAR data" was presented in 7th International conference on Microwave, Antenna, Propagation and Remote sensing. ICMARS-2011. During 7-10 Dec-2011 at Jodhpur.

Invited talks

1. **Ganguly N. D.**, Workshop on “Atmospheric Science and Climate Change” for College and University Professors at Indian Center for Climate Change and Societal Impacts Research, Ahmedabad on 23rd / 24th January, 2010.
2. **Mrudul Gadhvi**, *Three lectures* in *National Workshop on Physics for Tomorrow: Experimental Physics* organized by I. I. Sc, INSA and NASI at Department of Physics, St. Xavier's College, Ahmedabad. (Feb. 2012)
3. **Mrudul Gadhvi**, ‘Endeavors of the Approved Post Doctoral Fellowships’ in a *State level Workshop for Lecturers on potential build up programme* at Pandit Dindayal University, Gandhinagar, INDIA. (July-2011)
4. **Mrudul Gadhvi** and Miklos Zrinyi, ‘Designing and Development of Micro Motors using Smart Polymer Composites’ in *international conference on Nanotechnology and Ultrasound & Indo –US workshop on Nanosonics and Ultasonics* at Trichy (Jan-2011).
5. Miklos Zrinyi, **Mrudul Gadhvi**, et al. ‘Study on Micro-motor utilizing Quincke Rotation of Novel Smart Polymers’ in 7th International Conference on Flow Dynamics, at Sendai, Japan (Nov.- 2010).
6. **Trivedi, D.G.**, Invited to take the lecture on (i) Differential Amplifier and (ii) Power Amplifier in XXXV Refresher Course in Experimental Physics at ST. Xavier's College, Ahmedabad jointly with Indian Academy of Sciences, Bangalore on February 15 to 1 March 2012.
7. **Trivedi, D.G.**, One day Training Workshop on Chandrayaan-1 Mini-SAR Data Analysis Project was attended on 22 jan 2013 and presented work plan for the project and estimated results for the project 2012-2014.
8. **Trivedi, D.G.**, Attended a 8th lecture of PROF. Satish Dhawan taken by Dr Barbara Rayaan came from USA which was arranged by Ahmedabad Metrological society at SAC, Ahmedabad on 1-march 2013.

Research Projects of Students

Sr. No.	Topic	Project Report by	Supervisor	In Collaboration with
1	Study of Some Nano-magnetic	Khushbu Bathani	Dr .Mrudul Gadhvi	
2	A Study of Relativistic Effects on Neutron Star Structure	Sandeep Darji	Dr. C.J.Clement	
3	Analysis of Thermal Expansivity of Nanocrystalline Nickel	Abhishek A. Gor	Dr. Tushar C. Pandya	
4	Electrical Field Induced Resistive Switching Properties of sol-gel Derived Cd0.25 Co0.75 Fe2o4 thin film Nano Structures.	Satish Singh	Dr. Urvi Chhaya, Dr. M.R. Gadhvi	Department of Physics Gujarat University Dr. Utpal Joshi

5	Resistive Switching Properties of Iron Oxide Thin Film Synthesized By Sol Gel Route.	Mahendra Chaudhary	Dr. Urvi Chhaya, Dr. M.R. Gadhwani	Department of Physics Gujarat University Dr. Utpal Joshi
6	Resistive Switching Properties of CuFe ₂ O ₄ Thin Film Synthesized By Sol Gel Route.	Harsh Patel	Dr. Urvi Chhaya,	Department of Physics Gujarat University Dr. Utpal Joshi

Research Projects (2010-2011)

Sr. No.	Topic	Project Report by	Supervisor	In Collaboration with
1	Change In Some Properties of Composite Polymers	Maitry S. Mehta	Dr. Anita Sharma	Department of Physics M. S. University Prof. N. L. Singh
2	Journey of Antarctic Ozone Hole As Observed From Indian Antarctic Station Maitri	Vincent Joel	Dr. Nandita D. Ganguly	
3	Synthesis of Nano Sized Ferrite Particles by Co-precipitation Method	Parth T. Soni	Dr. Rajesh R. Iyer	
4	Vertical Distribution of Ozone(O ₃) At Low Latitude Using Uars Data	Shruti B. Thakkar	Dr. Shailesh Patel	
5	Innovative Method to Measure Density of Solid and Liquid Materials using Standing waves	Nilesh A. Patel	Dr. Arun P. Patel	
6	Growth, Surface, Structure and Optical Properties of Al _{0.06} Mg _x Zn _{0.94-x} O Thin Films	Devpura Ravi M.	Dr. Urvi Chhaya	Department of Physics Gujarat University Dr. Utpal Joshi
7	Analysis of Equations of State and High Pressure Phase Transition of Germanium	Aasim I. Shaikh	Dr. Tushar Pandya	
8	A Comprehensive Study of The Physical Properties of Nanocrystalline Molybdenum and Nickel Using Equation of State	Apoorva D. Bhatt	Dr. Tushar Pandya	

Research Projects (2011-2012)

Sr.N o.	Topic	Project Report by	Supervisor	In Collaboration with
1	Study of Audio Equipments (Speaker)	Kanica N. Garg, Prachee Kotari	Dr. Arun Patel Dr. Rajesh Iyer	Shah Audio Pvt. Ltd
2	Inductance of A Straight Wire	Krunal Patel, Payal Parmar		Dr. Jaydeep Ghosh (Inst. of Plasma Research)
3	Comparitive Study of temp of aerosol of 2011-2012	Kunjal Chandaria, Mitchelle Sebastian	Dr. Rajesh Iyer	Dr. Prakash Chauhan, ISRO, Ahmedabad
4	Comparison of Theoretical and Computational Hydrogen atom model.	Fatema Gajipurwala		Dr. Bijay Sahoo, PRL, Ahmedabd
5	Comparative Study of aerosol of 2011-2012	Devansh Desai	Dr. Rajesh Iyer	Dr. Prakash Chauhan, ISRO, Ahmedabad
6	Plasma Sources	Jashwinder Tomar		Dr. G Ravi, FCIPT, Gandhinagar

Research Projets (2012-2013)

Sr. No.	Topic	Project Report by	Supervisor	In Collaboration with
1	Theoretical study of bulk modulus of nano system	Sudeep Dighe	Dr. Tushar Pandya	
2	Theoretical study of Plasma.	Kunalsingh Dodiya		Dr. Jaydeep Ghosh (Inst. of Plasma Research)
3		Purva Divanji		Dr. Jaydeep Ghosh (Inst. of Plasma Research)
4	Study Of Aerosols	Joseph George	Dr. Rajesh Iyer	
5		Kullu Nirmal	Dr. Rajesh Iyer	
6		Chamndeepr	Dr. Rajesh Iyer	
7	Study on Quality control and Testing for the Plastics and Composites	Pritesh Shah	Dr. M. R. Gadhwvi	Dr. S. Saxena, HOD, CIPET, Ahmedabad
8		Shweta Divan	Dr. M. R. Gadhwvi	Dr. S. Saxena, HOD, CIPET, Ahmedabad

Department of Statistics

1. **Name of the department:** Statistics
2. **Year of Establishment:** 1961
3. **Names of Programme / Courses offered (UG, PG, M. Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)**
 - ✓ BSc in Statistics
 - ✓ COP in Statistics(SPSS and Applied Statistics)
4. **Names of Interdisciplinary courses and the departments/units involved:**

The department of Statistics currently does not offer any interdisciplinary courses. However, COP in Statistics (SPSS and Applied Statistics) is also offered to students from other subjects.
5. **Annual/ semester/choice based credit system (programme wise) :**

