

1. Name of the department :- **Department of Microbiology(H+G)**

2. Year of Establishment:- **Undergraduate Honours course on 2001**

Undergraduate Pass course on 2014

3. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.):- **Undergraduate**

4. Names of Interdisciplinary courses and the departments/units involved:- **Nil**

5. Annual/ semester/choice based credit system (programme wise):- **Annual at UG level**

6. Participation of the department in the courses offered by other departments: **Biochemistry**

7. Courses in collaboration with other universities, industries, foreign institutions, etc.: **Nil**

8. Details of courses/programmes discontinued (if any) with reasons:- **Nil**

9. Number of Teaching posts

| | Sanctioned | Filled |
|----------------------|-------------------|-------------------|
| Professors Associate | | |
| Professors | | |
| Asst. Professors | ONE | Not filled |

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

| Name | Qualification | Designation | Specialization | No. of Years of Experience | No. of Ph.D. Students guided for the last 4 years |
|----------------------------|--|---|--|-----------------------------------|--|
| Swapna Dey | M.Sc (Microbiology) | Permanent Part time lecturer (Govt approved) | Microbiology | 13 yrs | Nil |
| Lopamudra Choudhury | M.Sc (Microbiology), M.Phil (Microbiology), Pursuing PhD in Microbiology From Calcutta University | Permanent Part time lecturer (Govt approved) | Microbiology | 9yrs | Nil |
| Abhishek Chatterjee | M.Sc (Microbiology) | Guest lecturer | Microbiology | 4yrs | Nil |
| Sugata Dutta | M.Sc (Microbiology) | Guest lecturer | Microbiology | 4yrs | Nil |
| Kirat Kumar Ganguly | M.Sc (Microbiology), PhD, Post-Doc | Guest lecturer | Microbiology and cancer biology | 6months | Nil |
| Rajdeep Das | M.Sc (Microbiology) | Guest lecturer | Microbiology | 6 months | Nil |

11. List of senior visiting faculty:- Nil

12. Percentage of lectures delivered and practical classes handled(programme wise) by temporary faculty:-

| | Hons. | | Gen | |
|----------|---------------|------------------|---------------|---------------------|
| | Theory | Practical | Theory | Practical |
| Part-I | 46.15% | Not taken | 66.66% | No practical |
| Part-II | 53.84% | 50% | 66.66% | 50% |
| Part-III | 50% | 50% | 66.66% | 50% |

Part time Teachers:-

| | Hons. | | General | |
|----------|---------------|------------------|----------------|---------------------|
| | Theory | Practical | Theory | Practical |
| Part-I | 53.85% | 100% | 33.34% | No practical |
| Part-II | 46.16% | 50% | 33.34% | 50% |
| Part-III | 50% | 50% | 33.34% | 50% |

13. **Student -Teacher Ratio (programme wise):-**

| | |
|-------------------------------|----------------|
| Student- Teacher Ratio | |
| Honours | General |

| | |
|------------|------------|
| 9:1 | 7:2 |
|------------|------------|

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled:-

- **Existing lab attendants:2 (1 casual)**
- **Sanctioned :1**
- **Filled:1**

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG:-

| Teachers with | Number |
|--------------------------|---------------|
| DSc | 0 |
| DLitt | 0 |
| PhD | 1 |
| MPhil | 1 |
| PG | 6 |
| Total number of Teachers | |

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received: - **Nil**

17. Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received:- **Nil**

18. Research Centre /facility recognized by the University:- **Nil**

19. Publications:

- * a) Publication per faculty:

Faculty

1. Dr. Kirat Kumar Ganguly

a) Number of papers published in peer reviewed journals (national / International) by faculty ~~and students~~: 1

b) Number of publications listed in International Database

(For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)

