

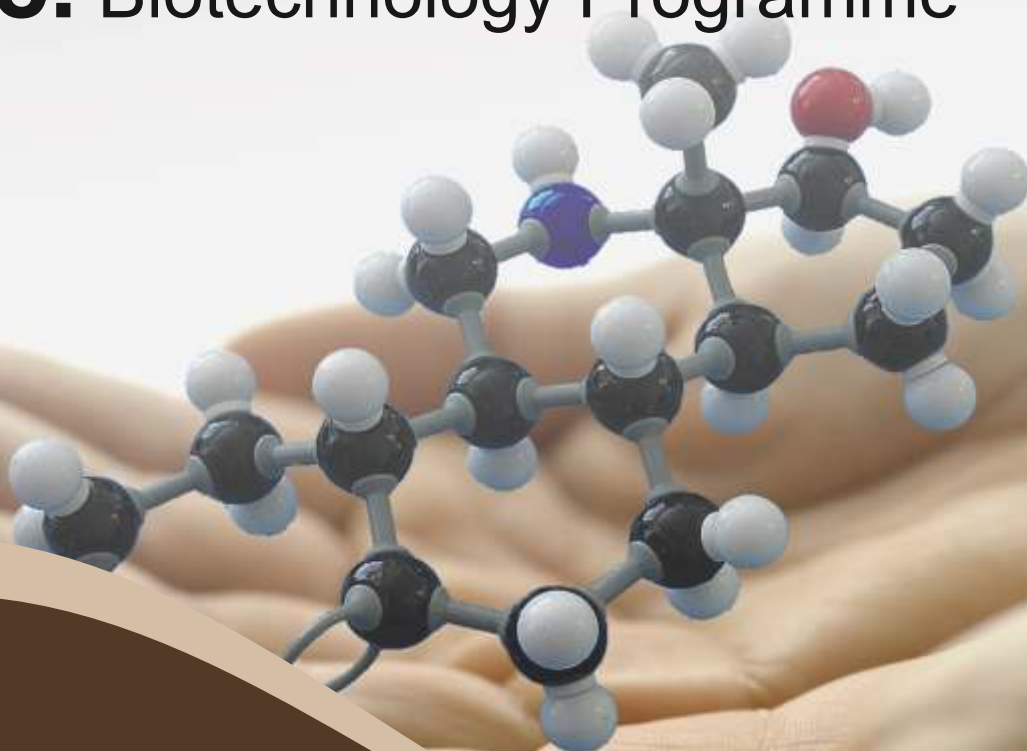
# Combined Entrance Examination

conducted by:

**Jawaharlal Nehru University**

for admission to

## **M.Sc.** Biotechnology Programme



**PROSPECTUS**  
ACADEMIC SESSION  
2014-15



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## **Check List**

- ☛ **PLEASE REFOLD THE APPLICATION FORM ONLY WHERE IT WAS ORIGINALLY FOLDED. DO NOT STAPLE, PIN OR STITCH ANY DOCUMENTS WITH THE APPLICATION FORM. SEND THE BANK DRAFT IN THE ENVELOPE PROVIDED. KEEP IT LOOSE ALONG WITH THE APPLICATION FORM INSIDE THE ENVELOPE.**

Before posting the completed application form please check that:-

- ☛ **You have filled in the Application Form in your own handwriting.**
- ☛ You have noted down your Application Form Number for future correspondence or retained a photocopy of the filled in Application Form;
- ☛ Your Application Form is complete in all respects;
- ☛ You have firmly affixed the recent (not more than two months old) passport size photograph in the Application Form.
- ☛ You have signed the application form in the space marked for signature.
- ☛ **You have passed the qualifying examination in 2012 or thereafter or you are appearing in 2014. In other words, those who have passed the qualifying examination PRIOR to 2012 are NOT eligible to apply;**
- ☛ **You fulfil the eligibility requirements as detailed in the Prospectus. You should, appear in the entrance examination only if you fulfil the eligibility requirements for M.Sc. Biotechnology Programme. Despite this caution, in case you do not meet the minimum eligibility criteria and still appear in the entrance examination, you will do so at your own risk and cost, and if at any stage, it is found that you do not fulfil the minimum eligibility requirements, the admission, if granted to you, shall be cancelled ipso facto.**
- ☛ **Examination Fee:** you have enclosed a Demand Draft drawn in favour of “JAWAHARLAL NEHRU UNIVERSITY” payable at **New Delhi** for the amount indicated below towards the entrance examination fee.

**General Category Candidates**

**including OBC Candidates**

**Rs. 600/-**

**SC/ST/PH Category Candidates**

**(PH includes OH, VH and HH)**

**Rs. 300/-**

**Foreign Nationals**

**US\$ 25.00 or Rs.1550/-**

- ☛ **Application Forms can be submitted only by Registered Post/Speed Post to Section Officer (Admissions), Room No.28, Administrative Block, Jawaharlal Nehru University, New Delhi - 110067. The completed Application Form must reach JNU latest by (i) offline Application Form by 28th March, 2014 and (ii) printed copy of the online Application Form by 2nd April, 2014. JNU will not accept responsibility for any postal delay or irregularity or loss in postal transit.**

**PLEASE DO NOT SEND YOUR APPLICATION FORM THROUGH PRIVATE COURIER SERVICES OR ANY OTHER POSTAL MODE EXCEPT REGISTERED POST/SPEED POST.**

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**PROSPECTUS**

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<b>I. GENERAL</b>
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Biotechnology is a multidisciplinary area on the educational scene and programmes have been developed to meet the growing demand for trained manpower for any meaningful Biotechnology activity in the country. The programmes are designed to expose the students to recent exciting developments in the area of genetic engineering and biotechnology and their exploitation in industry, agriculture and medicine.

Jawaharlal Nehru University will hold a Combined Entrance Examination for admission to 2-Year M.Sc. Programme in Biotechnology on behalf of following participating Universities:

1. University of Allahabad, Allahabad
2. Annamalai University, Tamil Nadu (M.Sc. in Marine Biotechnology)
3. Baba Ghulam Shah Badshah University, Rajouri (M.Sc. in Bioresources Biotechnology)
4. Banaras Hindu University, Varanasi
5. University of Burdwan, Burdwan
6. University of Calicut, Kerala
7. Devi Ahilya Vishwavidyalaya, Indore
8. Goa University, Goa (M.Sc. in Marine Biotechnology)
9. Gulbarga University, Gulbarga
10. Guru Jambheshwar University of Science & Technology, Hisar
11. Guru Nanak Dev University, Amritsar
12. Himachal Pradesh University, Shimla
13. HNB Garhwal University, Garhwal
14. University of Hyderabad, Hyderabad
15. University of Jammu, Jammu
16. Jawaharlal Nehru University, New Delhi
17. Kumaun University, Nainital
18. University of Lucknow, Lucknow
19. Madurai Kamaraj University, Madurai
20. Maharshi Dayanand University, Rohtak (M.Sc. in Medical Biotechnology)
21. M.S. University of Baroda, Vadodara
22. University of Mysore, Mysore
23. University of North Bengal, Siliguri
24. North Eastern Hill University, Shillong
25. Pondicherry University, Pondicherry
26. University of Pune, Pune
27. R.T.M. Nagpur University, Nagpur
28. Sardar Patel University, Anand (M.Sc. in Industrial Biotechnology)
29. Shivaji University, Kolhapur (M.Sc. in Environmental Biotechnology)
30. Tezpur University, Tezpur (M.Sc. in Molecular Biology & Biotechnology)
31. T.M. Bhagalpur University, Bhagalpur
32. Utkal University, Bhubaneswar
33. Veer Bahadur Singh Purvanchal University, Jaunpur
34. Visva-Bharati University, Santiniketan

The Entrance Examination will be held on May 19, 2014 at Centers all over the country (detail of these examination centers is shown under Section XIII of this Prospectus).

Major thrust areas in teaching and research of participating Universities are given below:

<b>1. UNIVERSITY OF ALLAHABAD, ALLAHABAD ( 19 seats ) *</b>
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M.Sc. course in Biotechnology at Allahabad University runs on a semester system comprising of four semesters. Students admitted to the course are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course. In addition to M.Sc. teaching programme, University also offers D. Phil programme in various areas of Biotechnology.

The core faculty members of Centre and from other departments share their expertise to teach the course. The Centre offers courses in Analytical Techniques, Biochemistry, Genetics and Microbiology, Biostatistics and Computer applications in Biotechnology, Biophysical Chemistry, Cell Biology, Molecular Biology, Fermentation Technology, Animal Cell Biotechnology, and Genetic Engineering, Immunology, Plant Biotechnology and two elective paper among Proteomics, Environmental Biotechnology, Nanobiotechnology and Molecular Therapeutics.

The method of teaching includes combination of lectures/practicals by faculty and guest speaker, seminar and journal club presentation. Time to time centre also organizes lecture by eminent academicians/scientist/industrialist. Students are required to undertake research project in IVth Semester in one of the research areas offered by faculties of the Centre.

The Centre is currently pursuing research programme in the following areas:

- Plant Biotechnology
- Molecular Biology
- Biosensor development and bioenergy resources
- Biofuel
- Microbial and Mushroom Biotechnology
- Nanobiotechnology and Gene delivery
- Stem cell Biology
- Molecular Biology of Cyanobacteria
- Protein folding and aggregation
- Metagenomics

The students have the option to work for summer project of 6-8 weeks in National Laboratories & other premier institution at the end of first year. The curriculum is regularly modified and updated time to time. At present the course design is being pursued in light of proposed DBT curriculum & latest development made in the field.

**Fees to be paid at the time of Admission:** Rs.12,500/-(Approx.) excluding Hostel expenses.

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## 2. ANNAMALAI UNIVERSITY, TAMIL NADU (13 seats) \*

Students admitted to the programme are eligible for the award of M.Sc. degree in Marine Biotechnology on successful completion of the course run by the Centre of Advanced Study (CAS) in Marine Biology of this University.

The CAS in Marine Biology is a reputed marine research institute in India, actively engaged for the last 56 years in teaching, research and extension with an ideal location and easy access to different coastal biotopes such as estuary, mangroves, backwaters and nearshore waters. It has made rapid strides in various facets of marine sciences. This centre was started as a field laboratory for the Department of Zoology, Annamalai University in 1957 and was recognized for its outstanding research contribution by the University Grants Commission (UGC) as the Center of Advanced Study in Marine Biology in 1963 and the UGC continued to extend its generous assistance till date through COSIST, SAP and Potential for Excellence in particular area in Marine Biology.

Environmental Information System (ENVIS) and All India Co-ordinated project on coastal biodiversity (East coast of India) are important activities of our Centre supported by the Ministry of Environment and Forest (MoEn & F). This programme got Best ENVIS Centre award among all the Centres of India in 2006. Our Centre has been identified as Centre of Excellence in Marine Biology by Ministry of Earth Sciences (MoES), New Delhi and the Centre is involved as a participating institution in the national and network programmes on Coastal Ocean Monitoring and Prediction System (COMAPS), Harmful Algal Bloom (HAB), benthos, squids etc. The DST – FIST programme recognised the Centre in the years 2000 – 2007. Recently the DST has extended its support through PURSE Programme. In 2013, the Ministry of Human Resource Development (Govt. of India) has identified this centre to set up a centre of excellence for training and research in frontier areas of science and technology. The Centre has become a separate faculty as “Faculty of Marine Sciences” from the academic year 2010-2011.

This Centre has all the essential infrastructure facilities, such as library, marine reference museum, marine aquarium, experimental aquaculture ponds, instrumentation centre, seawater circulation system and seaworthy boats as well as sophisticated instruments such as MOLDI - TOF -TOF, CHNS analyzer, Microbial Identification System, GC-MS, ICP etc. The Centre has also provided with high speed internet facility.

### **Academic programme:**

As drafted by Department of Biotechnology, Government of India, curriculum for M.Sc. Marine Biotechnology Programme is being implemented.

The Syllabus includes Biochemistry, Analytical techniques & GLP, Cell & Developmental Biology, Molecular Biology, Marine Resources, Biodiversity & Oceanography, Immunology, Marine Microbiology, Genetic Engineering, Genetics, Genomics

& Proteomics, Aquaculture Technology & Marine Pharmacology, Bioprocess Technology, Marine Environmental Biotechnology, Endocrinology & Reproduction of Marine Organisms and IPR & Biosafety.

Independent research topics are undertaken by students as a part of their curriculum on the following thrust areas: shrimp immunology, characterization of novel plasmid from marine microbes, marine pharmacology, regulatory mechanism of endocrine system, functional physiology of halophilic microbes and molecular taxonomy of marine organisms.

Our Centre has 59 faculties specialized in Marine Biology, Biotechnology, Microbiology, Oceanography, Pollution & Toxicology, Aquaculture, Physics, Mathematics, Engineering, Bioinformatics and Computer Science. Besides, this course is also supported by other departments such as Biochemistry, Earth Sciences, Statistics, Pharmaceutical Technology, Chemical Engineering and Microbiology. Special lectures by eminent scientists are arranged regularly.

In addition, our centre is also offering six post-graduate programmes on Marine Biology & Oceanography, Coastal Aquaculture, Marine Microbiology, Marine Food Technology, Marine Pharmacology and five year integrated programme on Ocean Science and Technology.

**Fees to be paid at the time of Admission:** Rs.30,085/- (Approx.)  
Boarding & Lodging at Hostel Rs.40000/- per annum (approx.)

**Contact Address:** Prof. K. Kathiresan,  
Director & Dean,  
Centre of Advanced Study in Marine Biology,  
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E-mail : [casmboffice@gmail.com](mailto:casmboffice@gmail.com)  
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### 3. BABA GHULAM SHAH BADSHAH UNIVERSITY, RAJOURI (J&K) (6 Seats)\*

Baba Ghulam Shah Badshah University came into existence by the Baba Ghulam Shah University Act No. XVI of 2002 of the Jammu and Kashmir legislative Assembly and became functional in the year 2005.

In 2008, the School of Biosciences and Biotechnology started running a 4 semester, full time Master's Programme on Bioresources Biotechnology to generate manpower skilled in various aspects of Biotechnology and Bioresources. The wed-lock between Bioresources and Biotechnology is aimed at equipping students for raising value added products from the Bioresources. The syllabus, besides covering all important aspects of Biotechnology such as Cell and Molecular Biology, Biomolecules and Microbial Physiology and Genetics, Enzymology and Biochemical Techniques, Genetic Engineering, Genomics and Functional Genomics, Bioenergetics and Metabolism, Bioinformatics and Biostatistics, Biology of immune System, Bioprocess Engineering and Technology and Animal and Plant Biotechnology, also has papers on Plant and Animal Bioresources, Characterization, Evaluation and Exchange of Bioresources and Bioresources; Assessment, Threats and Conservation. Faculty in the School is such that all these areas are competently taken care of. Besides the residential faculty, the students are able to interact with eminent workers in the field who visit BGSBU. The students also make trips to important Centers of learning. National Laboratories and Industry. The School has a number of research and extension projects sponsored by DBT, DST, MOEF, GBPIHED, Spice Board and NMPB.