The department has been following the University pattern from the year of its establishment. Currently only the third year students are following the annual system, while the first year and the second year students are into the semester system as the University introduced the CBCS structure from 2011 onwards.
6. **Participation of the department in the courses offered by other departments:**

Currently we do not have inter departmental programme. However, faculty contribute to the PGOP course of Campus Ministry.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.**

Currently we do not have any such collaboration.
8. **Details of courses/programme discontinued (if any) with reasons**

The department has not discontinued any programme. It has started the COP in SPSS.
9. **Number of Teaching posts**

	Sanctioned	Filled
Associate Professors	3	3
Asst. Professors		
Adhyapak Sahayak	3	3
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
Dr U.B.Gothi	M. Sc.,Ph.D.	Associate professor	Statistical inference	33
Dr N.F.Christy	M.Sc.,Ph.D., P.G.D.C.A, B. Ed	Associate professor	Statistical inference	16
Prof. B.B.Bhadauria	M.Sc.	Associate professor	—	29
Prof. Shraddha.C.Bhatt	M.Sc., M.Phil.	Adhyapak Sahayak	Sampling theory	3
Prof. Kirtan.C. Parmar	M.Sc., M.Phil., P.G.D.A.C.A, B. Ed	Adhyapak Sahayak	—	9
Prof. Aruna.K. Pandya	M.Sc.,M.Phil, B.Ed	Adhyapak Sahayak	—	3

11. List of senior visiting faculty

We do not have any visiting faculty

12. Percentage of lectures delivered and practical classes handled(programme wise) by temporary faculty : No temporary faculty

13. Student -Teacher Ratio (programme wise)

Year	2011-12
F.Y. B.Sc.	7:1
S.Y. B.Sc.	10:1
T. Y. B. Sc.	6:1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled.

The department does not have any technical staff or peon.

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ M.Phil./PG.

Two faculty are with Ph.D, and three are with M.Phil. and one is with MSc.

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received

The department does not have any project currently.

17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received

The department does not have any project currently.

18. **Research Centre /facility recognized by the University**
The department uses the facilities available at XRF. Recently, we have initiated a SPSS laboratory with 30 computers.
19. **Publications**
Details of publications, given at the end of this section of Statistics.
20. **Areas of consultancy and income generated**
The department has not offered any consultancy.
21. **Faculty as members in**
a) National committees b) International Committees c) Editorial Boards
The department does not have any faculty in any of the committees.
22. **Student projects**
a) Percentage of students who have done in-house projects including inter departmental/programme
Every year five students of TY carry out student project under the supervision of one of the faculty. That is about 15%.
b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories / Industry / other agencies:
No one
23. **Awards/ Recognitions received by faculty and students**
✓ Prof. B.B.Bhaduria was awarded ‘SANMAN PATRA’ by Ahhil Bhartiya Hindi Bhashi Utthan Sangh (ABHBUS) in 2009 for services given to society.
✓ Dr. U.B.Gothi, Appointed as a member of Board of Studies of Statistics. Board, Gujarat University for 3 terms, each of 3 years in 1997, 2006, 2012 respectively
✓ Dr. U.B.Gothi Delivered live lectures of Mathematical Statistics for 2 years in Bhaskaracharya Institute For Space Applications and Geo-Informatics(BISAG) , Gandhinagar
✓ Dr. U.B.Gothi, Examiner and Paper Setter for 2nd and 3rd year students of B.Sc. since last 18 years
✓ Dr. U.B.Gothi, Chairman of Examiners and Paper Setters of 2nd and 3rd year of B.Sc since last 2 years
✓ Dr. U.B.Gothi was invited as chief guest at Annual day of ‘Akar Adhyapan Mandir’ B.Ed. college.

Five students each year are being awarded research fellowships which also includes a medal. Moreover, the top rankers of each year, viz. FY, SY and TY, have been awarded merit certificates for excellence in the subject.

Year	Rank Position		
	FY	SY	TY
2009-10		2 nd	8 th ,18 th ,32 nd
2010-11			
	39 th	17 th	5 th , 6 th ,19 th , 21 st ,24 th ,46 th ,
2011-12			
		20 th ,	17 th ,

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: (Year 2011-12 batch)**

Name of the Course/programme	Applications received	Selected	Enrolled *M *F	Pass percentage (last year data)
B. Sc. Sem -I/II	60	42	16 26	100%
B. Sc. Sem – III/IV	61	26	11 15	100%
T. Y. B.Sc.	36	36	24 12	100%
COP	42	24	10 14	100%

27. **Diversity of Students:**
 Most of our students are from Gujarat Board. We do not get any foreign students.
28. **How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?**
29. **Student progression**

Student progression	Against % enrolled
UG to PG	80%
PG to M.Phil.	60%
PG to Ph.D.	4%
Ph.D. to Post-Doctoral	-
Employed <ul style="list-style-type: none"> • Campus selection • Other than campus recruitment 	6%
Entrepreneurship/Self-employment	-

30. **Details of Infrastructural facilities**
- Library:** The central library houses over 1724 books in Statistics.
 - Internet facilities for Staff & Students:** There is an internet enabled computer available for faculty. Students use internet facility in the main library.
 - Class rooms with ICT facility:** The department uses the common facility of the College, which is in the AV Room.
 - Laboratories:** There are two labs: One computer lab and one manual lab combined with the Psychology department.

31. **Number of students receiving financial assistance from College, University, Government or other agencies:** Two
32. **Details on student enrichment programme (special lectures / workshops / seminar) with external experts:**
33. **Teaching methods adopted to improve student learning:**
- ✓ We provide full syllabi to all students in the beginning of academic session.
 - ✓ We also provide printed copy of lecture wise schedule prior to teaching the course.
 - ✓ We thoroughly discuss all theoretical aspects with full involvement of the students in the class.
 - ✓ We regularly give assignments on different topics of the course.
 - ✓ We regularly conduct class test at the end of each unit. We also discuss their performance in the class.
 - ✓ We conduct quizzes on selected topics on individual/team basis.
 - ✓ We ask students to present seminars on the topics of their choice.
 - ✓ We occasionally arrange visits to industry for our T.Y. B.Sc. students.

34. **Participation in Institutional Social Responsibility (ISR) and Extension activities:**

The departmental staff members and students are involved in various social awareness programme of the College.

No	Programme	Participation
1	PGOP	all faculty members

35. **SWOT analysis of the department and Future plans**

Strengths

- ✓ The department grew from 3 to 6 full time faculty.
- ✓ Fully dedicated faculty.
- ✓ Creation of Statistics computer laboratory for the practical work to be done on computer.
- ✓ Staff worked very hard on conversion of Statistics practical from manual calculation to computer enabled calculation using software.
- ✓ We are a link between Arts and Science faculty.
- ✓ It requires great strength to teach the same topic to the students having different aptitude levels.
- ✓ All of our faculty deliver lectures under BISAG programme.
- ✓ Our departmental members are also helpful to other departments regarding their queries related to Statistics.
- ✓ Our faculty authored and co-authored books related to our subject in both the streams.
- ✓ All the faculty are involved in guiding students in their research projects.

Weakness

- ✓ We do not get students with higher percentage at entrance level.
- ✓ We do not have an independent Statistics laboratory of appropriate size with regard to strength of the students.
- ✓ We do not have even a part time peon to look after cleanliness and other jobs of the department.

Opportunities

- ✓ With Wi-Fi facility the department gets huge opportunity in the preparation of study material specially for the topics included in the some topics of new syllabus in CBCS.
- ✓ Because of cubical facility we can focus more on advanced studies.
- ✓ We are provided with an opportunity to canvas for our subject, interview and admit students in the department.
- ✓ We were given an opportunity to work with students in extra curricular activity.

