St. Xavier’s College, Kolkata

FIRST AUTONOMOUS COLLEGE UNDER CALCUTTA UNIVERSITY

NAAC ACCREDITED GRADE ‘A’

AWARDED COLLEGE OF EXCELLENCE BY UGC

M Sc in MICROBIOLOGY

Prospectus 2014 - 2016
Brief History of the College:
Founded in 1860 by a small group of Jesuits under the leadership of Rev. Fr. H Depelchin S.J., St. Xavier’s College was affiliated to Calcutta University in 1862. Founded by a Catholic Christian Minority Religious body, Society of Jesus, St. Xavier’s College is a religious minority educational institution recognized by the State Government. While a certain preference is shown to the educational & cultural needs of the minority community, admission is open to all irrespective of caste and creed.

A multi-disciplinary College, St. Xavier’s, offers 3 years Hons. 3 years General / Pass Graduation in B A, B Sc, B.Com, BBA and BA/B.Sc in Mass Communication (Vocational Major) and 1 year B Ed. Course.

M.Sc. Microbiology Department:
The Department of Microbiology was initiated in 2003 as a general Department and subsequently upgraded to the Honours Department since 2005. From 2006 onwards, it started to teach a syllabus different from Calcutta University under the autonomous system. The first group of graduates did exceptionally well with about 60 % first class and occupied the first two positions under the Calcutta University. The results under the autonomous mode were even better and the students were admitted in the different institutions of international repute like the IISc, TIFR, NIV, JNCASR, NCBS and IIT etc. The students also joined Universities like the Calcutta University, Jadavpur University, BHU, JNU etc. The Department also has a unique student exchange program with the University of Manitoba, Canada.

The M.Sc course was initiated in 2010 and our first batch passed out in 2012. Students did place themselves in industry and academic institutes. Three have cleared NET and Four of them cleared GATE, they are pursuing their Ph.D. in institutes like IICB, Bose Institute and in University like VisvaBharati. Some of them were absorbed in Dairy or food industry.

Thrust areas:
- We believe life sciences as a multi-disciplinary branch of science and want to provide our students with the basics to cope up with the demands of modern research and teaching. Emphasis is given on holistic approach where students are exposed to: Microbiology, Environmental sciences, Plant and animal sciences, Biochemistry, Molecular Biology, Bioinstrumentation, Bioinformatics and Computer applications.

- The Department also has rich culture of research and students are actively engaged in different in-house projects as well they participate in summer training courses in research institutes and industries. Further students are encouraged to present research papers in different national and international seminars as well organize a seminar series titled “Modern Trends in Microbiology”. From 2012 we have tried to organize campus placements and already student of the outgoing batch has been placed in industry.

- The department also organizes monthly work-seminars by renowned scientist from different institute in India to provide opportunity to students to listen to research work as well interact with them.

- Industry visits are conducted for students.
STAFF:
Administrative:
Rev. Dr. Dominic Savio, S.J.    Rector
Rev. Dr. Felix J Raj, S.J.   Principal
Prof. Bertram. Da Silva,   Vice Principal(Arts and Science)
Dr. Pradip Kumar Chakrabarti  Dean of P.G. studies
Prof. Albert C. Gomes  Controller of examinations
Dr. Kasturi Sarkar   Head of the Department

Faculty:
1. Dr. Kasturi Sarkar  M.Sc. Ph.D- Biochemistry
   (Research Interest: Protein Chemistry, Pathophysiology of different human diseases)
2. Dr. Arup K. Mitra  M.ScPh,D - Plant Science.
   (Research Interest: Plant Disease and Metal toxicity and it alleviation, medical microbiology)
3. Rev Father Dr.S.Xavier  M.Sc Ph.D - Environmental Science.
   (Research Interest: As toxicity and its control)
4. Dr. Sudeshna Shyam Chowdhury  M.Sc – Biochemistry
   (Research Interest : Germplasm screening and Marker Assisted selection, Antioxidant biochemistry)
5. Prof. Debjani Dutta M.Sc – Microbiology
   (Research Interest : Microbial Characterization, Soil Microbiology)
6. Dr. Mahasweta Mitra Ghosh M.ScPh.D- Biochemistry
   (Research Interest : Molecular biology related to Germplosm screening and Marker Assisted selection, Antioxidant biochemistry)
7. Dr. Madhumita Maitra  M.Sc Ph.D – Microbiology (Research interest : Study of cell signaling during pathogenesis of tuberculosis in human monocytes)
8. Dr. Riddhi Majumder M.Sc Ph.D – Biophysics (Research interest: Cell trafficking and regulation of cell signaling using Drosophila as model system)
9. Dr. Jaydip Ghosh  M.Sc Ph.D-Biochemistry (Research interest : Prokaryotic biology, especially to understand the mechanism of persister formation)
10. Dr. Anindita Banerjee  M.Sc Ph.D-Plant Biotechnology (Research interest : Plant Biotech & tissue culture especially to isolate and characterize the secondary metabolites)
11. Ms Lopamudra Roy  M.Sc Microbiology
12. Prof. Pinky Banerji Mal,  M.Sc Microbiology