The M.Sc. programme was started in BGSBU from the session 2011 with the Financial support of DBT, Government of India.

**Fees to be paid at the time of Admission:** Rs. 45,600/- per annum (This includes = Rs.28,600/- mess charges; Rs.8500/- room rent; Rs.5500/- miscellaneous; Rs.3000/- security deposit, refundable) Tuition fee for 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> semester 26000/-, Rs 27,000/-, Rs 28,000/- and Rs 29,000 respectively.

**Contact Address:** Prof. B. A. Wafai  
Director/Coordinator,  
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E-mail : [bawafai@yahoo.co.in](mailto:bawafai@yahoo.co.in)

#### 4. BANARAS HINDU UNIVERSITY, VARANASI ( 27 seats ) \*

M.Sc. (Biotechnology) programme at Banaras Hindu University runs on a semester system consisting of four semesters. Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

Besides the 6 core faculty members of the School the Faculty members from the Institute of Medical Sciences and Institute of Technology also share their expertise in teaching this multidisciplinary course. The School offers courses in Microbiology, Cell Biology, Biochemistry & Biophysics, Genetics and Molecular Biology, Biology of the Immune System, Enzymology and Enzyme Technology, Genetic Engineering, Plant Biotechnology, Animal Cell Culture, Environmental Biotechnology, Bioprocess Engineering and Technology, Bioinformatics & Biostatistics, and the evaluation is based on credit system. In addition to the above, students are allowed to choose any two minor electives of their interest offered by other departments of the Faculty of Science. A research project forms an integral part of the M.Sc. curriculum. The student undertakes a project work in one of the research areas of the School and present seminars related to their project topics in the third and fourth semesters.

The School is currently pursuing research programmes in the following areas:

- ✓ Plant Tissue Culture and Plant Biotechnology
- ✓ Cellular and Molecular Immunology and Tumor Immunology
- ✓ Molecular Microbiology with emphasis on Plant growth promotion
- ✓ Functional genomics in bacteria
- ✓ Environmental Biotechnology
- ✓ Enzymology and Enzyme Technology

The School has received financial support under UGC-SAP (DRS-Phase-II), DST-PURSE and DST-FIST Programme and is part of the DBT supported interdisciplinary School of Life Sciences.

**Fees to be paid at the time of Admission:** Rs. 7500/- (Approx.)

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Faculty of Science,  
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#### 5. UNIVERSITY OF BURDWAN, GOLAPBAG, BURDWAN ( 12 seats ) \*

The University of Burdwan was started in 1960 with its sprawling Campus in the estate of the erstwhile Maharaja of Burdwan. The M.Sc Course in Biotechnology was initiated in 2003 with the financial support of an NRI who donated two endowment chairs in the memory of his parents. The Department of Biotechnology, Govt. of India recognized and supported the programme from 2006.

Apart from two core faculties and three contractual whole time faculty, faculty members of different disciplines like Microbiology, Physics, Botany, Zoology, MBA and law come from different Departments of this University to share their knowledge with the students. Renowned Scientists and Professors have visited this Department and shared their teaching as well as research experience and expertise.

Since 2003 nine batches of students passed out with remarkable results not only in M. Sc but in different National level Examinations like UGC and CSIR NET, GATE, BET, ICMR, TIFR, and GRE-TOWFELL etc. The students of this Department are doing research in different reputed National Institutes as well as abroad. Some of them are doing Post-Doctoral work in USA and Germany. Students of this Department have been absorbed in various Biotech Companies like Biocon, Sigma-Aldrich and in Chembiotech.

The M. Sc syllabus is reframed and revised following DBT guidelines and credit system is going to be introduced from the next batch. Two elective papers of different disciplines like Microbial Biotechnology, Plant Biotechnology, Animal Biotechnology and Computational Biology have been included in the syllabus. In-house project is done by students on different disciplines. Industrial Tour/Research Institute visit are arranged every year.

A Research project sanctioned on "Arctic microflora" from DST is going on. The research programme is also going on in the following areas:

- 1) Plant Tissue Culture



- 2) Microbiology
- 3) Molecular Biology
- 4) Computational Biology

Adequate Hostel facility is also available for both male and female students in the University campus.

**Fees to be paid at the time of Admission:** Rs. 21,600/- (Approx.)

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Golapbag,  
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[Keshrijp@gmail.com](mailto:Keshrijp@gmail.com)

#### 6. UNIVERSITY OF CALICUT, KERALA ( 15 seats ) \*

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

The department is following the DBT model curriculum for the 2 year (4 semester) M.Sc. biotechnology teaching programme. The first and second semester offer theoretical and practical training in Cell & Developmental biology, Biochemistry, Microbiology, Analytical techniques, Molecular biology, IPR & Biosafety, Biostatistics & Bioinformatics, Immunology and Genetics. In the third semester, advanced courses, namely, Bioprocess engineering, Genetic engineering, Genomics & Proteomics, Plant biotechnology and Immunotechnology are offered. The fourth semester includes a Research project in addition to a course on Bioentrepreneurship and Seminar presentations on recent advances in biotechnology.

The department has a weekly journal club in which the students present research articles of topical interest from reputed journals.

In addition to the M.Sc. programme, the department also run M.Phil. and Ph.D. programmes. The thrust areas of research include Cell & Molecular biology, Enzymology and medical technology, Immunotechnology, Recombinant DNA technology, Bioprocess technology and Cancer biology.

The students of this department have consistently given excellent performances in the competitive examinations held for the award of GATE, DBT, UGC / CSIR- NET/JRF and are placed in premium institutions of national and international repute.

The department has close interaction with the Indian Institute of Spices Research, Kozhikode and the Central plantation Crops Research Institute, Kasargode.

**Fees to be paid at the time of Admission:** Rs.7965/- (Developmental fee Rs.5000 + Rs.2965\*) [excluding hostel fee] (\*subject to minor changes yearly)

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E-mail : [headandcoordinator@rediffmail.com](mailto:headandcoordinator@rediffmail.com)  
[manishramakrishnan@rediffmail.com](mailto:manishramakrishnan@rediffmail.com)

#### 7. DEVI AHILYA VISHWAVIDYALAYA, INDORE ( 16 seats ) \*

Students joining the program are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course. The School of Biotechnology offers teaching in Biochemistry, Cell and Development Biology, Molecular Biology, Analytical Techniques, Biostatistics and computer applications in first semester; Immunology, Microbiology and industrial applications, Genetic Engineering, Genetics, Genomics and Proteomics in second semester; Bioprocess Engineering and Technology, Immunotechnology, Stem Cell Biology, IPR and Biosafety, Metabolic engineering, Plant Biotechnology in third semester. To hone the research skills of students, the fourth semester is completely dedicated to research dissertation work.

The project work is evaluated on the basis of presentation and dissertation report. The assessment of the dissertation report is done by one external and one internal examiner. To give technical exposure to the students, the School also encourages the students to undergo summer training in other institutes/Industries for a period of six weeks after completion of second semester. The research areas of the School are Enzyme Technology, Molecular biology, Microbial technology, Plant biotechnology, Bioinformatics, Environmental Biotechnology, role of inflammatory signaling in metabolic disorders, development of potential drug candidates and therapeutic targets with reference to metabolic disorders including diabetes mellitus, obesity, cardio vascular problems, metabolic syndrome and thyroid abnormalities etc.

**Fees to be paid at the time of Admission:** Approx. Rs.17335/- Course fee for one semester without hostel. It includes Rs.3000/- caution money (refundable). If hostel is required, extra Rs.17,000/- [Rs.15000/- fee + Rs.2000/- caution money(refundable)] will have to be paid towards hostel fee for one year. This money does not include meals.

**Contact Address:** Prof. Anil Kumar,  
Head,  
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Khandwa Road Campus,  
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Indore – 452001  
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Fax No. : 0731-2470372  
E-mail : ak\_sbt@yahoo.com

### 8. GOA UNIVERSITY, GOA (20 seats) \*

Students admitted to the programme are eligible for the award of M.Sc degree in Marine Biotechnology on successful completion of the course.

The Department is being funded by the DBT from the time of its inception in 1988 and since 2008 has had the added distinction of being DST-FIST sponsored.

The Courses offered for the M.Sc programme are covered in 4 semesters. While ensuring that all key aspects of General Biotechnology are covered, the outgoing students are, in addition, fully equipped for a career in marine biotechnology. Goa University follows a Choice Based Credit System (CBCS). In the first two semesters emphasis is given on teaching physicochemical aspects of Biology and the marine ecosystem and include Fundamentals of General and Marine Microbiology, Concepts in Biochemistry, Principles of Genetics & Molecular Biology, Principles of Oceanography, Biostatistics, Communication Skills & Scientific Writing, The Marine Ecosystem, Introductory Immunology, Cell & Developmental Biology, Bioinformatics as well as Plant Tissue Culture Technology. In the later two semesters, specialized courses on Bioprocess & Industrial Biotechnology, Recombinant DNA Technology, Animal Cell Culture, Enzymology, Molecular Immunology, Potential Applications of Marine Organisms, Aquaculture Technology & Marine Pharmacology, Applications of Recombinant DNA Technology, Biosafety & IPR, Cellular Biophysics, Genomics and Proteomics as well as the novel course on Scuba Diving are offered.

Separate laboratory courses in each subject enable every student to get hands – on experience with all the instruments. The well equipped laboratories enable the students to take up independent research topics/projects within the Department itself during the third and fourth semesters.

The thrust areas of research in the Department are: Drugs and bioactive compounds from the seas: Extremophilic (thermophilic/hypersaline/deep-sea/anoxic) microorganisms. Study of alginate lyases, agarases, xylanases, lipases, cellulases, amylases and proteases of special characteristics of commercial importance from marine microorganisms. Biodiversity & ecology of hypersaline and sulphate reducing bacteria. Processes for preparation of toxins and other bioactive substances from bacteria and higher marine organisms. Biodegradation of oils spills and tar balls by selectively developed, genetically superior, marine microbial consortia. Establishment of methods to assess risks due to recombinant DNA in marine environment.

Summer training (4-6weeks) is mandatory at the end of the second semester, for which the students are placed in R & D laboratories of nationally recognized Institutes and Industries.

Most of our postgraduate students qualify for the CSIR/UGC fellowship and some of them secure a very high ranking at the GATE examination. This is in addition to their achievement at the DBT and ICMR fellowship examinations.

The placement profile of each outgoing batch has also been excellent, with the students successfully gaining positions in nationally as well as internationally renowned institutions.

The University has close interaction with the National Institute of Oceanography, Goa for both teaching as well as research. Besides, the Department also has active research collaboration with the following National Institutes : ICAR Research Complex (Goa), National Centre for Antarctic and Ocean Research (Goa) and BITS Pilani (K.K.Birla Goa Campus).

**Fees to be paid at the time of admission:** Fees Rs.14000/- approx. (annual) plus Rs. 8000-10000/- for the 1<sup>st</sup> Semester, towards Hostel and Mess charges (these amounts are inclusive of refundable caution deposits totaling Rs. 4500/-).

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Head & Coordinator  
Department of Biotechnology,  
Goa University, Sub Post Office,  
Taleigao Plateau,  
Goa - 403206  
Phone No. : 0832-6519091,6519356  
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Website : <http://www.unigoa.ac.in>

### 9. GULBARGA UNIVERSITY, GULBARGA (7 seats) \*

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course. They can also avail facility of additional diploma in Nanoscience offered in the University.

The Department offers M.Sc. semester courses in cell and developmental Biology, Biochemistry, Microbiology, Analytical Techniques, Immunology, Bioinformatics, Genomics and Proteomics, Molecular Biology and Genetics, General Biotechnology, Animal Biotechnology, Genetic Engineering, Food Biotechnology and Bioprocess Engineering, Molecular Biology and Environmental Biotechnology, IPR and Biosafety, Plant Biotechnology, Proteomics, Genetics, Medical and Nano Biotechnology, Immunotechnology, Microbial Technology, etc. The new revised syllabus proposed by DBT is implemented from the year 2010 – 11 with updated inputs.

Students are also assigned with the project work, review article preparation and seminars. A study tour to undertake hands on training in sophisticated industry/institute is encouraged. The project work on one of the advanced/emerging area is compulsory.

The centre has all essential facilities, such as, Instrumentation laboratory, Cell and tissue culture laboratory, virtual learning resource centre and digital library and video conferencing.

The Department has received various research projects funded by CSIR, DBT, DST, AICTE, MOWR, UGC. The department is collaborated for research activities with national institute/Organization such as SBI, Coimbatore, VSI, Pune; NIMHANS, Bangalore; Biocon, Bangalore; Novozymes, Bangalore.

The M.Sc. students of the department have qualified national exams such as DBT, JRF, CSIR-JRF, NET, GATE, NII, SLET, etc.

The major research areas of the department are

- ✓ Plant tissue culture and Plant molecular biology
- ✓ A biotic and abiotic stress response in plants
- ✓ Animal Biotechnology and pharmaceutical Biotechnology
- ✓ Medical Biotechnology and Phage therapy
- ✓ Industrial Biotechnology and Fermentation technology
- ✓ Pharmacokinetic studies of plant based bioactive molecules and
- ✓ Bioinformatics & protein – interaction

**Fees to be paid at the time of Admission:** Rs. 5870/- + Rs. 3600/- (Hostel fee) = Rs. 9470/- (Approx.)

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[ckelmani@gmail.com](mailto:ckelmani@gmail.com)  
website : <http://www.gulbargauniversity.kar.nic.in>

### 10. GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR (20 seats) \*

Guru Jambheshwar University of Science & Technology (GJUS&T) is an 'A' grade NAAC re-accredited University. Students admitted to the programme in the Department of Bio & Nano Technology of GJUS&T, are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course. The Department is also supported by UGC-SAP-DRS program, World Bank TEQIP-II and DST-FIST program.

This is DBT-sponsored programme offering courses in Introductory Biotechnology, Structure, Function & Metabolism of Biomolecules, Cell Biology, General & Applied Microbiology, Biochemical & Biophysical Techniques, Gene Structure

Function & Regulation, Immunology & Animal Cell Culture, Plant Cell, Tissue and Organ Culture, Fermentation Technology, Genetic Engineering, Enzymology & Enzyme Technology, Molecular Genetics, Application of Biotechnology in food, Introduction to Bioinformatics, Agricultural Biotechnology & IPR, Application of Environmental Biotechnology, Medical Biotechnology. The students have to undergo a three to four weeks of In-Plant/Summer Training in various institutes/industries during summer vacations in the first year. A 14 to 16 weeks of Investigation Problem during the 4th semester forms an integral part of the program. The courses offered are innovative in several respects with major thrust being different research areas pertinent to Plant Biotechnology & Food Biotechnology, Microbial Biotechnology, Environmental Microbiology and Nano Science & Technology. Credit based system of Examination based on international pattern has been introduced from the Academic Session 2006-07.