Challenges

- ✓ Due to increase in the number of seats in the professional courses, the number of students joining B.Sc. Programmeme is decreasing day by day.
- ✓ Overall interest of the students towards studies is decreasing year by year.

Future plans: for 2013

- ✓ Informing the students and their parents whose attendance is weak.
- ✓ Intimation to the students and their parents whose performance is poor.
- ✓ To make library visit by the students mandatory.
- ✓ To bring to the notice of the Principal about the students showing unacceptable behavior towards their fellows students and faculty.
- ✓ To make weekly tests compulsory in each class.
- ✓ We shall organize “quiz competition” for the students of T.Y. B.Sc.
- ✓ We shall keep an up to date record of T. Y. B. Sc students after completion of studies (job placement).

For 2014-15

- ✓ To involve students from each of F.Y., S.Y., T.Y. classes in some research project.
- ✓ To involve faculty in some research work.
- ✓ Along with the practical journal a practical work-book to be given to students containing necessary statistical information such as statistical tables, graphs, formulae etc.
- ✓ To make industries/ institute visit compulsory for each student.

For 2016 to 2020

- ✓ To raise a separate departmental library.
- ✓ To prepare lecture-slides/notes to make utilize by students anywhere anytime.

- ✓ To equip the classrooms with all digital amenities such as smart-board, projector.
- ✓ To arrange for campus recruitments/placements exclusively for students of Statistics.
- ✓ Students are becoming exam and marks oriented due to semester system.

Publication: Book

1. Shraddha “Fundamental Statistics-I, Creative Prakashan. ISBN- 978-93-82019-14-5

Publication: Journal

1. **Pandya, A.**, “Uses of Statistics in Economics” Arthsankalan, 2012.

Seminars attended

1. **Pandya, A.**, Attended an International Conference on Applied Mathematics and Statistics organized by the Department of Statistics & Mathematics, Gujarat University, Ahmedabad in the year 2011.
2. **Pandya, A.**, Attended a National Conference on Physics for Tomorrow in the year 2011
3. **Pandya, A.**, Attended in 1 day National Conference on Environment and Climate with the theme Impact Assessment of Environment and Climate organized by Biology Department of Matushri Virbaima Mahila Science and Home Science College, Rajkot in the year 2011
4. **Pandya, A.**, Participated in 1 day Workshop on IMC RBNQA Criteria organized by St. Xavier's College, Ahmedabad in the year 2011
5. **Pandya, A.**, Faculty Development Programme seminar organized by Gujarat Statistical Association in the year 2010
6. **Pandya, A.**, National Level Seminar on Impact of Statistics on Science and Society sponsored by UGC, organized by Department of Statistics, M.G. Science Institute in the year 2010
7. **Pandya, A.**, National Level Seminar on Recent Trends in Bio-Medical Statistics sponsored by UGC, organized by Department of Statistics, Gujarat University in the year 2007
8. **Pandya, A.**, Role of Statistics In Socio-Economic Planning seminar organized by Directorate of Economics & Statistics, Govt. of Gujarat, Gandhinagar & Department of Statistics, Gujarat University, Ahmedabad in the year 2007.

Projects Guided by Dr. U.B.Gothi to Undergraduate Students

2010-2011

- Paper v/s Digital World by Ms. Archana Nair

2010-2011

- Factors Affecting Tourism in Gujarat by Ms. Dhruti pandey
- Efficiency of Education System in Ahmedabad by Ms. Talreja Komal
- Status of Education in India by Shaikh Rumana

- Listening Habit of Radio Station of People of Metro Cities by Siddharth Vaderkar
- A report on Retail Pharmaceutical Marketing: Analyzing Consumer Behavior by Poorva Vaishnav

2009-2010

- Application of Statistical Tools in Stock Market Bandish Sharma and Arthurony Macwan
- Various Details of Leading Brands by Bhargav Dhagia and Harsh Khatri
- Attitude of Customer Towards Cell Phones by Virali Vora and Namrata Bhavsar

2008-2009

- Various Retail Format For Consumer Electronics by Bhargav Dhagia Tejal Shukla
- The Consumer Perception And Behavior of Different AGE Groups Towards Tourism by Deenky Shah and Bhoomi Shah
- Forecasting Endangered Species by Farha Doctor
- Public Debt Management by Rooshabh Mehta
- Inflation- A Critical Study of Riddhi Deliwala
- Consumer Preferences and Buying Behavior of Personal Care Products by Virali Vora and Namrata Bhavsar

Vocational Biotechnology Cell

1. **Name of the department :** Vocational Cell (Not a department, it is a Unit)
2. **Year of establishment:** 1995
3. **Names of Programme / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)**
 - ✓ Vocational Biotechnology
 - ✓ COP in Microbial Biotechnology
4. **Names of Interdisciplinary courses and the departments/units involved**

The Biochemistry department and the Vocational cell work hand in hand for the Vocational Biotechnology course.
5. **Annual/ semester/choice based credit system (programme wise)**

The department has been following the University pattern from the year of establishment. Currently only the third year students are following the Annual System, while the first year and the second year students are into the semester system as the University introduced the CBCS structure from 2011 onwards.
6. **Participation of the department in the courses offered by other departments**

The department staff members in conjunction with the Campus Ministry have also conducted soft skill training sessions in the Personality Growth Oriented Programme for students of all other departments.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.**

There are no collaborative courses. However, a group comprising staff members and students of Marquette University, Wisconsin have been coming to do a case study on the student owned companies (Entrepreneurial simulated units) of the Vocational Cell for the last four years. They review the work done by our students and send back reports suggesting the necessary interventions to improve the functioning of the company. The Vocational Biotechnology students run the company, Xplant^R. These case studies by the Marquette group have helped Xplant^R grow.
8. **Details of courses/programme discontinued (if any) with reasons**

No courses have been discontinued; however, the number of credits devoted to the course has changed with the onset of the CBCS by the University since 2011. In the Annual system, the Vocational Biotechnology course comprised two papers in the first year, one paper

in the second year and two papers in the third year. The curriculum also included summer trainings in the first and second year. The university used to conduct examinations for the same.

With the onset of the CBCS structure, the course has been reduced to a Compulsory Elective Course with laboratory sessions. Every semester, the Biotech students have to compulsorily take Biotechnology as their Elective subject, thus maintaining its vocational tag. However, the course is deserving of more credits, which the University is not accepting, despite the fact that it has been a part of the University format for the past 16 years.

Course Structure (Annual System)

- First Year: Paper I and Paper II
- Summer Placement
- Second Year: Paper III
- Summer Placement (Xplant Internship)
- Third Year: Paper IV
- Paper V (Entrepreneurship)
- The examinations were taken by the University and the students needed to pass in the Vocational Course.

Course Structure (CBCS)

- Semester I: EC 101 with Lab sessions
- Semester II: -
- Semester III: EC 201 with lab sessions
- Semester IV: EC 202 with lab sessions
- Semester V: SEC 301 with lab sessions
- Semester VI: SEC 302 with lab sessions
- (Time duration for summer training reduced)

9. Number of Teaching posts (as on February 1, 2013)

The College Management has been appointing two Ad hoc faculty persons and an adhoc peon to successfully enable functioning of the course. In 2009, one faculty was appointed on a permanent basis by the College Management. One of the members of the Biochemistry department also shared the teaching load till October, 2013. From this academic year, the work load has been distributed between an adhoc faculty and an Adhyapak Sahayak of the Biochemistry department. A visiting faculty comes in for the Entrepreneurship component of the Course.

