Evaluative Report of the Departments

DEPARTMENT OF BOTANY

1. **Name of the Department & its year of establishment:**
   Department of Botany, 1906

2. **Names of Programmes / Courses offered:**
   - **UG:** BSc - Botany
   - **PG:** MSc - Botany (specialization- Angiosperm taxonomy and Phytochemistry; Plant Physiology and Biochemistry),
   - **M.Phil:** Botany (Angiosperm taxonomy and Phytochemistry; Plant Physiology and Biochemistry)
   - **Ph.D:** Botany

3. **Interdisciplinary courses and departments involved:**
   The Department conducts a Cross Faculty course for students from the Arts Faculty on Garden Art as a means of giving students an interdisciplinary experience. In addition, when framing the syllabus for all the Botany Courses, a member of another Science Department (Physics) is requested to give suggestions for making the content interdisciplinary.

4. **Annual/ semester/choice based credit system:**
   Semester and choice based credit system.

5. **Participation of the department in the courses offered by other departments.**
   - **Dr. Rajendra D. Shinde**
     - Dr. R.D. Shinde delivered a lecture on “Biodiversity of India” to the Students of Life Science, St. Xavier’s College. (2008-09).
     - He conducted a field trip for the students of the Life Science department to Khandala, and for the Jr. College students (2008-09).
     - He was visiting faculty for the ‘Diploma in Forensic Science course’, conducted by the Department of Zoology. (from 2008 onwards).
     - He also served as resource person for Interdisciplinary Honour’s Programme for Environmental Science by St. Xavier’s College (2009)
   - **Dr. Mrs. Ujwala C. Bapat**
     - Dr. Mrs. U. C. Bapat engaged lectures for M. Sc. Biotechnology and Enterprise (1 yr. Course in collaboration with Bath University, UK in India).
     - She conducted lectures on Biotechnology for M.Sc. Biotechnology regular 2 year course.
6. Number of teaching posts sanctioned and filled (Professors/Associate Professors/Asst. Professors)

<table>
<thead>
<tr>
<th></th>
<th>Sanctioned</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>NIL</td>
<td>NIL</td>
</tr>
<tr>
<td>Associate Professors</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Asst. Professors</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

7. Faculty profile with name, qualification, designation, specialisation (D.Sc./D.Litt./ Ph.D./M.Phil., etc.)

<table>
<thead>
<tr>
<th>Name</th>
<th>Qualification</th>
<th>Designation</th>
<th>Specialization</th>
<th>No. of Years of Experience</th>
<th>No. of Ph.D. students guided in the last 4 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ujwala C. Bapat</td>
<td>Ph.D</td>
<td>Associate Professor</td>
<td>Plant Physiology</td>
<td>23</td>
<td>(5 students registered)</td>
</tr>
<tr>
<td>Kevin D'Cruz</td>
<td>M.Sc</td>
<td>Associate Professor</td>
<td>Plant Anatomy</td>
<td>22</td>
<td>NIL</td>
</tr>
<tr>
<td>Rajendra D. Shinde</td>
<td>Ph.D</td>
<td>Associate Professor</td>
<td>Floristics and Taxonomy</td>
<td>21</td>
<td>(01 completed), (04 registered)</td>
</tr>
<tr>
<td>Alok Gude</td>
<td>M.Sc</td>
<td>Asst. Professor</td>
<td>Cyotgenetics</td>
<td>9</td>
<td>NIL</td>
</tr>
<tr>
<td>Manek M. Mistry</td>
<td>Ph.D</td>
<td>Asst. Professor</td>
<td>Floristics and Taxonomy</td>
<td>16</td>
<td>NIL</td>
</tr>
</tbody>
</table>

8. Percentage of classes taken by temporary faculty – programme-wise information
   A temporary Assistant Professor was taken on in 2012 to cover the new courses that were taken over under Autonomy. Hence the percentage is:
   B.Sc: 10%
   M.Sc: 10%

9. Programme-wise Student Teacher Ratio
   F.Y. B.Sc 35:1
   S.Y. B.Sc 10:1
   T.Y. B.Sc 12:1
   M.Sc I 03:1
   M.Sc II 03:1

10. Number of academic support staff (technical) and administrative staff: sanctioned and filled
    Laboratory Assistant: 01 (Sanctioned: 01)
    Laboratory Attendant: 04 (Sanctioned: 04)
    The Blatter Herbarium of the Department has 01 Assistant Curator and 01 Peon who are permanent Management Staff.
11. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Mention names of funding agencies and grants received project-wise.

(a) Dr. Mrs. Ujwala C. Bapat - U.G.C. Major Research Project Grant of Rs. 8,67,500.00 for 3 years for a project entitled ‘Phytochemical analysis and antimicrobial activity studies on a few plants belonging to family Euphorbiaceae’ (2010 till date)

(b) Dr. Rajendra Shinde - Principal Investigator on Digitized Inventory of Medicinal Plant Resources of Maharashtra. Funded by Rajiv Gandhi Science and Technology Commission, Govt. of Maharashtra Rs. 23,40,170.00 (from 2009 - 2012).

(c) Dr. Rajendra Shinde “Cartographic Studies on Vegetation of Ambarnath MIDC area using GPS technology” - Rs. 30,000.00 sponsored by Mumbai University Teachers Research Grant. (2008-2009).

(d) Mr. Alok Gude: Project received Rs. 10,000.00 for ‘Detection of heavy metals from the soil near railway tracks in Mumbai’(2008-2009) funded by University of Mumbai.

(e) Dr. Rajendra Shinde received Rs. 55,000.00 for Project on ‘Isolation and Characterization of Genomic DNA from Noni – Morinda citrifolia (Rubiaceae)’2006-2008 funded by University of Mumbai.

12. Departmental projects funded by DST-FIST; DBT, ICSSR, etc.; total grants received:

a) Dr. Mrs. Ujwala C. Bapat – Received U. G. C. Major Research Project Grant of Rs. 8,67,500.00 for 3 years for a project entitled ‘Phytochemical analysis and Antimicrobial activity studies on a few plants belonging to family Euphorbiaceae’ (2010 till date)

b) Dr. Rajendra Shinde - 2009-2012, Principal Investigator on Major Research Project – Digitized Inventory of Medicinal Plant Resources of Maharashtra (Thane, Mumbai and Raigad District). Details of the project: Funded by Rajiv Gandhi Science and Technology Commission, Govt. of Maharashtra, Amount sanctioned Rs. 23,40,710.00. PowerPoint Presentations were delivered on half-yearly progress of DIMPR project in June 2011 & December 2011 at ARI, Pune. Project completed: Report and final Utilization Certificate submitted to the Coordinating Agency – Agharkar Research Institute, Pune. Preparation of the final report from 14 PI is on at ARI – Report will be published in the digitized form as well as Hard Copy in the book form.

c) DST-FIST grant of Rs. 34.20 lakhs for Equipments and Infrastructure facility (2004-07) to Dept.s of Biological Sciences (Life Science, Botany, Microbiology and Zoology)

13. Research facility / centre with

- State recognition: recognized Ph.D lab with permanent recognition from University of Mumbai.

- National recognition: The Blatter Herbarium is recognised as a National Research Centre for Plant Taxonomy for the last 100 years and is widely
recognised by the botanical community in the country.

- International recognition: The Blatter Herbarium and Library are also internationally recognised and are listed in the Index Herbariorum published by New York Botanical Garden, USA and have the Acronym – “BLAT”

14. Publications:

**number of papers published in peer reviewed journals (national / international):**

**Rajendra D. Shinde**


**(Paper Presentation)**

1. Dr. R. D. Shinde Presented poster on **Floristic Diversity of Nandur Madhmeshwar Wetland Sanctuary, Nasik District**, Abstract T1/P45 at National Conference on Biodiversity Assessment, Conservation and Utilization held from 9-11 Feb 2012: organized by M.E.S. Abasaheb Garware College, Pune.


**Ujwala C. Bapat**

Sachin Kuwar and U.C. Bapat (2009): Ethnobotanical Studies on Kokani tribals of Nashik District of Maharashtra. Accepted for Publication on 13/01/09 Ref. No. IJKT/TK-962/2008

**(Paper Presentations)**


* **Monographs:** NIL
* **Chapter(s) in Books:**
  Dr. R. D. Shinde contributed to the book – Some-Trees of Mumbai (English) / Mumbaichi Vriksharaji (Marathi) published by Department of Extra Mural Studies, University of Mumbai and ONGC – Rare Trees of Mumbai in (2007-2008)
* **Editing Books:** NIL
* **Books with ISBN numbers with details of publishers:**
  The Blatter Herbarium has published the following books written by an Associate Professor and former Curator of the Herbarium:
  1. Handbook of Diseases and their Herbal remedies in Maharashtra. 2010
  2. Dictionary of Species Names (with meaning of names, local names, scientific equivalents and sanskritic name) 2009.

- Number listed in International Database NIL
- Citation Index – range / average: NIL
- SNIP: NIL
- SJR: NIL
- Impact factor – range / average: NA
- h-index: NA

15. Details of patents and income generated: NIL

16. Areas of consultancy and income generated:
Dr. Rajendra Shinde offers consultation through the Blatter Herbarium, for identification of plant specimen. The funds generated for the Blatter Herbarium is the following:
2009-10: 51 specimens: Rs 13,250/-
2010-11: 56 specimens: Rs 14,000/-
2011-12: 48 specimens: Rs 12,000/-
2012-13: 61 specimens: Rs. 15,250/-

Dr. Manek K. Mistry was consulting botanist for the ‘Flower Garden Project’ at Dadar Pumping Station of Mumbai Municipal Corporation.

17. Faculty recharging strategies:
**(Orientation Course)**
Alok Gude completed an orientation course sponsored organized by the University of Mumbai at University of Mumbai campus, Kalina; from 18th September to 17th October 2006.

**(Refresher Course)**
Alok Gude attended a refresher course sponsored by UGC and organized by the University of Mumbai at G.N. Khalsa college in the stream of Biotechnology, form 1st to 22nd October 2008.

**(seminars / symposia / conferences / workshops attended)**
*The faculty attended many national and international staff seminars, workshops, conferences and symposia.*

**Dr. Rajendra D. Shinde**
1. Attended two day workshop on ‘DNA BARCODING’ conducted by Loyola Center for R & D, St. Xavier’s College. Ahmadabad and Paul Hebert Centre for DNA Barcoding and Biodiversity Studies, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, 7-8 Dec 2012
2. Attended workshop on ‘Plant Nomenclature’ conducted by Prof. K. N. Gandhi, Harvard University and Botanical Survey of India, Kolkotta, 11-13 Jan 2013;

**Dr. Mrs. U. C. Bapat**
1. Member of Local organizing Committee for the State level Seminar on ‘Capitalization of Herbal Technology’ organized by Birla College, Kalyan, and attended the same.
2. Participated in a 3- day National Symposium sponsored by UGC and
organized for Plant Tissue Culture Association (India) at St. Xavier’s College, Ahmedabad

3. Participated in UGC sponsored workshop on ‘Capacity Building of Women Managers in Higher Education’ organised by the SNDT university, Mumbai

Mr Alok Gude
1. Attended two day workshop on ‘DNA BARCODING’ conducted by Loyola Center for R & D, St. Xavier’s College. Ahmadabad and Paul Hebert Centre for DNA Barcoding and Biodiversity Studies, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, 7-8 Dec 2012.

(visits to universities: national / international)

Dr. Rajendra D. Shinde-
b) Dr. Specht’s Lab – University of California, Berkeley, USA – One Month Molecular Phylogeny Course. 2009-2010.
c) University of Bath, UK – On United Kingdom India Education and Research Initiatives Programme to Design the curriculum of Joint Venture Program – One Year M.Sc. in IBE. 2008-2009
d) Liverpool Hope University, UK – to attend a Youth Congress – BIG HOPE. He also visited Kew Botanical Gardens and Herbarium. 2007-2008.

Dr. Mrs. U. C. Bapat
*Visited Liverpool Hope University for studying the system of education and Liverpool University to observe ongoing research projects and the facilities in the research laboratories. During this visit she got the opportunity to visit Natural History Museum and Kew Herbarium and Garden. 2009-2010.
*Group leader for the Indian team participating in Biology Olympiad held from 8 to 14th July, 2011 at Taiwan. All the members of the team received silver medals. She was a resource person for the resource generation camp for Biology Olympiad held in September at HBCSE, Mumbai

18. Student projects
• percentage of students who have done in-house projects including inter-departmental: 10% undergraduate students have done short research projects under the inhouse Honours Program on topics that are not part of their curriculum. 95% of post graduate students have done inhouse dissertations.
• percentage of students doing projects in collaboration with industries / institutes: 2 % of undergrad and 3% of post grad students have collaborations with industry.

19. Awards / recognitions received at the national and international level by
• Faculty:
  International Fellowship Award
• **Doctoral / post doctoral fellows:** NIL

• **Students:**
(a) Mr. Valentine Borges of M.Sc-II won first prize for paper presentation - ‘Flavonoid loss during short-term storage (refrigeration) of Citrus fruits commonly consumed in South Mumbai’ at the National Seminar on ‘New Vistas in Plant Sciences’ organized by Department of Botany, Goa University, on 15th and 16th March 2012.
(b) Mr. Valentine Borges of M.Sc-II won first prize for paper presentation ‘Flavonoid stability of fruits commonly consumed in South Mumbai’ at National conference on ‘Basic Sciences as Foundation of Applied Sciences and Technology’ organized by Sir P. P. Institute of Science, Bhavnagar, Gujarat on 19th and 20th February 2012.

20. **Seminars/ Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any:**
For the Centennial celebrations, Blatter Herbarium held a National Conference on ‘Plants in Relation to Man & Biosphere’ November 16th to 17th, 2007, funded by UGC and TATA group.