The Department has a well established Bioinformatics Facility (BIF) for the promotion of biology teaching through Bioinformatics (BTBI) under BTIS net program of DBT assistance & partly funded by DST-FIST program.

**Fees to be paid at the time of Admission:** Rs.19210/-(Approx.)

**Contact Address:** Dr. Neeraj Dilbaghi,  
Professor & Chairperson  
Dept. of Bio & Nano Technology,  
Bio & Nano Technology Centre,  
Guru Jambheshwar University of Science & Technology,  
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E-mail : [ndnano@gmail.com](mailto:ndnano@gmail.com)  
Website : [www.gjust.ac.in](http://www.gjust.ac.in).

#### 11. GURU NANAK DEV UNIVERSITY, AMRITSAR ( 13 seats ) \*

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

Students are imparted theoretical and practical training in Biochemistry, Microbiology, Genetics, Immunology, Computer Applications and Biostatistics, Biochemical and Biophysical Techniques in the first semester. During the second, third & fourth semesters, students are trained in specialized areas of Genetic Engineering, Immunobiotechnology, Plant and Animal Tissue Culture, Biochemical Engineering, Fermentation Technology, Microbial Biotechnology, Enzymology Genomics and Functional Genomics and Computer Programming and Bioinformatics. In the fourth semester, students are also required to work on a small independent research project to sharpen their scientific skills and knowledge under the guidance of a faculty member and also graded seminars are conducted. The project work is evaluated by an assessment committee constituted for this purpose. Following a satisfactory report, the student is recommended for the award of M.Sc. degree in Biotechnology.

The Department is well equipped with modern instrumentation and infrastructure to allow and encourage the students to explore the field/problem of their choice in disciplines of Biotechnology.

**Fees to be paid at the time of Admission:** Rs.38300 + 15690 (Hostal Charges)(Approx.)  
**(Subject to change as per University guidelines)**

**Contact Address:** Dr. Prabhjeet Singh,  
Professor & Head  
Department of Biotechnology  
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Amritsar - 143005 (Punjab)  
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Fax No. : 0183-2258272  
E-mail : [biotechgndu@yahoo.com](mailto:biotechgndu@yahoo.com)  
Website : [www.gndu.ac.in](http://www.gndu.ac.in)

#### 12. HIMACHAL PRADESH UNIVERSITY, SHIMLA ( 19 seats ) \*

Students admitted to the programme are eligible for the award of M.Sc. Degree in Biotechnology on successful completion of the course.

The students shall be introduced to the theoretical and practical aspects of the major areas of Biotechnology. The courses offered in the first semester are: Remedial Course 1 Introductory Mathematics (for biology students) or 2 Introductory Biology (for Non-Biology students), Biochemistry, Microbiology, Molecular Biology and Instrumental Methods of Analysis. The students will study Recombinant DNA Technology, Immunology and Immunotechnology, Plant Biotechnology and Animal Technology

and Biochemical Engineering in the second semester. They shall undertake Environmental Microbiology and Biotechnology, Fermentation Technology, Computer and Bioinformatics, Enzyme Technology and a special paper in third semester. For specialization the students will opt any one of the elective paper: Biocatalysts and Biotransformation, Food Technology, Metabolic Engineering and Nano Biotechnology. They are required to undertake a major research project in the area of biotechnology in fourth semester.

**Fees to be paid at the time of Admission:** Rs.1193/-(Approx.)(Excluding hostel charges) but likely to change.

**Contact Address:** Prof. T C Bhalla,,  
Coordinator  
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**13. HNB GARHWAL UNIVERSITY, GARHWAL (13 seats)\***

H.N.B. Garhwal University situated in the heart of Himalaya, offer highly conducive environment for higher education and research. It attracts students from 26 Universities of 14 States (average last 5 yr.). The students have been rated highly motivated, alert, articulate and aware (Resonance, July 2003, IISc Bangalore). The Department identified for excellence in research & teaching by UGC through SAP & COSIST, DST-FIST and DBT-HRD, has emerged as a hub of scientific activity and quality Human Resource Development in Biosciences. Most striking features are its warm ambience, strong student-teacher rapport, student participatory approach and inquiry based interactive learning system (aided with computers) conducive to critical thinking and personality building. The department has well equipped laboratories, Hi-Tech classrooms with modern teaching audiovisual aids Central Instrumentation Facility, Library (six thousand books) and computer labs with broadband internet facility.

The Department offers two-year M.Sc. Biotechnology degree course. In the early semesters, fundamentals of Biochemistry, Molecular Biology, Genetics, Microbiology, Immunology, Genetic Engineering, Enzymology, Legal Biotechnology, Computer programming and Market Management are included in the syllabi. In the late semesters course includes Cell and Tissue Culture, Biochemical & Molecular Endocrinology, Bioinformatics, Environmental Biotechnology and Bioprocess Engineering, elective courses on advance area of biotechnology like Food and Beverage Technology, Pharmaceutical Biotechnology and Drug designing, Immunotechnology, Fermentation Technology, Fish Biotechnology and Biomedical Technology etc are taught. The students also required to undertake dissertation / thesis work.

H.N.B. Garhwal University, following several student interactive brainstorms with renowned Scientists of the country has provided a 3-tiered roadmap strengthening knowledge of basics, up-linking with the industry & rendering it society relevant-through integrative, flexible curricula. The high profile basic and vocational PG courses, adjudged of very high standard and utility' by UGC-NAC, 2003, groom students for academic excellence. The Department has an excellent track record of its students qualifying for national (NET-CSIR / UGC, GATE, ICMR, NII, CCMB, DRDO, IIT, JNCAR, BARC etc.) and international fellowships (USA, UK, Korea, Finland, Germany etc.). Students of this Department have been successful in securing placement in top biotechnology industries viz., Sanofu Aventis, Biocon, Panacea Biotech, Pfizer, Ranbaxy, Sun Pharma, Genetix etc. Major thrust area of research are Animal Behaviour, Endocrinology, Molecular Physiology, Immunodiagnostics, Genetic diversity, phylo-geography, Conservation Biology, Bioinformatics and Microbial biotechnology. Faculty serve on prestigious national & international bodies.

**Fees to be paid at the time of Admission:** Rs.3380/- (Approx.) (excluding hostel etc.)

**Contact Address:** Prof. N Singh,  
Professor & Head  
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HNB Garhwal University,  
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Website : [www,hnbgu.ac.in](http://www,hnbgu.ac.in)

**14. UNIVERSITY OF HYDERABAD, HYDERABAD (25 seats) \***

University of Hyderabad, a premier institute, recognized by the Government of India, stood first in the 2010 Scopus ranking amongst the Universities in India. Department of Biotechnology and Bioinformatics, School of Life Sciences, University of Hyderabad offers the "M.Sc. Biotechnology Programme" and awards M.Sc., degree in Biotechnology to the students after their



successful completion of the course. University started implementing the revised course curriculum suggested by the DBT from the academic year 2009-2010. The department offers elective courses on Protein Engineering and Protein Folding, Molecular Therapeutics, Neurogenetics, Stem Cell Biology, Evolutionary Genetics, Vaccines, Computational Biology, Industrial and Food Biotechnology. University strictly follows academic calendar and evaluation is based on credit earned by the students.

The department has thirteen permanent faculty members. The teaching activities of the department are performed actively by participation of faculty members from the School of Life Sciences, Mathematics and Computer Information Sciences, Chemistry and Physics. The department has strong collaboration with Centre for DNA Finger Printing and Diagnostics research and teaching programs viz. M.Sc. in Biotechnology and M.Tech. in Bioinformatics.

The research area of the Department is focused on "Molecular Therapeutics for Infectious and Neurodegenerative Diseases". The present research activities of the faculty including Integrated Ph.D. in Biotechnology and PhD in Biotechnology are primarily centered on understanding molecular mechanism of folding and function of proteins, protein crystallography, the ribosome structure and function, functional characterization of Topoisomerase in HIV infection and ageing, molecular and cellular changes in cerebral ischemia (stroke), cerebral malaria and glioma progression, behavioral neuroscience, molecular epidemiology and path genomics, vaccines, computational and functional genomics, gene regulatory networks and chaperones in genome stability, molecular virology, and chromatin remodeling. Research activities using animal, plant, micro organisms as models, specially focuses on development of molecular therapeutics and Nano particle based drug delivery systems for HIV, cancer and neurodegenerative diseases; Tissues engineering using stem cells; characterization of proteinase inhibitors for use in agriculture and human therapeutics. These activities provide excellent academic programs that facilitate innovative teaching and provide research orientation to the students of M.Sc. Biotechnology. Research laboratories of M.Sc. are well equipped and the students have access to various research laboratories and facilities of School of Life Sciences like proteomics, genomics and bioinformatics infrastructure facility. Such an exposure allows the students to secure good number of JRF fellowships and placements.

**Fees to be paid at the time of Admission:** Rs.8080/-plus Hostel fee as admissible.

**Contact Address:** Prof. P Prakash Babu,  
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Department of Biotechnology & Bioinformatics  
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University of Hyderabad,  
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Website : [www.uohyd.ernet.in](http://www.uohyd.ernet.in).

**15. UNIVERSITY OF JAMMU, JAMMU ( 07 seats ) \***

The Department of Biotechnology was established in the year 1999 and is funded by the Department of Biotechnology (DBT), Govt. of India, New Delhi. During 2008, the nomenclature of the department was changed to School of Biotechnology.

The School is DST-FIST and UGC-SAP supported. The faculty has attracted extramural funding from National and International funding agencies. About 200 students have graduated from the school and 95% have cleared National tests like NET-JRF (CSIR/UGC)BET-JRF (DBT) and NET-JRF (ICMR) and GATE. The students have been placed in prestigious research institutes across the globe for pursuing Ph.D. and Post-doctoral studies. The school has established Memoranda of Understanding with prestigious institutes and Universities from India and abroad for fostering collaborative research and exchange of students and scientists. The Bioinformatics centre supported by the DBT. Govt. of India is fully functional in the school. The School also conducts short term courses workshops in Bioinformatics for University and college teachers and research scholars.

The school is housed in a state of art building. Four M.Sc. laboratories and the central facility laboratory of the school are fully equipped to conduct experiment prescribed in the syllabi. The school also houses six research laboratories wherein all the necessary facilities including sophisticated instruments RT-PCR, HPLC have been placed. Purchase of few more sophisticated instruments is under process. The School follows DBT and UGC National syllabi. This year, four elective courses and a new course on Molecular Virology have been introduced. During the 4<sup>th</sup> semester of M.Sc Biotechnology programme the students have to conduct original Research and submit a dissertation to the University which is evaluated by the Board of External and Internal examiners.

The thrust areas of research include

- Genomics
- Metabolomics
- Metagenomics

Cancer Biology  
 Biomolecules from fungi and plants  
 Fermentation and Industrial Biotechnology

**Fees to be paid at the time of Admission:** Rs.15000/- (approx.)

**Contact Address:** Prof. Manoj K Dhar,  
 Director  
 School of Biotechnology,  
 University of Jammu,  
 Jammu-180006  
 Phone No. : 0191-2456534  
 Fax No. : 0191-2456534  
 E-mail : [manojkdhar@rediffmail.com](mailto:manojkdhar@rediffmail.com)  
 Website : [www.jammuuniversity.in](http://www.jammuuniversity.in)

**16. JAWAHARLAL NEHRU UNIVERSITY, NEW DELHI ( 31 seats ) \***

The School of Biotechnology was one of the first six centres established under the aegis of Department of Biotechnology (DBT), Govt. of India for carrying out Postgraduate teaching and research in areas related to Biotechnology. Initially established as a Special Centre for Biotechnology in 1985, it was upgraded to the level of a School in the year 2006.

Over the years the Biotechnology programme at JNU has established itself as a leading academic programme both from the teaching and research point of view. The faculty of the School is internationally recognized for basic and applied aspects of biotechnology research.

The School for Biotechnology emphasizes teaching of Physico-Chemical and quantitative aspects of Biology in the early semesters including Biochemistry, Microbiology, Biophysical Chemistry, Cell Biology, Biomolecules, Immunology, Molecular Biology & Molecular Genetics, Mathematics, Elementary Engineering and Bioprocess Technology. In the later semesters, specialized courses on Downstream processing, Virology, Computational Biology, Molecular Biology of Eukaryotic Systems, Genetic Engineering and its Applications, Animal Cell Technology and Bio-informatics are offered. Students also deliver seminars as part of the course curriculum.

M.Sc. students also participate in major research projects starting in the third semester in one of the following areas:

- Molecular Biology and Genetic Engineering
- Molecular Biology of infectious diseases
- Immunology
- Protein Engineering, Protein Structure, stability and folding
- Biochemical Engineering, Metabolic Engineering and Bioprocess Technology
- Transcription and Human Biology
- Structural Biology and Bioinformatics
- Cell Signalling
- Cancer Biology
- Molecular basis of human viral diseases
- Metagenomics and Environmental Biotechnology
- Biotherapeutics Production
- Molecular Modeling and Cheminformatics

For details about the various programmes, course outline, faculty profile and facilities visit our Website: <http://www.jnu.ac.in/SBT>

**Fees to be paid at the time of Admission:** Rs.5,000/- for General including OBC & Rs.2500/- for SC,ST,PH (Approx.)

**Contact Address:** Prof. Rakesh Bhatnagar,  
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 School of Biotechnology,  
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 New Delhi-110067  
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 E-mail : [dean\\_sbt@mail.jnu.ac.in](mailto:dean_sbt@mail.jnu.ac.in)

**17. KUMAUN UNIVERSITY, NAINITAL ( 23 seats ) \***

The Department of Biotechnology in Kumaun University has been established with the objective to train students in various areas of Biotechnology. This programme is supported by the Department of Biotechnology, Govt. of India and all students admitted receive a stipend of Rs. 3000/- P.M. Student admitted in the 2-year (4 semester) programme are eligible

for the award of M.Sc. degree in Biotechnology on successful completion of the course. Students of this University are offered conceptual courses like Biochemistry, Microbiology & industrial applications, Cell & developmental Biology, Biostatistics & Computer science etc. to develop the basic understanding of the subject during their initial studies and core course like Molecular Biology, Genetics, Analytical Techniques, Immunology & Immunotechnology and Genomics & Functional Genomics during later semesters. Besides that they are taught advanced courses like Genetics Engineering, Bioprocess Engineering, IPR & Biosafety and are offered elective courses like Plant Biotechnology, Environmental Biotechnology, Animal Biotechnology and Molecular virology to select from in the IIIrd Semester.. The course work has been developed the expertise in the area of specialization and to give a more practical and directional approach to the understanding of the subject. The students are required to undertake project/thesis work in their final semester, which starts from IIIrd Semester. Students also deliver seminars as part of the course curriculum.