Position	No. of staff members
Lecturer	01
Adhoc Lecturers	01
Adhoc Peons	01
Visiting Faculty	01

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 Vincent Braganza (Retired in Oct 2012)	Ph.D.	Associate Professor (Ex – Principal)	Biochemistry (Protein Chemistry)	26 yrs of UG 12 yrs PG teaching	Completed 1 Submitted 2 Ongoing 5
Dr Sudeshna Menon	Ph.D.	Coordinator/ Adhyapak Sahayak	Life Sciences (Secondary Metabolites)	16	-
Prof. Devanshi Khokhani (2007 – 09)	MSc.	Adhoc Lecturer	Biochemistry	02	-
Prof. Chandni Bhatt (2009 – 11)	MSc, M.Phil.	Adhoc Lecturer	Microbiology	02	-
Prof. Prashasti Pandya (2011-12)	MSc.	Adhoc Lecturer	Biotechnology	01	-
Prof. Hardik Gohel	MSc.	Adhoc Lecturer	Biotechnology	6 months	-

11. List of senior visiting faculty

In fulfilment of the Entrepreneurship paper, a visiting faculty, Ms. Vandana Mehta takes about 10 lectures in a year.

Every year, an industrialist is invited to give a talk on Entrepreneurship to enlighten students on the nuances of business. Some of the eminent business personalities of Ahmedabad who were invited are as follows:

- i) Mr. Pradip Chona of Havmor
- ii) Mr. Ketan Desai of Troika
- iii) Mr. Piruz Khambatta of Rasna
- iv) Mrs. Handa from Claris Life Sciences

12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty.

As mentioned above the faculty of this course are appointed ad hoc. They are generally appointed on a contract of one year, which is renewed every year. The current coordinator was appointed in 2009 and was a permanent Management employee. This academic year from August 2012, she has been appointed as an Adhyapak Sahayak in Biochemistry.

13. Student -Teacher Ratio (programme wise)

Academic Year	Teacher – student ratio
2007 – 13	1: 45

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

There has always been one ad hoc peon. It was UGC's recommendation that the laboratory assistants of the Biochemistry

- department would help out with the Biotechnology laboratory sessions. However, the assistance was not extended.
15. **Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ M.Phil./PG.**
Currently one faculty is with doctorate degree and the other faculty has submitted the thesis.
16. **Number of faculty with ongoing projects from a) National b) International funding agencies and grants received.**
None of the faculty have ongoing research projects. Both have submitted research proposals for funding to agencies like GSBTM and UGC.
17. **Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received**
The Vocational Cell does not have any funded projects.
18. **Research Centre /facility recognized by the University.**
Xavier Research Foundation, a sister concern of SXC is located on the College premises. The research facilities enable experiments in Plant Tissue Culture, Microbiology, Molecular biology, Chemical Sciences, Phytochemistry, Protein Purification and Animal experimentations. Faculty who have benefited for research from Vocational Biotechnology course are Dr Sudeshna Menon, and Mr. Hardik Gohel. Both of them used the infrastructure to pursue their doctoral studies.
- The student run company, Xplant, run by the third year students of Vocational Biotechnology is housed in the research centre. The students avail of the facility in the early mornings and evenings, before and after their college timings. The unit is fully equipped to carry out plant tissue culture work. The students produce and sell the tissue cultured plants as gift articles. They also conduct various workshop modules as part of their services. This programme is the flagship programme of the course, and one of its kind in Gujarat.
19. **Publications**
- Research Papers Published**
- Mr. Hardik Gohel*
1. “Thermophiles as a biotic tool to increase the rate of conventional biogas production”, Proceeding of National Conference on Environmental technologies: Today and tomorrow, ISBN-978-93-80867-31-1.
 2. “Yeast as an economic and prolonged feedstock for biodiesel production” accepted for publication in International Journal of Renewable Energy Research (IJRER), ISSN 1309-0127.
- Research Papers under Communication**

1. “Synergetic effect of temperature and partial digestion of cellulose on conventional biogas production”, International Journal of renewable and sustainable energy, Impact Factor-1.5
2. “Effect of metabolic stress and various environmental conditions on lipid accumulation in halophilic yeast *Candida albicans*”, International Journals of Biotechnology and Biochemistry [IJBB], ISSN 0974-4762

International/National/State Level Conferences/Seminar attended

1. International Conference on Challenges in Biotechnology and Food Technology (ICBF-2009) organized by Annamalai University during 8th – 10th October, 2009 was attended, where an oral presentation of Prof. Hardik Gohel’s research works was presented entitled “Biodiesel Production from Yeast Biomass by Direct Transesterification”, which was appreciated a lot.

Dr. Sudeshna Menon

Conferences/ Seminars/ Symposia attended:

1. Sudeshna Menon, S.K.Ghosh & Vincent J. Bragnza. Production of Saponins in cell suspension cultures of *Gymnema sylvestre* R.Br. Presented at a National Seminar on Recent Developments in Secondary Plant Metabolite Research, held at Jamia Hamdard University, New Delhi between 19th -20th March, 2012.
2. Sudeshna Menon, S. K. Ghosh, V. J. Braganza (2012). Enhanced *in vitro* production of saponins in cell suspension cultures of *Gymnema sylvestre* R. Br. Due to temperature stress. Presented at the National Symposium on Impact of Plant Tissue Culture on Advances in Plant Biology, held at St Xavier’s College, Ahmedabad between 19th – 21st January, 2012.
3. Shaunak Deota, Ankita Upadhye, Preeti Sharma, Yvonne Christian, Sudeshna Menon, Effect Of Different Gelling Agents And Their Concentrations On *In Vitro* Micropropogation Of *Cordyline Fruticosa*, Poster presented at the National Symposium on Impact of Plant Tissue Culture on Advances in Plant Biology, held at St Xavier’s College, Ahmedabad between 19th – 21st January, 2012.
4. Sudeshna Menon, Kavita Kshirsagar, Chandni Bhatt and Vincent J. Braganza (2011). Micropropagation of *Nyctanthes arbortristis* L. and antibacterial potentials of its *in vitro* cultures and leaves. 32nd PTCA (I) meeting and National Symposium on Recent Advances in Plant Tissue Culture and Biotechnology held at MN Institute of Applied Sciences, Bikaner, 4th- 6th February, 2011.
5. Sudeshna Menon, S. K. Ghosh & Vincent J. Braganza (2008), Presented at the 29th PTCA meeting, held at Mohanlal Sukhadia University, Udaipur, 8th - 10th March, 2008.

20. Areas of consultancy and income generated

- Dr Vincent Braganza is in the screening of projects for MSME and he also offers his consultancy to Intas Pharma on Biosafety.
- Dr Sudeshna Menon is in the screening of projects for MSME

- Dr Sudeshna Menon is in the Animal ethics committee of the Xavier Research Foundation.
21. **Faculty as members in**
a) National committees b) International Committees c) Editorial Board

Prof. Hardik Gohel

Acting as a reviewer in following International Journals

- ✓ “International Journal of Renewable and Sustainable energy (JRSE)” published by AIP journals, NY, USA. ISSN 1941-7012, Impact Factor-1.239
- ✓ “Environmental Progress and Sustainable Energy” published by Wiley publication, USA. ISSN 1944-7450, Impact Factor-1.649
- ✓ “International Journal of Renewable Energy Research (IJRER)” published by Gaza University, Turkey, ISSN 1309-0127.

