School of Biochemical Engineering

Indian Institute of Technology (BHU)

CELEBRATING CENTENARY

100 years

IIT (BHU) VARANASI

PLACEMENT BROCHURE 2022-2023

ABOUT

The School was established for achieving several benchmarks in teaching and research in the modern field of Biochemical Engineering and Biotechnology.It has kept on modernizing its programs to impart education in upcoming areas of Biochemical Engineering and Biotechnology.

The School presently offers courses leading to IDD, M. Tech. and Ph.D degrees in Biochemical Engineering.The School also offers courses to undergraduate students of the Department of Chemical Engineering, Department of Pharmaceutics, and postgraduate students of School of Materials Science Technology, School of Biomedical Engg, Department of Civil Engg,Department of Food Science Tech, Institute of Agriculture Sciences, and School of Biotechnology, Faculty of Science. In the new undergraduate curriculum, the School has been entrusted to offer a number of institute level courses either independently or jointly with other departments .

The research facilities of the School are utilized not only by other departments of the institute and BHU but also by other teaching institutions and research laboratories .The faculty also guides inter departmental interdisciplinary projects and dissertations.

The School has been functioning in the premise of Dept of Chemical Engineering since its inception. However, the school now has a new building, three-storied, which includes all teaching and Laboratories. The floor area of the new building of School is 10,000 sq. feet.(Total 30,000 sq ft).

ADMISSION

Integrated Dual Degree (IDD) - B.Tech.+M.Tech.

The admission to the five-year Integrated Dual Degree Program is through the Joint Entrance Examination-Advanced (JEE Advanced , formerly known as IIT-JEE) conducted by one of the seven zonal IITs. The students are awarded the degree of B.Tech in Biochemical Engineering and M. Tech in Biochemical Engineering and Biotechnology. The program incepted in the year 2006.

M. Tech.

Admission to the M Tech Program is through Graduate Aptitude Test in Engineering(GATE).The program involves coursework and project work of two semesters each The school does not offer any specialization but there are thrust areas of research as mentioned in subsequent pages of the Brochure. This program began from the year 1986 onwards.

Ph.D.

The School offers Ph.D. Degree in Biochemical Engineering. The yearly intake varies between 10-20 Students.The School also offers joint research program with other Schools of the Institute or other academic organizations. This program started from the year 1986 onwards.

CURRICULUM (IDD)

Core Courses (UG)

- Introduction to Biochemical Engineering
- Advances in Biochemistry
- Fundamentals of Microbiology
- Microbial Process Principles
- Bioprocess Calculations & Technology
- Microbial Engineering
- Enzyme Engineering
- Wastewater Engineering
- Biofuels & Bio Energy
- Molecular Biology and Genetic Engineering
- Molecular Biology and Genetic Engineering
- Bioinstrumentation and Control
- Bioreactor Design & Bioprocess Plant Design
- Fermentation Processes
- Structural Biology
- Downstream Processing
- Fundamentals of Bioinformatics
- Food Engineering & Technology
- Animal Cell Culture
- Protein Engineering
- Bioprocess simulation
- Cell & tissue Engineering

Institute Science and Engineering Courses(UG)

- Engineering Mathematics II
- Physics II; Introduction To Engineering Electromagnetics
- Chemistry I
- Engineering Thermodynamics
- Manufacturing Practices I and II & Engineering Drawing
- Computer Programming
- Essentials of Biochemistry
- Fundamentals of Electronics and Instrumentation Engineering
- Chemical Reaction Engineering
- Numerical Analysis
- Energy resources and Utilisation
- New separation Processes
- Engineering Economics and Management
- Drug Delivery Techniques
- Process Optimisatio
- Biotransport Processes

STUDENTS ACHIEVEMENTS

Several alumni of the school have been admitted to MS, Ph.D. and Post-Doctoral programs at reputed institutions such as the University of California-San Diego, Northwestern University, National University of Singapore.

The students also underwent internships at reputed corporations, startups, and institutions in India and in countries such as Taiwan, Singapore, the US, UK, Germany, Canada, and Australia. Some of these are Imperial College London, National University of Singapore, Yale University, University of Michigan, Australian National University, University of Hamburg, Biocon, Serum Institute of India, BARC, DRDO, CSIR-CIMAP, Bose Institute, IISc, IIT Bombay and IIT Delhi.

In addition of this, yearly, the students are selected into prestigious fellowship programs such as 'Khorana Program for Scholars', Mitacs Globalink Internship program,' 'DAAD Internship program,' 'Taiwan Experience Education Program,' 'IITs Internship program' and 'Indian Academy of Sciences fellowship.'