The M.Sc. students of the department have hundred percent success rate in the competitive examination held for the award of GATE/DBT/ICMR /JNU/SPM/ UGC/ CSIR-NET/JRF and are placed at institution of National and International repute.

The department is running at the Bhimtal campus of the University, 20 kilometers downhill of Nainital. The new infrastructure has specific Plant Biotechnology, Biochemistry, Molecular Biology, Microbiology and Bioinformatics Laboratories etc. other than teaching laboratories. The courses are taught by the faculty of the department as well as by the guest lecturers of various experts of specialized areas. The faculty members are actively working on various Biotechnology related projects funded by DBT, CSIR, UCOST and UGC etc. The department has active interaction for both teaching and research with various institutes and universities of repute like CCMB Hyderabad, NIMHANS Bangalore, NCCS Pune, NIMR New Delhi, DIBER Haldwani, DCFR Bhimtal, IVRI Mukteshwar, PDFMD Mukteshwar, G.B. Pant University, Pantnagar, NDRI Karnal and NBRI Lucknow State council of science and technology Gangtok Sikkim etc.

**Fees to be paid at the time of Admission:** I Semester Rs.16270/-, II Semester Rs.11050/-, III Semester Rs.11220/- & IV Semester Rs.11050/-, Govt. Hostels (Boys & Girls) are available at Rs. 16110/- per year excluding food.

**Contact Address:** Dr. Veena Pande,  
Head & Coordinator  
Department of Biotechnology,  
Joonestate, Kuatal, Bhimtal Campus,  
Kumaun University, Bhimtal,  
Nainital – 263136  
Phone No. : **05942-248185, 248042**  
Fax No. : 05942-248185  
E-mail : veena\_kumaun@yahoo.co.in, veena\_biotech@rediffmail.com

### 18. UNIVERSITY OF LUCKNOW, LUCKNOW ( 13 seats ) \*

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

M.Sc. Biotechnology program is supported by Department of Biotechnology (DBT), Govt. of India and is run in the Department of Biochemistry, Lucknow University. This is a 4-semester course with 8 weeks summer training. The course content, in brief, include: Biomolecules and Biopolymers; Biophysical Chemistry and Techniques; Biostatistics and Computer Applications; Enzymology; laboratory Course I; Molecular Cell Biology; Microbiology and Metabolic Processes; Molecular Biology I; Immunology; Student Seminar; Laboratory Course II; Molecular Biology II; Principles of Genetic Engineering; Microbial Technology and Bioprocess Engineering; Enzyme and Food Technology; Students Seminar; Laboratory Course III; Plant Biotechnology and Tissue Culture; Animal Biotechnology and Cell Culture; Project work; Two months summer training (Entrepreneurship). The method of teaching include the combination of lectures and practical/ demonstration by the faculty and guest speakers, seminars, audio-visual presentation, etc.

The Department of Biochemistry is well recognized all over the country for its standard of teaching and research. The department runs M.Sc., M.Phil, Ph.D. and D.Sc. degree programs. The M.Sc. Students of this department have always excelled in the competitive examinations held for the award of Research fellowships at national level-UGC-CSIR NET, GATE, etc.

The Department is collaborating in research activities with the other departments of the University as well as with national organizations, such as Central Drug Research Institute, Indian Institute of Toxicology Research, National Botanical Research Institute, Central Institute of Medicinal and Aromatic Plants, KG Medical University, Lucknow.

The Department has earned recognition in the form of financial support from Rockefeller Foundation, UNESCO, PL480, UGC under Special Assistance and COSIST, DST-FIST and DST PURSE programs. Department also has Bioinformatics Infrastructure Facility (BIF) of DBT and Centre of Excellence in Bioinformatics from U P Govt.

The major research areas of the department include: (1) Genetic Engineering (2) Metabolic Pathway Engineering (3) Clinical Biochemistry (4) Animal Biotechnology (5) Bioinformatics.

**Fees to be paid at the time of Admission:** Rs.15,000/- per semester + Rs.750/- Enrolment fee (One time). Hostel charges are extra



**Contact Address:** Prof. U N Dwivedi,  
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Website : <http://lkouniv.ac.in>

**19. MADURAI KAMARAJ UNIVERSITY, MADURAI ( 30 seats ) \***

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

The M.Sc., teaching programme is a two-year (4 semesters) course and follows Choice Based Credit System (CBCS) of the University. The CBCS offers both Core and Elective courses in each School. The students have the option to take also the elective courses offered by other Schools in the University. Projects are the integral part of the CBCS and each student works on a research project for one full semester.

The students have the option to work for a summer project in Biotech companies, National Laboratories and other Premier institutions in India for about 6 weeks at the end of first year.

The School of Biotechnology, which runs the M.Sc. Biotechnology programme, has excellent facilities for research in the areas of modern Biotechnology. Moreover, the School has regular ongoing research and developmental projects in thrust areas.

The School has the following National Facilities:

- ✓ National facility for clinical proteomics.
- ✓ Centre for Plant Molecular Biology
- ✓ Centre of Excellence in Bioinformatics
- ✓ High Resolution Graphics
- ✓ VPN NODE of DBT
- ✓ FIST (DST)- DNA sequencing facility and Central Computer Laboratory
- ✓ SAP-UGC – Real Time PCR
- ✓ Macromolecular X-ray diffraction systems

Major research programmes of the School of Biotechnology are:

- ✓ Production of anticancer antibiotics from *Streptomyces*
- ✓ Production of Industrial Enzymes from *Streptomyces*, *Bacillus*, *E.coli* and Fungi
- ✓ Plant Tissue Culture
- ✓ Genetic Engineering of Plants using *Agrobacterium tumefaciens*
- ✓ Transgenic plants for virus, fungal and stress resistance.
- ✓ Stress response in plants
- ✓ Heterologous gene expression in fungi
- ✓ Molecular Biology, Immunology and *Genome Analysis of Mycobacterium leprae and M. tuberculosis*
- ✓ Vaccines
- ✓ Animal Biotechnology
- ✓ Cell Biology
- ✓ Immunochemistry and biodegradation of toxic chemicals
- ✓ Protein crystallography and Structural biology
- ✓ Bioinformatics
- ✓ Comparative genomics of microorganisms
- ✓ Human serum proteomics and tear proteomics
- ✓ Industrial collaborative projects
- ✓ Nanobiotechnology

**Fees to be paid at the time of Admission:** Rs.14000/- (Approx.) (including Hostel fees).

**Contact Address:** Prof. T Anitha Sironmani,  
Head & Chairperson  
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**20. MAHARSHI DAYANAND UNIVERSITY, ROHTAK ( 20 seats ) \***

Maharshi Dayanand University is named after the name of a great visionary and social reformer, Maharshi Dayanand. The University is located at Rohtak in the state of Haryana - about 75 kms from Delhi on Delhi-Hisar National Highway (NH-10).

The University campus, spread over an area of over 665.44 acres, is well laid with state-of-the-art buildings and magnificent road network, and presents a spectacle of harmony in architecture and natural beauty. Educational and research programmes are offered through its 38 teaching departments. There are as many as 10 Teaching Blocks, 20 Hostels, an elegant Vivekananda Library with 6 off-shoots, the majestic Tagore Auditorium equipped with modern gadgetry and amenities, spectacular Students Activities Centre, Campus School, Health Centre, Faculty House, Sports Stadium, Swimming Pool, Multipurpose Gymnasium Hall, Community Centre, Printing Press, Canteens, Shopping Complex and an Administrative Block. There is a very robust Campus Wide Network – an amalgam of cable and Wi-Fi technologies, with 1 Gbps internet connectivity.

#### **Centre for Medical Biotechnology**

Centre for Medical Biotechnology is housed in a centrally air conditioned three storied building with working area of 9630 square meters on three floors. It has well organized laboratories, classrooms, seminar rooms and conference room. The centre has well established Animal Cell Culture Facility and Central Instrumentation Facility.

The Centre is equipped with instruments necessary for advanced research in Biotechnology. Some facilities include: Equipment – Fermentor, Blotting apparatus, Deep freezers, Ice-flaker, IEF Electrophoresis, Gel Documentation system, High-speed Centrifuges, Real-Time PCR, ELISA reader, Nano HPLC, UV-VIS spectrophotometer, Phase contrast Inverted microscope, Aktapurifier etc.

This centre also houses a well established bioinformatics facility supported by DBT, Govt of India having its own high and low end servers to cater the need of Centre. The major area of research in the Centre are Insect Genetic Engineering, Virology, Animal cell culture, Tuberculosis Diagnostics and Antifungal & Antimicrobial compound screening etc.

The M.Sc., teaching programme is a two-year (4 semesters) course and follows Choice Based Credit System (CBCS) of the University formulated by DBT expert committee. The CBCS offers both Core and Elective courses. Projects are the integral part of the CBCS and each student works on a research project for one full semester in one of the following areas. The students also have the option to work for a summer training in Post Graduate Medical College, Rohtak or any other premier institute in India for 8 weeks at the end of first year.

- ✓ Genomics and Proteomics
- ✓ Population genomics
- ✓ Antimicrobial agents
- ✓ Molecular virology
- ✓ Tuberculosis
- ✓ Diagnostics
- ✓ Stem Cell Biology

**Fees to be paid at the time of Admission:** Rs.10,217/-

**Contact Address:** Dr. S. K. Gakhar  
Professor and Director  
Centre for Medical Biotechnology,  
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**21. M. S. UNIVERSITY OF BARODA, VADODARA ( 25 seats ) \***

Students joining the programme in the Department of Microbiology and Biotechnology Centre are eligible for the award of degree in M.Sc. Biotechnology on successful completion of the course. The programme is spread over four semesters covering a total of 100 credits.

The department has strong base in Microbial Technology and the main features of the programme are Genetic Engineering, Molecular Biology, Industrial Microbiology and Immunology. The department has a very good collection of textbooks easily accessible to the students. Besides this, the students also have access to excellent internet facilities.

The basic training is given in Microbiology, Biochemistry, Genetic Engineering, Developmental Biology, Immunology and some aspects of Biochemical Engineering, Biophysics, Biostatistics, Bioinformatics and Environmental Biotechnology. The major research programmes are in the following areas:

- ✓ Plan Microbe Interactions
- ✓ Genome Analysis
- ✓ Proteome Analysis

- ✓ Development of probiotics
- ✓ Enzyme Technology
- ✓ Macrophage- Bacterial interactions
- ✓ Molecular Microbiology
- ✓ Protein osmolyte interactions

Students work on a research project during the course as a part of the practical training. The aim is to provide them sufficient experience and proficiency in the methodology of biological research to enable them to carry out independent research. Projects are assigned, as far as possible, according to the individual interests of students, and are carried out in our own laboratories. After submission of their dissertation, the students undergo a viva-voce, in which they have to defend their work.

Students are also required to give one Seminar during their course and submit a Project Proposal.

The Centre also has the following facilities :

- ✓ Bioinformatics Centre – DIC

**Fees to be paid at the time of Admission:** Boys - 5000/- + Hostel Rs.6000/- (Approx.) Girls - 3800/- + Hostel Rs.6000/- (Approx.) Hostel accommodation will be provided subject to availability.

**Contact Address:** Prof. T. Bagchi,  
Coordinator  
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Website : <http://www.bcmsu.ac.in>, <http://www.msubiotech.ac.in>

## 22. UNIVERSITY OF MYSORE, MYSORE ( 10 seats ) \*

The University of Mysore (UOM) is the sixth oldest university in India. The university is reaccredited for the third time with a score of 3.47 out of 4.00 by NAAC. UOM is recognized by the Ministry of Human Resource and Development/ UGC, Government of India as an Institution of Excellence and awarded Rs.100 crores. Under this programme the university has set up a Centre of Excellence in "Biodiversity, Bioprospecting and Sustainable Development". This centre is equipped with MALDI-GC-LC-MS/MS, NMR, XRD, Confocal microscope, SEM, Fluorescent microscope, Polarizing microscope, Live cell imaging system, DNA sequencer, Multimode plate reader, Flow cytometer, Ultracentrifuge, High speed centrifuge, Fermenters & Bioreactors, Water purification system, Vacuum concentrator, Freeze driers, Ultrafreezers, Biosafety cabinets etc. UGC has recognized this university as University Potential for Excellence (UPE) and granted Rs. 60 crores. DST has recognized this university under Promotion of University Research and Scientific Excellence (PURSE) with a grant of Rs. 9 crores.

M.Sc. Biotechnology is a four-semester (CBCS) programme offered by the Department of Studies in Biotechnology. The course content covers theoretical and practical training in Biophysics and structural biology, Bioanalytical techniques, Bioprocess technology, Molecular genetics, Food & environmental biotechnology, Advanced molecular biology, Gene technology, Biostatistics & Bioinformatics, Molecular biodiversity, Immunotechnology, Cell signaling & communication, Plant biotechnology and Animal biotechnology. The students have to undertake a project work in the fourth semester.

The major thrust areas of research at the department include Plant and microbial biotechnology, Molecular Plant Pathology, Biopesticides, Mycotoxins, Cancer Biology, Biomarkers, Molecular biodiversity and Bioprospecting. The Department is supported by UGC-SAP-DSA, COSIST, DST-FIST, ICAR, DBT-HRD, DBT Indo-German and European Union Programmes. The faculty members are having competitive grants from national and international agencies. The Department has established a Seed Health Center for Asian region with DANIDA support. Good infrastructure has been established at the department for teaching and research..

**Fees to be paid at the time of Admission/Registration:** Rs.16,000/- per year

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Professor & Chairman,  
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### 23. UNIVERSITY OF NORTH BENGAL, SILIGURI ( 07 seats ) \*

Students admitted to the four-semester (two-year) programme (as per DBT, GoI, prescribed syllabus) of the Department of Biotechnology, University of North Bengal, are eligible for the award of M.Sc degree in Biotechnology on successful completion of the course.

