



SCHOOL OF BIOTECHNOLOGY

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 competitive and vibrant Ph.D. programme in basic and applied biotechnology embarks on creating a strong academic research foundation in the following cutting-edge areas of Biotechnology:

- Biochemical Engineering and Metabolic Engineering
- Molecular and Cell Biology
- Cancer Biology
- Molecular Biology of infectious diseases
- Protein Science and Structural Biology
- Chemical Biology and Bioconjugate Chemistry
- Bioinformatics and Systems Biology
- Immunology and Vaccine Development
- Nanobiotechnology and Microfluidics
- Plant Biotechnology
- Environmental Biotechnology & Metagenomics
- Cilia Biology and Optogenetics
- Functional genomics of human diseases
- Synthetic Biology

The School of Biotechnology is well endowed with State of the art facilities for cutting edge research in Biotechnology. Some of the major equipments/facilities in the school are as follows:

- Central Instrumentation Facility
- Recombinant Product Development Facility
- Spectroscopic Facility
- Microcalorimetric Facility
- Microscopic Facility
- Protein production and purification Facility
- Biosafety Level 2 Facility
- Biosafety Level 3 Facility
- Plant Tissue Culture Facility

Central Instruments Facility

The School has a Central Instruments Facility (CIF) equipped with all the basic and advanced equipments/instruments required for modern day research in biotechnology. The facility is open round the clock for both the students and the faculty.

Recombinant Product Development Facility (RPDF)

Under the FIST support from the Department of Science and Technology (DST), the School has created a Recombinant Product Development Facility. The facility includes all necessary up stream and downstream equipments, and quality control and testing equipments required for the recombinant product development.

Spectroscopic facility:

The spectroscopic facility includes a number of highly sensitive UV-Visible spectrophotometers, Fluorescence spectrometers, Circular Dichroism spectrometer with stopped

flow attachment, FT-IR spectrometer and Nano drop Spectrophotometer etc.

Microcalorimetric facility:

This facility includes Microcal differential scanning calorimetric and isothermal titration calorimetric set up for studying bimolecular stability, folding and interactions.

Microscopic facility:

This includes Simple microscopes, Fluorescent microscopes, Laser Scanning Confocal microscope, Phase contrast microscopes.

Protein Production and Purification Facility:

This facility includes refrigerated incubator shakers, Bacterial and Mammalian cell bioreactors with online FTIR analysis, AKTA-Prime, AKTA-Explorer FPLC for protein purification, Shimadzu HPLC.

Other equipments:

Other specialized analytical facilities that are available in various labs and the Central facility include Real Time PCR, ELISA readers, Elispot Reader, Fluorescence Activated Cell Sorter, Bioreactors. Denaturing Gradient Gel Electrophoresis etc. In addition to the above, the University has an Advanced Instrumentation Facility. Details about the facility can be looked at: <http://www.jnu.ac.in/AIRF>

Strong emphasis is placed on the interdisciplinary nature of Biotechnology; Thus, students coming from both the Physical and Biological Sciences streams are welcome.

For more details about the School, visit the JNU website : <http://www.jnu.ac.in/sbt>

Ph.D.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Eligibility
1	School of Biotechnology	Biotechnology – SBTH (904)	<p>M.Sc. in Biotechnology, Biochemical Engineering, Biochemistry, Chemistry, Physics, Mathematics or any branch of Physical or Biological or Engineering Sciences or B.Tech/B.E. (Biotechnology/Bioengineering/Allied Areas)/MBBS with at least 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>M.Sc./B.Tech/B.E./MBBS with 55% marks or equivalent Grade 'B' in UGC 7-point scale (or an equivalent Grade in a point scale wherever Grading system is followed).</p> <p style="text-align: center;">OR</p> <p>Obtained 2 years M.Phil Degree with at least 55% marks of a recognized University/Institution (with dissertation/seminar/viva) or one year M.Phil with 55% marks with additional one year research experience of a recognized University/Institution and one publication and 55% marks or equivalent in M.Sc./B.E/B.Tech./MBBS</p> <p>Relaxation to SC/ST/OBC (Non creamy layer)/Differently abled as per the UGC Regulations 2016</p>