21. **Student profile course-wise:**

<table>
<thead>
<tr>
<th>Name of the Course (refer question no. 2)</th>
<th>Applications received</th>
<th>Selected Male</th>
<th>Selected Female</th>
<th>Pass percentage Male</th>
<th>Pass percentage Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.Sc. (2006-07)</td>
<td>90</td>
<td>25</td>
<td>40</td>
<td>98%</td>
<td>100%</td>
</tr>
<tr>
<td>B.Sc. (2007-08)</td>
<td>85</td>
<td>27</td>
<td>38</td>
<td>99%</td>
<td>100%</td>
</tr>
<tr>
<td>B.Sc. (2008-09)</td>
<td>103</td>
<td>30</td>
<td>45</td>
<td>98%</td>
<td>98%</td>
</tr>
<tr>
<td>B.Sc. (2009-10)</td>
<td>110</td>
<td>35</td>
<td>45</td>
<td>87%</td>
<td>95%</td>
</tr>
<tr>
<td>B.Sc. (2010-11)</td>
<td>130</td>
<td>30</td>
<td>50</td>
<td>90%</td>
<td>94%</td>
</tr>
<tr>
<td>M.Sc. (2006-07) #</td>
<td>Students apply to the University</td>
<td>6</td>
<td>6</td>
<td>83.33%</td>
<td>100%</td>
</tr>
<tr>
<td>M.Sc. (2007-08) #</td>
<td>-----do-----</td>
<td>4</td>
<td>5</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>M.Sc. (2008-09) #</td>
<td>-----do-----</td>
<td>5</td>
<td>6</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>M.Sc. (2009-10) #</td>
<td>-----do-----</td>
<td>3</td>
<td>4</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>M.Sc. (2010-11) #</td>
<td>-----do-----</td>
<td>5</td>
<td>6</td>
<td>100%</td>
<td>83.33%</td>
</tr>
</tbody>
</table>

# Total 15 Seats. 10 For Plant Taxonomy (7 seats are allotted by the University of Mumbai and 3 are selected by college) and 5 for Plant Physiology (3 are allotted by the University of Mumbai and 2 are selected by college).
22. Diversity of students

<table>
<thead>
<tr>
<th>Name of the Course (refer question no. 2)</th>
<th>% of students from the College</th>
<th>% of students from the State</th>
<th>% of students from other States</th>
<th>% of students from other countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.Sc - Botany</td>
<td>20</td>
<td>60</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>M.Sc – Botany</td>
<td>40</td>
<td>40</td>
<td>20</td>
<td>NIL</td>
</tr>
<tr>
<td>M.Sc by Research</td>
<td>33</td>
<td>60</td>
<td>7</td>
<td>NIL</td>
</tr>
<tr>
<td>M.Phil</td>
<td>0.01</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Ph.D – Botany</td>
<td>10</td>
<td>90</td>
<td>NIL</td>
<td>NIL</td>
</tr>
</tbody>
</table>

23. How many students have cleared Civil Services, Defense Services, NET, SLET, GATE and any other competitive examinations? : Data not available

24. Student progression

<table>
<thead>
<tr>
<th>Student progression</th>
<th>Percentage against enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG to PG</td>
<td>15</td>
</tr>
<tr>
<td>PG to M.Phil.</td>
<td>Nil</td>
</tr>
<tr>
<td>PG to Ph.D.</td>
<td>2</td>
</tr>
<tr>
<td>Ph.D. to Post-Doctoral</td>
<td>Nil</td>
</tr>
<tr>
<td>Employed</td>
<td></td>
</tr>
<tr>
<td>• Campus selection</td>
<td>1</td>
</tr>
<tr>
<td>• Other than campus recruitment</td>
<td>50</td>
</tr>
<tr>
<td>Entrepreneurs</td>
<td>2</td>
</tr>
</tbody>
</table>

25. Diversity of staff

<table>
<thead>
<tr>
<th>Percentage of faculty who are graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>of the same parent university</td>
</tr>
<tr>
<td>from other universities within the State</td>
</tr>
<tr>
<td>from other universities from other States</td>
</tr>
</tbody>
</table>

26. Number of faculty who were awarded Ph.D., D.Sc. and D.Litt. during the assessment period: NIL

27. Present details about infrastructural facilities

a) Library: The Blatter herbarium library holds 5000 volumes on Plant Taxonomy and subscribes to 2 international and 4 national journals. The Department Faculty have another 200 volumes which are available to students.

b) Internet facilities for staff and students: An Internet Lease Line connection is available in the Head of Department’s room and in the Blatter Herbarium’s Research Room for use of faculty. The students revert to the Knowledge Centre.

c) Total number of class rooms: 4 dedicated, in addition to the general pool.
d) Class rooms with ICT facility: all classrooms

e) Students’ laboratories: 3

f) Research laboratories: 2: 1(Plant Physiology) and 1 (Plant Taxonomy in Blatter Herbarium)

28. Number of students of the department getting financial assistance from College: an average of 2 per year

29. Was any need assessment exercise undertaken before the development of new program(s)? If so, give the methodology: No

30. Does the department obtain feedback from

a. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize it? - Yes; feedback is used for framing new syllabi through the Board of Study, which includes external faculty and also faculty from other departments to bring in the interdisciplinary perspective.

b. students on staff, curriculum as well as teaching-learning-evaluation and what is the response of the department to the same? – Two third-year student representatives are present in the committee for framing new syllabi. A Teacher Assessment Questionnaire is filled in by students on every teacher and this gives a feedback on the teaching effectiveness of each teacher. This is discussed in the Department and with the Vice Principal.

c. alumni and employers on the programmes and what is the response of the department to the same? – Dr. Marselin Almeida, an alumnus and distinguished botanist is on the BOS. Dr. G. T. Paratkar, Director of CARTIBS and Ved Sailesh Nadkarni, General Manager, Dhutpapeshwar, are also on the BOS and they make a valuable contribution.

31. List the distinguished alumni of the department (maximum 10)

1. Dr. Marselin Almeida – Distinguished botanist; author of “Flora of Maharashtra” (1996-2009), and 50+ scientific papers; consultant at Blatter Herbarium; Advisor to Sanjay Gandhi National Park, Mumbai by appointment of Hon. High Court of Mumbai; Ph.D. Guide at BNHS

2. Dr. Rola Seshagiri Rao – Past Joint Director of Botanical Survey of India

3. Dr. Zarir Kapadia – General Manager, Rallies India Ltd. Author of Orchids of Bombay

4. Late Fr. C.J. Saldanha, Author of the Flora of Hassan District and Flora of Karnataka

5. Dr. Janardhan Pathak, Head, R & D, Zandu Pharma

6. Late Dr. G. L. Shah, Head of the Botany Department, S.P. University, Vallabhidhvya Nagar. Gujarat. Author of Flora of Gujarat State
7. Dr. Virbala Shah, Retd. Chief Botanist, Nicholas Piramal
8. Mr. Pankaj Udhas – Well Known Singer
10. Mr. Suresh Menon, Vice President, I-Gate, Chicago, USA.

32. **Give details of student enrichment programmes (special lectures / workshops/ seminar) with external experts.**

The Honours Programme of the department is the co-curricular programme of excellence which the Department takes part in. Students earn extra academic credits for work done in this programme.

The Department regularly conducts workshops in Taxonomy with the help of External Experts like Dr. M.R. Almeida for PG students as well as for external students. The following eminent scientists have visited our department and given special lectures / spoken to students on career opportunities:

- Dr. M. Sanjappa, Former Director of the Botanical Survey of India.
- Dr. A.K. Jain, Head and Professor – Department of Botany, Jiwaji University
- Dr. Roshini Nayer, NBPGRI, New Delhi
- Dr. Acharya, MSU, Baroda.
- Dr. Meena Haribal, Smithsonian.
- Mr. Suresh Menon, VP, IGate.
- Dr. Jyotsna Tanna, Horticulturist, Mumbai.

33. **List the teaching methods adopted by the faculty for different programmes.**

1. Classroom lectures using teaching aids such as audio-visual aid.
2. Practicals using fresh and preserved materials and teaching aids as above.
3. One day or longer duration field excursions are carried out for all classes.
4. Visits to industrial establishments and government organizations.

34. **How does the department ensure that programme objectives are constantly met and learning outcomes monitored?**

(a) By conducting periodic written tests for theory and practicals; student’s presentations, and reports of field excursions.
(b) Semester end theory papers for all classes are moderated by external examiners and Semester end third year and M.Sc practicals are conducted by external examiners.

35. **Highlight the participation of students and faculty in extension activities.**

(a) Some students have participated in Tree Censuses conducted by various organizations and also as resource persons for preparing EIA (Environmental Impact Assessment) reports.
(b) Every student of the First Year does a 2 Credit Course under the Social Involvement Programme with 60 hours of Field Work in collaboration with an NGO.
Dr. R. D. Shinde

a) Member of Science Communicators and Marathi Vidnyan Parishad which organizes various educational activities for school children. Dr. Shinde is a resource person for many of their programme. He is invited on All India Radio to speak on Biodiversity which airs programmes in Local Languages. He also authored a Docudrama on Medicinal Plants which was presented on AIR in the year 2011.

Dr. Manek K. Mistry

a) Resource person for N.S.S. at St. Andrews College, Mumbai (2011-2012)

36. Give details of “beyond syllabus scholarly activities” of the department.

Faculty: Year 2006-2007

Dr. Mrs. U. C. Bapat

(1) Dr. (Mrs.) U. C. Bapat was a resource person for Teachers Training Programme on Environmental Studies organized by Enviro-vigil, Thane and conducted two session programmes for the teachers of Thane.

Dr. Rajendra Shinde

2) Dr. R. D. Shinde has delivered a lecture on “Flowering Plants of Mumbai” at Somaiya College and “Relevance of Indigenous Practices, Tribal Culture and its Linkages to Forest Resources and Their Conservation, Community Participation”, at the teacher’s training programme organized by Enviro-Vigil, Thane.

3) He also conducted workshop on “Plant Diversity” for the students of Standards 8 and 9 at Nehru Science Centre. (2006-2007)

4) He helped the students of Ryan International School for a Science project on “Bark Study of Tree Species” and the project was selected for National Level Exhibition. (2006-2007)

5) He was invited to be on the panel for the selection of the students at Dr. Homi Bhabha Bal Vaidnyanik competition organized by the “Greater Bombay Science Teachers’ Association”. (2006-2007)

Year 2007-2008

Dr. Rajendra Shinde

1) Dr. R. D. Shinde was a resource person for the workshop conducted at Nehru Center – Nehru Planetarium, Worli, Mumbai on “Nature Quest” for School Children on 25.08.2007 and “Year of Environment Programme” organized by Vidnyan Parishad, Navi Mumbai at Vivekanand Madhyamik School, Sanpada. The lecture was titled “Plants and Trees Around us”.

2) He delivered a Guest Lecture on “Biodiversity” at S.I.E.S. College of Arts, Science & Commerce.

3) He and Mrs. Vaishnavi Godse had conducted the lectures for M.Sc. II students at R. A. Society’s Dr. Undre College of Arts, Science and Commerce, Borli-Panchayatan, Raigad.

Year 2008-09

Dr. Mrs. U. C. Bapat

1) Was visiting faculty for the M.Sc. Herbal Science Course at Birla college, Kalyan and Ruia College, Matunga.

2) Dr. (Mrs.) Bapat engaged lectures for M.Sc. Biotechnology students, of our college. She is on the panel of examiners and moderators in Herbal Science for M.Sc. II.
3) At present there are 2 research students registered for Ph. D. degree under her guidance and 2 students will be registering soon for Ph. D. as their research proposal is approved by the University.

4) Seven M. Sc II students completed their dissertation in Botany under her guidance.

Dr. RajendraShinde
1) Was visiting faculty for the M.Sc. Herbal Science Course at Birla College, Kalyan and Ruia College, Matunga.
2) Engaged lectures in Taxonomy for M.Sc. students of the College of Arts, Science and Commerce – Borli Panchtan, Raigad. He conducted lectures for the Certificate Course in Taxonomy organized by the Department of Extra Mural Studies, University of Mumbai.
3) He was a resource person for field trips to Sanjay Gandhi National Park, Borivali and BPT Garden organized by the Department of Extra Mural Studies, University of Mumbai, (every Sunday from July 2008 to October 2008) and sponsored by the Marathi Daily News Paper – Loksatta. One research student has registered for the M.Sc. (by research) degree and one for Ph.D. degree under his guidance. Two M.Sc. II students worked under his supervision for their project dissertations.

Year 2009-10
Dr. Mrs.U. C. Bapat
1) Dr. (Mrs) Bapat was a visiting faculty for M.Sc. (I and II) Herbal science course at Birla college, Kalyan and Ruia college, Matunga.
2) She is on the panel of examiners and moderators in Herbal Science at M.Sc. II.
3) She guided two students of Birla College, Kalyan for their M. Sc dissertation work in herbal science.
4) Five M. Sc II students in Botany completed their project dissertation under her supervision. One student registered for Ph. D. Degree course in Botany under her guidance.
5) Ms. Arati Paradkar successfully completed her research dissertation under the guidance of Dr. (Mrs) Bapat and was recently awarded M. Sc.( by research) degree in Botany by the University if Mumbai.
6) Mrs. Bapat was a member of the organizing committee working for the ‘National Seminar on Cultural and Biodiversity of vegetation of coastal Region of India, Sawantwadi, CHM College Ulhasnagar. She attended the same seminars and two of her research students presented papers at the Sawantwadi conference held on September 23 to 25, 2010.

Dr. RajendraShinde
7) Dr. Shinde has been a visiting Faculty for M.Sc.II in Herbal Science at Ruia College, Matunga, Mumbai.
8) He was a visiting faculty for Diploma in Plant and Animal Taxonomy conducted by the Department of Extra Mural Studies, University of Mumbai.
9) He had conducted number of Nature trails for general public under the Nature conservation and awareness Programme, department of Extra Mural Studies, University of Mumbai.
10) He was a resource person for City Walk and Tree Appreciation Course – Organized by the University of Mumbai and Loksatta and for the
Interdisciplinary Honor’s program for Environmental Science conducted by the St. Xavier’s College.

11) He delivered a speech on ‘Biodiversity’ at Group’s Knowledge Sharing Session - Tell Me Why with Chai - organized by Essar Group, Essar House, Mumbai.

12) He has helped Mr. Jaffary from Bamiyan University and Br. Joel Noronha, s.j. from De Nobili College, Pune in carrying out the ‘Biodiversity Study’ and has explained them the herbarium technology.

13) Dr. Shinde has taken up the project of labeling the trees in the premises of St. Pius College Aarey Road, Goregaon and preparing a vegetation map of the area.

Mr. Alok Gude
14) Invited as a speaker for scheme of Coaching for SC /ST / Minority for NET on the topic of Life Sciences on 19th December 2010.

Mr. Kevin D’cruz
15) Invited to Canada in October 2009 by Dr. Lalu Mansinha, Academic Director, The Ontario Maharashtra Student Exchange Program, to visit three universities in the Toronto area, York University, Ryerson University and University of Toronto to discuss measures to increase the two way flow of OMG Exchange students to and from St. Xavier’s College and the 17 universities of the OMG Exchange Program.

16) Invited to the United Kingdom in May 2010 - to undertake a specific programme of staff development at Liverpool Hope University for senior academics from St Xavier’s College, Mumbai.