Growing with the years, the department has acquired critical expertise in transforming learners of the M.Sc in Biotechnology to future human resources of high quality Science and Technology Institutes of India and abroad. Five salient points of the University's M.Sc program in Biotechnology are: (i) One-to-one teacher-student (teacher student ratio: approx. 1 : 1) interactive and remedial session; (ii) Monitoring and mentoring of individual student to transcend; (iii) exposure to independent hands-on practical connected to a step-up ascent in methods involved to uncover a research problem identified afresh in the respective practical classes; (iv) In-house dissertation projects, beginning from the third semester, as per students' choice, in the fields of biomedical technology, enzyme biotechnology, bioinformatics, agricultural biotechnology, fungal biotechnology, high-throughput biology, phytochemistry, plant biotechnology, animal cell culture, nanobiotechnology, and microbial biotechnology ; and (iv) strong emphasis on learning by doing, holding regular journal club (integral part of the curriculum), presentation of cutting-edge research findings and entrepreneurial projects by students. A Ph.D level course- work and training program in research design has been developed to recruit highly qualified and motivated Ph.D students and post-doctoral associates in genomics-proteomics-metabolomics-resistome research programs supported through various extramural funding by CSIR, DBT, UGC, DST etc. and industrial contributions. The department currently provides strong research ties between NBU-department of Biotechnology and different National and international Research Institutes, and Universities. The steady increase in the quality of publications by the core faculty members of the department is an important index of vibrant intellectual environment. The profile of the sent-out post-graduates pursuing Ph.D as well as post-Ph.D research in internationally recognized centres of higher learning and research , and the quanta of qualifiers in National eligibility tests (NET, GATE, DBT-BET, ICMR) are the main reasons why students qualifying combined entrance examination are attracted to get admitted to M.Sc Biotechnology program of the University of North Bengal.

**Fees to be paid at the time of Admission:** Rs.878/- (Approx.) for first semester

**Contact Address:** Dr. Randhir Chakraborty,  
Coordinator  
Department of Biotechnology,  
University of North Bengal,  
P.O. NBU, Siliguri – 734013  
West Bengal  
Phone No. : 0353-2776354(O), 09434872273 (M)  
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### 24. NORTH EASTERN HILL UNIVERSITY, SHILLONG ( 10 seats ) \*

North-Eastern Hill University was set up by an Act of Parliament and notified on 19<sup>th</sup> July 1973. The objectives of the University, as laid down in the act, are "to disseminate and advance knowledge by providing instructional and research facilities in such branches of learning as it may deem fit; to pay special attention to the improvement of the social and economic conditions and welfare of the people of the hill areas of the North-eastern region, and in particular, the intellectual, academic and cultural advancement".

At the moment, barring a few Centres located at Bijni Complex, almost all department of the University are housed in the buildings on the permanent campus. We now have Internet connectivity through our own VSAT to which all the departments located on the campus are linked. The telecommunication department has set up a fully automated telephone exchange on the campus. In a short span of 35 year. NEHU has matured into an institution with a proven academic excellence of higher learning and research learning and research, social commitment and cultural interest with a clear vision for its future growth. In the year 2006, it was chosen as a 'University with Potential for Excellence' by the University Grants Commission (UGC). It has been able to attract persons of proven academic excellence from almost all parts of the country to serve on its faculty; the present faculty strength is 342. Its student community is drawn not only from different part of the North-East but also from other regions of the country and abroad.

The department of Biotechnology & Bioinformatics at the North Eastern Hill University, Shillong was started in 2005. It has Post Graduate (MSc and PhD) academic programmes. This programme is intended to develop, acquire and maintain modern state-of-the-art teaching, training, research, databases and software related to biologically rich resources of the North eastern region of India, which could ultimately contribute towards socio-economic development of the tribal people of the region. Based on overall academic objectives of the Department and its faculties' potentialities the department was considered for financial support for "M.Sc. Biotechnology" by the Department of Biotechnology, New Delhi which was started with effect from April, 2007.

**Fees to be paid at the time of Admission:** Rs.4500/- (Approx.) with Hostel caution deposit ( Mess fee extra).

**Contact Address:** Prof. Anupam Chatterjee,  
Course Coordinator  
Department of Biotechnology & Bioinformatics,  
North-Eastern Hill University,  
Shillong - 793022  
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**25. PONDICHERY UNIVERSITY, PONDICHERY (23 seats) \***

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

Choice based credit system is followed in Pondicherry University where the students are at liberty to choose the courses of their interest in consultation with the Faculty Advisor. Hard core and soft core courses offered by different departments are available and the students can construct their curriculum depending upon their ambition.

Courses offered during programme include Microbiology, Biochemistry, Cell and Molecular Biology, Molecular Genetics, Applied and Industrial Microbiology, Molecular Plant Pathology, Immunobiology, Plant Biotechnology, Marine Biotechnology, Animal Biotechnology, r-DNA Technology, Immunotechnology, Bioprocess Technology, Bioinformatics and Pharmacokinetics. Besides credit seminar(s), the students are expected to carry out dissertation in the last two semesters. In addition to the above, the students shall undergo a 6 weeks training programme during the summer vacation in any of the reputed National Laboratories/Universities/ Industries in India.

The Department has ten faculty members and equipped with instruments necessary for advanced research in Biotechnology. Some facilities include: Equipment – Bioreactor, Blotting apparatus, Deep freezers, Ice-flaker, TG and IEF Electrophoresis, Gel Documentation system, High - Speed Centrifuges, Real –Time PCR, ELISA reader, Gas Chromatography, HPLC, LCMS, Lypophilizer, UV-VIS spectrophotometer, Phase contrast microscope, Inverted microscope and Flow- cytometer; Facilities – Plant Tissue culture facility, Animal cell culture facility and Biosafety facility.

The Department has received financial support from both National (DBT, DST, UGC, CSIR, AICTE and DAE) and International (Rockefeller Foundation and Danish Government) funding agencies. The Department has also earned recognition for financial support through DST- FIST and UGC-SAP programmes.

Major research programmes of the Department are as follows:

1. Bioactive molecules from microbes and plants.
2. Synthesis and characterization of nanoparticles
3. Crop improvement through genetic engineering and marker assisted breeding
4. Application of probiotics in aquaculture and food processing industries
5. Role of cell adhesion molecules in pathogenesis of Staphylococcus epidermis
6. Protein Engineering
7. Hematopoietic stem cell biology

**Fees to be paid at the time of Admission:** Tuition Fees: Rs. 16,138/-(approx)  
Hostel Fees: Rs. 4900/-(approx) per semester

**Contact Address:** Dr. N. Arumugam  
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**26. UNIVERSITY OF PUNE, PUNE ( 25 seats ) \***

The Department of Biotechnology, University of Pune is a well established Centre for teaching and research in biotechnology and related areas. It started in 1985 along with a few first centres supported by DBT, New Delhi.

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course. There are 100 credits to be completed by a student.



The main thrust areas of the centre are quantitative aspects in Biology. Students are offered core courses in Biological Chemistry (including Biochemical and Biophysical methods), Cell Biology, Computer Programming, Biomathematics, Statistics, Molecular Biology, Genetics, Immunology, Microbiology, Virology and Bioinformatics in the first two semesters. In the later two semesters, more specialized and advanced courses, namely Genetic Engineering, Tissue Culture (Animal & Plant), Stem Cell Technology, Genomics and Proteomics, Structural Biology, Chemical Synthesis and Screening, Plant Biotechnology and Biochemical Engineering are offered. The fourth semester courses also include a seminar course and a research project.

The department has six core faculty members, 4 Faculty members as DST INSPIRE Faculty, DBT Ramalingaswamy Fellow and Bio-care PI and 4 Teaching Associates. In addition, there are 24 Adjunct faculty who contributes to our teaching and research programme. The Department has well established teaching and research laboratories. A number of Ph.D. and Post doctoral students work in various research programmes of the Department which are as follows:

1. Molecular biology of regulation of protein synthesis during anemia, and various cytoplasmic stresses in mammals and in *Leishmania donovani*.
2. Nanotoxicity and regulation of protein synthesis in mammalian cells.
3. Proteomics of parasites and microbes.
4. Mechanism of heavy metal bioremediation at molecular level and Nanobiotechnology involving microbes.
5. Epigenetic studies on micronutrient deficient diabetic subjects from India.
6. Regulation of insulin/insulin like growth factor signaling in mammalian brain by chaperons.
7. Anti-inflammatory and apoptosis promoting activities of brasinosteroides isolated from medicinal plants.
8. Plant-derived nanoparticles and bioremediation.

The department has active interactions and scientific collaborations with the neighbouring Department and National Laboratories. Teachers from other Department and Scientists from NCCS, NCL, NIV, NARI, ARI etc. contribute to our teaching and research program. For further details including syllabus, our website ([www.unipune.ac.in/Department of Biotechnology](http://www.unipune.ac.in/Department%20of%20Biotechnology)) may be visited.

**Fees to be paid at the time of Admission:** Rs.26,000/- (Approx.)

**Contact Address:** Prof. J. K. Pal,  
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**27. RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR (10 seats) \***

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

The course is envisaged to cater to the needs of the Food industries, Pharmaceutical industries, Molecular biology and also environmentally friendly applications of the Biotechnology. The M.Sc. Biotechnology Course related to the "Fermentation Biotechnology, Environmental/ Industrial Biotechnology, Plant & Health Molecular Biology" is based on semester pattern. In first three semester, there are Four Theory papers & Two practical each. The course offers theoretical and practical training in cell Biology, Genetics, Enzymology, Macromolecules and Biophysical Techniques, Microbial Physiology, Industrial Biotechnology & Biostatistics, Molecular Biology, Immunology & Bioinformatics, Animal & Plant Biotechnology, Genetic Engineering. In the fourth semester beside Four theory papers, one practical & seminar the students undertake Experimental/ Field based Project work on a related research topic of Biotechnology, which is compulsory. The work must be original and is expected to be critical analysis of a problem of contemporary significance.

Students are encouraged to visit some research institutes of national and international repute during the two-year course. Every student has to give at least one seminar in every semester and submit a written summary of the same. Every student undergoes the summer/winter training programme in Biotechnology Industry/R&D Institutions for atleast 2-4 weeks during the vacations. Monthly fellowship (studentship) of Rs. 3,000/- per month is being awarded to each student enrolled under the DBT-RGBC support programme.

Rajiv Gandhi Biotechnology Centre has active interaction of both teaching & research with various departments in the university and a number of neighbouring research institutes and is well equipped with modern instrumentations and infrastructure to allow and encourage the students to explore the horizons of knowledge in varied aspects of Biotechnology.

**Fees to be paid at the time of Admission:**

Annual Fee (including Exam fee):	First year (i.e. Sem-I & Sem-II) -	Rs.19,395/- (Approx.)
	Second year (i.e. Sem - III & Sem-IV) -	Rs.21,469/- (Approx.)

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Course Coordinator  
Rajiv Gandhi Biotechnology Centre,  
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E-mail : [director.rgbc@gmail.com](mailto:director.rgbc@gmail.com)  
Website : [www.nagpuruniversity.org.in](http://www.nagpuruniversity.org.in)

**28. SARDAR PATEL UNIVERSITY, GUJARAT ( 13 seats ) \***

Students admitted to the programme are eligible for the award of M.Sc degree in Industrial Biotechnology on successful completion of the course. Under the Choice based Credit System (CBCS) introduced in the department from 2011, there are 100 credits to be completed.

The Bhanuben Ratilal Doshi (B R Doshi) school of Biosciences is a renowned state university situated close to the milk city Anand. The department has nurtured and developed a strong emphasis on basic and applied research in diverse areas of Biology. The department is nationally and internationally recognized for its contributions in research the areas of Environmental Biotechnology, Plant morphogenesis, Microbial technology, Biodiversity, plant Biotechnology, herbal medicines and human diseases.

The department also runs five other post-graduate courses such as Biochemistry, Botany, Biotechnology, Microbiology and Zoology. The DBT sponsored Industrial Biotechnology programme is spread over four semesters. The first three semesters comprise of three core and one elective paper and two practical courses in each semester. In the fourth semester, along with two core papers, a dissertation or research project is to be carried out by the students. The dissertation is an independent, credit based research work carried out under the supervision of a faculty member as a partial requirement for the M.Sc degree. The core as well as elective papers offered include: Molecular Biology, Bioinstrumentation, Cell Biology and genetics, Biostatistics, Transport processes and down stream processing, Bioprocess and biochemical Engineering, Genetic Engineering and Bioinformatics, Microbial technology, Enzymology, Immunology, Environmental Biotechnology and Plant and animal Biotechnology.

These courses are being taught by experienced faculties of the department as well renowned regular visiting faculties. The department at present has 15 permanent faculty members and two ad-hoc faculties. All the faculty members are actively engaged in research supported by various governmental and industrial sponsors such as UGC, DST, CSIR, DBT, ICAR, MoE, DRDO, GSBTM, NDDB, BASF etc. In addition to these individual projects the department has received grants under UGC-SAP, UGC-COSIST and DST-FIST.

**Fees to be paid at the time of Admission:** Rs. 6500/- (Approx.) per semester + Hostel fee extra

**Contact Address:** Dr. R.B. Subramanian,  
Coordinator,  
BRD School of Biosciences,  
Sardar Patel University,  
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E-mail : [subramanianrb@gmail.com](mailto:subramanianrb@gmail.com)

**29. SHIVAJI UNIVERSITY, KOLHAPUR (10 seats) \***

Shivaji University, Kolhapur named after the great Maratha Warrior Chhatrapati Shivaji, was established in 1962 at Kolhapur (Maharashtra). Students admitted to the programme are eligible for the award of M.Sc. Environmental Biotechnology on successful completion of the four-semester course under CBCS introduced in the University from 2013. This course was started in 2006 at Department of Biochemistry which includes training in-Cell Biology, Microbiology and Virology, Proteins (Structure and Functions), Biomolecules, Biostatistics and Bioinformatics with Computer Orientation, Enzymology, Molecular Biology, Bioenergetics, Tools and Techniques in Bioscience, Genetic Engineering, Immunochemistry, Fermentation Technology, along with Basics of Ecology, Ecotoxicology and Ecochemistry, Environmental Pollution and Control, Environmental Biotechnology, Biodiversity, IPR, Biosafety & Bioethics etc.

Student has to complete 96 credits (Theory courses: 64 credits and Practical/Project/ Seminar/ Scientific Paper Writing: 32 credits). Students also have a choice to take some of the courses from other departments of the University.

This centre is equipped with UV- Vis, IR, GC, HPLC, HPTLC, Gel Documentation system, PCR, RTPCR, DGGE, TGGE and DNA Sequencer etc. along with all basic facility required in Plant tissue culture, Enzymology and Bioinformatics.

The research thrust areas of the Department relies in Biotransformation, Microbial and Phytoremediation (Textile Dyes and xenobiotics), Bioinformatics, Molecular Modelling/ Computational Biochemistry, Ayurvedic drugs and its biochemical action, Biodiversity, identification, DNA barcoding and Bioprospecting of Medicinal plants, Molecular community dynamics in rhizosphere of textile dye contaminated ecosystems and genetically modified microorganisms for dye degradation.