Student projects

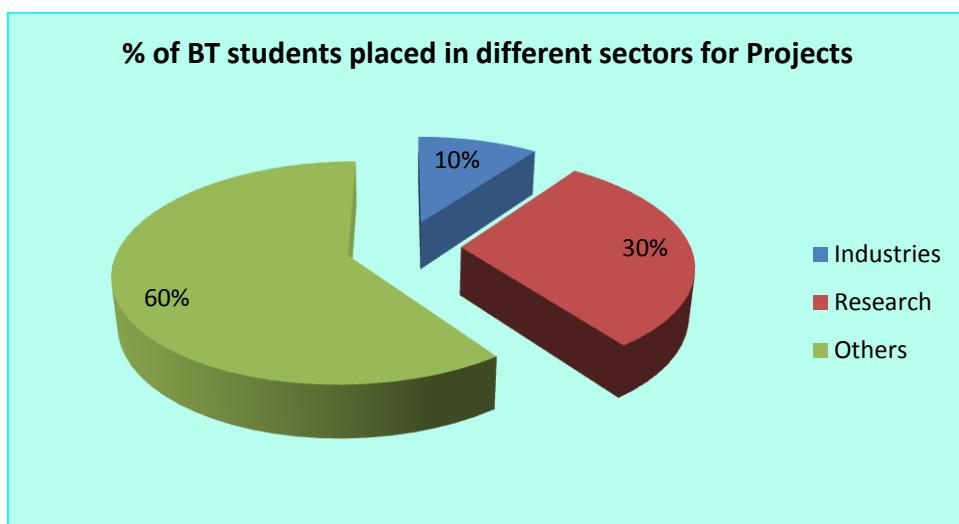
a) Percentage of students who have done in-house projects including inter departmental/programme/

Students of the third year are given opportunities to be inducted into undergraduate research projects after a systematic screening process. External experts are invited to evaluate the shortlisted students. Every year 5 - 10 students are selected. Thus, about 30% of students every year have done in – house projects. These students’ projects are funded by the college and on completion are awarded a certificate at a special function organized by the research centre.

b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/other agencies

The Vocational Biotechnology students who major in Biochemistry with Voc. Biotechnology as an additional subject in fulfilment of the course have to go to institutions or industries for a summer internship during their first year or second year for a period of 20 to 30 days (8 hours per day). Thus, all (100%) students have got summer placements. They are provided with an official letter and asked to approach organizations for summer placements on their own. Thus, the summer placements have been in industries, research institutions and laboratories. These projects enable the students to get an insight into applications of various theories and instruments used in these institutions and industries along with a knowhow of the working environment. The students have to submit a training report, which is evaluated and the grade is included in the Certificate given to each student on completion of the 3 years of course.

Percentage of students placed in different sectors:



Others: (Diagnostics, Pathology Labs, Hospitals)

List of some of the institutions the students have gone for summer trainings

1. Cadila Pharmaceuticals Ltd, Ahmedabad
3. Zydus Cadila, Ahmedabad
4. Torrent Research Centre, Gandhinagar
5. Mother Dairy, Gandhinagar
6. Forensic Science Laboratory, Gandhinagar
7. Gujarat Cancer Research Institute, Ahmedabad
8. ICGEB, New Delhi
9. BARC, Mumbai
10. MITCON, Pune
11. B. V. Patel PERD Centre, Ahmedabad
12. Amul Plant, Anand
13. Sun Pharma, Vadodara
14. Genetics Research Centre, FRIGE House, Ahmedabad
15. Consumer and Education Research Centre, Ahmedabad
16. Nehru Foundation, Centre for Environment Education, Ahmedabad
17. Oil and Natural Gas Agency, Ahmedabad
18. Sabar Dairy, Palanpur
19. Shaili Biotech, Mehsana
20. CSMCRI, Bhavnagar
21. INTAS Pharmaceuticals Ltd, Indus Biotherapeutics, Ahmedabad
22. Kemrock, Baroda
23. Sterling Hospital, Ahmedabad
24. SAL Hospital, Ahmedabad
25. National Institute of Occupational Health, Ahmedabad
26. Prathama Blood Bank, Ahmedabad
27. Scientific Diagnostic, Ahmedabad
28. Green Cross laboratories, Ahmedabad
29. Orchid Pharmaceuticals, Goa
30. SPAN Diagnostics, Surat
31. Lambda Research Centre, Ahmedabad

22. **Awards/ Recognitions received by faculty and students**
The research students selected each year are being awarded research fellowships which also includes a medal. Moreover, the top rankers of each year, viz. FY, SY and TY, have been awarded Merit Certificates for excellence in the subject by Ekalavya Foundation, Ahmedabad.
23. **List of eminent academicians and scientists/ visitors to the department**
Fr. Vincent Braganza S.J, who is a member of the Plant Tissue Culture Association of India, was given an opportunity to host the 33rd PTCA Annual Meeting and the National Symposium at St Xavier's College. This National Seminar was organized by the Xavier Research Foundation, Vocational Biotechnology Cell and the Biochemistry Department. Several eminent speakers of Plant tissue Culture of India were invited to give talks.
24. **Seminars/ Conferences/Workshops organized & the source of funding**
a) National Level
National Symposium on Impact of Plant Tissue Culture on Advances in Plant Biology and 33rd PTCA Annual Meeting, Jan 19 -21, 2012. The Symposium was organized with the help of funding by UGC, DBT, GUJCOST, NABARD, IOB, BOB, and INSA.
The Biotechnology students and staff made a humble effort to make the event a big success.
About 55 students of Biotechnology participated in Poster Presentations and their abstracts were printed in a supplementary abstract book and included in the registration kits.
25. **Student profile programme/course wise: (2012-13)**
- | Name of the Course/ programme | Applications received | Selected | Enrolled *M *F | Pass percentage |
|-------------------------------|-----------------------|----------|----------------|-----------------|
| Voc. Biotech | 800 | 49 | 12 37 | 100 |
- *M=Male F=Female
The course has always had a high female to male ratio. This could be attributed to more girl students taking up Biology in their 12th standard and an inclination towards research as a career option.
26. **Diversity of Students**
About 97% students are from Gujarat, while 3% are from other states.
27. **How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense**

services, etc.?

In the last two academic years, the vocational Biotech students have benefitted from the Capacity Building Workshops conducted by the Biochemistry Department. There has been an increase in the number of students that have cleared the JNU Common Entrance test for admissions to MSc. Biotech.

	2007-08	2008-09	2009-10	2010-11	2011-12
Admitted	TIFR:1 NET: 1	TIFR:1 NCBS:1 NET : 1	JNU(JEE):4 NET: 01	JNU(JEE): 03	TIFR:2 IIT:1 JNU(JEE):4

28. Student progression

About 81% of students progress towards higher studies in Biosciences. The remaining 19% change their field and continue studies. Very rarely, students opt for entrepreneurship or career immediately after BSc.

29. Details of Infrastructural facilities

- a) **Library:** About 100 books are maintained in the College library. The students also get access to books and journals subscribed by the Research Centre.
- b) **Internet facilities for Staff & Students:** The department has an internet portal for staff members and Wi-Fi accessibility. The students can avail internet facility for referencing in the College library and the research centre. The research students selected are given internet facility at the research centre (Xavier Research Foundation).
- c) **Class rooms with ICT facility:** The department uses the LCD projector of the XRF, which enables the staff and students to give power point presentations for teaching and seminars respectively.
- d) **Laboratories:** The department has a fully equipped laboratory that can accommodate 30 – 40 students.

30. Number of students receiving financial assistance from college, university, government or other agencies:

In the past five years, six students have availed financial assistance from the college.

31. Details on student enrichment programme (special lectures / workshops / seminar) with external experts

There is a tradition of inviting past students who have gone on to do their Masters programme or doctoral programme to talk on their work. This has been very encouraging for the students and it is also an opportunity for them to seek guidance from their seniors.

Xplant, the student owned company, is a simulated industrial set up to teach students application of knowledge and its commercial prospects. The Company has a CEO, COO, Heads of departments like Production, marketing, Research and Development, HR and Administration, Product Design and Quality Assurance. They are needed to self sustain by producing and marketing their products. Apart from technical knowledge, the students in the process also learn team work, time management, problem solving, planning and strategy, discipline, multitasking and efficient working.