Year 2010-11

Dr. Rajendra Shinde
1) Invited to deliver Post Graduate lectures by University of Mumbai in Mumbai and Dapoli
2) M.Sc. Herbal Science at Birla College, Kalyan and Ruia College, Matunga.
3) Certificate Course in ‘Plant and Animal Taxonomy’ – Conducted by the Extra Mural Studies, University of Mumbai

Dr. Mrs. Ujwala C. Bapat
4) She was a visiting faculty for M.Sc. (I and II) Herbal science course at Birla college, Kalyan and Ruia college, Matunga.
5) Invited to deliver Post Graduate lectures by University of Mumbai in Mumbai.
6) She is in the panel of examiners and moderators in Herbal Science at M.Sc. II.
7) Three students registered for Ph. D. Degree under her guidance.
8) Five M. Sc II students from our college completed their dissertation in Botany under her guidance.
9) She also guided two students of Birla College for their M. Sc dissertation work in herbal science.

Year 2011-12

Dr. Mrs. Ujwala C. Bapat
1) Member of Local organizing Committee for the State level Seminar on ‘Capitalization of Herbal Technology’ organized by Birla College, Kalyan, and attended the same.
2) Invited to take M.Sc, Herbal Science lectures at Birla College (Part I), Kalyan and Ruia College, Matunga (Part I and II).

3) A panelist of Examiners for Herbal Science M. Sc II Examination held in March-April, 2012.

4) Presented a mid-term report of her UGC Major Research Project. The progress was satisfactory and received remaining amount and the additional grant of Rs. 1,45,800.00 for the project fellow.

5) Coordinator for the ‘Garden Art’ course which is a cross-faculty course for Arts, BMM and BMS students.

6) Dr. (Mrs.) Bapat helped the Staff of Chemistry Department of S.I.E.S. College, Mumbai, in writing the project proposal and carrying out the research work. They received the project Grant and successfully completed the project work.

7) Resource person for the resource generation camp for Biology Olympiad held in September at HBCSE, Mumbai.

8) Visiting faculty for M.Sc. (I and II) Herbal science course at Birla college, Kalyan and Ruia college, Matunga.

Mr. Kevin D’cruz

9) Resource Person for "ICT for administration and Academics" at the Professional Development Programme for Academic Administrators and Principals organized by the UGC Academic Staff College.


11) Conducted Open-ended Honours Programme on the use of DELTA (DEscription Language for TAxonomy) - a flexible method for encoding taxonomic descriptions for computer processing and INTKEY for construction of natural-language Descriptive Databases, Interactive keys and cladistic and phenetic classifications.

12) Attended a special one-day event to discover how Apple is enhancing teaching and learning; met other education leaders, attended keynote speeches and experienced the Apple learning environment at a hands-on session. August 2011.

Dr. Rajendra Shinde

13) Invited as a Chief Guest and to deliver a Lecture at Jhunjhunwala College, Ghatkoper, Mumbai on 15th September 2012.

14) Invited as a Chief Guest and deliver a Key Note address for their Annual Botanical Intercollegiate Program – Saptaparni. Delivered a lecture on Pollination in Plants on 17th December 2012.

15) Visiting faculty for M.Sc. II Plant Taxonomy lectures at Dapoli College.

16) Visiting faculty for M.Sc. II Plant Taxonomy lectures at Dr. Undre College, Borli Panchtan, Dive.

37. **State whether the programme / department is accredited / graded by other agencies. Give details:** No.
38. **Detail any five Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department**

**Strengths:**  
(a) Faculty with expertise in different disciplines and from different Universities. 
(b) Faculty with consistent record of research paper publication, conference presentations (national & international) and consultancy.  
(c) The Blatter Herbarium is the most reputed non-governmental institution for Plant Taxonomy in Western India.  
(d) The collections for the ‘Flora of Maharashtra’ written by Dr. Marselin R. Almeida are deposited in Blatter Herbarium and constitute a rich reference source for identification and critical study of flowering plants from Western India.  
(e) PhD students in the department – who assist teachers in training UG students in research

**Weakness:**  
(a) Getting academically weak students at the first year level. Most of the students opt for subjects like Microbiology and Life Science or Biotechnology. Very few students opt for Botany as their first choice.  
(b) Students enrolling for PG are also academically weak.  
(c) Less job opportunities in the market.

**Opportunities:**  
(a) The growing awareness on environmental issues and agriculture needs improved capacities for the staff to meet the demands of the students.  
(b) Demand by environment protection agencies as botany is intrinsically related to environmental science.  
(c) Opportunity to prepare our own syllabi and implement the same with greater freedom.  
(d) To start new interdisciplinary programmes like – Horticulture, Garden Art.

**Challenges:**  
(a) Framing a syllabus which will  
   i. meet the demands of industry and environmental agencies for trained botanists  
   ii. hold the interest of students which is veering from the traditional aspects of the subject.  
(b) To create subject interest in students for Botany and retain it through out the course (in the era of Biotechnology, Management and Mass Media, this is an extremely difficult task.)  
(c) To provide Quality UG & PG teaching with publication based research  
(d) To provide Quality education that prepares students for a global work environment with the existing faculty workload, finance and space

39. **Future plans of the department.**  
1. To strengthen our research and consultancy work.  
2. To publish quality research papers in peer reviewed journals.  
3. To include a research component in UG and PG teaching.  
4. To teach pro-industry academic programmes and prepare students for the future.
Department of Biotechnology

1. Name of the Department & its year of establishment
   Post graduate department of Biotechnology: Established in 2007

2. Names of Programmes / Courses offered:
   PG (Master of Science in Biotechnology)

3. Interdisciplinary courses and departments involved
   - Biostatistics with the involvement of the Statistics department of the college
   - Computer applications with the involvement of the IT department of the college

4. Annual/ semester/choice based credit system
   - Annual –till 2012
   - Semester since 2012

5. Participation of the department in the courses offered by other departments
   - Faculties of the department have conducted lectures for the Post Graduate Diploma course - Industrial Biotechnology and Enterprise offered by the college which leads to a Master’s Degree from the University of Bath, U.K. Dr. Ms. Vivien Amonkar headed the Faculty team that framed the syllabus for the above course.
   - Department of Life science, Department of Biotechnology and CIF conducted a two day Lecture workshop on “Techniques in animal tissue culture and gas chromatography” for faculty of the departments of Biotechnology, Chemistry, Life Science, Microbiology and Zoology – June 2011. These techniques are included in courses of the above departments. Dr. Shiney Peter was a resource person for the techniques in animal tissue culture.
   - Department of Biotechnology conducted a five day workshop on Bioinformatics for the faculty of Microbiology and Biotechnology in July, 2011. Ms. Norine D’souza was the resource person for the same.

6. Number of teaching posts sanctioned and filled (Professors/Associate Professors/Asst. Professors)

<table>
<thead>
<tr>
<th></th>
<th>Sanctioned</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate Professors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asst. Professors</td>
<td>03</td>
<td>03</td>
</tr>
</tbody>
</table>
7. Faculty profile with name, qualification, designation, specialisation
   (D.Sc./D.Litt./ Ph.D./M.Phil., etc.)

<table>
<thead>
<tr>
<th>Name</th>
<th>Qualification</th>
<th>Designation</th>
<th>Specialization</th>
<th>No. of Years of Experience Total/ In the Dept. in years</th>
<th>No. of Ph.D. students guided in the last 4 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr.(Ms.) Vivien Amonkar</td>
<td>M.Sc., Ph.D.</td>
<td>Head of Dept., Associate Professor</td>
<td>General Microbiology, Biochemistry - Microbial, Medical Microbiology, Environmental Microbiology, Pharmaceutical and Food microbiology</td>
<td>33 / 5</td>
<td>--</td>
</tr>
<tr>
<td>Ms. Akaanksha Ghatpande</td>
<td>MSc.</td>
<td>Lecturer</td>
<td>Microbiology</td>
<td>2 (2007-2009)</td>
<td>--</td>
</tr>
<tr>
<td>Ms. Norine D’Souza</td>
<td>M.Sc, SET</td>
<td>Assistant Professor</td>
<td>Applied Zoology</td>
<td>10/ 4</td>
<td>--</td>
</tr>
<tr>
<td>Ms. Varnica Khetrapal</td>
<td>MSc</td>
<td>Assistant Professor</td>
<td>Microbiology</td>
<td>3 (2009-2012)</td>
<td>--</td>
</tr>
<tr>
<td>Mr. Melwin Sequiera</td>
<td>MSc</td>
<td>Lecturer</td>
<td>Biotechnology</td>
<td>1 2009-10</td>
<td>--</td>
</tr>
<tr>
<td>Dr. Shiney Peter</td>
<td>PhD</td>
<td>Assistant Professor</td>
<td>Life Sciences Applied Medical Science</td>
<td>3yr/2 yrs</td>
<td>--</td>
</tr>
<tr>
<td>Dr. Biswa Prasun Chatterjee</td>
<td>PhD</td>
<td>Assistant Professor</td>
<td>Biotechnology</td>
<td>1yr/ From July 2012</td>
<td>--</td>
</tr>
</tbody>
</table>

8. Percentage of classes taken by temporary faculty – programme-wise information
   The PG Biotechnology course was introduced in 2007 as a self- financing course. It is taught by full time faculty and guest faculty.

9. Programme-wise Student Teacher Ratio
   20:1

10. Number of academic support staff (technical) and administrative staff: sanctioned and filled
    Four support staff including one Laboratory attendant
11. **Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Mention names of funding agencies and grants received project-wise.**

<table>
<thead>
<tr>
<th>Name of Teacher</th>
<th>Title</th>
<th>Cost</th>
<th>Duration</th>
<th>Date of sanction</th>
<th>Funding agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr.(Ms.) Vivien Amonkar</td>
<td>Characterization of cellulase produced by micro-organisms growing on specific cellulose substrates</td>
<td>25,000/-</td>
<td>1 Year</td>
<td>2010</td>
<td>DBT-ICT-Centre for Energy Bioscience</td>
</tr>
<tr>
<td>Dr.(Ms.) Vivien Amonkar &amp; Ms. Varnica Khetrapal</td>
<td>Microbial Synthesis and characterisation of silver nanoparticles</td>
<td>1,05,000/-</td>
<td>2 Years</td>
<td>2011</td>
<td>UGC Minor Research</td>
</tr>
</tbody>
</table>

12. **Departmental projects funded by DST-FIST; DBT, ICSSR, etc.; total grants received –**

13. **Research facility / center with**
   - state recognition
   - national recognition
   - international recognition

14. **Publications:**
   Number of papers published in peer reviewed journals (national / international) -10

**Dr. Shiny Peter:**
- Comparative evaluation of the cytotoxic and apoptotic potential of *Poecilocerus pictus* and *Calotropis gigantean*, Caroline M, Shiny P & B P Hardikar; Journal of Environmental Pathology, Toxicology and Oncology, 30(1):83-92(2011)
- Development and characterization of new cell line BPH22 from midgut epithelial cells of *Poekilocerus pictus* (Fabricius, 1775), Kharat K R., Madhavi V. S , Shiny P & B. P. Hardikar; In Vitro Cellular and Developmental Biology—Animal DOI 10.1007/s11626-010-9349-4.

**Dr. Biswa Prasun Chatterji**
- Chakraborti, Soumyananda; Chakravarty, Devlina; Gupta, Suvroma; Chatterji, Biswaprasun; Dhar, Gopa; Poddar, Asim; Panda, Dulal; Chakrabarti, Pinak; Ghosh Dastidar, Shubhra; Bhattacharyya, Bhabatarak. (2012) Discrimination
of ligands of different flexibility resulting from the plasticity of the binding site in tubulin. Biochemistry. 51(36):7138-48


- **Impact factor – range / average** -1.3 – 4

15. **Details of patents and income generated**  NA

16. **Areas of consultancy and income generated**  NA

17. **Faculty recharging strategies**
- Feedback sessions with HOD
- Attending Faculty seminars and workshops conducted by college (Ref. Annexure 1)
- Attending conferences and workshops on relevant topics at other institutes (Ref. Annexure 1)
- Faculty Mentor system

18. **Student projects** - (Ref. Annexure 2)
- Percentage of students who have done in-house projects including inter-departmental
  - 2.5%

<table>
<thead>
<tr>
<th></th>
<th>2007-09</th>
<th>2009-2011</th>
<th>2010-2012</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

- Percentage of students doing projects in collaboration with industries / institutes
  - 97.5%

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>19</td>
<td>27</td>
<td>26</td>
<td>25</td>
<td>97.25%</td>
</tr>
</tbody>
</table>

19. **Awards / recognitions received at the national and international level by**

- **Student**: Basil D’Mello (M.Sc Part II student) was selected for a six month DBT-ICT-Centre for Energy Biosciences project, “Characterization of cellulases produced by *Trichoderma reesei* and *Aspergillus niger*” in 2010-11
20. Seminars/Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any. – None

21. Student profile course-wise:

<table>
<thead>
<tr>
<th>Name of the Course</th>
<th>Year</th>
<th>Applications received</th>
<th>Selected</th>
<th>Pass percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>MSc</td>
<td>2007-09</td>
<td>123</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>2008-10</td>
<td>341</td>
<td>2</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>2009-11</td>
<td>265</td>
<td>4</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>2010-12</td>
<td>260</td>
<td>4</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>2011-13</td>
<td>229</td>
<td>4</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>2012-14</td>
<td>210</td>
<td>3</td>
<td>27</td>
</tr>
</tbody>
</table>

22. Diversity of students

<table>
<thead>
<tr>
<th>Name of the Course</th>
<th>% of students from the College 2006 -12</th>
<th>% of students from the State 2006 -12</th>
<th>% of students from other States 2006 -12</th>
<th>% of students from other countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSc I Biotechnology</td>
<td>None (College students are not eligible)</td>
<td>84%</td>
<td>16%</td>
<td>None</td>
</tr>
<tr>
<td>MSc II Biotechnology</td>
<td>100</td>
<td>84%</td>
<td>16%</td>
<td>None</td>
</tr>
</tbody>
</table>

23. How many students have cleared Civil Services, Defense Services, NET, SLET, GATE and any other competitive examinations?