1. Trerotola, M.; **Ganguly, K. K.**; Fazli, L.; Lu H.; Fedele, C.; Dutta, A.; Liu, Q.; Angelis, T. D.; Riddell, L. W.; Riobo, A. N.; Gleave, M. E.; Zoubeidi, A.; Pestell, R. G.; Altieri, D. C.; Languino, L. R. The Trop-2 / $\alpha 5\beta 1$ integrin complex is up-regulated in invasive prostate cancer and displaces FAK from focal contacts (accepted for publication, under revision for the journal Oncotarget, December, 2014)
2. Nanda, D.P., Dutta, K., **Ganguly K.K.**, Hajra, S., Mandal, S.S., Biswas, J., Sinha, D. MMP-9 as a potential biomarker for carcinoma of oral cavity: a study in eastern India. Neoplasma. 2014 Aug 23.
http://www.elis.sk/download_file.php?product_id=3971&session_id=1ek83bq6u18hopbjdf35vk7m30
3. Sinha, D.; Dutta, K.; **Ganguly, K.K.**; Biswas, J.; Bishayee, A. A novel synthetic oleanane triterpenoid suppresses adhesion, migration, and invasion of highly metastatic melanoma cells by modulating gelatinase signaling axis. Mol Carcinog. 2014 Feb 10. doi: 10.1002/mc.22136. [Epub ahead of print] PubMed PMID: 24510625.
<http://onlinelibrary.wiley.com/doi/10.1002/mc.22136/abstract>
4. Sen, T.; **Ganguly, K. K.**; Biswas, J.; Chatterjee, A. Focal Adhesion Kinase Induces Matrix Metalloproteinase-2 by Involving $\alpha 5\beta 1$ -Mediated Signaling in Breast Cancer Cell, MCF-7 (in press, Acta Medica International, December, 2014).
5. Sayeed, A.; Fedele, C.; Trerotola, M.; **Ganguly, K. K.**; Languino, L. R. IGF-IR Promotes Prostate Cancer Growth By Stabilizing $\alpha 5\beta 1$ Integrin Protein Levels, Levels. PLoS ONE, 8 (10):e76513. doi:10.1371/journal.pone.0076513.
<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0076513>
6. Pal, S.; **Ganguly, K. K.**; Chatterjee, A. Extracellular matrix protein fibronectin induces matrix metalloproteinases in human prostate adenocarcinoma cells PC-3. Cell Communication & Adhesion, Early Online: 1–10, 2013
<http://informahealthcare.com/doi/abs/10.3109/15419061.2013.833193>
7. **Ganguly, K. K.**; Pal, S.; Moulik, S.; Chatterjee, A. Integrin and Metastasis. Journal of Cell Adhesion and Migration. Volume 7, Issue 3, May/June 2013.
<http://www.ncbi.nlm.nih.gov/pubmed/23563505>
8. Pal, S.; **Ganguly, K. K.**; Moulik, S.; Chatterjee, A. Modulation of MMPs by cell surface integrin receptor $\alpha 5\beta 1$. Anti-cancer Agents in Medicinal Chemistry, 2012, 12 (7): 726-732. <http://www.ncbi.nlm.nih.gov/pubmed/22292746>
9. **Ganguly, K. K.**; Sen, T.; Mandal, S.; Biswas, J.; Chatterjee, A. Studies on expression of Focal Adhesion Kinase (FAK) in Human Breast Cancer tissue. Journal of Cancer Therapy, 2012, 3, 7-19. <http://www.scirp.org/journal/PaperInformation.aspx?paperID=17211>

10. **Ganguly, K. K.**; Sen, T.; Pal, S.; Biswas, J., Chatterjee, A. Studies on Focal Adhesion Kinase (FAK) in Human Breast Cancer cell MDA-MB-231. *Advances in Biological Chemistry*, 2012, 2, 29-42.
<http://www.scirp.org/journal/PaperInformation.aspx?paperID=17274>
11. Maity, G.; Choudhury, P.R.; Sen, T.; **Ganguly, K. K.**; Sil, H., Chatterjee, A. Culture of human breast cancer cell line (MDA-MB-231) on fibronectin-coated surface induces pro-matrix metalloproteinase-9 expression and activity. *Tumour Biol.* 2011 Feb; 32(1):129-38.
<http://www.springerlink.com/content/23388t7h4748mj82/?MUD=MP>

c) Paper presentation:

- Participated as delegate in **4th Annual Conference of Molecular Pathology Association of India**, organized by Tata Medical Center, Kolkata, from 14th to 15th February, 2015
- **Oral presentation on ‘Crosstalk between integrins and Trop-2 promotes prostate cancer metastasis’** in **‘8th Annual Postdoctoral Research Symposium’**, Thomas Jefferson University, Philadelphia, USA, 2013.
- **Oral presentation on ‘Crosstalk between integrins and Trop-2 promotes prostate cancer metastasis’** in **‘Research in Progress’**, Thomas Jefferson University, Philadelphia, USA, 2013.
- **Participation and Poster presentation on ‘Studies on Focal Adhesion Kinase (FAK) in Human Breast Cancer’** in “30th Annual Convention organized by “Indian Association for Cancer Research (IACR)”, 2011.
- Participation in Scientific symposium organized by Asia Oceanic Research Organization on Genital Infection & Neoplasia (AOGIN), Hosted by Chittaranjan National Cancer Institute, Kolkata & AOGIN India, 2009

d) h-index-5

2. Smt Lopamudra Choudhury

- Number of paper published in peer-reviewed international journal – 1.