Department also offers M. Sc. and Ph.D. courses in the Biochemistry and one year Post Graduate Diploma in Bioinformatics. Biochemistry department has been recognized by Department of Science and Technology through its FIST, University Grants Commission through SAP-DSR-I programme and is also actively involved in DBT-IPLS and DST-PURSE programmes sanctioned to Shivaji University, Kolhapur. This Department is recognized for its textile dye degradation studies in the International community.

**Fees to be paid at the time of Admission:** Rs. 36,475/-

**Contact Address:** Prof. S. P. Govindwar,  
Prof. and Head  
Department of Biochemistry,  
Shivaji University,,  
Vidyanagar, Kolhapur - 416004  
Maharashtra  
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Fax No. : 0231 - 2692333  
E-mail : spg\_biochem@unishivaji.ac.in

### 30. TEZPUR UNIVERSITY, TEZPUR (ASSAM) ( 20 seats ) \*

The Department of Molecular Biology and Biotechnology (MBBT) of Tezpur University was instituted on the 24<sup>th</sup> of July 1997. The Department started with a two-year M.Sc. degree in Molecular Biology and Biotechnology, and currently also offers Ph.D. in Molecular Biology and Biotechnology as well as a 5 year Integrated M.Sc. in Biosciences and Bioinformatics. Over the years the Department has substantial contribution to the development of trained manpower in different fields of biotechnology and molecular biology, which has placed the Department among the leading centers of learning and research in the country.

The current faculty strength of the Department is eighteen, with different areas of specialization. The Department laboratories are equipped with some advanced instrumentation facilities and are also supplemented by the advanced instrumentation available at the Tezpur University Sophisticated Equipment Facilities Service. The Department follows the M.Sc. General Biotechnology syllabus, recommended by DBT, Govt. of India since July 2011 and the students also have an option to choose elective subjects like Computational Biology, Microbial Technology, Animal Biotechnology, Plant Biotechnology, Environmental Biotechnology, Evolutionary Genetics.

The final semester students participate in Major Research projects in any one of the ongoing research areas of the Department that include Molecular Toxinology, Molecular Immunology and Immunogenetics, Evolutionary Genetics, Genetics of Diseases (Cancer, Malaria, Eye, Diabetes etc.) Plant Biotechnology, Venom Biochemistry, Nanobiotechnology, Bioinformatics and Computational biology, Environmental Biotechnology, Food Microbiology, Industrial Microbiology, Enzyme Technology, Bioremediation, MEOR, Protein Chemistry, Drug Discovery from natural products, Inflammatory gene expression and regulation.

The University has also introduced the Choice Based Credit Transfer (CBCT) that enables the students to enroll for credit course each semester, of their choice, thereby enabling them to opt for the multidisciplinary courses. The additional details on the faculty profiles, research interests and infrastructural facilities can be viewed at our website: <http://www.tezu.ernet.in/dmbbt/index.htm>

**Fees to be paid at the time of Admission:** Rs.17819/- (Approx) (including medical insurance, Hostel admission and caution deposits) The amount is subject to revision.

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Head & Coordinator  
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Napaam, Tezpur University,  
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### 31. T.M. BHAGALPUR UNIVERSITY, BHAGALPUR ( 25 seats ) \*

Named after Tilka Manjhi - a great martyr of India's freedom movement, T. M. Bhagalpur University was established in 1960. Students admitted to the programme are eligible for the award of M.Sc. Degree in Biotechnology on successful completion of the course.



M.Sc. Biotechnology program was started at T.M. Bhagalpur University in 2001 to offer high quality, education, training and research in Biotechnology at the Master level. Hough Post Graduate Department of Biotechnology (PGDBT) is in its beginning stage more within a short period of it has gained appreciation from NAAC, UGC and DBT, New Delhi. It is two years course consisting of four semester, i.e., Sem-I to Sem-IV each of six months. The PG DBT offers courses in Cell Biology & Biomolecules, Microbial Physiology & Genetics, Biophysical Chemistry, Computer Applications, Biostatistics & Mathematics, Molecular Biology & Genetic Engineering, Immunology, Macromolecules & Basic Enzymology, Animal and Plant Biotechnology, Fermentation and Bioprocess technology and Elective paper- Biochemistry (Metabolic Pathways\ Clinical Biochemistry). A research project forms integral part of the M.Sc. (IV<sup>th</sup> Semester) curriculum.

The department is currently pursuing research programe in the following areas:

1. Plant Tissue culture & Plant Biotechnology.
2. Plant Pathology & Microbiology.
3. Cellular and Molecular Immunology.
4. Seri-technology.
5. Biofertilizers.
6. Characterization of Nano-particles.
7. Clinical Microbiology.
8. Toxicology & Medicinal Plants.
9. Biochemistry / Enzymology.

This department is getting financial assistance from UGC and DBT, New Delhi. This department is well recognized all over the country for its standard of teaching and research. The M.Sc. students of this department have always excelled in the competitive examination held for the award of Research Fellowships at national level DBT-JRF, UGC-CSIR-JRF/NET, IISC-JRF, ICMR-JRF, GATE, etc. The average placement of the passing students per year is over 70%. Presently some of the students are also doing research work abroad.

**Fees to be paid at the time of Admissiionn:** Rs.16500/- (Semester-I) Rs.13500/- (per Semester afterwards i.e. Semester - II, III & IV)

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Coordinator,  
P.G. Department of Biotechnology,  
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**32. UTKAL UNIVERSITY, BHUBANESWAR ( 10 seats ) \***

Utkal University established in the year 1943, is the seventeenth oldest University in India. Its present campus at Vani Vihar, Bhubaneswar is located on a sprawling 399.9 acre area in the heart of Bhubaneswar, the Capital city of Odisha.

P.G. Department of Biotechnology is established in the year 2002 and the M.Sc. Biotechnology Teaching Programme is supported by the Department of Biotechnology, Govt. of India, New Delhi.

Students admitted to the Teaching programme of the Department are eligible for the award of M.Sc. Degree in Biotechnology on successful completion of the Course.

M.Sc. Biotechnology programme is a four semesters (two years) teaching programme offered by the Post Graduate Department of Biotechnology, Utkal University. The Course curriculum has been designed to impart theoretical and practical training to the students in Cell Biology and Genetics, Biochemistry, Microbial Physiology and Genetics, Biotechniques, Molecular Biology, Enzyme and Bioprocess Technology, Immunology, Biostatistics and Bioinformatics in the first two Semesters.

In 3<sup>rd</sup> Semester more specialized and advanced courses i.e., Genetic Engineering, Plant Biotechnology, Animal Biotechnology, Environmental Biotechnology, IPR & Biosafety are offered. In 4<sup>th</sup> Semester the students shall have to undertake an extensive project work for a period of six months with an aim to have laboratory exposure and proficiency in the methodology of Biological Research, Student Seminar is also an integral part of the course curriculum, Utkal University has introduced semester choice based credit system adopting UGC guidelines from this academic session. Under this system students have flexibility to take some courses/credit hours in 3<sup>rd</sup>/4<sup>th</sup> semester in the related or cross disciplinary areas from related P.G. Department of the University.

The Department has active interaction in teaching and research with various Departments of the University and a number of National Institutes in and around Bhubaneswar. It is well equipped and has established research laboratories with fundings

from the DBT, Govt. of India, DST, Govt. of India, ICMR, DAE (BARC), UGC and State-DST etc. The Department is also under DST-PURSE Programme. The M.Sc. Biotechnology course is taught by the core faculties of the Department as well as associate visiting faculties. Students of this Department have always excelled in various competitive examinations held for the award of Research fellowships at National level i.e., UGC-CSIR NET, GATE, DBT-JRF, ICMR-JRF and carrying out research in reputed Institutes and Universities in India. The Department is currently pursuing research activities in the following areas.

- Molecular Mechanism of oxidative stress, programmed cell death, and cell signaling by exogenous and endogenous factors, radiation injury and their linkage to several health ailments.
- Epigenetic regulation of cellular redox status, pathogenesis and Non specific immune response.
- Mechanistic study of redox regulation in economically important animals.

Infrastructure facilities: Student Laboratory, Research Laboratory, Library, Computers, Internet facility and equipments such as UV-Visible spectrophotometer, Spectrofluorimeter, Chemi Doc. System, Orbital Shaker incubator, High speed refrigerated centrifuge, Micro plate (ELISA) Reader, Gel Electrophoresis, Blotting System, Gel Doc. System, Thermal Cycler (PCR), -80°C, -50°C & -20°C Deep freezers, Hybridization oven, Sonicator, Research Microscopes, Fermenter, Millipore water purification system, Cold room, Power backup system, Oxygraph, Microscope with digital camera attachment and Microtome for histochemical studies are available in this Department. Besides the above facilities, Department has developed cell culture facilities and also has procured sophisticated equipments like Real Time PCR, High Performance Liquid Chromatography (HPLC) system and Fluorescence Microscope.

For detail information please visit University/Department website: ([www.utkaluniversity.ac.in](http://www.utkaluniversity.ac.in) and [www.utkalbiotech.ac.in](http://www.utkalbiotech.ac.in))

**Fees to be paid at time of Admission:** Admission fees Rs.4,119.00 (Rupees four thousand one hundred nineteen only) for Male Candidates and Rs.3,951.00 (Rupees three thousand nine hundred fifty one only) for Female Candidates, Course fees Rs.8,500.00 (Rupees eight thousand five hundred only) per Semester.

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E-mail : [j.dandapat.nou@gmail.com](mailto:j.dandapat.nou@gmail.com), [j.dandapat@rediffmail.com](mailto:j.dandapat@rediffmail.com)

### 33. VEER BAHADUR SINGH PURVANCHAL UNIVERSITY, JAUNPUR ( 20 seats ) \*

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the prescribed course. The syllabus is frequently revised to incorporate latest concepts and recently developed technologies. It includes, First Semester: Cell Biology, Genetics & Molecular Biology, Biochemistry and Biophysics; Second Semester: General Microbiology, R-DNA Technology, Immunology & Immunotechnology and Biostatistics & Bioinformatics; Third Semester: Industrial Microbiology, Plant & Animal Tissue Culture, Applied Molecular Biology and Environmental Biotechnology; Fourth Semester: Biochemical Engineering & Fermentation Technology and Medical Genetics, plus a 4-month project work in a university department, biotech company or reputed national research institution (BARC, BHU, Bose institute, CCMB, CIMAP, CDRI, IIVR, IITR, JNU etc.). Emphasis is given on Applied Molecular Biology and Microbial Technology. The entire system of evaluation is external and centrally controlled. During the project work the students bear their personal expenses and other charges, if any, as levied by the host institutions/ company. The Department actively interacts with research institutions/ universities for the purpose of research and training. There are seven core faculty members in the Department. Most of the faculty members are having research projects funded from DST, DBT, UGC, CSIR and CST. The research areas include molecular genetics, microbial biodegradation, mushroom biotechnology, biodiversity etc. The Department has received one-time equipment grant from the DBT and is also receiving development grants from UGC/ State Govt. in different plans.

**Fees to be paid at the time of Admission:** Rs.25000/- (approx.) (Per Semester) and Rs. 2000/- as caution money, Hostel Charges extra

**Contact Address:** Prof. M. P. Singh,  
Head  
Department of Biotechnology  
Veer Bahadur Singh Purvanchal University,  
Jaunpur - 222001, UP  
Phone No. : 05452-252538  
Fax No. : 05452-252211  
E-mail : [mpsingh.16@gmail.com](mailto:mpsingh.16@gmail.com)

### 34. VISVA-BHARATI UNIVERSITY, SANTINIKETAN ( 19 SEATS ) \*

Visva-Bharati at Santiniketan founded by Gurudev Rabindranath Tagore is a Central University of National importance since 1951. M.Sc. Biotechnology program was started at this University in the year 1997 and from 2004 it is supported

by the Department of Biotechnology, Government of India. Students admitted to the program are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course in 4 semesters (2 years duration). The first three semesters have four theory and one laboratory course (Practical) in each semester with a provision of summer training for 4 to 6 weeks in any Institute/University of choice in India at the end of the 2<sup>nd</sup> semester. In the 4<sup>th</sup> semester besides two theory courses and one Practical course, each student carry out a project work under the supervision of a faculty of the Department spread over the 3<sup>rd</sup> and 4<sup>th</sup> semesters which is evaluated at the end of the 4<sup>th</sup> semester followed by a grand Viva-voce. As per the syllabus revised in 2012 the entire course carry 96 credits.

The courses of the first two semesters are designed with the objective to strengthen the basic concepts of Life science and Biotechniques. These courses are Cell Biology, Microbiology, Biomolecules, Immunology, Molecular Biology, Computer applications, Biostatistics and Instrumentation. The 3<sup>rd</sup> and 4<sup>th</sup> semester offer courses in the applied aspects such as Animal biotechnology, Plant biotechnology, Genetic engineering, Bioprocess engineering, Bioinformatics, Bioethics and IPR, Environmental Biotechnology and Bioentrepreneurship. Students are required to present recent advances in Biotechnology in weekly seminars which is also evaluated besides several extra-mural lectures/guest lectures are organised inviting scientists from other Institutions/Universities.

The Department has computer and internet facility in the class room for ready availability of students and a library besides a well established Central library. The Department has Seven permanent faculty for the M.Sc. Biotechnology course. In addition guest faculties are invited for interaction with students for better understanding of interdisciplinary fields like Bioinformatics, Bioprocess engineering and Entrepreneurship. The faculty members are actively working on various Biotechnology related projects supported by DBT, DST, UGC, CSIR and MOEF, and also collaboration with National and International Institutes/Universities. The Department has also received financial support through DST-FIST program. The priority areas of research work of the Department are the following:

1. Biofertilizers
2. Biodiversity and bioprospecting of Cyanobacteria and algae
3. Molecular Virology
4. Immunology
5. Bioactive compounds from plants
6. Cloning and characterization of carbohydrate splitting enzymes
7. Ageing mediated damage to cellular macromolecules and their modulation
8. Host-pathogen interaction
9. Structure and function of plant resistance genes
10. Drought and submergence stress in rice

Further details about the University, faculty profiles and their academic interests can be viewed at our website: <http://www.visva-bharati.ac.in>.

**Fees to be paid at the time of Admission:** Rs.6340/-(approx.).

**Contact Address:** Prof. S. P. Adhikary,  
Head & Coordinator (DBT-HRD programme)  
Department of Biotechnology  
Visva Bharati (a Central University),  
Santiniketan - 731235 Dist. Birbhum  
West Bengal  
Phone No. : 03463 - 261101  
Fax No. : 03463-261101  
E-mail : [adhikarysp@visva-bharati.ac.in](mailto:adhikarysp@visva-bharati.ac.in), [adhikarysp@gmail.com](mailto:adhikarysp@gmail.com)

\* Number of seats is subject to revision by the participating Universities.