- CSIR NET – 6 JRF, 7 LS
- SLET- nil
- GATE- 7
- DBT - 2
- ICMR- 2

24. Student progression

<table>
<thead>
<tr>
<th>Student progression</th>
<th>2007-09</th>
<th>2008-10</th>
<th>2009-11</th>
<th>2010-12</th>
<th>Percentage against enrolled Year wise (2008-2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG to PG</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>PG to M.Phil.</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>PG to Ph.D.</td>
<td>8/20 40%</td>
<td>6/30 20%</td>
<td>3/30 10%</td>
<td>2/30 6.66%</td>
<td>17%</td>
</tr>
<tr>
<td>Ph.D. to Post-Doctoral</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Employed</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>
### Student progression

<table>
<thead>
<tr>
<th>Year</th>
<th>2007-09</th>
<th>2008-10</th>
<th>2009-11</th>
<th>2010-12</th>
<th>Percentage against enrolled Year wise (2008-2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus selection</td>
<td>11/20 55%</td>
<td>18/30 60%</td>
<td>25/30 83%</td>
<td>17/30 56%</td>
<td>65%</td>
</tr>
<tr>
<td>Other than campus recruitment</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

| Entrepreneurs | - | - | - | - | - |

### 25. Diversity of staff

**Percentage of faculty who are graduates**

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>of the same parent university</td>
<td>50</td>
</tr>
<tr>
<td>from other universities within the State</td>
<td>-</td>
</tr>
<tr>
<td>from other universities from other States</td>
<td>50</td>
</tr>
</tbody>
</table>

### 26. Number of faculty who were awarded Ph.D., D.Sc. and D.Litt. during the assessment period.

Two

### 27. Present details about infrastructural facilities

- **Library** – Main library and the departmental library with 37 books
- **Internet facilities** for staff and students – Bioinformatics lab with internet facility available, Knowledge (Computer) Centre of the college, Library
- **Total number of class rooms** 1
- **Class rooms with ICT facility** 1
- **Students’ laboratories** 2
- **Research laboratories** 1 Additional: Centralized Instrumentation Facility + Caius Research Lab for research

### 28. Number of students of the department getting financial assistance from College.

1-2 per year

### 29. Was any need assessment exercise undertaken before the development of new program(s)? If so, give the methodology.

No

### 30. Does the department obtain feedback from

- **Faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize it?**
  Yes through weekly faculty meetings. Remedial measures are adopted on the basis of the feedback
- **Students on staff, curriculum as well as teaching-learning-evaluation and what is the response of the department to the same?**
  Yes through
  - Formal TAQ administered to all students
  - Annual feedback at the Khandala seminar of the department.
  - Twice a month feedback sessions
The department adopts remedial measures on the basis of the feedback.

c) Alumni and employers on the programmes and what is the response of the department to the same?
• Yes, from alumni through informal discussions. The department adopts remedial measures on the basis of the feedback.

31. List the distinguished alumni of the department (maximum 10)
• NA as the department is just 5 years old

32. Give details of student enrichment programmes (special lectures / workshops / seminar) with external experts.
   a. Special lectures by experts from the particular field

   **2009-10**
   1. Dr. Jacinta D’Souza, Reader, Department of Biology, Centre for Basic Sciences, DAE, Mumbai – Bioinformatics.
   2. Dr Ajith Dattar, Senior advisory,, Shimadzu analytical – Spectroscopy
   4. Mr. Sujith Nair, Deputy General Manager, Cognizant Technology solutions- Clinical Databases

   **2010-11**
   • Dr Deepak Modi , Scientist , National Institute of Research in Reproductive Health, Mumbai– Microarrays and siRNA technology
   • Dr. Srabani Mukherjee, Scientist, National Institute of Research in Reproductive Health, Mumbai – Applications of Flow Cytometry
   • Ms Maithili Achrekar, Patent agent, Associate, Mulla and Mulla associates, Mumbai – Intellectual Property Rights
   • Dr Ajith Dattar, Senior advisory,, Shimadzu analytical – Spectroscopy
   • Mr. Sujith Nair, Deputy General Manager, cognizant Technology solutions- Clinical Databases

   **2011-12**
   5. Dr Deepak Modi , Scientist , National Institute of Research in Reproductive Health, Mumbai– Microarrays and siRNA technology
   7. Dr Ross Bernard, Director , University of Queensland, Australia - Biofuels

   b. Seminars

   • **2008-2009**
   • One day workshop in collaboration with OPPI - ACADEMIA Programme on “Careers in the Pharma Industry for PG Bioscience students" on May 22nd, 2009

   The speakers at the workshop were:
   o **Mr. Ranga Iyer** - President, OPPI and Managing Director, Wyeth Ltd.
   o **Mr. Tapan Ray** - Director General - Organisation of Pharmaceutical Producers of India (OPPI)
   o **Mr. Ajit Mahadevan** - Partner – Business Advisory Services Ernst & Young Pvt. Ltd
   o **Mr. K. Hari Ram** - Managing Director Galderma India Pvt. Ltd
Dr. Anil Kukreja - Director – Medical Affairs Roche Scientific Company (India) Pvt. Ltd

2010-11

One day seminar in collaboration with Department of Microbiology titled ‘Infectious diseases: Staying Ahead’.

Speakers at the seminar:
- Dr. B.R Das, Executive Director- Research and Innovation, SRL Ltd
- Dr. Sanish Davis, DGM Clinical Research Drug Discovery, Glenmark Research Centre
- Dr. Aamir Shaikh, Founder Assansa, Health Care consultant
- Dr. Zimra Israel Director, Science Policy, Vaccines and Biologics, Pfizer New York,
- Mr. Vishal Jajodia, Executive Director, Swati Spentose.
- Ms. Teja Thorat a public health student, Boston University

c. Workshops
2008-09
1. "How to write a research proposal and to make a scientific presentation" by Dr. Sorab Dalal
2. One day workshop on PCR and Western Blot organised in collaboration with Bangalore Genei

33. List the teaching methods adopted by the faculty for different programmes.

Besides the classical chalk and talk methods other methodologies used by the department are:

   a. Multimedia- PowerPoint presentations, films, animations, specialized software (Bioinformatics).
   b. Problem based learning (for practicals and other courses).
   c. Peer Learning.
   d. Group discussions, Group presentations.
   e. Project based learning (to develop inquiry based learning).
   f. Role play.
   g. Research paper discussion
   h. Experiential learning.
   i. Problem solving.
   j. Skills practices.
   k. Use of open courseware.
   l. Summary and Primary Paper Writing

34. How does the department ensure that programme objectives are constantly met and learning outcomes monitored?

The Head of Dept. and the faculty of the department meet every week for formal meetings in which the objectives of the department, the programmes to be implemented, the achievement of learning outcomes and the remedial measures to be adopted (if necessary) are discussed.

Student feedback on various programmes are obtained on a regular basis both orally and in writing. An annual feedback is obtained at the annual Khandala
35. **Highlight the participation of students and faculty in extension activities.**
   
   A. **Students organize an intercollegiate biotech related fest ‘Palindrome’ annually. The fest is associated with a social cause.**
   
   2009- Associated with Cancer Aid and Research foundation in collecting money for cancer patients
   2010- Associated with V9 Orchid Trust in collecting money for cancer patients
   2011- Associated with REAP- (Reach Education Action Programme – founded by Fr. Trevor Miranda) which works towards providing basic primary education to slum children and the empowerment of women. The students visited two REAP centers at Kalwa and Ghatkopar, performed street plays on “The importance of Hygiene” and “Educating the girl child”. Along with spreading awareness about the above issues, they played with the children and interacted with the members of the women’s self help group, discussing additional issues like cleanliness, the dangers of tobacco consumption etc. A donation to the organization was also made.
   2012- Associated with Dr. Babasaheb Ambedkar School at Naepean Sea road, Mumbai. 60 underprivileged street children were provided with goodies and clothes. A Christmas party with games and skits was also organized by the students.

   B. **Environment Day Seminar on 14th January 2011.**
   
   An environment audit for the whole college was carried out by the students of the department in collaboration with Eureka Forbes and the report was presented.

36. **Give details of “beyond syllabus scholarly activities” of the department.**

   a. **Workshops and Lectures by experts :** As reported in Point No. 32
   b. **Seminars :** As reported in Point No. 32
   c. **Journal club**
   
   i. Twice a month students present primary research articles based on the current research scenario in various fields of biotechnology
   d. **Palindrome**
   
   i. An intercollegiate fest organized by the students. Since its inception in 2009, this fest brings about the amalgamation of scientific temper and erudition along with entertainment. Around 20 colleges from Mumbai, Navi Mumbai and Thane participate in this annual event. The events in the fest include:
   
   ➢ Migraine- mixed pack of bioscience based rounds that tested the knowledge, memory and lab skills
   ➢ Brainvita/ Grey Matters – Quiz
   ➢ Melodies and Molecules/Silent Mutation- skits based on bioscience topics
   ➢ Crimes and Clues- Forensic workshop
   ➢ A competition based on biotech entrepreneurship
   
   The event is associated with a social cause every year.
   e. **Palindrome Magazine:**
   
   i. An annual magazine published by the department since 2009. The magazine portrays the creativity of the students in the form of articles, compilations, poems, news and views. It is an extension of the fest Palindrome.
   f. **Industrial visit:**
   
   Every year the department organizes visits to Pharmaceutical and
Biotechnology related industries in different parts of the country to acquaint students with research, development and production work happening over there.

- 2008 – Industrial Visit to Chandigarh, Shimla and Delhi where they visited various National Bioscience Institutes and the International Centre for Genetic Engineering and Biotechnology.
- 2009- Industrial visit to Goa where they visited Goa University, National Institute of Oceanography, Wyeth Limited and the Kingfisher plant
- 2010- Industrial visit to Rajasthan where they visited Arid Forest Research Institute, BISR and GD Morarka research center,
- 2011- Industrial visit to Bangalore where they visited Mother Dairy, IIHR, Merck Specialties Ltd, Labland India and CSTRI. Mysore.
- 2012 – Industrial visit to Rajasthan where they visited Jaipur Dairy, BISR and GD Morarka research centre.

g. Paper Presentation Competition 2007-08
1. Interdepartmental PG Paper presentation competition organized on 17th January 2008 for the different bioscience departments

h. Short Certificate Course in Public health
Students completed short 15 lecture courses in
- Epidemiology
- Occupational Health, Natural Calamities, and Disaster Management
- Study Design and Biostatistics.

Students were also involved in a pilot project of "Impact India 2021" , a research project, jointly undertaken by the Center for Faith and Public Life (CFPL) at Fairfield University, Connecticut USA and two Jesuit institutions in India - St. Xavier's College in Mumbai and Loyola College in Chennai . It consisted of a 10-month pilot study of the issue of the sex ratio imbalance in India. The study involved a survey, conducted by the students, which was designed to examine family dynamics and challenges that impact maternal and child well-being by reframing the issue away from women's health to include men and women as stakeholders for their own well-being within the family unit. This analytical approach provided evidence-based attitudes embedded in family interactions and revealed pressure points within families around the practice of male-child preference.

37. State whether the programme/ department is accredited/ graded by other agencies. Give details.
a. NA

38. Detail any five Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department
Strengths
1. Faculty and support staff of the department.
Faculty who are involved in: (Refer to Annexure 1 for faculty activities)
a. Quality teaching reflected in the high ( good, Very good) TAQ scores
b. Continuous professional development : See Annexure 1
c. Sincere, Dedicated work reflected by the Co-curricular activities of the
department that require demanding and challenging faculty support. Refer to Q.36

d. Modern goal based teaching-learning methodologies Refer to Q.33
e. Teaching that emphasizes research skills:
   - Project based teaching learning
   - Summary and Primary Paper Writing
   - Biostatistics
   The success of which is reflected in the number of students who join PhD in renowned Universities in India and abroad.

Eg.
India: National Institute of research in reproductive health (NIRRH) Mumbai, Institute of Chemical Technology (ICT), Mumbai, ACTREC, Navi Mumbai, National Institute of Immunology(NII), Delhi.

UK: University of Leicester

USA: Cornell University, University of Michigan, University of Toledo, Indiana University

Others: University of Victoria, Canada; National University of Singapore;

f. Mentoring of students both on career, academic and personal issues.

Support Staff:
Very hard working, sincere, committed staff who always put the interest of the department students before theirs.

2. Curricular and Co-curricular Programmes of the department

Curricular: From 2007 – 2012 the department followed the syllabi of Mumbai University using modern teaching learning pedagogies. (Refer to Q.33)

From 2012, as St. Xavier’s College became autonomous, the department designs its own syllabi and assessments with the help of a Board of Studies that includes industry experts and faculty of other Biotechnology departments.

Co-curricular Programmes of the Dept.: (Refer to Q. 36)

3. Infrastructure

Good lab facilities and basic instrumentation for conducting postgraduate practicals and research projects.

4. Students

Majority of the students are meritorious, several with University ranks. They are intelligent, sincere and motivated, who are keen to learn the advanced principles of Biotechnology, laboratory techniques and soft skills as a Bioscience related career is a significant goal in their lives. They are extremely cooperative and help in the organization of several departments co-curricular activities. Their university results prove their academic capabilities.

5. Good working atmosphere in the department

Teaching and nonteaching faculty and students of the department share a very warm relationship which includes a lot of cooperation and understanding. The students have often appreciated the concern and mentoring they have received.

Weaknesses
- Few Faculty Publications
- Limitation of finance and space

Opportunities
- Academic Autonomy - As the faculty now design their own syllabi and assessments
• Research due to the increased emphasis
• Collaboration with institutes and industries that have a Biotechnology focus
• Interdisciplinary work

Challenges
➢ To provide Quality PG teaching with publication based research
➢ To provide Quality education that prepares students for a global work environment with the existing faculty workload, finance and space
➢ Student Placements

39. Future plans of the department.
➢ To teach globally relevant postgraduate Biotechnology courses within the autonomy system of the college by continuously reviewing and changing syllabi and teaching methodologies.
➢ Increasing the interdisciplinary nature of the courses.
➢ Increasing in-house publication based research.
➢ Increasing collaborations with industry and other institutes.
➢ To build an animal tissue culture lab for teaching and research.

ANNEXURE 1

FACULTY ACADEMIC PROFILE

Coordinator/ Head of Dept.- Dr. Ms. Vivien Amonkar & Head Department of Microbiology

Name of the Faculty: Norine D’Souza

College and Departmental committees
• Member of UGC committee (2011-2012 and 2012-2013)

University work:
• MSc II Practical examination evaluation (2009- onwards)
• MSc. II theory paper evaluation (2009 – onwards)
• University examination paper setting (March –April 2012 session and October session 2012)
• University paper moderation (March –April 2012 session and October session 2012)

Research Profile:
• In house project on characterisation of cellar spider silk
• Role of ion channels in glioma and their exploitation as drug targets (PhD project)
• Therapeutic potential of arthropodal extracts.