Number of publications listed in International Database

(For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)

- Dasgupta, M., Das, R., Haque, G., Banerji, I., Nandy, S., Mitra, A. K. and **Roy, L.** (2014) Modification in Asphalt Texture by Heavy Metal Tolerant Bacteria Isolated From Industrial Effluent. *Nature Environment and Pollution Technology*. **13**(4):787-790. [ISSN: 0972-6268; NAAS Rating of the Journal (2014) = 4.94; Index Copernicus: 4.47; Scopus H-Index = 2; Scopus SJR = 0.166; Cites per Doc. (2Yr) equivalent to Impact FactorTM = 0.086 as per www.scimagojr.com]

□

Impact factor

Faculty-

Dr. Kirat Kumar Ganguly

Total Impact Factor for 09 publications: 19.816

□

20. Areas of consultancy and income generated: **Nil**

21. Faculty as members in

a) National committees b) International Committees c) Editorial Boards....

Smt Lopamudra Choudhury– Member of The Indian Science Congress Association (National committee).

22. Student projects

a. Percentage of students who have done in-house projects including inter departmental/programme:-

- **100 % of students of 3 rd (H)** are (from 2006 to 2012 year) engaged in laboratory or industrial visit incorporated in their UG course of study. From 2013 it is not part of their UG Syllabus

| Year | Location of the laboratory/or industry |
|-------------|--|
| 2012 | Mother Dairy at Dunkuni |
| 2011 | Metro Dairy at Barasat |
| 2009 | TCMPF LTD, Ambattur, Madhavaram-Milk – Colony, Chennai, and Pasteur laboratory at ooty |
| 2008 | Arvind Pharma at Vizag |
| 2007 | Yaksum brewery at south Sikkim |
| 2006 | Yaksum brewery at south Sikkim |

b. Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/ other agencies: **Not yet**

23. Awards / Recognitions received by **faculty** and ~~students~~:-

1. Dr. Kirat Kumar Ganguly

a. **Received Senior Research Fellowship (SRF) from Defense Research & Development Organization (DRDO), Government of India.**

- b. **Received Senior Research Fellowship (SRF) from Chittaranjan National Cancer Institute from Ministry of Health & Family Welfare- Government of India.**
- c. **Received Post-Doctoral Research Associate ship (NIH, USA) from Thomas Jefferson University, Philadelphia, USA**

2. Lopamudra Choudhury:-Qualified in the GATE Examination (in Life Sciences), 2006

3. Sugata Dutta- Qualified in the GATE Examination (in Life Sciences), 2012

4. Rajdeep Das- Qualified in the GATE Examination (in Life Sciences), 2013

24. List of eminent academicians and scientists / visitors to the department

- i) **Prof. J.J.Ghosh** **visit on 2002**
(Professor, Department of Biochemistry)
- ii) **Dr. Dhrubajyoti Chattopadhyay** **visit on 2005**
(Pro Vice Chancellor academic, CU)
- iii) **Prof. A. B. Banerjee** **visit on 2006**
(Department of Biochemtry, University College of science, kol)
- iv) **Dr.Sandip K.Bandhopadhyay** **visit on 2006**
(Reader Department of Biochemtry IPGME)
- v) **Dr.Arup kumar Mitra** **visit on 2012**
(Associate prof. and ex head Department of Microbiology (UG+PG), St.Xavier's College)
- vi) **Dr.Madhumita Moitra** **visit on 2012**
(Assistant prof.

25. Seminars/ Conferences/Workshops organized & the source of funding

a. National:- Nil

b. International:- Nil

26. Student profile programme/course wise:

| Name of the Course/programme (refer question no. 4) | Applications received | Selected | Enrolled | | Pass percentage |
|--|-----------------------|----------|----------|----|-----------------|
| | | | *M | *F | |
| Microbiology(Hons) UG (Session-2011-2014) | 132 | 40 | 9 | 16 | 100% |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

*M = Male *F = Female

27. Diversity of Students

| Name of the Course | % of students from the same state | % of students from other States | % of students from abroad |
|---|-----------------------------------|---------------------------------|---------------------------|
| Microbiology (H+G) undergraduate course | 100% | Nil | Nil |

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?

| Competitive Examination | No. of successful students (2004 – 2014) |
|--------------------------------|--|
| NET (UGC / CSR) | 7 |
| SET | - |
| Civil Services | - |
| Defence Services | - |
| SSC | 3 |

29. Student progression

| Student progression | Against % enrolled |
|---|---------------------------|
| UG to PG | 95% |
| PG to M.Phil. | 2 to 3% |
| PG to Ph.D. | 50 to 60% |
| Ph.D. to Post-Doctoral | 40 to 45% |
| Employed <ul style="list-style-type: none"> • Campus selection • Other than campus recruitment | Nil 37% |
| Entrepreneurship/Self-employment | 2% |