The case study on Xplant by the Marquette University team is a student enrichment programme.

Workshops

1. Hands on training in Advanced Molecular biology, Xavier Research Foundation, Ahmedabad, 27 – 29 Dec, 2012
2. Hands on training on Analytical techniques in chemical and biological sciences, Xavier research Foundation, 29 -30th May, 2012
3. Hands on training on molecular biology techniques, Xavier Research Foundation, March 2011
4. Workshop on Proteomics and Immunological Techniques – Xavier Research Foundation, Ahmedabad in collaboration with Helini Biomolecules, Chennai, March – 2010
5. Workshop on Advanced Analytical Techniques like IR, GC Spectroscopy and HPTLC – Xavier Research Foundation, Ahmedabad - 2009
6. Advanced Molecular Biology Techniques – Xavier Research Foundation in collaboration with Helini Biomolecules, Chennai – 2009
7. HPTLC – Procedure and Data analysis and interpretation at Xavier Research Foundation – 2008

Class Presentations

Each student has to choose a topic relevant to their subject and give a presentation for 20 minutes. This exercise is to improve the presentation skills, data collection and communication skills.

32. Teaching methods adopted to improve student learning

The following steps have been taken up by the department to enhance student learning:

- ✓ Laboratory manuals are being given to students in the printed form since the last five years.
- ✓ Writing a review on a Science Fiction movie bringing out its authenticity in portrayal of science knowledge.
- ✓ Quizzes: Subject based quiz is conducted once in a while.
- ✓ Data Collection and its Statistical Analysis; making a hypothesis and showing its level of significance.
- ✓ Seminars by students on topics related to the subject: This activity increases the knowledge base of the students along with improvement in communication skills.
- ✓ Small hands on projects on tissue culture of plants, where the

students not only have to select a plant, but they also have to review the literature, design their experiments to standardize a protocol and analyze their data.

- ✓ Conducting objective tests based on multiple choices.
- ✓ Xplant, a platform for students to learn Entrepreneurship by doing and not just theory.
- ✓ Assignments
- ✓ Writing business proposals for Biotech products
- ✓ Treasure hunt with subject related clues. This is a fun activity and yet it is testing knowledge.
- ✓ Group discussions on current Biosciences topics, for eg. environmental issues like non conventional sources of energy and implications of Biotechnology, Preservation of stem cells etc.

33. Participation in Institutional Social Responsibility (ISR) and Extension activities

The departmental staff members and students are involved in the Personal Growth Oriented programme of the College. Some students have also been part of social outreach programme of the college such as Jagrat, NSS etc. Many of our students have also been associated with Centre for Environment Education to create awareness in the society about environment. There are a few of our students, who voluntarily participate in teaching slum children. Our students have also been part of a Water project to analyze the portability of water and pollution in the river Sabarmati.

34. SWOC analysis of the department and Future plans

- ✓ **Strengths:** High Demand, good academic record, good student progression, Proactive; Entrepreneurial project (Xplant), Good infrastructure and library facilities, Competent staff; Students with an average percentage of 70% in their 12th, DBT Star College Funding.
- ✓ **Weakness:** Teacher: student ratio of 1 :45; University's lack of interest in the Course; Becoming an elective course in the current CBCS system; No research grants; Identity crisis felt by some students.
- ✓ **Opportunities:** Summer Internships, Entrepreneurship programme, Research, Workshops and Seminars, Consultancy by staff members; Good PG programme; Good Placements; MBA in Biotechnology is an interesting option.
- ✓ **Constraints:** Credits in the credit system; reduced time for summer internships, syllabus, laboratory sessions; Timings of the lectures; No laboratory assistance.

Future Plans

- ✓ Foundation to be re-established
- ✓ Databases and Documentation
- ✓ Redesign the course to compete with the best in the world
- ✓ Maintain the standards built by the current staff and students
- ✓ Enhance learning by involving the students

- ✓ Initiate interdisciplinary projects
- ✓ Increase thrust on Research by staff and students

*Post-accreditation
Initiatives*

Significant Quality Sustenance and Enhancement Measures

SXC: 2007-2012

St. Xavier's College was accredited with 5 Stars (in 2001) and reaccredited with an A+ (in 2007). It was declared a College with Potential for Excellence in 2006. The College was subsequently recognized by DBT (in 2009) under the Star Colleges Scheme. India Today has consistently ranked Xavier's as the best College in Gujarat and among the top 50 colleges in India. The College had applied for the IMC Ramkrishna Bajaj Award in 2011 under education category. It bagged a merit certificate and was judged as one of the 6 top educational institutes in the country.

St. Xavier's College has been consistently on top of the list for its results. Last year 90 of our students were among the 'top 50 students' of the University. Society at large rates it as the best college of Gujarat and this can be seen at the time of admission. A significant number of our students continue to top in sports and extracurricular activities at the University. In 2012-13 during the Inter Zonal Youth Festival out of the 15 events, 13 prizes were bagged by our students. The College has been retaining the University overall General Championship for athletics and games for the last 20 years.

In the last two years the CBCS system has been introduced and the College has been at the forefront in ensuring its effective implementation. Despite the fact that the curriculum is given by the University, SXC has made a major contribution to development of curricula, both in Arts and Science. It has ensured that a significant number of its faculty, who serve on Boards of Studies of eight subjects have been involved in updating syllabi while faculty from another two departments were involved in designing the curricula.

Under the CBCS foundation and soft skill courses were developed and executed by SXC. Some of the courses designed for electives by the faculty of SXC (public health, yoga, value oriented education) have been adopted by Gujarat University in their entirety. In keeping with its mission, the College has sought to devise its own semester electives, specifically electives linked to environmental issues. The course on Environmental Science in Sem II was designed and conducted by faculty from five departments of the College. A course on Biodiversity was offered in Sem III.

With the aim of empowering the students, the College has kept an eye on market developments and on changes within the academic world. The College continues to run the 12 COPs it had earlier started and so far 1964 students have benefited from this programme in the last five years. The College has added two new COPs (Applied Statistics and SPSS, Instrumental Chemical Analysis). Looking to the importance and requirements of analytical chemists in industrialized Gujarat a Post Graduate Diploma in Analytical Chemistry (PGDAC) was started in 2009 along with four other courses (including MSW) which have catered to over 300 students under the Convergence Scheme of IGNOU.

The motto of SXC is all round development. In order to achieve this, the College has been offering various programme for the past 15 years that help a person to develop not only their academic but also their aesthetic, spiritual, and physical aspects. In 2009, College restructured these under the name Personal Growth Oriented Programme (PGOP). The PGOP has two divisions: programme that address soft skill development and programme for personal discovery.

Under the first section the College (for the last two years) has offered 24 programme in skill development before the University Youth Festival. This has paid rich dividends and our College bagged most of the awards at youth festivals with some of the students going all the way to compete at the National level. In 2010-11, 12 students and in 2012-13, six students went to the Nationals.

The second component of the Personal Growth Oriented Programme (PGOP), totally designed and executed by the faculty of SXC, has been offered to students because the counsellors of the College felt that many students require a support system to deal with themselves, family, and society. The College had earlier (till 2008) integrated a weekly value education session into the timetable for every class. However, from 2009 onwards this was upgraded to a larger scale as Personal Growth Oriented Programme (PGOP).

On its own initiative, the College has designed modules aimed at adding value to the curriculum. Apart from the PGOP which helps in capacity building and holistic, human resource development module and is taken by all students and has been effectively integrated into the annual system, the College has also developed an Education Plus Leadership Programme (for students from disadvantaged groups). The College has also developed and tested a youth appropriate stigma reduction curriculum (related to HIV AIDS) in a college setting for the first time in the nation. Tying up with NGOs (like CRS, ICRW) has helped provide professional orientation to the faculty to handle these curricula thus ensuring their sustainability. The College has even conducted technology-linked courses like Backpack Journalism with foreign collaborative interaction.