Academic Development: Seminars, workshops and certificate courses:

a) Conducted by the college

2008-2009
1. Two day staff seminar on “systems in autonomy – Credits and syllabi conducted by St. Xavier’s College, Mumbai 2008
2. Four day seminar cum workshop on “The Ignatian Pedagogical Paradigm and social action” conducted by St. Xavier’s Institute of Education in collaboration with St. Xavier’s College Mumbai, 2009
3. Two day workshop Lady Tata workshop on “Techniques in Molecular Biology” organised by Department of Life science and Caius research Laboratory, TS. Xavier’s College, 2009

2010-11
1. One day Faculty seminar on “organizational behaviour and Team building” conducted by St. Xavier’s College HRD centre at Khandala, 2010

2011-12
1. Two day Lecture workshop on “Techniques in animal tissue culture and gas chromatography” organised by Department of Life science, Department of Biotechnology and CIF, June 2011
2. Resource Person for Bioinformatics workshop conducted by the Department Of Biotechnology for faculties of Biotechnology and Microbiology, June 2011

2012-13
1. One day faculty workshop on “Publishing Academic research” conducted by St. Xavier’s College, Mumbai, 2012
2. Two day faculty development seminar at St. Xavier’s College HRD centre Khandala, 30th Sep- 1st Oct, 2012

b) Conducted by the other institutions / colleges:
2008-2009
1. One day workshop on M.Sc. I (revised) paper I practicals and theory, conducted by Department of Biotechnology, Ramaniranjan Jhunhunwala college, Mumbai, 2008
2. One day workshop on M.Sc. I (revised) paper IV practicals and theory, conducted by Department of Biotechnology, G.N. Khalsa College, Mumbai, 2008
3. One day workshop on M.Sc. Part I, paper II practicals, conducted by Department of Biotechnology, CKT college, New Panvel, 2008
4. Four day seminar cum workshop on “The Ignatian Pedagogical Paradigm and social action” conducted by St. Xavier’s Institute of Education, Bandra in collaboration with St. Xavier’s College Mumbai, 2009

2009-2010
1. One day seminar on theoretical and practical aspects of Bioinformatics and Biostatistics held at Department of Biotechnology, University of Mumbai, 2009
2. One day workshop for revised MSc. Part II Biotechnology curriculum on conducted by Department of Biotechnology, G.N. Khalsa college, 2009
3. One day workshop for revised MSc. Part II Biotechnology curriculum on conducted by Department of Biotechnology, Ramaniranjan Jhunhunwala college, 2009

2010-11
1. One month certificate course in bioinformatics from Rishi Biotech, Thana, 2010
2. Twelve day hand’s on workshop spectroscopy and chromatography conducted by GNARD Khalsa college , 2010
3. Two day workshop on “Clinical proteomics : Teaching and beyond conducted by Lady memorial and DBT at ACTREC , 2010
4. Two day symposium on Laboratory animals for experimental research conducted by ACTREC, 2010
5. Two day DBT workshop on “ Applications in Biotechnology” organised by Tata memorial Centre , ACTREC , 2011

2011-12
1. Three day Lady Tata Memorial trust workshop on “Expression , purification and structural analysis of proteins organised by SIES college of Arts, Science and Commerce , 2012

2012 -13
1. One day workshop on “Credit based semester system for M.Sc. I Biotechnology organised by Ramaniranjan Jhunjunwala college on 23rd June 2012

Name of the Faculty: Dr. Shiney Peter
College and Departmental committees
• Member of UGC committee ( 2011-2012 )
• Member of placement cell (2012-2013)
• Member of science fest organization committee (2012-2013)

University work:
• MSc I Practical examination evaluation (2011)
• MSc. II theory paper evaluation (2011 –onwards)

Academic Development: Seminars, workshops and certificate courses:

a) Conducted by the college

2011-12
1. Resource person for animal tissue culture at the two day Lecture workshop on “Techniques in animal tissue culture and gas chromatography” organised by Department of Life science , Department of Biotechnology and CIF , June 2011
2. Four day workshop on Bioinformatics conducted by Department of Biotechnology, June 2011.
3. Resource person for Honour’s Programme conducted by Department of Microbiology in Animal Tissue Culture , 2012

2012-13
1. One day faculty workshop on “Publishing Academic research” conducted by St. Xavier’s College, Mumbai , 2012
2. Two day faculty development seminar at St. Xavier’s College HRD centre Khandala , 30th Sep- 1st Oct,2012

b.) Conducted by the other institutions / colleges :

2008-2010
• Lecture series “Frontier in Biosciences”, conducted by Indian Academy of sciences at Wilson College in 2008.
• Workshop on Immunoassays for screening natural products for their immunomodulatory activity organized by D. G. Ruparel College in Collaboration with Immunology Department, ACTREC, Navi Mumbai, 2009
• Actively involved in setting up Animal cell culture laboratory at KET’s V G Vaze College, Mulund and training research students and faculty in animal cell culture techniques- 2005-2009

2010-2011
• Attended a workshop on Clinical Proteomics at ACTREC, Navi Mumbai in 2010

2011-12
• LTMT workshop on Expression, purification and Structural analysis of Proteins at SIES College, 2012
• DBT workshop on Applications in Bioinformatics at ACTREC, 2012
• International symposium on Stem Cells Biology at ACTREC, 2012
• Flow cytometry workshop at ACTREC, Kharghar, Navi Mumbai, June 2011

2012-13
• Attended a three week Biosciences Summer School At University Of Bath, UK in May, 2012
• Attended a Plenary Session ‘Approaches to Teaching and Learning – an Indian Perspective’ at the conference ‘Enhancing the International Student Learning Experience in the Biosciences’ organised by the Higher Education Academy STEM Biosciences and the Dept. of Biology & Biochemistry, University of Bath, UK: May, 2012

Name of the faculty: Dr. Biswa Prasun Chatterjee

College and Departmental committees
• Member of palindrome organizing committee (2012-2013)

Academic Development: Seminars, workshops and certificate courses
2007-09
• Poster presented on “Antiproliferative mechanism of action of 10-(3-hydroxy-4-methoxy-benzylidene)-9(10H)-anthracenone, a new class of anti-tumor agent” in 77th Annual Meeting of Society of Biological Chemists, India in IIT Madras, 18-20 December, 2008
• Poster presented on “10-(3-hydroxy-4-methoxy-benzylidene)-9(10H)-anthracenone binds to tubulin at the colchicine site, inhibits microtubule assembly and inhibits cancer cell proliferation at mitosis” in VIII European Symposium of American Protein Society in Zurich, Switzerland during June 14-18, 2009

Name of the Faculty: Ms. Varnica Khetrapal
College and Departmental committees
- Member of placement cell (2011-2012)
- Member of infrastructure committee (2011-2012)

University work:
- MSc I Practical examination evaluation (2009-2012)
- MSc. II theory paper evaluation (2010–2012)

Research Profile:
- ICT-DBT funded project on characterisation of cellulases produced by *Trichoderma reeseri* and *Aspergillus niger*
- UGC minor project on characterisation of Ag nanoparticles

Academic Development: Seminars, workshops and certificate courses:

a) Conducted by the college

2010-11
1. One day Faculty seminar on “Organizational Behaviour and Team Building” conducted by St. Xavier’s College HRD centre at Khandala, 2010

2011-12
1. Two day Lecture workshop on “Techniques in animal tissue culture and gas chromatography” organised by Department of Life science, Department of Biotechnology and CIF, 2011

b.) Conducted by the other institutions / colleges:

2011-12
- International workshop on antimicrobial resistance at Haffkine’s institute, Mumbai, 2011
- Seminar on structural biology and bioinformatics conducted by the , Department of Biophysics, University of Mumbai, February 2012

2010-11
- Science Academics refresher course in Advances in Biotechnology, conducted by Indian academy of Sciences (IAS) and NIRRH, Parel, Mumbai from 1st March 2011 – 16th March 2011.

2009-10
- One day workshop on Tissue culture practicals – Paper VI, conducted by V.G Vaze College, Mumbai, December 2009.

Name of the faculty: Mr. Melwin Sequiera

Academic involvement:

b) Conducted lectures and practicals for Msc part I and Part II students

c) Participated in the designing the autonomous syllabus

Academic Development: Seminars, workshops and certificate courses:

a. Conducted by the college: Nil

b. Conducted by the other institutions / colleges:

- Three day workshop in Bioinformatics conducted by R. Ruia college, Mumbai, September 2009
- One day workshop on Bioinformatics – Paper V practical discussion conducted by Department of Biotechnology, University of Mumbai, September 2009.
- One day workshop on Tissue culture practicals – Paper VI, conducted by V.G Vaze College, Mumbai, December 2009.
### ANNEXURE 2