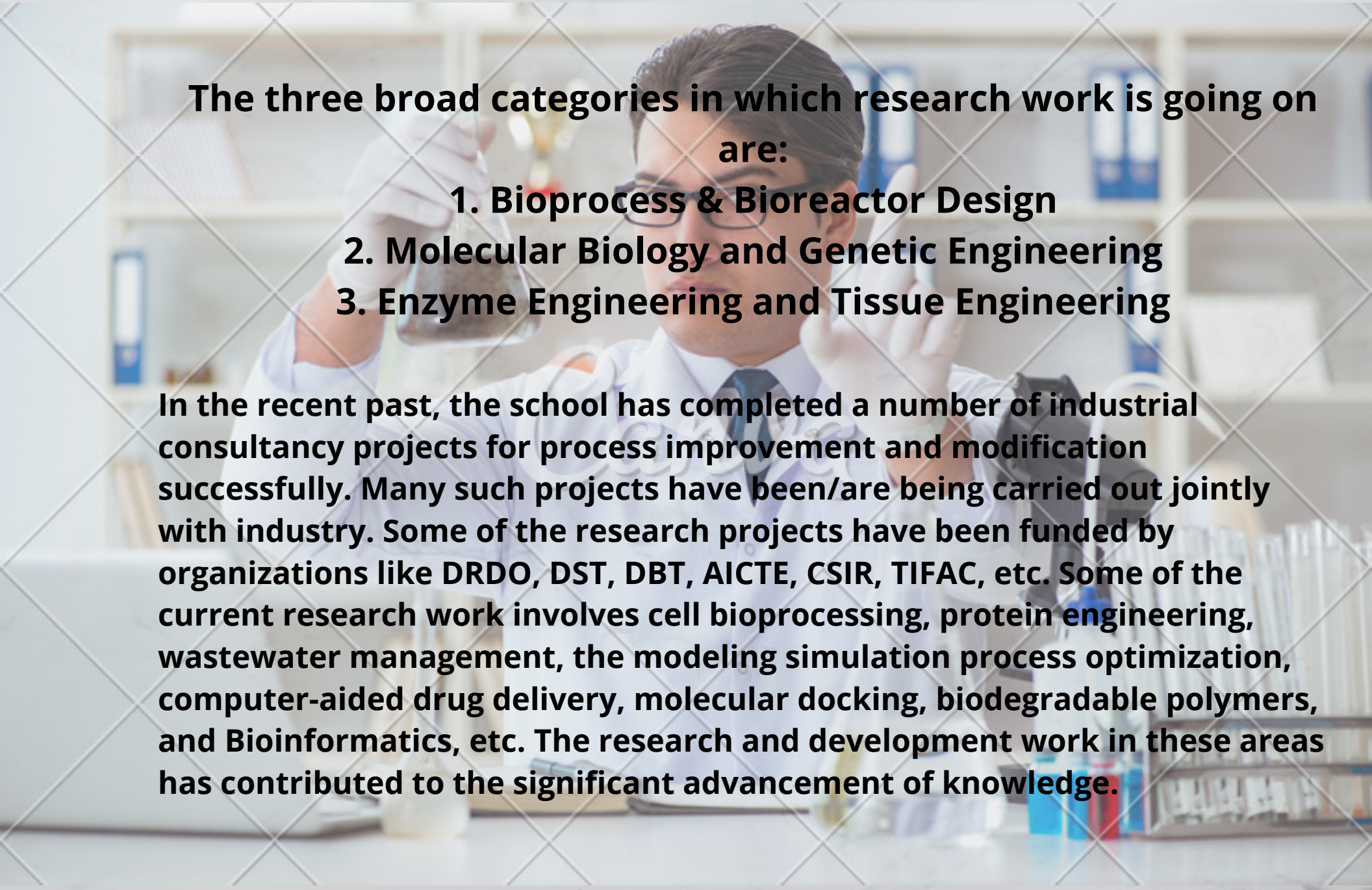
Indo -US conference on Bioengineering and Regenerative medicine (ICBR-2020)

CURRICULUM (POSTGRADUATES)

The School also offers many PG level courses to the students for their course credit requirements. The School does not offer any specialization but runs a number of elective courses at PG/Ph.D. level. Such courses include:

- Bioprocess Instrumentation & Control
- Enzyme Engineering and Technology
- Bioconversion
- Waste Water Treatment
- Bioinformatics
- Biobusiness Planning and Management
- Animal cell culture

RESEARCH



The three broad categories in which research work is going on are:

1. Bioprocess & Bioreactor Design

2. Molecular Biology and Genetic Engineering

3. Enzyme Engineering and Tissue Engineering

In the recent past, the school has completed a number of industrial consultancy projects for process improvement and modification successfully. Many such projects have been/are being carried out jointly with industry. Some of the research projects have been funded by organizations like DRDO, DST, DBT, AICTE, CSIR, TIFAC, etc. Some of the current research work involves cell bioprocessing, protein engineering, wastewater management, the modeling simulation process optimization, computer-aided drug delivery, molecular docking, biodegradable polymers, and Bioinformatics, etc. The research and development work in these areas has contributed to the significant advancement of knowledge.

LABORATORIES IN THE DEPARTMENT

- UG and PG Lab
- Biomolecular Lab
- Instrumentation Lab
- Enzyme Engineering Lab
- Bioreactor Design &Cell Processing Lab
- Bioprocess Technology Lab
- Food Technology Lab
- Bioinformatics Lab
- Tissue Engineering Lab
- Engineered Therapeutics Lab
- Cell Culture lab
- Research Lab I
- Research Lab II
- Bio- Physio Sensors and Nanobioengineering Lab
- Protien Engineerig Lab

RESEARCH FACILITIES

The School has 15 specialised laboratories, 6 lecture theatres, a 100 seat Seminar Hall,a small library with textbook bank and Internet facility.The School enjoys an excellent professional interaction with various industrial organisations, experts and consultants. Faculty members are engaged in high level research collaborations and consulting with working industry, where as some others have projects funded by the industry.

To know more about the Research and Labs please visit :

https://youtu.be/4QmbJlam1Nw

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