The College in collaboration with Catholic Relief Service (CRS) offered a training programme to SC, ST and OBC students regularly for the last five years. A team of faculty planned and conducted the sessions in a well spaced manner. This programme helped the students to come to terms with their rural background, broaden their vision, change their mindset, and think out of the box. Students who have undertaken this training have been securing admissions in good Universities for courses which they would have never thought of doing. As an outcome of this programme, the College has prepared and published a book, 'Youth Leadership Programme: Education Plus' (ISBN: 978-93-80066-41-7).

The process of teaching-learning-evaluation is at the core of the activities of the College. The process of admission is transparent and student-friendly and has come in for praise from several quarters. Use of student counselors at the

time of admissions has helped. The College has special counters for the differently-abled and for students from dispossessed classes. The College systematically ensures both equity and access to students of different strata and diverse talents which is reflected in the student profile of the College. Faculty have actually been to rural and adivasi areas to explain to students the value of a career in basic sciences or in humanities. They also are involved in counseling and selecting students for particular subjects. The admission process is closely evaluated and suitably modified each year.

With a view to providing inclusive education, Xavier's has institutionalized a mechanism to accompany students from disadvantaged groups: Jagrat, Utkarsh and Urja continue to respond creatively to the needs of these groups. Hand holding of the weaker students by the Star batch, mentoring by faculty and colleagues, remedial learning, personalized study and group study are ways by which the College effectively caters to the needs of advanced, differently-abled and slow learners. Faculty have been trained in mentoring and sensitized to issues of stigma and inclusiveness. SXC is a hub for differently-abled students of other neighbouring colleges to gather for get togethers and seminars. There is an annual Utkarsh get together held on campus.

A sizable number of our students come from Gujarati medium and from rural areas. The transition from Gujarati medium to English medium and rural to urban areas poses various difficulties. Jagrat is a forum for students to tackle these issues. Faculty have designed a programme that helps students to overcome these issues.

The College also experimented with a system of compliance which has promoted faculty-student interaction and responsible learning. From 2009 to 2012, a compliance system was in place. This was a method adopted to reduce classroom teaching, and to encourage self learning. Under this system a student can remain absent upto 25% of the total classes (including medical leave etc.). Compliance requires that the students keep track of the topics they have missed and meet the concerned faculty and ascertain from him/her the requirements to demonstrate that s/he has covered the matter taught in class through self study. Compliance underwrites the duty of the faculty to ensure that every student covers the syllabus either by attending class or, in situations where s/he does not attend class, by self study. It gives the student the right to manage her/his student life. This served two purposes: student-faculty interaction improved and responsible learning was introduced. This interactive and participatory approach has brought in a sense of responsibility and accountability in the students as far as learning goes.

To cater to the needs of advanced learners and to ensure that they are well placed in national institutes, a capacity building programme was initiated from 2007 by the department of Biochemistry without Govt. aid. This programme has been financially supported by the Gujarat Govt. since 2011. Under this programme various Science colleges of Ahmedabad and Gandhinagar districts come together. This programme trains students to develop skills of analysis, communication, interview, deductive logic etc. It enables them to target top

National institutes for advanced studies. From 2008-10, three students secured admission in TIFR/ NCBS combined. Many others opt for JNU. During 2011-12, 57 students opted for this programme and all of them have secured admission in well placed National Universities.

The College tries to induct quality faculty. The College has even gone to Court to ensure that the Govt. gives permission to employ good, qualified faculty and has succeeded in getting the High Court to direct the Govt. to do so. Faculty are encouraged not only to complete their Ph.D but also to keep up presenting papers and publishing. In the last five years, seven faculty have got Ph.D; two faculty have completed their M.Phil.; two had Post doctoral fellowships abroad. Seven of our faculty are recognized Ph.D guides and four are M.Phil guides while fourteen more have applied for Ph.D guideship. 11 have registered for Ph.D.

SXC is the first College in Gujarat to opt for accreditation. Therefore, we have been the benchmark for other institutes. SXC introduced MCQ type of evaluation in 2009 which has been adopted by Gujarat University since last year. Online evaluation has been in place for TY students at the mid-term examination. For first and second year students MCQ examination is conducted on paper due to the logistic constraints and the large number of students. Since 2012, SXC has also introduced OMR sheets as part of its examination reform.

Students' evaluation of teaching is systematized. Faculty have also been helped to understand 'quality' and integrate quality concerns into teaching-learning. They are also being trained to move towards technology advanced learning. The College has seriously implemented the API (Annual Performance Index) as recommended by the Govt. Faculty is expected to carry out an Annual Performance Index (API) which is shared with the Principal and he adds his comments. This is sent to the Dept. of Higher Education, Gandhinagar, for further perusal. The Students Council for Quality (SCQ) has been set up and it interacts with the Principal directly.

Research continues to be our major thrust. Both faculty and students are provided with research facility at our research centre, Xavier Research Foundation. The former Principal was also the Director of the XRF. XRF has become a hub for interdepartmental research activities and for resource sharing. In order to remain relevant and updated with the subject, XRF together with SXC has organized four workshops in Advanced Biological Techniques, one National Seminar (33rd PTCA Symposium) and Annual Research Seminars. The College has organised three National conferences, two National workshops and a State level workshop. College also has conducted six State level seminars. SXC has set aside a day for interaction and sharing on the first Saturday of March every year and designated it as 'Staff Research Day' where the research output of faculty is published in the form of 'Research Annals of Xavier's, Ahmedabad'. This has been a practice since 2003. A 'Departmental Society' has been started since 2011 by every department.

As compared to earlier years when ten students were selected annually to take up research projects, now five students from each department are selected for UG research. Last year, the 65 undergraduate students selected for research were guided by the faculty of different departments. Students also run two ‘companies’ (ITUs)- Xplant and XOIC. Students have organised themselves to form a company, called ‘Xplant’ where there is a production unit, a marketing unit, an accounting section etc. The group prepares marketable tissue cultured products for table-tops in restaurants, offices etc. They evaluate the strategy, audit financial transaction for the year and handover the unit to a new batch of students for the following year. The media has taken note of this initiative. The Industrial Chemistry cell has a similar entrepreneurial programme ‘XOIC’ for manufacturing coloured candles, petroleum jelly etc. These programme are offered to give value addition and expose students to the nuances of entrepreneurship. Both these initiatives have been studied by a team from The Applied Global Business Learning Team (ABLT) of Marquette University, USA, during their visits to India in the last three years.

Our extension activities go beyond the regular NSS activities. Two flagship programme of the College, attempting to link good scientific research with meaningful social interventions are the Aadi Aushadhi project at Dediapada (in South Gujarat) and the Bhiloda project (in North Gujarat). Our faculty engage in extension activities in areas of their expertise covering a wide range of topics and extending over a wide geographical area from (the tissue culture flower project in Bhiloda to Aadi Aushadhi in south Gujarat. We collaborate with academic, research, industry and philanthropic organizations.

Perhaps our best initiative in interdisciplinary research has been the programmeme with the ICRW on “Piloting Integrated Youth Based Stigma and Discrimination Curriculum in Higher Education”. Faculty from 12 departments and students of 10 departments worked together with the ICRW to design and implement the stigma reduction framework into a higher education institution for the first time in the country.