#### STUDENTS RESEARCH PROJECTS
**BATCH 2007- 2009**

<table>
<thead>
<tr>
<th>Sr. no</th>
<th>Name</th>
<th>Title</th>
<th>Institution/ company</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Annes P. Sebastian</td>
<td>Immobilization Of DNA Probe</td>
<td>BARC, Mumbai.</td>
</tr>
<tr>
<td>3.</td>
<td>Namratha</td>
<td>Developing whole blood TSH estimation protocol using serum TSH-IRMA kits – for screening of neonates for Congenital hypothyroidism</td>
<td>Bhabha Atomic Research Centre</td>
</tr>
<tr>
<td>4.</td>
<td>Aliya Bari</td>
<td>Screening of <em>flavobacterium</em> species &amp; its immobilization</td>
<td>Bhabha Atomic Research Centre Mumbai</td>
</tr>
<tr>
<td>5.</td>
<td>Aastha Sinha</td>
<td>A study on The diversity of methane producing bacteria in the rumen sample using molecular techniques</td>
<td>R.M.C., Parel</td>
</tr>
<tr>
<td>6.</td>
<td>Ms. Akshada Sawant</td>
<td>Implementation of Stable and Non-competitive DNA Internal Control for Routine Clinical Qualitative PCR for HBV Diagnosis</td>
<td>Super Religare Laboratories (SRL Ranbaxy LTD)</td>
</tr>
<tr>
<td>7.</td>
<td>Chetan Ramesh Patil</td>
<td>In-vitro screening of Synthetic compound for Anti-cancer activity and elucidating their possible mechanisms of Action</td>
<td>Nicholas Piramal Research Centre.</td>
</tr>
<tr>
<td>8.</td>
<td>Thekkevilayil Melvin Mathew</td>
<td>Study on Radioprotection By Baicalein on Normal and Cancer cells</td>
<td>Bhabha Atomic Research Centre, Mumbai</td>
</tr>
<tr>
<td>9.</td>
<td>Veena D’souza</td>
<td>Biotransformation of canrenone to 11-hydroxy canrenone using <em>Aspergillus ochraceus</em></td>
<td>IPCA Laboratories Ltd.</td>
</tr>
<tr>
<td>10.</td>
<td>Abhirami K.Iyer</td>
<td>Role of Microenvironment in DNA Damage Response of Tumor Cells</td>
<td>Bhabha Atomic Research Centre, Mumbai</td>
</tr>
<tr>
<td>11.</td>
<td>Abhishek Bansod</td>
<td>Mapping Of Polymorphism In The Coding Region Of II-10 In Immune Response Against Plasmodium Parasitic Infection</td>
<td>St. Xavier’s College Mumbai</td>
</tr>
<tr>
<td>12.</td>
<td>Sujay Gaikwad</td>
<td>Generation of a GST-Desmoplakin fusion protein to develop monoclonal antibodies against desmoplakin</td>
<td>(ACTREC)</td>
</tr>
<tr>
<td></td>
<td>Name</td>
<td>Project Description</td>
<td>Institution</td>
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<tr>
<td>16.</td>
<td>Karyn Fernandes</td>
<td>PCR Optimization for production of the V_{1H} gene from <em>Camelus domedarius</em></td>
<td>Radiation Medicine Centre, Bhabha Atomic Research Centre, Mumbai</td>
</tr>
<tr>
<td>17.</td>
<td>Rohan Patil</td>
<td>To assess the Single Nucleotide Polymorphism (SNP) in the Coding region of TGF-β1 in a Malaria endemic region of Orissa</td>
<td>Tata Institute of Fundamental research, Mumbai</td>
</tr>
<tr>
<td>18.</td>
<td>Kay Sharon Sebastian</td>
<td>Studies on anticancer properties of <em>Bacterioruberin</em> and its mode of action on MCF-7 breast cancer cells</td>
<td>Radiation Biology &amp; Health Science Division BARC, Mumbai</td>
</tr>
<tr>
<td>19.</td>
<td>Susha Kutteyil</td>
<td>Standardization of Quantitative Real Time PCR using different cell concentrations of <em>Mycobacterium tuberculosis</em></td>
<td>Radiation Medicine Centre, Bhabha Atomic Research Centre, Mumbai</td>
</tr>
<tr>
<td>20.</td>
<td>Akanksha Bafna</td>
<td>A Multicentre, Randomized, Double blind, Placebo controlled, Parallel arm study of effect of intravenous VEGF Trap in advanced Ovarian Cancer patients</td>
<td>Bhagwan Mahaveer Cancer Hospital and Research Centre, Jaipur</td>
</tr>
<tr>
<td>Sl no</td>
<td>Name</td>
<td>Title</td>
<td>Institution/ company</td>
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<tr>
<td>2.</td>
<td>Ashrita Bhelwa</td>
<td>Use Of Reverse Blot DNA Hybridization Technique For Prenatal Diagnosis Of Sickle Cell Aneamia</td>
<td>Pregene” Preventive Genetics Diagnostic Nagpur –</td>
</tr>
<tr>
<td>3.</td>
<td>Crismita C. D’mello</td>
<td>Molecular Cloning Of Housekeeping Gene Glyceraldehyde Phosphate Dehydrogenase (Gapdh) For Applications In Real -Time Pcr</td>
<td>RMC, BARC</td>
</tr>
<tr>
<td>4.</td>
<td>Anne Jacob</td>
<td>Study Of Novel Binding Partners Of 14-3-3γ</td>
<td>Sorab Lab, ACTREC.</td>
</tr>
<tr>
<td>5.</td>
<td>John Joel Selvaraj</td>
<td>In vitro evaluation of Antioxidant, Antimicrobial and Larvicidal activities of Flower extract of Plumeria acuminata.</td>
<td>Haffkine Institute, Mumbai</td>
</tr>
<tr>
<td>7.</td>
<td>Liselle Pereira</td>
<td>Screening Of Marine Bacteria And Sequencing Of Dna Extracted from Hemicellulose And Cellulose Degrading Bacteria</td>
<td>National Institute of Oceanography, Goa</td>
</tr>
<tr>
<td>8.</td>
<td>Maneka</td>
<td>Effect of growth temperature on Escherichia coli survival on exposure to hydrogen peroxide</td>
<td>Bhabha Atomic Research Center</td>
</tr>
<tr>
<td>9.</td>
<td>Neethu Thomas</td>
<td>Studies on the immunomodulatory effects of 1,4-naphthoquinone and g1-4a in Murine and human lymphocytes</td>
<td>Bhabha Atomic Research Centre (BARC) Mumbai</td>
</tr>
<tr>
<td>10.</td>
<td>Prathiba Gaikwad</td>
<td>Characterization of mutants and recombinant inbred lines of groundnut (arachis hypogaea l.) Using ssr and issr markers</td>
<td>BARC</td>
</tr>
<tr>
<td>11.</td>
<td>Mansi Kamat</td>
<td>A novel concept of biomilling to make iron oxide nanoparticles and synthesis of drug functionalised gold nanoparticles using cefaclor (antibiotic)</td>
<td>National Chemical Laboratory(NCL), Pune</td>
</tr>
<tr>
<td>12.</td>
<td>Ambika Natarajan</td>
<td>Electroantennogram responses of wild-type and klp64d mutant phenotypes of drosophila melanogaster</td>
<td>Tata Institute of Fundamental Research, Mumbai</td>
</tr>
<tr>
<td>13.</td>
<td>Ria Jacob</td>
<td>Affinity Purification Of Human Recombinant G-CSF And Its Refolding Analysis Using HPLC</td>
<td>BIOGENOMICS PVT.LTD</td>
</tr>
<tr>
<td>14.</td>
<td>Sarina D’Mello</td>
<td>Identification And Screening Of Novel Mutations In Exon 2 , 11b And 11 D Of</td>
<td>Jaslok Hospital and Research Centre</td>
</tr>
<tr>
<td>No.</td>
<td>Author</td>
<td>Title</td>
<td>Institution/Location</td>
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<tr>
<td>15.</td>
<td>Mithila Prabhu</td>
<td>Enhancing Factor: Validation Of Microarray Data Using RT-PCR</td>
<td>ACTREC</td>
</tr>
<tr>
<td>16.</td>
<td>Sheetal Kotle</td>
<td>Identification and Molecular Characterization of Mosquitocidal <em>Bacillus</em> species</td>
<td>Bhabha Atomic Research Centre(BARC), Trombay, Mumbai</td>
</tr>
<tr>
<td>17.</td>
<td>Shwetha Pereira</td>
<td>Quantitation Of Thyroid Specific Messenger RNA In Peripheral Blood Of Healthy Controls Using Real-Time PCR</td>
<td>Radiation Medicine Centre BARC</td>
</tr>
<tr>
<td>18.</td>
<td>Sushma Rokade</td>
<td>Studies On The Effect Of Density Of A549 Cells On The Survival Of <em>Mycobacterium tuberculosis</em></td>
<td>Bhabha Atomic Research Center,</td>
</tr>
<tr>
<td>21.</td>
<td>Brinal Figer</td>
<td>Efficacy Of Disinfectants Against Airborne Microbes</td>
<td>IPCA Laboratories</td>
</tr>
<tr>
<td>22.</td>
<td>Antara Banerjee</td>
<td>Biochemical and biophysical studies on monomeric mutant of a pro-apoptotic protein HtrA2 to determine its structure-function relationship</td>
<td>ACTREC, Navi Mumbai</td>
</tr>
<tr>
<td>23.</td>
<td>Tina Lucas</td>
<td>Method Development for the Separation of Related substances and Quantification of the API Prasugrel Hydrochlorie by Reverse phase HPLC</td>
<td>Glenmark Pharmaceuticals Pvt Ltd</td>
</tr>
<tr>
<td>24.</td>
<td>Veena Gonela</td>
<td>Association of auto antibodies against oxidized Low Density Lipoprotein with C-reactive protein levels and its relation with cardiovascular diseases in Rheumatoid Arthritis</td>
<td>Sir Hurkisondas Hospital</td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
<td>Institute</td>
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<td>--------------------</td>
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</tr>
<tr>
<td>1. Preeti Admane</td>
<td>PCR-RFLP of mitochondrial 12S rRNA gene for meat speciation</td>
<td>Bombay Veterinary college Parel</td>
<td></td>
</tr>
<tr>
<td>2. Pearl Braganza</td>
<td>Effect of Histone deacetylase inhibitors on connexin expression level in foetal buccal mucosal cell line</td>
<td>ACTREC, Khraghar</td>
<td></td>
</tr>
<tr>
<td>4. Rohit Bhat</td>
<td>Screening and isolation of secondary metabolites from fungal cultures</td>
<td>Indian Institute of Integrated Medicine , CSIR</td>
<td></td>
</tr>
<tr>
<td>5. Martin Snehal</td>
<td>Estimation of DR-70 (FDP) Tumor marker in suspected cancer patients</td>
<td>Super Religare Laboratories, Mumbai</td>
<td></td>
</tr>
<tr>
<td>6. Romila Remos</td>
<td>Study of effect of plant extracts as an immunomodulator on Jurkat cell lines</td>
<td>Institute of Chemical technology, Matunga, Mumbai</td>
<td></td>
</tr>
<tr>
<td>7. Lucas D’Souza</td>
<td>Cloning and expression of the immunogenic regions of Drosophila melanogaster Sirtuins</td>
<td>TIFR</td>
<td></td>
</tr>
<tr>
<td>9. Patkar Bhagyashree</td>
<td>Polymorphism in Peroxisome Activated Receptor gamma gene association</td>
<td>NIRRH, Parel</td>
<td></td>
</tr>
<tr>
<td>10. Periera Swidle</td>
<td>Determination of Polyphenolic content and antioxidant activity in an essential oil of an indigenous herb</td>
<td>Institute of Chemical technology, Matunga, Mumbai</td>
<td></td>
</tr>
<tr>
<td>11. Richard Noronha</td>
<td>Isolation and screening for 1-amino cyclopropane -1-carboxylate deaminase producing bacteria from Rhizosphere soil</td>
<td>Indian Council of agricultural research Goa</td>
<td></td>
</tr>
<tr>
<td>12. Rinta Paul</td>
<td>Co-expression of recombinant subunits of Kinasin -2 in Drosophila melanogaster in vitro</td>
<td>TIFR, Mumbai</td>
<td></td>
</tr>
<tr>
<td>13. Shradha Rupavate</td>
<td>Evaluation of cystatin-C based equation as accurate illustrations of Renal Function</td>
<td>P.D. Hinduja Hospital and Medical Research centre</td>
<td></td>
</tr>
<tr>
<td>14. Sneha Sansare</td>
<td>Creation of a novel lentiviral expression vector</td>
<td>ACTREC, Khraghar</td>
<td></td>
</tr>
<tr>
<td>15. Kathleen Sequiera</td>
<td>Diversity of Ralstonia solanacerium from a single habitat and study on non EPS producing Ralstonia solanacerium isolates</td>
<td>Indian Council of agricultural research Goa</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Name</td>
<td>Title</td>
<td>Institution</td>
</tr>
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<td>-------------------------------------------------</td>
</tr>
<tr>
<td>16.</td>
<td>Sapana Sangare</td>
<td>Detection of water borne pathogens using gold nano probes</td>
<td>N. Shankaran Nair Research centre for Nanotechnology and Bio nanotechnology, Ambernath</td>
</tr>
<tr>
<td>17.</td>
<td>Diana Rodrigues</td>
<td>Role of Cullins in Spermatogenesis and Oogenesis in <em>Drosophila melanogaster</em></td>
<td>TIFR, Mumbai</td>
</tr>
<tr>
<td>18.</td>
<td>Jinal Shah</td>
<td>The incidence of hepatitis –B surface antigen in pregnant women</td>
<td>T.N. Medical college, Nair Hospital</td>
</tr>
<tr>
<td>19.</td>
<td>Lucy Nainan</td>
<td>Studying adaptability of <em>Helicoverpa armigera</em> with emphasis on defense elicitors from insect oral secretions and insect gut protease diversity</td>
<td>NCL, Pune</td>
</tr>
<tr>
<td>20.</td>
<td>Varda Podar</td>
<td>Effect of sequential treatment of Histone d-acetylas einhitior, Trochostatic A And Adreamycin in acute myeloid leukemia – a pilot study</td>
<td>ACTREC, Kharghar</td>
</tr>
<tr>
<td>21.</td>
<td>Megha</td>
<td>Purification of Plasmodium Falciparum inolase and delta -5, Plasmodium falciparum inolase and determine the potenatil of the deleted penta peptide region as an immunogen</td>
<td>TIFR, Mumbai</td>
</tr>
<tr>
<td>22.</td>
<td>Khyati Shah</td>
<td>To evaluate the diagnostic specificity of modified WIDAL test for recent infection in comparison with conventional WIDAL test</td>
<td>T.N. Medical college, Nair Hospital</td>
</tr>
<tr>
<td>23.</td>
<td>Sharon Mary John</td>
<td>The effect of dietary restriction on <em>Drosophila melanogaster</em></td>
<td>TIFR, Mumbai</td>
</tr>
<tr>
<td>24.</td>
<td>Geetanjali Patak</td>
<td>Potential biomarkers for the diagnosis of Cardiac and vascular dysfunction identified in the subsisting population of Bhopal Industrial Holocaust</td>
<td>BMHRC, Bhopal</td>
</tr>
<tr>
<td>25.</td>
<td>Basil D’Mello</td>
<td>Characterization of cellulases produced by Trichoderma reesei and Aspergillus niger</td>
<td>ICT and St. Xavier’s college Mumbai</td>
</tr>
<tr>
<td>26.</td>
<td>Charutha Godbole</td>
<td>A novel concept of Bio-milling to make iron oxide and zinc oxide nano particle and imaging of effect of lysozyme on Gram positive and gram negative bacteria using Atomic Force Microscopy</td>
<td>NCL, Pune</td>
</tr>
<tr>
<td>27.</td>
<td>Priynaka Ghorpade</td>
<td>Molecular biology approach to study human follicle stimulating hormone receptors at gene and protein level</td>
<td>NIRRH, Mumbai</td>
</tr>
<tr>
<td>28.</td>
<td>Isha Sundesh</td>
<td>Mesenchymal Stem Cells</td>
<td>Jaslok Hospital, Mumbai</td>
</tr>
<tr>
<td>Sl no</td>
<td>Name</td>
<td>Title</td>
<td>Institute</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------</td>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1.</td>
<td>Almeida, Neha Vijay</td>
<td>Towards studying the interactions of stress-inducible gene bola in green alga <em>Chlamydomonas reinhardtii</em></td>
<td>UM-DAE-CBS</td>
</tr>
<tr>
<td>2.</td>
<td>Asapur Prithvi Chidanand</td>
<td>Attachment of haloperdol to gold nanoparticle</td>
<td>N. Shankaran Nair Research Centre for Nanotechnology and Bio nanotechnology, Ambernath</td>
</tr>
<tr>
<td>3.</td>
<td>Bhandari Ankita</td>
<td>Differential susceptibility of bacterial cell towards zno nanoparticles</td>
<td>NCL, Pune</td>
</tr>
<tr>
<td>4.</td>
<td>Bhujbalrao Ruchika Narendra</td>
<td>Characterisation of ftsz assembly and modulation ftsz polymerization by l-menthol</td>
<td>IIT Mumbai</td>
</tr>
<tr>
<td>5.</td>
<td>Bilimoria Khushnam Darius</td>
<td>Molecular characterization of staphylococcus aureus strains from bovine mastitis by clfa and nuc gene polymerase chain reaction (PCR) assays.</td>
<td>Bombay Veterinary college Parel</td>
</tr>
<tr>
<td>6.</td>
<td>Chelliah Juliah John</td>
<td>In-situ synthesis and coating of nanoparticles on various surfaces and antibacterial activity of silver nanoparticles</td>
<td>BARC, Mumbai</td>
</tr>
<tr>
<td>7.</td>
<td>Cyrill Samantha Allan</td>
<td>Determination of Drug Susceptibility Profiles of Mycobacterium tuberculosis by Pheno-typic and Genotypic Assays.</td>
<td>The Foundation for Medical Research, Mumbai</td>
</tr>
<tr>
<td>8.</td>
<td>D’souza Marsha Chiquitta</td>
<td>Effect of Rab Coupling Protein (RCP) on Trafficking of cell adhesion molecules.</td>
<td>National Institute of Research in Reproductive Health, Parel</td>
</tr>
<tr>
<td>9.</td>
<td>Dmello Divya Dulcina</td>
<td>Standardization of anti-inflammation assay and isolation of bioactive molecules from natural products</td>
<td>Piramal Lifesciences Ltd., Mumbai</td>
</tr>
<tr>
<td>10.</td>
<td>D’souza Jennifer</td>
<td>Study of bioactivity of Mangroves and their associated actinomycetes for anti-infective drugs</td>
<td>National Institute of Oceanography, Goa</td>
</tr>
<tr>
<td>11.</td>
<td>D’souza Wilfred Gerald</td>
<td>Preliminary chemical and biological characterization of cellar spider silk (cob web silk)</td>
<td>St. Xavier’s College, Mumbai</td>
</tr>
<tr>
<td>12.</td>
<td>Fernandes Donella Anthony</td>
<td>Biotransformation of an active anti-cancer pharmaceutical intermediate</td>
<td>Piramal Lifesciences Ltd., Mumbai</td>
</tr>
<tr>
<td>13.</td>
<td>Fernandes Edcina Doreen</td>
<td>16 s r RNA based identification and characterization of vibrio from marine environments</td>
<td>National Institute of Oceanography, Goa</td>
</tr>
</tbody>
</table>
1. Name of the Department & its year of establishment:
   Chemistry: 1902

2. Names of Programmes / Courses offered:
   UG, MSc (by Research), Ph.D

3. Interdisciplinary courses and departments involved:
   A Cross Faculty Course “Chemistry in Context” is offered to students in various departments of Arts / Humanities. The Department has introduced a

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Title</th>
<th>Institute/Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Fernandes Evelyn Theodore</td>
<td>Estimation of heavy metals and pesticide levels in commercial milk brands in Mumbai</td>
<td>BARC, Mumbai</td>
</tr>
<tr>
<td>15</td>
<td>Fernandes Jocelyn Victoria</td>
<td>Molecular Characterisation and Remediation Potential of Lac-cases from a Marine-derived Fungus</td>
<td>National Institute of Oceanography, Goa</td>
</tr>
<tr>
<td>16</td>
<td>Gupta Shefali</td>
<td>Mutational analysis of ehôtpig-L</td>
<td>JNU, Delhi</td>
</tr>
<tr>
<td>17</td>
<td>Jain Anushi Vikram</td>
<td>Establishment of reference ranges for thyroid hormones in healthy Indian adults</td>
<td>Super Religare Laboratories</td>
</tr>
<tr>
<td>18</td>
<td>K. Sharon Rajan</td>
<td>Status of fe and mg in coastal ecosystems and oysters of karwar, central west coast of India</td>
<td>Dept. Of Marine Biology, Karwar</td>
</tr>
<tr>
<td>19</td>
<td>Kamath swati Sudhakar</td>
<td>Molecular phylogeny of parainfluenza virus (hpiv 1, 3, 4)</td>
<td>National Institute of Virology, Pune</td>
</tr>
<tr>
<td>20</td>
<td>Kanhekar Riya Rajan</td>
<td>Assessment of oxidative stress parameters in murine model of rabies</td>
<td>Haffkine Institute of Training and Research</td>
</tr>
<tr>
<td>21</td>
<td>Mane Mandar Manohar</td>
<td>Isolation of Xanthomonas campestris from insect infected Solanum lycopersicum and the production of Xanthan gum</td>
<td>Mitcon Bio-Pharma centre, Pune</td>
</tr>
<tr>
<td>22</td>
<td>Mitra Sumitra</td>
<td>Understanding the role of novel genes in the PHO pathway in yeast</td>
<td>TIFR, Mumbai</td>
</tr>
<tr>
<td>23</td>
<td>Pednekar Reshmi Ramesh</td>
<td>Impact of antifouling biocides on biofilm development of bacteria and diatom</td>
<td>National Institute of Oceanography, Goa</td>
</tr>
<tr>
<td>24</td>
<td>S.P. Poornima Rao</td>
<td>Expression, Purification and Structural Characterization of BRCA1 Transactivation domain (1560-1859)</td>
<td>ACTREC, Kharghar</td>
</tr>
<tr>
<td>25</td>
<td>Shivtarkar Harshala Ramesh</td>
<td>Study of neutrophil phagocytic activity using different assays</td>
<td>T.N. Medical college, Nair Hospital, Mumbai</td>
</tr>
<tr>
<td>26</td>
<td>Singh Ankita</td>
<td>Assessment of oxidative stress parameters in murine model of rabies</td>
<td>Biocon, Bangalore</td>
</tr>
</tbody>
</table>
new course in Neurochemistry from June 2012 which is currently being offered as an Applied Component even to Biological Science students.