Guest Faculty:
1. Prof (Dr) Pradeep Kumar Sengupta-Saha Institute of Nuclear Physics
2. Dr. Madhumita Chakraborty-RA, IICB
3. Dr. Bhaskar Narayan Chaudhury- Fortis Hospital
4. Dr. Arunabha Bhattacharya-WBUT
5. Mr. Abir Sarkar M.Sc, SXC Statistics

Support Staff:
Mr. Arabindo Bar, Mr.Pintu Biswas, Ms Soma Mondal, MrBiswanath Sen and Mr. Asim Mondal

Useful information:
• Class timing: 10 A.M to 5.00 PM but in-house project may demand work after the stipulated time
• Compulsory Attendance: 75%(minimum)
• Dress code and decorum should be maintained as per college rules
• Students should participate in laboratory and industry visits.
Course Content:
The syllabus of Masters has been designed in such a way that the students have perfect blend of Microbiology and Molecular Biology, moreover the course content of NET examination has been given due importance.

Semester I:
MCBM4101: Biophysical techniques, Microscopy and biological macromolecules.
MCBM4102: Cell biology and cell signaling
MCBM4103: Taxonomy & Morphology, Ecology.
MCBM4104: Thermodynamics, enzymes and reaction kinetics
MCBM4151 (Practical): Introductory microbiology, Biochemistry and Biophysical techniques.

Semester II:
MCBM4201: Spectroscopy and Crystallography and General and Microbial metabolism
MCBM4202: Molecular biology and Microbial genetics
MCBM4203: Environmental microbiology
MCBM4204: Plant Physiology and Plant Biotechnology.
MCBM4252 (Practical): Plant tissue culture and Environmental Biology

Semester III:
MCBM4301: Recombinant DNA technology, and Biostatistics.
MCBM4302: Computer applications, bioinformatics and genomics and proteomics.
MCBM4303: Eukaryotic transcription translation and genetics interactions
MCBM4304: Food technology, immunology and cancer biology
MCBM4353 (Practical): Recombinant DNA technology, Bioinformatics, Computer applications and biostatistics.

Semester IV:
MCBM4401: Industrial Microbiology, Virology
MCBM4402: Medical Microbiology and chemotherapeutic agents.
MCBM4454: Industrial and medical microbiology
MCBM4455: Project work and dissertation
MCBM4456: Grand viva and Critical review

RESEARCH AND PROJECT WORK:
The faculty members are actively engaged in research in different and the area of interest has already been given earlier. The advisory committee has been constituted in such a way that eminent scientists and researchers from different institutions have been incorporated and their presence make the programme more fruitful and practically oriented. The department already has a rich tradition of research and as rare feat students already participate in different National and International Seminars presenting papers and posters. The department takes the lead in publishing AVISHKAR-The Xaverian journal of research which will gain further momentum with contributions from the post graduate department of Microbiology.
FEES

At the time of Admission:

- Security Deposit: 10,000.00
- Admission Fees: 4,000.00
- Lab Fees: 5,000.00
- Yearly Extras: 3,500.00
- Cyber Fees: 300.00
- Certificate Fee: 400.00
- Registration Fee: 200.00
- Exam Fees: 700.00
- 3 Months Tuition Fees + Development fees: 12,300.00

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Total fees to be paid at the time of admission: 36,400.00

Monthly:

- Tuition Fees: 600.00
- Additional: 2,500.00
- Development Fees: 1,000.00

ADMISSION (2014-2015)

ELIGIBILITY CRITERIA

- B.Sc in Microbiology or its equivalent.
  (Those students who have completed their 2nd year University Examination in 2013 and awaiting 3rd year Examination Results are also eligible.)