An interesting model of ‘lab to land’ transfer is the ‘Aadi Aushadhi’ venture set up by Dr. Lancelot D’Cruz. On completion of his doctoral work, he formed a network of tribal medicinal practitioners (bhagats) in the Dediapada forests (300 kms south of Ahmedabad). This association has been converted into a profit making venture providing additional livelihood options to the tribal population, under the trade name of ‘Aadi Aushadhi’. With funding from an International donor agency and with a team of NGOs working in tandem, ‘Aadi Aushadhi’ today markets both traditional adivasi medicine and value-added food products. The group has staked claims to a patent on Mahuda icecream which is a first time product marketed by this group. Adivasi students studying at the College have assisted ‘Aadi Aushadhi’ in marketing their products in Ahmedabad and in other urban centres. The creditable performance of the group at the IIM Food Festival (since 2008) is an outcome of this collaboration.

SXC is now working towards implementing a new strategy involving research. The Jesuit management has appointed Dr.(Fr.) Fernando Franco S.J., a former

faculty of the Economics Department who have served as an advisor at the national and international level, to coordinate research among all the Jesuit institutions on campus i.e. SXC, XRF, BSC (an on campus Social centre/NGO), Gurjarvani (an on campus Communications centre) and XICA (our BCA College). A research team comprising members of all these institutions has already been set up. One of results of this initiative was the Arts Seminar on “Education: A Step towards Inclusiveness” held on January 31, 2012 which was attended by 26 faculty and 120 students.

All this requires that the infrastructure of the College keeps pace with the needs. Since the last re-accreditation, the College has added the following infrastructure: it has created a separate ICT building which houses the library, the Bachelor of Computer Applications, Laboratories, a 300-seater auditorium, a room for alumni and staff rooms. The College has also a computer labs with 10 terminals used for Backpack Journalism courses in collaboration with Marquette University, Wisconsin, USA, 25 terminals for SCOPE examinations, 30 for SPSS and 17 for the library. Also a number of eco-friendly measures have been taken to conserve energy, water, paper, fuel, etc. With a view to enhancing infrastructure that facilitates effective teaching and learning, the College has created four new classrooms, renovated six classrooms, installed white boards in many classrooms, renovated the AV room, painted the College building, provided separate cubicles for all faculty. SXC has also added LCD projectors (4), a video camera, a projection microscope and new computers (64). It has provided internet access to all faculty and to the library, and movies and cassettes to teach English etc. to facilitate innovative teaching approaches. SXC has a Digital English Language Laboratory (DELL), funded by the Gujarat Govt., which is used by students during COP in English Language and Communication Skills. This facility has also been used by the Govt. of Gujarat to conduct the SCOPE examinations.

The library has been moved recently into a more spacious building with INFLIBNET facility. The library is automated with SOUL programme and has internet facility. SXC is slowly moving towards a 24hr e-library open to the public of Ahmedabad.

The College is student-centred. Student data are computerized and student progression is monitored. Both academic and psychological counselling is provided. Two full time counsellors, two faculty with added responsibility of a Career Cell, teams to take care of co-curricular and extracurricular activities, Sports Director, coaches etc take care of various aspects of student support and progression. The College had a system of Deans to provide personalized service to students of each year. The Campus Ministry cell conducts PGOP to facilitate the holistic growth of every student. The College has held trainings in mentoring, facilitation skills, sensitivity and inclusiveness to equip the faculty. Facilitating mechanisms include a Career Cell, the Students’ Council for Quality, and a Campus Ministry cell which coordinates welfare measures and regular activities for the disadvantaged groups. The institution permits students to make maximum use of its infrastructure so as to excel holistically.

Creative attempts have been made by the College leadership in setting up experimental structures to monitor quality. This was done through a 3-tier mechanism.

Level 1: It comprises of all Governing Council members and members of the Management. They meet at the beginning for training, evaluation and chalking out plans for the College. Most members of Governing Council are also members in other educational bodies of Jesuits, the organisation that runs the College. They do undergo training and interact with resource persons of higher education from across the globe. A lot of what they learn about improving the academic quality is translated into action. For example, the compliance system was one such outcome. The Governing Council met every Tuesday to evaluate, plan out and discuss College related matters.

Level 2: It consists of all the HODs and the OS. This committee met every Tuesday and discussed matters pertaining to the day-to-day running of the College. They evaluated existing learning methodologies and gave inputs on improving the system. The unitised teaching plans, completing the courses according to the schedule, conducting theory and practical examinations, displaying marks etc. were monitored by this committee.

Level 3: The third level is the Students' Council for Quality (SCQ) which consists of representatives from each class. These students are selected through consensus by their classmates. The SCQ has around six committees which follow up various aspects of the functioning of the College. The heads of these committees together with SCQ coordinator interact with the administration of the College to focus more clearly on students' issues. The SCQ is responsible for the organising and implementation of the various College functions, such as the annual College cultural festival, the first year admissions, the third year farewell programme and so on.

The Principal was the link between the 3 levels meeting each group separately and discussing issues related to quality assurance on campus. With the wider inclusion of people in the IQAC, steps are taken to assure quality not only in academics but also in non academic matters. However, on the flip side, proper documentation has been difficult to maintain and the College has currently reverted back to the NAAC-proposed structure.

Our former Principal, Fr Francis Parmar has been a member of the General Council (GC), of NAAC. He has been a resource person for NAAC Promotional activities in Gujarat University, SP University, Saurashtra University and SNDT University Colleges.

The College Management is highly structured and yet with sufficient freedom to the persons on the spot. Various bodies meet regularly to plan and evaluate. The HODs and the coordinators enjoy functional autonomy; however, the Principal ensures proper coordination between the academic and co-curricular activities. The College Management has been focussed on quality attainment. The Management has constantly ensured that lack of finances do not hinder implementing a good idea.

The top leadership of the College are themselves top academicians involved in science-based, community oriented engagements, involving the tribals and medicinal plants in Dediapada in South Gujarat and tribal women entrepreneurship through rose tissue culture in Bhiloda (North Gujarat). Dr Robert, our current Principal, has completed and published a research study on ‘Cooperatives in Gujarat’. SXC has initiated the process of linking all sister institutes on campus for collaborative research. A coordinator has been appointed to facilitate this process. The post of Vice Principal, Research and Quality has been created to facilitate all research activity on campus.

The College does have a perspective plan of development. Attainment of autonomy is central to this plan. The College hence embarked on a strategy to implement this plan. The steps in the strategy included:

- ✓ Completion of the procedure for attaining autonomy.
- ✓ Enhancing the process of setting up adequate infrastructure for autonomy.
- ✓ Strengthening the College’s research and outreach programme.
- ✓ Preparing, empowering and motivating the faculty and students for autonomy.
- ✓ Strengthening linkages with other Jesuits institutions and foreign universities.
- ✓ Widening the choice of courses/ options available to students.

The process is well underway. A group of six faculty spent two days at premier autonomous institutions like Loyola College and Stella Maris in Tamil Nadu, to familiarize themselves with the nuances involved in opting for academic autonomy. They shared their experiences and findings with the rest of the faculty on their return. Dr. Ignacimuthu, the former Vice Chancellor of University of Madras, was invited to SXC, Ahmedabad, for a seminar on “Autonomy for Quality and Excellence”, as a part of preparing the faculty for academic autonomy. After obtaining the necessary No Objection Certificate (NOC) from Gujarat Government as well as from Gujarat University, we are awaiting a response from UGC to begin the process of applying for academic autonomy.

Thus the College continues to keep in tune with the changing needs, serving not only the students that come to it, but also contributing to areas beyond through its outreach programme. It provides excellent education without losing sight of providing equal opportunity to all sections of society. We hope that our dream of autonomy will be realized one day, creating a more conducive atmosphere for excellence. The NAAC reaccreditation will greatly help in making this dream a reality.

Jai Xavier's



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