4. **Annual/ semester/choice based credit system:**
   Semester and Credit system

5. **Participation of the department in the courses offered by other departments:**
   Chemistry students take a Cross-faculty course from the list provided by the Arts Faculty, and also in a course entitled: Giving Voice to Values

6. **Number of teaching posts sanctioned and filled (Professors/Associate Professors/Asst. Professors)**

<table>
<thead>
<tr>
<th></th>
<th>Sanctioned</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate Professors</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Asst. Professors</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

7. **Faculty profile with name, qualification, designation, specialisation (D.Sc./D.Litt./ Ph.D./M.Phil., etc.)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Qualification</th>
<th>Designation</th>
<th>Specialization</th>
<th>No. of Years of Experience</th>
<th>No. of Ph.D. Students guided in the last 4 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freddy Havaldar</td>
<td>PhD</td>
<td>Asso. Prof</td>
<td>Organic Chemistry</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Surabhi Potnis</td>
<td>M.Phil</td>
<td>Asso. Prof</td>
<td>Organic Chemistry</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>Dionysia Coutinho</td>
<td>PhD</td>
<td>Asso. Prof</td>
<td>Organic Chemistry</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>Gulshan Shaikh</td>
<td>M.Sc</td>
<td>Asso. Prof</td>
<td>Organic Chemistry</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Fr. Roy Pereira</td>
<td>PhD</td>
<td>Asst. Prof</td>
<td>Inorganic Chemistry</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Bhagwat Bonde</td>
<td>PhD</td>
<td>Asso. Prof</td>
<td>Organic Chemistry</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Marazban Kotwal</td>
<td>M.Sc</td>
<td>Asst. Prof</td>
<td>Physical Chemistry</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Ashma Aggarwal</td>
<td>PhD</td>
<td>Asst. Prof</td>
<td>Physical Chemistry</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Geeta Kotian</td>
<td>PhD</td>
<td>Asst. Prof</td>
<td>Organic Chemistry</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Saima Khan</td>
<td>M.Sc</td>
<td>Asst. Prof</td>
<td>Organic Chemistry</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Abhilasha Jain</td>
<td>PhD</td>
<td>Asst. Prof</td>
<td>Physical Chemistry</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Prahlad Rege</td>
<td>PhD</td>
<td>Asst. Prof</td>
<td>Analytical Chemistry</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

8. **Percentage of classes taken by temporary faculty – programme-wise information:** Nil

9. **Programme-wise Student Teacher Ratio:** 1:20

10. **Number of academic support staff (technical) and administrative staff: sanctioned and filled:** 2 Lab Assistants and 10 Lab Attendants sanctioned and filled.
11. Number of faculty with ongoing projects from
   a) National
   b) International funding agencies
   c) Total grants received. Mention names of funding agencies and grants received project-wise.

CURRENT RESEARCH:
   a) On-going projects leading to PhD Degree under Dr. Freddy H Havaldar:
      1. Syntheses and biological activity of some novel Nitrogen containing heterocycles – Azadkumar S. Sharma
      2. Syntheses of some novel azaheterocycles and study of their pharmacological activity – Bhushan Dabholkar.
   b) On-going research by Abhilasha Jain, Ashma Aggarwal and Marazban Kotwal
      Photo-fenton degradation of certain dyes catalyzed by organic additives:
      A technique for waste-water treatment

12. Departmental projects funded by DST-FIST, DBT, ICSSR, etc.; total grants received
    STAR COLLEGE FUND: 6 Lakhs per annum
    DST-FIST: 3 Lakhs

13. Research facility / Centre with
    • State recognition: The Nadkarny Sacasa Laboratory is recognised by the University of Mumbai for Masters and Doctoral research.
    • National recognition
    • International recognition

14. Publications:
    Number of papers published in peer reviewed journals (national / international) between 2007 and 2012: **44**

RESEARCH PUBLICATIONS
Faculty Member: DR. FREDDY H. HAVALDAR

1. ECOfriendly Pathways for Drug Design.
   Organised by Department of Chemistry, Dr. Ambedkar College, Nagpur.

2. Syntheses of Biological Activity of 2-(3-Carboxy Phenyl)-5-(4-Substituted Phenyl)-1-Acetyl-2-Pyrazolines.


10. PATENT: NOVEL PROCESS FOR SYNTHESIS OF ENANTIOMERICALLY PURE (R) 5-[(1R)-1-(4-ALKYLPIPERAZIN-1-YL)ETHYL]-2-METHOXYBENZENE -SULFONAMIDE. INDIAN PATENT PUBLISHED ON 11 DECEMBER 2009.


13. SYNTHESIS OF SOME SUBSTITUTED PYRAZOLONES.

14. SIMULTANEOUS ESTIMATION OF ATENOLOL HYDROCHLOROTHIAZIDE, LOSARTAN AND VALSARTAN IN THE PHARMACEUTICAL DOSAGE FORM.

15. SIMULTANEOUS ESTIMATION OF GLIMIPRIDE, ROSIGLITAZONE AND PIOGLITAZONE HYDROCHLORIDE IN THE PHARMACEUTICAL DOSAGE FORM.

16. SIMULTANEOUS ESTIMATION OF METFORMIN HYDROCHLORIDE, ROSIGLITAZONE AND PIOGLITAZONE HYDROCHLORIDE IN THE TABLETS DOSAGE FORM.

17. SIMULTANEOUS DETERMINATION OF PARACETAMOL, ACETYLSALICYLIC ACID, MEFENAMIC ACID AND CETIRIZINE DIHYDROCHLORIDE IN THE PHARMACEUTICAL DOSAGE FORM.

18. SYNTHESSES OF BIOLOGICALLY ACTIVE 1-(SUBSTITUTED AMINOMETHYL)-3-(2'-NAPHTHOXYACETYLHYDRAZONO) INDOLIN-2-ONES.
PUBLISHED IN ASIAN JOURNAL OF CHEMISTRY, VOL. XXII, No. 9, Pp. 6677-6680 (2010).

19. SYNTHESSES OF SOME THIAZOLIDIN-4-ONES AS POTENTIAL ANTIMICROBIAL AGENTS.

20. NOVEL METHOD FOR THE SYNTHESSES OF 2-SUBSTITUTED BENZIMIDAZOLES USING Ti (IV) ISOPROPXIDE AND CUMENE HYDROPEROXIDE.
PUBLISHED IN SYNTHETIC COMMUNICATIONS (LONDON), VOL. XLI, No. 15, Pp. 2304-2308 (2011).

21. SYNTHESSES OF NOVEL SPIRO-[INDOLINE-3,3'-PYRAZOL]-2-ONES.

22. SYNTHESIS OF NEW INDOLINE-2-ONES AND THEIR MICROBIAL ACTIVITY.

23. SYNTHESSES OF BIOLOGICALLY ACTIVE 1-[2-(1,3-DIMETHYL-2,6-DIOXO-1,2,3,6-TETRAHYDRO-PURIN-7-YL)-ACETYL]-3-(SUBSTITUTED PHENYL)-1H-PYRAZOLE-4-CARBALDEHYDE.

Faculty Member: Dr. Abhilasha Jain


Faculty Member: Dr. Prahlad V. Rege


15. S. T. Trivedi*, P. A. Sathe, P. V. Rege- "SIMULTANEOUS QUANTITATION OF Ascorbic acid , Lead (II) and Iron (II) IN AN INDUSTRIAL EFFLUENT USING DIFFERENTIAL PULSE POLAROGRAPHY” is published in *International Journal of Chem Tech Research* Vol.4, no.2, pp 539-545.


**Paper / Poster Presentations**

**Faculty Member: DR. FREDDY H. HAVALDAR**


2. Presented ONE research paper at Staff Seminar in College on 9 February,2011.
Faculty Member: Dr. Ashma Aggarwal
1. Aggarwal Ashma (2011), Excess molar enthalpies of ternary mixtures containing o-toluidine + tetrahydropyran with pyridine or benzene or toluene at 308.15 K., 6TH National Conference on Thermodynamics of Chemical and Biological Systems, 2-4 Nov., M.D. University Rohtak (Haryana) (poster presentation).

Faculty Member: Dr. Prahlad V. Rege

Faculty Member: Dr. Roy J. J. Pereira, S.J.
International Conference presentations and participations 2012
• “Can the Mind be Explained Away?” Insights from Brain Chemistry. Paper presentation at Creighton University, Omaha, USA on 31st Oct. 2008.
• “Meditation and Beyond: Phenomena beyond Materialism” was presented at Cosmos, Nature and Culture – A Transdisciplinary Conference organized by Metanexus Institute and held at Tempe, Phoenix, Arizona, USA, in July 2009 and subsequently published online at http://www.metanexus.net/conference2009/abstract/Default.aspx?id=10835
• “Broken Bodies, Broken Minds – A Medical Critique.” Paper presentation at the University of Guelph, Canada on March 13th, 2010.
• “I’ll get by with a little help from my friends – Neuroscience offers support to Dual Aspect Monism” has been presented at the IRC/ISSR Oxford University Conference, UK in July 2010.
• Participated in the ‘by invitation’ only conference of 23 high level educators (Vice-Chancellors, Registrars, Deans, HODs) on Study Abroad Capacity Building organized by the United States India Education Foundation and the U.S. Consulate at the University of Hyderabad and Lemon Tree Hotel in Hyderabad from 10th to 12th October, 2012.
• One among the 8 specially selected participants invited for the Education Roundtable with Mr. Wayne Woulter, Clerk of the Privy Council and Secretary to the Cabinet of the Government of Canada organized by the Consulate General of Canada at the Canadian Consulate, Mumbai on 22nd October, 2012.
- Participated in “The Argumentative Indian” conference organized by the University of Melbourne and the Australia India Institute at the University of Melbourne from 31st October to 2nd November, 2012.
- Delivered the 7th Alexander Mar Thoma Metropolitan Memorial Lectures. The first day dwelt on finding God through Physics and the second day dwelt on finding God through Neurosciences. The overall theme of this two day lecture series covering the Science and Religion relationship was “Meeting God in the 21st Century.” This two day lecture series in Singapore was held on 17th and 18th November, 2012.

**National Conference presentations**
- “Does the Chemistry of the Brain produce religious experiences?” Invited speaker for the ASSR Annual Seminar on Cosmology, Science and Religion, on Feb 3-5, 2012 at Khandala, India.
- “From Higgs Boson to God Particle” Paper presentation on 5th October in the Plenary Session ‘Education and Research – A Road Towards Human Excellence’ in the two day SSTech 2012 National Conference on Science and Spirituality in the Age of Technology organized by the University of Mumbai and the Institute of Science and Religion at Mumbai University, Kalina Campus, Mumbai on 5th and 6th October, 2012.
- “Quality of Life and Quality Life” Panelist for this session on 6th October at the two day SSTech 2012 National Conference on Science and Spirituality in the Age of Technology organized by the University of Mumbai and the Institute of Science and Religion at Mumbai University, Kalina Campus, Mumbai on 5th and 6th October, 2012.

* Monographs Nil

* Chapter(s) in Books
**Dr. Roy J. J. Pereira, S.J.**
One chapter written for the book, Gems from India (ISPCK/VIEWS, 2006).

* Editing Books: Nil
* Books with ISBN numbers with details of publishers: Nil
* Number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)
  * Citation Index – range / average
  * SNIP
  * SJR
  * Impact factor – range / average
  * h-index

15. Details of patents and income generated:
   Faculty Member: **DR. FREDDY H. HAVALDAR**
   **INTERNATIONAL & NATIONAL PATENT:** NOVEL PROCESS FOR SYNTHESIS OF ENANTIOMERICALLY PURE(R) 5-[(1R)-1-(4-ALKYLPIPERAZIN-1-YL)ETHYL]-2-METHOXYBENZENE-SULFONAMIDE.
16. Areas of consultancy and income generated: Nil

17. Faculty recharging strategies

Faculty Member: **DR. FREDDY H. HAVALDAR**
1. Two days National Seminar on ‘Drug Design and Methodology in Chemistry’ on 31 August and 1 September 2007 at K.C.College.

Faculty Member: **Dr. Dionysia L M Coutinho**
On Planning & Organizing Committee and participated in the following:

**Refresher courses:**

**Dr. Freddy Havaldar:**
Participated in Refresher Course conducted by UGC Academic Staff College, University of Mumbai from 6 October 2008 to 25 October 2008, Emerging trends in chemistry.

**Marazban Kotwal**
Participated in Refresher Course conducted by UGC Academic Staff College, University of Mumbai from 1st October 2012 to 20th October 2012, Recent Developments in Material Science.

**Ashma Aggarwal**
Participated in Refresher Course conducted by UGC Academic Staff College, University of Mumbai in Oct. 2009, Emerging trends in chemistry.

**Geeta Kotian**
i) Participated in Refresher Course conducted by UGC Academic Staff College, University of Mumbai from 6th October 2008 to 25th October 2008, Emerging trends in chemistry.

  ii) Participated in Refresher Course conducted by UGC Academic Staff College, University of Mumbai from 1st October 2012 to 20th October 2012, Recent Developments in Material Science.