## II. ELIGIBILITY

Bachelor's degree under 10+2+3 pattern of education in Physical, Biological, Agricultural, Veterinary and Fishery Sciences, Pharmacy, Engineering/Technology, 4-years B.Sc. (Physician Assistant Course); OR Medicine (MBBS) OR B.D.S. with at least 55% marks.

**Only those candidates who have passed the qualifying examinations in 2012 or thereafter including those who are appearing in 2014 are eligible to apply. In other words, those who have passed the qualifying examination PRIOR to 2012, are NOT eligible to apply.**

**IMPORTANT NOTES: Before applying, please ensure that you fulfil the eligibility requirements as prescribed above. Also please note that permission to appear in the entrance examination is subject to your fulfilling the minimum eligibility requirements prescribed above. You may, therefore, appear in the entrance examination only if you fulfil the eligibility requirements for M.Sc. Biotechnology Programme. Despite this caution, in case you do not meet the minimum eligibility criteria and still appear in the entrance examination, you will do so at your own risk and cost, and if at any stage, it is found that you do not fulfil the minimum eligibility requirements, the admission, if granted to you, shall be cancelled ipso facto.**

### III. ELIGIBILITY OF CANDIDATES WHO ARE DUE TO APPEAR IN THE QUALIFYING EXAMINATION

The candidates who are due to appear in the respective qualifying examination prescribed as eligibility for admission shall also be considered for appearing in the entrance examination. Such of the candidates will be allowed to appear in the entrance examination **at their own risk and on the clear stipulation that in the event of their selection, they will be entitled to admission only if they secure the minimum prescribed percentage of marks in their qualifying degree examination** and that they will be required to submit all the documents including final mark-sheet of the qualifying examination (indicating the final and overall percentage of marks) before the deadline for admission fixed by the concerned participating University.

### IV. SCHOLARSHIPS

Students selected for admission to M.Sc. Biotechnology Programme of the participating Universities will be eligible to receive scholarship at the rate of Rs.3000/- p.m.

**Note:**The scholarship of Rs. 3000/- p.m. for students joining M.Sc. Biotechnology programme at the School of Biotechnology of JNU would be awarded to all the students during first semester. In the subsequent semesters, the scholarship will be extended only in respect of those students who secure minimum CGPA of 6.00 in the end-semester examinations.

### V. RESERVATION/CONCESSION

- a) **Reservation:** 15%, 7% and 3% of seats shall be reserved for Scheduled Caste (SC), Scheduled Tribe (ST) and Physically Challenged (Handicapped) (PH) candidates respectively. All the SC/ST and PH candidates who have passed the qualifying examination are eligible to apply irrespective of their percentage of marks in the qualifying examination. **Only those SC/ST/PH candidates who have passed the qualifying examinations in 2012 or thereafter (including those who are appearing in 2014) are eligible to apply. In other words, those who have passed the qualifying examination PRIOR TO 2012 are NOT eligible to apply. OBC reservation, wherever applicable, will be implemented as per the policy of each participating University.**
- b) **Concession for Kashmiri Migrants:** 10% marks will be added to the overall marks scored by a Kashmiri migrant candidate in the Entrance Examination. After adding 10% marks, in case he/she is covered in the cut-off point in the merit list, he/she will be offered admission strictly in accordance with his/her inter-se merit alongwith other candidates subject to his/her meeting the minimum prescribed eligibility requirements and also subject to his/her producing valid registration documents issued by the notified authorities certifying the candidate's Kashmiri migrant status.

### VI. GUIDELINES/COURSE OUTLINES FOR ENTRANCE EXAMINATION

The question paper for the Entrance Examination will be of three hours duration and divided into two parts:

**Part-A** will have multiple choice type questions at the level of 10+2 in the subjects: **Physics, Chemistry, Mathematics and Biology. The Candidates will be required to attempt 60 questions** : Total marks for Part A will be (60 questions x 1 mark each) of 60 marks. There will be negative marking and for each wrong answer, ½ (half) mark will be deducted.

**Part-B** will also have multiple-choice questions of Bachelor's level requiring thinking and analysis. **There will be questions from Physics, Mathematics, Biology (e.g., Botany, Zoology, Biochemistry, Microbiology, Genetics and Molecular Biology) and Chemistry.** The candidates will be required to attempt 60 questions. Total marks for Part B will be 60 questions x3 marks each = 180 marks. There will be negative marking and for each wrong answer one mark will be deducted.

### VII. PREVIOUS YEARS' QUESTION PAPERS

For the reference of intending candidates, a set of question papers pertaining to the last three years are available on JNU website [www.jnu.ac.in](http://www.jnu.ac.in).

## VIII. SELECTION PROCEDURE

The selection will depend strictly on the basis of inter-se merit of the candidate in the Entrance Examination vis-a-vis preferences for joining the Universities indicated by the candidate. **In case a candidate has not indicated his/her choice for joining a particular University, his/her name will not be considered for that University.**

**The Selection procedure will be as follows:**

- 1) After the merit list is drawn more than double the number of candidates than the total intake only will be informed of their merit rank in the entrance examination. The candidates will also be informed about the total number of seats in each participating University. The candidates will be asked to exercise their options for joining the Universities in the proforma (which will be sent by JNU). The candidates will be asked to send to JNU a Bank Draft of Rs.5,000/- (Rs.2,500/- in the case of SC, ST, PH candidates) **as initial security deposit** giving their willingness to be considered for admission to the participating Universities in accordance with their options for joining the universities vis-à-vis their inter-se merit in the Entrance Examination. **ALL CANDIDATES ARE ADVISED TO CHECK THE RESULT ON THE WEB SITE OF THE UNIVERSITY ([www.jnu.ac.in](http://www.jnu.ac.in)) IN THE SECOND WEEK OF JUNE.**
- 2) The candidates who do not exercise their options for joining any of the participating universities will not be considered for admission to that university/universities.
- 3) After allotment of seats, the JNU will send intimation to the candidates about their allotment of the university and also to the concerned participating university to which the candidate has been selected. Please note that once allotment of University is made on the basis of inter se merit vis-à-vis options, other options of the Universities given by the candidate shall stand frozen. **CANDIDATES ARE ADVISED TO CHECK THE ALLOTMENT OF UNIVERSITY ON THE WEB SITE OF THE UNIVERSITY ([www.jnu.ac.in](http://www.jnu.ac.in)) IN THE FIRST/SECOND WEEK OF JULY.**
- 4) The participating university will then inform the candidate about the complete admission procedure and schedule of their university as well as the amount of fee etc. to be deposited by the candidate. The initial security deposit already sent by the candidate through demand draft to JNU will be sent to the concerned University for refund after first semester.
- 5) In case the candidate is offered admission in accordance with his/her options for joining the universities vis-à-vis his/her inter-se merit, but subsequently in case he/she either does not join the concerned university or withdraws during the first semester then in that event, the initial deposit of Rs. 5,000/- or Rs.2,500/- in the case of SC,ST , PH categories as the case may be, will stand forfeited.
- 6) The initial security deposit of Rs.5000/-, (Rs.2,500/- in the case of SC/ST, PH category candidates) will be refunded in full to those of the candidates who are not offered admission to any of the participating university.
- 7) **Candidates may note that request for transfer from one university to another will not be entertained under any circumstances. Therefore, candidates are advised not to make any request in this regard.**
- 8) Only those candidates who will be asked to exercise their option, the list/letter of these candidates will be available on JNU website ([www.jnu.ac.in](http://www.jnu.ac.in)) although intimation to this effect is also sent to the candidates on their e-mail account. However, the candidates are advised to find out through their own sources whether their names appear in the list and thereby make arrangement for sending their final option together with initial security deposit by the stipulated date. **The University will not issue any paper intimation to the candidates. Candidates are advised to regularly check JNU website for updates.**
- 9) **PLEASE NOTE THAT ONLY ONE MERIT LIST WILL BE RELEASED AND THERE WILL BE NO SECOND LIST UNDER ANY CIRCUMSTANCES.**

## IX. ADMIT CARD FOR ENTRANCE EXAMINATION

The candidates may download their Admit Card from the University's website: [www.jnu.ac.in](http://www.jnu.ac.in) around 10<sup>th</sup> May 2014 and take the Admit Card to the Examination Centre with a copy of latest passport size photograph.

**Before taking the entrance examination, please ensure that you fulfil the eligibility requirements as prescribed by the University. Also please note that permission to appear in the entrance examination is subject to your fulfilling the minimum eligibility requirements prescribed for admission as notified in the Prospectus. You may, therefore, appear in the entrance examination only if you fulfil the eligibility requirements as prescribed for M.Sc. Biotechnology Programme under Section-II of this prospectus. Despite this caution, in case you do not meet the minimum eligibility criteria and appear in the entrance examination, you will do so at your own risk and cost, and if at any stage, it is found that you do not fulfil the minimum eligibility requirements, the admission, if granted to you, shall be cancelled ipso facto.**

Those candidates who have applied and fulfil the prescribed eligibility conditions but somehow are able to download the Admit Card are advised to contact either the JNU Representative (who will be available at the Examination Centre

at least a day in advance) or the Presiding Officer/Principal of the Centre to sort out the problems. **It may be noted that only those candidates will be allowed to appear in the entrance examination whose names appear in the roll-list available with the examination centre. The University will assume no responsibility whatsoever in case the candidate fails to report on the due date and time for appearing in the entrance examination.**

## X. TIME -TABLE FOR ADMISSION

1.	Start of Online Application process	from 10.00 a.m. on 7th February, 2014
2.	Issue of offline Application Forms (by Post)	7th February, 2014
3.	Last date for issue of offline Application Forms (by Post)	11th March, 2014
4.	Closing of online Application Process	till 5.00 p.m. on 26th March, 2014
5.	Last date of submission of completed Application Form to reach JNU	
	i) Offline Application Forms	28th March, 2014
	ii) Printed copy of online Application Form	2nd April, 2014
6.	Date and time of Entrance Examination	May 19, 2014 (9.00 A.M. to 12.00 Noon)
7.	Results of Entrance Examination	
	i. Merit list of candidates to exercise their option for Universities	2nd/3rd week of June, 2014
	ii. Final result of allotted Universities	last week of June/1st week of July, 2014
8.	For admission/result queries, visit our website	<a href="http://www.jnu.ac.in">www.jnu.ac.in</a>

**Although the University will inform the candidates falling under consideration zone about their merit in CEEB on their e-mail account, it is the responsibility of the candidate to see the result on University website. The list/letter of these candidates will also be available on JNU website ([www.jnu.ac.in](http://www.jnu.ac.in)). The University will not issue any paper intimation to the candidates. Candidates are advised to regularly check JNU website for updates.**

## XI. HOSTEL FACILITIES

The outstation candidates admitted to the programme of study of the participating Universities will be considered for hostel accommodation as per rules of the concerned University subject to availability of hostel accommodation. Students may please note that grant of admission in a University would not ensure automatic allotment of hostel accommodation and that the same will be offered subject to its availability.

## XII. CERTIFICATES AND OTHER DOCUMENTS REQUIRED AT THE TIME ADMISSION

- (a) Two copies of the Matriculation, Higher Secondary Pre-University of Indian School Certificate or Senior School Certificate (10+2) or an equivalent examination certificate, showing the age/date of birth of the candidate duly attested by the Principal of the College/School last attended or a Gazetted Officer;
- (b) A Character Certificate from the Head of the Institution last attended;
- (c) Two attested copies of the statement of marks obtained by the candidate in Senior School, Bachelor's Degree/ Master's Degree examination etc; or their equivalent examination;
- (d) Two attested copies of the Bachelor's Degree and/Master's Degree;
- (e) SC/ST/OBC Certificate, if belonging to SC/ST/OBC category
- (f) A Medical Certificate for PH Candidates certifying nature & percentage of disability issued by the competent medical authority.
- (g) Migration Certificate (in original) from the Head of the Institution/University last attended.

**Important: The candidates are also required to produce all originals of the above certificates/documents for verification at the time of registration/admission. In the absence of any of the original certificates/documents, registration/admission shall not be allowed.**

### XIII. INSTRUCTIONS FOR COMPLETING THE APPLICATION FORM

**Notes:**

- a) Please read the Check List given in the inside front cover of the brochure before filling-up the Application Form.
- b) Please fill the form in your own handwriting.
- c) Please note down your Application Form Number for future correspondence or retain a photocopy of the filled in Application Form.
- d) The Application Form is to be filled in by the candidate **IN BLACK INK ONLY** giving complete information using capital letters as far as possible. Please read carefully the instructions given hereunder before filling up the form. Refer to the sample of a filled-in Application Form given in the prospectus. Note especially the right method to darken the bubbles as shown in the Sample Application Form.
- e) First, write in black ink (using capital letters) the required information in the boxes (wherever provided). Then darken the appropriate bubble corresponding to the letter/numeral underneath each box. What you write in these boxes is only for your guidance and verification that you are darkening the bubble corresponding to the correct letter/numeral.
- f) If you wish to change a marking, completely cover the darkened bubble with white fluid, and then darken the appropriate bubble.
- g) Please note that your name, your parent's/guardian's name, and your date of birth should exactly be the same as given in your 10th class or first Board/Pre-University examination certificate. Any deviation, whenever discovered, may lead to cancellation of your candidature.

1. **Name of the Candidate:** Write your name in capital letters as given in your 10th class certificate or your first Board/Pre-University Examination. Write a only one letter in each box. Leave one, **and only one**, blank box between consecutive words of your name. Darken the appropriate bubble underneath each letter of the name. If your name has several initials, leave one bubble blank after each of them.
2. **Date of Birth :** Darken the bubbles to indicate date of birth exactly same as given in your High School or your first Board Examination in terms of day, month and year. Use numeral 01 to 31 for date, use numerals 01 to 12 for month and use last two digits for the year of birth.
3. **Gender:** Darken the appropriate bubble.
4. **Nationality:** Darken the appropriate bubble. In case you are a Foreign National, please indicate the country to which you belong in the space provided.
5. **Category:** Darken the bubble corresponding to your category/categories as given below. **Your request for change of category subsequent to your submission of Application Form will not be accepted.**

Category	Code
General	G E N
Scheduled Caste	S C
Scheduled Tribe	S T
Other Backward Class ( Only Non Creamy Layer) as per Central list	O B C

- 5(a). If you belong to Minority Community, darken the bubble, otherwise leave it blank.
6. **PH Category:** In case you are a candidate with a minimum of 40% disability, darken the bubble corresponding to your Physical Handicapped category as given below. Otherwise leave it blank.
 