Admission is provisional and it will be finalized subject to passing the B Sc or equivalent with a minimum of 60%.

APPLICATION PROCEDURE

Step 1: Application forms are available on the College website - www.sxccal.edu

Step 2: Download the prospectus and application form. Print the form and fill up the relevant details.

Step 3: Completed Application forms are to be submitted along with an application fee of Rs 500/- and attested photocopies of Class X, Class XII, B Sc Examination Mark sheet, University Registration Certificate, Proof of Date of Birth to the Post Graduate Office, Third Floor, St. Xavier’s College on working days.

Dates of submission of duly filled application forms: 30th June, 2014 to 9th July, 2014
(Between 11 am and 3 pm)

Date of Written Examination: 12th July, 2014 at 3 P.M.*

Date of Selection List: 22nd July, 2014*

Format of Admission Test: Multiple Choice questions on Microbiology (B Sc Level)

Inauguration: 1st August, 2014*

Scholarship, in the form of waiver of tuition fee, will be provided to one student on the basis of academic performance in the 1st and 2nd Semester examinations of the College.
RULES AND REGULATIONS

1. Candidates are required to find their allotted seats and shall take their seats 15 minutes before the time of commencement of the examination.

2. Candidates are warned that any attempt to use any unfair means at the examination, or any breach of any of the examination rules will render them to penalties as the authority may determine.

3. If during and/or after the examination it is found that the candidate does not fulfill all or any of the rules and Regulations governing the examination, his/her examination is liable to be cancelled.

4. Candidates without admit cards will not be allowed to sit for the examination.
St. Xavier's College, Kolkata

AUTONOMOUS

APPLICATION FORM FOR ADMISSION
TO M. Sc. (MICROBIOLOGY)
UNDER UNIVERSITY OF CALCUTTA
2014 - 2015

1. Name of the applicant (In block letters) …………………………………………………………………………

2. Present Address
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Telephone No. …………………Mobile …………………………………

3. Permanent Address
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4. Date of Birth ……………………………… Blood Group: ………………………………………

5. Name and Occupation of Father ………………………………………………………………………………………

6. Name and Occupation of Mother ………………………………………………………………………………………

7. Guardian’s Name, Relationship and Occupation ………………………………………………………………………

8. Income of the Family per Month …………………………….

9. Whether belonging to Catholic /XTIAN/ SC/ST/OBC (if yes attach all attested copy of necessary certificates)
   CATHOLIC ☐ XTIAN ☐ SC ☐ ST ☐ OBC ☐

10. Achievements (if any please specify): Academic ☐ Co-curricular ☐ Games ☐ Cultural ☐

11. Whether physically handicapped (if yes attach all attested copy of necessary certificate)
   ☐ Yes ☐ No

12. Are you enjoying any scholarship or stipend?
    ☐ Yes ☐ No

13. Are you employed at present?
    ☐ Yes ☐ No
14. Details of academic qualifications:

<table>
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<tr>
<th>Examination Passed</th>
<th>Madhyamik or equivalent</th>
<th>Higher Secondary or equivalent</th>
<th>BSc (Hons) or equivalent</th>
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<tr>
<td>Year of Passing</td>
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<td>Name of School &amp; Board / College &amp; University</td>
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<td>Subjects Taken</td>
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<td>Percentage of Marks</td>
<td>(All Subjects)</td>
<td>(All Subjects)</td>
<td>(Honours / Major)</td>
</tr>
</tbody>
</table>

Students who have appeared in the final examination this year, need to calculate the percentage on the basis of the results declared till date.

**DECLARATION / UNDERTAKING**

I declare / undertake that:

1. The statements made above by me are true.
2. If any error/misinformation is detected after my provisional admission, my admission shall be treated as cancelled.
3. I have not taken admission to any other course.
4. I am not employed anywhere.
5. If I am admitted I will be a full time student of the College.
6. If I remain absent from the classes continuously for fifteen days at a stretch or for a total of thirty days (interrupted) during the first two months of my admission to the course of studies without a reason acceptable to the College my studentship will terminate and my name shall be automatically struck off the rolls.

Endorsed Signature of the applicant

Signature of Parent/Guardian Date ………………………

N.B.

1. Application must be supported by attested copies of X, XII and Graduation (Part I, II and III) mark sheets.
2. Incomplete forms are liable to be rejected.
3. Selection list will be displayed on the notice board.
4. Original mark sheet must be shown at the time of admission.