**Saima Khan**
i) Participated in Refresher Course conducted by UGC Academic Staff College, University of Mumbai from 1st October 2010, Emerging trends in chemistry.

  ii) Participated in Refresher Course conducted by UGC Academic Staff College, University of Mumbai from 1st October 2012 to 20th October 2012, Recent Developments in Material Science.

**Orientation courses:**

**Ashma Aggarwal**
Participated in Orientation Course conducted by UGC Academic Staff College, University of Mumbai in 2007.
Saima Khan
Participated in Orientation Course conducted by UGC Academic Staff College, University of Mumbai in 2008

18. Student projects
• percentage of students who have done in-house projects including inter-departmental: 30%
• percentage of students doing projects in collaboration with industries / institutes: 2%

19. Awards / recognitions received at the national and international level by
• Faculty
• Doctoral / post-doctoral fellows
• Students
  • i. Award / prize won at Intercollegiate academic competitions: Ms. Veena Iyer secured 2nd rank in Chemistry Aptitude Test conducted by Indian Chemical Society
  • ii. Academic achievements at University Exams:
    a. Ms Viola D’Mello secured 3rd rank in Chemistry in Mumbai University at TYBSc in 2011.
    b. Ms Veena Iyer secured 1st rank in Chemistry in Mumbai University TYBSc in 2012.

20. Seminars/ Conferences/Workshops organized and the source of funding (national /international) with details of outstanding participants, if any.
Nil.

21. Student profile course-wise:

<table>
<thead>
<tr>
<th>Name of the Course (refer question no. 2)</th>
<th>Applications received</th>
<th>Selected</th>
<th>Pass percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B.Sc. In Chemistry</td>
<td>530</td>
<td>252</td>
<td>168</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FY : 75</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SY : 90</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TY : 96</td>
<td></td>
</tr>
</tbody>
</table>

22. Diversity of students

<table>
<thead>
<tr>
<th>Name of the Course (refer question no. 2)</th>
<th>% of students from the College</th>
<th>% of students from the State</th>
<th>% of students from other States</th>
<th>% of students from other countries</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Departmental data not available</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
24. Student progression

<table>
<thead>
<tr>
<th>Student progression</th>
<th>Percentage against enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG to PG</td>
<td></td>
</tr>
<tr>
<td>PG to M.Phil.</td>
<td></td>
</tr>
<tr>
<td>PG to Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Ph.D. to Post-Doctoral</td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td></td>
</tr>
<tr>
<td>• Campus selection</td>
<td></td>
</tr>
<tr>
<td>• Other than campus recruitment</td>
<td></td>
</tr>
<tr>
<td>Entrepreneurs</td>
<td>Departmental data not available</td>
</tr>
</tbody>
</table>

25. Diversity of staff

<table>
<thead>
<tr>
<th>Percentage of faculty who are graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>of the same parent university</td>
</tr>
<tr>
<td>from other universities within the State</td>
</tr>
<tr>
<td>from other universities from other States</td>
</tr>
</tbody>
</table>

26. Number of faculty who were awarded Ph.D., D.Sc. and D.Litt. during the assessment period:

27. Present details about infrastructural facilities
a) Library: Department has a small Library of its own for the students run by student members of Xavier’s Association of Chemistry (XAC)
b) Internet facilities for staff and students: The department has a Lease Line connection for the use of faculty. Students use the central facilities.
c) Total number of class rooms: 40 classrooms used by all the departments
d) Class rooms with ICT facility: all 40 are ICT enabled.
e) Students’ laboratories: 2 large laboratories and one small lab.
f) Research laboratories: The Nadkarny Sacasa Laboratory

28. Number of students of the department getting financial assistance from College.
10%

29. Was any need assessment exercise undertaken before the development of new program(s)?
None.

30. Does the department obtain feedback from
a) faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize it?
Yes. The department constantly redesigns the syllabi and evaluation system often as part of the Board of Studies according to the experience of the year.
b) students on staff, curriculum as well as teaching-learning-evaluation and what is the response of the department to the same?

Yes. TAQs are conducted every alternate year. The response is discussed with the Head of Department and Vice Principal for adjustments.

c) alumni and employers on the programmes and what is the response of the department to the same?

Alumni often visit the department and give feedback on the courses, and some give guest lectures on their field of specialization.

31. List the distinguished alumni of the department (maximum 10)

- Dr. Peshotan Mirza (Ex-Faculty & Head Priest of Parsi community)
- Mark Saldanha (Managing Director, GlenMark Pharmaceuticals)
- Aubrey Mendonca (Visiting faculty, Canada)
- Dr. Naval Katrak (ex-manager L&T)
- Dr. Cyrus Dalal (Managing Director, Castrol)
- Dr. Noel D’Souza (R & D manager, Hoescht)
- Dr. Sivaramakrishnan Iyer (Vice-President, HealthCare, Nicholas Piramal)
- Dr. Navinchandra K Khatri (General Manager, Elder Pharmaceutical)
- Dr. Ravichandra Palkar (Manager, Kores)
- Mr. Akshay Arora (MD, Ion Exchange)

32. Give details of student enrichment programmes (special lectures / workshops / seminar) with external experts.

Lectures were conducted by several eminent speakers like
- Dr. Shirsat from Goa University
- Dr. A. Q. Contractor from IIT
- Dr. Poojary on Drug Designing
- Dr. Z. Turel D. Litt. Retired from Institute of Science and currently an adjunct Professor at Mithibai College

**Honours Programme Summary**

Lecture Series conducted to date:

1. Fundamentals of Chemistry for third year Biological Science students
2. Chemistry in the Pharmaceutical Industry
3. Toxicological Studies
4. Applications of Spectroscopy
5. Chemistry in Basic Forensic Science
6. Chemistry in Advanced Forensic Science
7. Chemistry in Marine Science
8. Pericyclic Reactions
9. Perfumery
10. Chemistry in Nutrition
11. Homeopathy
12. Organic Magnets
13. Marine Science

Project Work: This was theoretical as well as experimental:
1. An insight into production
2. Water Pollution studies
3. Drug Analysis
4. Chromatography – Techniques and Application
5. A new approach to Qualitative Analysis
6. Classical Physical Chemistry
7. Environmental Chemistry – Soil Analysis
8. Architecture in Chemistry
9. Analytical Techniques

Guided Work: A theoretical activity, assignment that was guided by the faculty. Topics covered all branches of Chemistry. Some of the topics are:
1. Nanotechnology
2. Biodiesels
3. Geochemistry
4. Homeopathy
5. Chemistry in Cosmetics
6. Application of Thermodynamics / Physical Chemistry to the Life Sciences
7. Alchemy
8. Food Adulteration
9. Fermentation
10. X-Ray & Diffraction studies
11. Nuclear Chemistry

Book Review: Chemistry or Chemistry related books were read and critically analyzed. Some of the titles covered are:

**Organic Chemistry**
1. Environmental Chemistry
2. Spectroscopy
3. History of Chemistry.

**Biochemistry**
1. Medicinal Chemistry
2. Pharmaceutical Industry
3. Industrial Chemistry
4. Applications of Chemistry.

33. List the teaching methods adopted by the faculty for different programmes.
   Power-Point presentations, OHP, Models, Computer generated experiments

34. **How does the department ensure that programme objectives are constantly met and learning outcomes monitored?**
   By taking feed-back periodically from the students and the faculty. Regular weekly department meetings are held to take stock and to plan for the immediate future.

35. **Highlight the participation of students and faculty in extension activities.**
   All first year students take part in the mandatory Social Involvement Programme, with 60 fieldwork hours spent with NGOs in the city.
36. Give details of “beyond syllabus scholarly activities” of the department.

- Industrial Visits conducted to Hindalco, Cadilla Pharmaceuticals CIPLA and several smaller Industries involved in synthesizing dyes, brighteners and surfactants.
- Annual Seminar for our Students at Khandala
- Visit to Sophisticated Analytical Instrumentation Facility in IIT Bombay
- The Department published a Magazine titled ‘The Chemistry Times’ to celebrate the International Year of Chemistry.
- The students participated in the Science Fest of St. Xavier’s College ‘Paradigm 2012’ in which they showcased techniques of making Biodiesel and various analytical techniques like determination of amount of Vitamin C in various food products and fruit juices.
- The students have been regularly putting up magic show in Chemistry which brings out the fun side of learning Chemistry.

Faculty Member: DR. FREDDY H. HAVALDAR
1. Appointed as a member of the Vigilance Squad by the Vice-Chancellor, University of Mumbai on 6 October 2006.
4. Appointed the Presiding Officer by the Election Commission during General Election to Maharashtra Legislative Assembly on 12 October 2009.
5. Conferred ‘A Special Research Award’ for 2009-2010 by St. Xavier’s College.
6. Invited as a Judge for the research paper competition at M.Sc. (Part II) at Ruia College on 21 January 2011.
7. Invited as an Expert in Chemistry on Selection Committee for Staff Placement at Vivekanand College on 22 January 2011.
8. Convenor of Department Committee to draft the S.Y.B.Sc. (Autonomous) Syllabus in Organic Chemistry.

Faculty Member: Gulshan Shaikh
1. Resource person for Orientation of new staff faculty
2. Resource person for BSc Nautical Science Maritime Academy
3. Lecturer for MSc Part I and Part II - Organic Chemistry
   [University of Mumbai]
4. Participated in the following events:
   a. Human Rights in a Globalized World - Liverpool Hope University and St. Xavier’s College
   b. Ted-Ex Gateway Y.B.Chavan Center, Mumbai
   c. Innovative Teaching in Chemistry – TIFR, Mumbai
   d. Delivered talks on Science as a career option – CJM school, Mumbai

Faculty Member: Dr. Dionysia L M Coutinho
1. 2001 to 2012 - on the College panel for F.Y.BSc.admissions.
2. 2005 till date - College IQAC.
4. 2009 till date – Convenor of the College TAQ Committee.

Faculty Member: Surabhi Potnis
1. Member, TYBSc syllabus committee of Mumbai University 2009-2010
2. Convener, syllabus committee for framing of autonomous syllabi of FYBSc, SYBSc and TYBSc Chemistry in St. Xavier’s College
3. Resource-person in UGC sponsored Workshop for TYBSc revised syllabus organized by Board of Studies in Chemistry of Mumbai University conducted at Khalsa College in June 2010
4. Invited as Subject Expert on Selection committee for appointment of new faculty at Sophia College, Wilson College
5. Invited as Subject Expert on Selection committee for Staff Placement at Rizvi College, Sophia College and Wilson College
6. Member of panel for selection and training of students for International Junior Science Olympiad 2008 onwards
7. Resource person at Orientation cum Selection Camps for International Junior Science Olympiad 2008 onwards
8. Visiting faculty for BSc Nautical Science
9. Panel member for selection interviews for HomiBhabha Young Scientist Prize: 2009
10. Invited as resource person for Teacher training program conducted for Science teachers by BASE at AmulakhAmichand High School: July 2012

**Departmental activities:**
1. Dr. Freddy Havaldar, Dr. B.D. Bonde and Dr. Abhilasha Jain went for Industrial visit to Cadilla Pharmaceuticals, Ahmedabad in October, 2011 with the students.
2. Prof (Ms). S. Potnis, Dr. Ashma Aggarwal and Dr. Abhilasha Jain visited the Sophisticated Analytical Instrumentation Facility in IIT Bombay in January 2012.
3. Fr Roy Pereira SJ, Prof M Kotwal and Prof (Ms) Sonali Ghadi conducted a workshop cum seminar for Chemistry undergraduate students at Khandala
4. Dr. Abhilasha Jain completed PGDBA (Post Graduate Diploma in Business Administration) from Symbiosis, Pune with A+ grade.
5. Xavier’s Association of Chemistry [XAC] organizes an intercollegiate festival / competition since its inception in 2003 called Chem-X-Treme.

**University Recognitions Received by the teachers in the last academic year (Committees and Academic bodies):**

<table>
<thead>
<tr>
<th>Syllabus Committee Undergraduate</th>
<th>Dr. F. Havaldar, Prof. S. Potnis, Dr. D. Coutinho, Dr. (Fr) R. Pereira, Prof. G. Shaikh, Dr. B.D. Bonde, Prof. M. Kotwal, Dr. A. Aggarwal, Dr. G. Kotian, Prof. S. Khan, Dr. A. Jain: Designing T.Y.B.Sc Theory and Practical (autonomous) Syllabi and Revision of F.Y.B.Sc. and S.Y.B.Sc. Theory and Practical syllabi of autonomous curriculum. Dr. F. Havaldar, Fr. Roy Pereira SJ, Dr. B. D. Bonde for Applied component syllabi</th>
</tr>
</thead>
</table>
Prof. MarazbanKotwal: T.Y.B.Sc Theory and Practical.
Dr. Ashma Aggarwal: T.Y.B.Sc Theory [Analytical] and Practicals [Physical & Analytical]
Dr. Geeta Kotian: TYBSc. Theory (Inorganic) and Practicals [Organic ]
Prof. Saima Khan: TYBSc. Theory (Inorganic) and Practicals [Organic ]
Dr. Roy Pereira: TYBSc Practicals

b) Post graduate Examiners
Dr. Freddy Havaldar : PAPER-SETTER, MSc Theory and Practicals
Dr. (Ms) Dionysia Coutinho : MSc Theory and Practicals
Prof (Ms) S. S. Potnis: MSc (Part I) theory and practicals (2006-2008)

Moderators
Prof (Ms) S. S. Potnis: TYBSc Theory (Paper-setter: 2009-2011)

Post graduate teachers
Dr. Freddy Havaldar: MSc Part I and II : Organic Chemistry
Prof (Ms) S. S. Potnis: MSc Part I: Analytical Chemistry
Prof. Gulshan Shaikh : MSc. Part I and Part II Organic Chemistry
Prof. Marazban Kotwal: MSc Part I: Physical Chemistry
Fr Roy Pereira SJ: Neuroscience at JDV Pune (Masters course)

Ph.D. guides
Dr. Freddy Havaldar

Coordinators/resource persons in workshops on syllabus / Practicals
Dr. Freddy Havaldar was a member of panel for appointment of examiners at the TYBSc applied component practicals & M.Sc. Part II Organic Chemistry.

37. State whether the programme/ department is accredited/ graded by other agencies. Give details. : No

38. Detail any five Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department:

**Strengths**
Committed teaching faculty
Actively involved in research
Strive for academic excellence
Strive for holistic growth of students
Good student-faculty interaction

**Weaknesses**
Ratio of teachers with expertise in Inorganic Chemistry among the faculty is low.

**Opportunities**
Autonomy has unfolded a lot of opportunities for designing syllabi which is challenging and relevant & also thrown open a plethora of opportunities for collaborating with universities abroad.
Challenges
Potential for starting job oriented / Industry oriented courses

39. Future plans of the department.
Starting job oriented / Industry oriented courses