Hearing Handicapped	:	HH
Orthopadeically Handicapped	:	OH
Visually Handicapped	:	VH
7. In case you are Kashmiri Migrant, darken the bubble, otherwise leave it blank.
8. **State of Domicile:** Mention the code of the state to which you belong (refer to the codes given below). Darken the bubble corresponding to the appropriate numeral in each column.:

State/Union Territory	Code	State/Union Territory	Code
Andaman & Nicobar	0 1	Bihar	0 5
Assam	0 2	Chandigrah	0 6
Andhra Pradesh	0 3	Chattisgarh	0 7
Arunachal Pradesh	0 4	Delhi	0 8

State/Union Territory	Code	State/Union Territory	Code
Daman & Diu	0 9	Mizoram	2 3
Goa	1 0	Nagaland	2 4
Gujarat	1 1	Orissa	2 5
Haryana	1 2	Pondicherry	2 6
Himachal Pradesh	1 3	Punjab	2 7
Jammu & Kashmir	1 4	Rajasthan	2 8
Jharkhand	1 5	Sikkim	2 9
Karnataka	1 6	Tamil Nadu	3 0
Kerala	1 7	Tripura	3 1
Lakshadweep	1 8	Uttar Pradesh	3 2
Madhya Pradesh	1 9	Uttarakhand	3 3
Maharashtra	2 0	West Bengal	3 4
Manipur	2 1	Any other place(in India)	3 5
Meghalaya	2 2	Foreign Countries	3 6

9. **Programme of Study:** Darken the appropriate bubble corresponding to the programme of study for which you will be taking the Entrance Examination (**Darken only one bubble**).

10. **LEAVE IT BLANK.**

11. Darken the bubbles corresponding to the appropriate numerals to indicate year of passing or appearing in the qualifying examination (i.e. examination on the basis of which you are seeking admission).

12. **Entrance Examination Centre:** Darken the bubbles corresponding to the appropriate numerals to indicate the city where you would take the entrance examination. A list of cities where JNU entrance examination is to be held is given below. **No change will be permitted and no correspondence in this context will be entertained.** In case it is not possible to allot the Centre of your choice, the University reserves the right to allot you alternative centre.

Name of the Centre	Centre Code	Name of the Centre	Centre Code
1. Agartala	1001	29. Kolkata	1029
2. Ahmedabad	1002	30. Lucknow	1030
3. Aizawl	1003	31. Mumbai	1031
4. Allahabad	1004	32. Madurai	1032
5. Amritsar	1005	33. Nagpur	1033
6. Bangalore	1006	34. Noida	1034
7. Bareilly	1007	35. Pant Nagar	1035
8. Bhubaneshwar	1008	36. Patna	1036
9. Calicut	1009	37. Pondicherry	1037
10. Chandigarh	1010	38. Pune	1038
11. Chennai	1011	39. Raipur	1039
12. Coimbatore	1012	40. Ranchi	1040
13. Dehradun	1013	41. Sambalpur.	1041
14. Delhi	1014	42. Shillong	1042
15. Dimapur	1015	43. Shimla	1043
16. Gangtok	1016	44. Silchar	1044
17. Gwalior	1017	45. Siliguri	1045
18. Guwahati	1018	46. Srinagar	1046
19. Goa	1019	47. Thiruvananthapuram	1047
20. Gorakhpur	1020	48. Udaipur	1048
21. Hyderabad	1021	49. Varanasi	1049
22. Secundrabad	1022	50. Vijayawada	1050
23. Imphal	1023	51. Visakhapatnam	1051
24. Indore	1024	<b>(Overseas Centre)</b>	
25. Itanagar	1025	52. Kathmandu*	2000
26. Jaipur	1026		
27. Jammu	1027		
28. Katihar	1028		

\* Subject to sufficient number of candidates available.

**Note:**

- The University reserves the right to change/cancel any Centre of Examination within India/abroad without assigning any reason.
- Addresses of the Centres of Examination will be available on our JNU website ([www.jnu.ac.in](http://www.jnu.ac.in)) around 10th May, 2014



13. **Details of Bank Draft enclosed towards Entrance Examination :** Darken the bubbles corresponding to the appropriate numerals to indicate Bank Draft Number, Date of Demand Draft and amount of the demand draft. The entrance examination fee is Rs. 600/- for general category candidates including OBC candidates and Rs. 300/- for the candidates belonging to SC/ST and Physically Challenged (Handicapped) categories. The entrance examination fee for Foreign Nationals is US\$ 25.00 or Rs.1550/-.

You are required to enclose Crossed Bank Draft for the prescribed examination fee. The bank draft should be drawn in favour of **JAWAHARLAL NEHRU UNIVERSITY** payable at **NEW DELHI**.

**You must write your application form no., name, programme and examination centre opted for on the left hand corner on the reverse of the Bank Draft.**

**PLEASE NOTE THAT, IF YOUR APPLICATION IS REJECTED FOR ANY REASON, WHATSOEVER OR YOU ARE NOT ABLE TO TAKE THE ENTRANCE EXAMINATION, THE ENTRANCE EXAMINATION FEE PAID BY YOU SHALL NOT BE REFUNDED.**

**(If the bank draft towards entrance examination fee is not submitted with the application form, your application will be summarily rejected without any intimation to you).**

14. **Please note that Column No. 14. (i.e your name and mailing address ) will be scanned and therefore it should be written very clearly IN BLACK INK ONLY. If you make any mistake, you should cover the whole box with exact size white paper slip and write your name and address on that. Your address must not overflow this box.**
15. **Photograph :** Please write your name and application form number on the backside of a recent good quality colour photograph (taken not earlier than two months) and firmly affix (do not staple) in the box provided. The photograph should be taken preferably with dark coloured clothes in a white background. The approximate size of the photograph should be 3.5 cm. x 4.5 cm. **Do not sign on the photograph and do not get it attested.**
16. **Signature:** Put your usual signature in black ink within the box provided. Your signature must not overflow or touch the border of the box provided. Your signature establishes your identity. Hence, do not merely write your name in capital letters. This may lead to rejection of your application.
17. **Father's/Guardian's Name:** Write your father's/Guardian's name in BLOCK LETTERS exactly as in your 10th class or equivalent Certificate. Write only one letter in each box.
18. **Mother's Name :** Write your Mother's name in BLOCK LETTERS exactly as in your 10th class or equivalent Certificate. Write only one letter in each box.
19. **Mobile Number:** Darken the bubbles corresponding to the appropriate numerals to indicate your mobile number.
20. **Permanent Address :** Write your complete permanent address in CAPITAL LETTERS, including Pin Code.
21. **Academic Record:** While filling up the information relating to the Academic Record, you should strike off the examinations which are not relevant and should indicate the name of the relevant examination i. e. High School, Higher Secondary, Senior School Certificate (10+2), Intermediate or equivalent, B.Sc. (Hons.), B.Sc., B.Tech., B.E. etc. as the case may be. If you are appearing for final year examination you should fill in all the columns except percentage of marks column wherein you should write "APPEARING". **Please do not forget to write subjects studied in qualifying examination in the column provided for verification of your eligibility.**

In case the University/Institution from where you have passed the examination follows letter grading system/CGPA, you are required to indicate the equivalent percentage in the space provided in the application form for the purpose of determining the eligibility.

If you are presently a student of any University, please write the name of that University also indicate the year in which you will pass out the final year examination from this University.

- **Declaration:** The candidate must sign the declaration at the end of the application form.
- **Telephone/Fax No./Email etc:** The candidate is also advised to give his/her telephone/mobile number; Fax/Email, if any, in the appropriate columns at the end of application form.
- **Insert the following documents in the 10" X 7" size envelope supplied with the Application Form and post it to the University by Registered Post/Speed Post.**
  1. Bank Draft (Put the Bank Draft in the 9" X 4" size envelope supplied with the Application Form).
  2. Application Form (Refold the application form where it is originally folded).

**Application Forms can be submitted only by Registered Post/Speed Post to Section Officer (Admissions), Room No.28, Administrative Block, Jawaharlal Nehru University, New Delhi - 110067. The completed Application Form must reach JNU latest by (i) offline Application Form by 28th March, 2014 and (ii) printed copy of the online Application Form by 2nd April, 2014. JNU will not accept responsibility for any postal delay or irregularity or loss in postal transit.**

**PLEASE DO NOT SEND YOUR APPLICATION FORM THROUGH PRIVATE COURIER SERVICE OR ANY OTHER POSTAL MODE EXCEPT REGISTERED POST/SPEED POST**

**Important Notes:**

- If any information furnished by the candidate in the application form is found to be false, his/her admission, if granted on the basis of such information will be cancelled, ipso facto.
- Incomplete application forms will be summarily rejected without any reference to the candidates. The candidates are, therefore, advised to carefully complete all the relevant columns of the application form.
- Application Forms received after the closing date shall not be entertained. However, where marginal delay in submission of completed form occurs due to pressing reasons, or for circumstances beyond the candidate's control, such of the application forms shall be considered on the merit of each individual case with justification given by the candidate alongwith the form in support of his/her claim for its late submission.
- University shall not accept responsibility for any postal delay or non delivery of filled in application forms to the University or non receipt of admit card by the candidate.
- Any dispute with regard to any matter relating to admission shall be subject to the jurisdiction of Delhi Courts only.

17. Father's Name/Guardian's Name (IN BLOCK LETTERS)  
 RAVINDER KUMARI SINGH

18. Mother's Name (IN BLOCK LETTERS)  
 LAKSHMI DEVI

19. MOBILE NUMBER  
 9876212441

20. Permanent Address: VIMAL KUMAR SINGH  
 House No. 011/67, Laxmi Nagar  
 Sarwal Colony, Jammu  
 District: Jammu State: JK  
 Country: India PIN Code: 180006

21. Academic Record : Take into account marks in those subjects which are counted for awarding division.

Examination Passed	Year of Passing and Division	% of Marks CGPA or Grade	Duration of Course (Years)	Name of School/College/ Institution and District in which studied	Name of Board/University	Subject/Papers Offered
High School/Matriculation/ 10th Class	2008	82		KV No.1, Jammu	CBSE	Eng, Hind, Math
Senior School Certificate (11-12) Intermediate or equivalent	2010	60		-do-	-do-	Eng, Bio, Phy, Chem
B.Tech (Hons) B.E./B.Sc./B.Eng./B.Tech./B.E./B.Tec./M.B.E.S. or S.B.E./Any other Graduate Degree/ Aggregate of all years	2013	68	3	Ramjus college	DU	Biotechnology
Masters Degree/ Aggregate of all years						
Any other examination Please specify						

\* Strike off the Name of Examination which is not applicable.

Are you a student of any University at present, if yes, give details:

NO

(Name of the University & Course of Study)

DECLARATION BY THE APPLICANT : I declare that nothing is concealed and the information furnished by me in the Application form is true in all respects and in case any entry or information is found to be false, this shall entail automatic cancellation of my admission besides rendering me liable to such action as the University may deem proper. I hereby undertake that I have carefully gone through the eligibility conditions prescribed in the Prospectus for the programme I am applying for and shall appear in the entrance examination after satisfying myself that I do fulfil the same. If at any stage it is found that I do not fulfil the minimum prescribed eligibility criteria, my admission, if granted, shall stand cancelled and I shall have no right to admission whatsoever.

Vimal Singh  
 Signature of the Applicant

Date: 04/03/14 Telephone No. with STD Code:

Fax No.

Place: Jammu

Mobile No. 9876212441

E-mail: vimalkumarsingh@gmail.com

For 15-23  
Last Date for Admission  
23-March-2014

### Application Form for Combined Entrance Examination for Biotechnology Programmes -2014-15 (CEEb)

Size - 1

Plticks with \* Mark are Mandatory.

1. NAME OF THE CANDIDATE AS IT APPEARS IN THE SCHOOL LEAVING CERTIFICATE (IN CAPITAL LETTERS)

V I M A L K U M A R S I N G H

APPLICATION FORM INCOMPLETE IN ANY RESPECT SHALL NOT BE CONSIDERED

Wrong Method

Correct Method

2. Date of Birth

Day	Month	Year
10	07	93

3. GENDER Male <input checked="" type="radio"/> Female <input type="radio"/>	5. CATEGORY GENERAL <input checked="" type="radio"/> S. C. <input type="radio"/> S. T. <input type="radio"/> OBC (Non-Creamy Layer) <input type="radio"/> 5 (a). Minority Community <input type="radio"/>	6. PH CATEGORY PH <input type="radio"/> OH <input type="radio"/> VH <input type="radio"/> 7. Kashmir Migrant <input type="radio"/>	8. STATE OF DOMICILE 14 <input checked="" type="radio"/> 01 <input type="radio"/> 02 <input type="radio"/> 03 <input type="radio"/> 04 <input type="radio"/> 05 <input type="radio"/> 06 <input type="radio"/> 07 <input type="radio"/> 08 <input type="radio"/> 09 <input type="radio"/>	9. Programme for Study (Tick box only one/submit) M.Sc. Biotechnology (BT) <input checked="" type="radio"/> M.Sc. (Agr) Biotechnology (SAG) <input type="radio"/> M.V. Sc (MVS) <input type="radio"/> M.Tech Biotechnology (MTB) <input type="radio"/>	10. Stream to which applying only for M. Tech Programme Engineering Stream <input type="radio"/> Science Stream <input type="radio"/> Pharma Stream <input type="radio"/>
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13. Details of Bank Draft enclosed towards Entrance Examination Fee.

11. Year in which qualifying exam passed/appearing	12. Entrance Exam Centre Code	DD NUMBER	DATE OF DEMAND DRAFT	AMOUNT
2013	1027	6114377	08 03 14	0600

14. YOUR COMPLETE POSTAL ADDRESS INCLUDING YOUR FULL NAME (WRITE IN CAPITAL LETTERS. USE BAL. POINT PEN WITH BLACK INK)

NAME: VIMAL KUMAR SINGH  
 ADDRESS: H. NO. 011/67,  
 LAXMI NAGAR,  
 SARWAL COLONY,  
 JAMMU (J&K)  
 PIN CODE: 170050

15. PHOTOGRAPH

Application No. \_\_\_\_\_

REPLY AFFIX YOUR COLOUR PHOTOGRAPH OF GOOD QUALITY TAKEN ON OR AFTER JAN. 1, 2014

DO NOT STAPLE (SIZE 3.5 CM X 4.5 CM)

(Do not get the Photograph attached.)

16. SIGNATURE (WITHIN BOX IN BLOCKING HAND, USING BLACK BALL-POINT PEN ONLY)

Vimal Singh

Application No. \_\_\_\_\_

FOLD ALONG THIS LINE

FOLD ALONG THIS LINE

JAWAHARLAL NEHRU UNIVERSITY  
EXAMINATION CENTRES  
FOR ENTRANCE EXAMINATION  
2014-15