30. Details of Infrastructural facilities

a. Library :- **Seminar library -70 books(in steel almirah),**

Central library-near about 170 books

b. Internet facilities for Staff & Students:- **yes**

c. Class rooms with ICT facility:- ***LCD projector**

*** Overhead Projector**

d. Laboratories:-

This lab is well equipped with following relevant instruments:

- i) Laminar air flow**
- ii) Micro centrifuge**
- iii) Refrigerator**
- iv) pH meter**
- v) Vortex**
- vi) Colorimeter**
- viii) UV transilluminator**
- ix) BOD shaker cum incubator**
- x) Hot air oven**

- xi) Over Head projector
- xii) LCD projector
- xiii) Autoclave
- xiv) Microscopose (binocular and monocular)
- xv) Room temperature shaker
- xvi) Water bath
- xvii) Deep freezer (-20°C)
- xviii) Air conditioner
- xix) Water and gas line
- xx) Exhaust fan
- xxi) Wooden wall cabinet and wooden student's working table
- xxii) Pressure cooker
- xxiii) Fire extinguisher
- xxiv) Hot plate
- xxv) Electronic weighing machine
- xxvi) Gel apparatus

Microbiology has 2 labs one is divided by 4 chambers and another is in annex building. Both lab is well spaces, airy and can accommodate more than 50 students once at a time.

31. Number of students receiving financial assistance from college, University, government or other agencies: - **0**
32. Details on student enrichment programmes (special lectures / Workshops / seminar) with external experts: -
- i) **2006, 2007, 2008 and 2012** department had arranged a one day seminar cum student's competition that improves students speaking skills.
 - ii) **Prof. A.B Banerjee in 2006**
topic –mode of biochemical action of antibiotics
 - iii) **Dr.Sandip K. Babndhopadhyay**
in 2006 topic- free radicals
 - iv) **2007 attend a seminar (Bengal**

science lecture) on Einstein and Bose a few lessons by Prof.Sushanta Duttagupta organised by West Bengal Council of science and Technology and Department of Science and Technology Gov. of West Bengal, Vanue Presidency College.

v) 2007 a one day seminar cum student competition. Guest speakers our ex students topic vaccine and vaccination and spectroscopy

vi) 2008 Seminar held on account of world AIDs Day sponsored by Rotaract club of Behala. Topic-AIDs and one day seminar cum student's competition

vii) Attend UGC sponsored seminar on present scenario and future prospects of microbiology and plant biotechnology, organised by Botany and Microbiology, Asutosh College, Kolkata in collaboration with Bose Institute, Kolkata, 2011

vii) Attend a seminar on Journey of Microbiology: Evolution ton its Modern Age application Organised by The Department of Microbiology Tara Devi Harakh Chand KanKaria Jain College

ix) 2012- two day seminar cum students competition: Dr.Arup Kumar Mitra topic general talk on microbiology, Dr.Swati Roy Gangopadhayay: - topic:-Dengue Dr.Madhumita Moitra:-topic: medical microbiology

33. Teaching methods adopted to improve student learning:-

- Chalk and talk
- Over head Projector
- Power point presentation
- Students seminar
- Group Discussions
- Home assignments

34. Participation in Institutional Social Responsibility (ISR) and Extension Activities: - Nil

35. SWOC analysis of the department and Future plans:-

Strength:

- One of the oldest UG (Hons+ Pass) laboratory in Kolkata.
- This laboratory is well equipped with all the relevant instruments and can accommodate near about 50 students at one go.
- This lab has all the ultramodern infrastructural facilities including separate AV room.
- Our departmental library has a vast collection of books and journals on different aspects of Microbiology.
- Utmost importance is given towards building the theoretical basis and practical skills of UG students.
- To make students updated about ongoing scientific inventions (related to Microbiology) different college /UGC sponsored seminars are organised.

Weakness:-

- Some of the essential (costly) instruments are shared from other labs.
- Sanctioned posts for more teaching and laboratory attendant will help maintaining overall efficiency in every aspect with rising student numbers.
- Laboratory set up has to be further upgraded if we plan to commence PG programme.

Opportunity:-

- Students getting exposure to modern microbiological techniques and concepts of in different aspects of microbiology.
- Audio visual presentation makes the topic more interesting and communicable.
- Students are given an opportunity for visiting different related industries and research institutions for future career development. The visits expose them to applied field of Microbiology.

Challenges:-

- To bring out the best from each and every student and developing a competitive attitude in them.
- Since Microbiology is a research oriented subject, emphasis is given to develop their

practical skills and strengthen their theoretical concepts for their proper career shaping.

Future Plan

- Provision for starting PG curriculum with further equipped lab and classroom setup
- Provision for giving summer training and different certificate and diploma courses to UG/PG students.
- To run different projects funded by government agencies.
- To arrange workshops
- To start student exchange programmes