About the Department

The mission of Department of Biotechnology is to create a fusion of engineering and the life sciences that promote scientific discovery and the development of new biochemical technologies, biomedical technologies and therapies through research and education. The Department was started in the year 2006 with an under-graduate programme in B.Tech (Biotechnology) with an intake of 60 students. The Department offers Ph.D. programme.

About the Institute and Warangal

National institute of Technology Warangal (NITW) formerly known as Regional Engineering College, Warangal (RECW) is the first among the 20 RECs setup as joint venture of the Government of India and State Government. Over the years, the college has established itself as a premier institution imparting technical education of high standards, leading to the B. Tech. degrees in various branches of engineering, M. Tech. and Ph.D programs in different specializations. With a view to give further impetus to the technical education, the Central Government upgraded the REC to NIT, and conferred the Deemed to be University status.

Warangal is known for its rich historical and cultural heritage. It is situated at a distance of 140 km from Hyderabad. Warangal is well connected by rail and road. The campus is 2 km away from Kazipet railway junction and 12 km away from Warangal railway station. Participants are advised to alight at Kazipet or Warangal depending upon the train of travel.

Travel and Accomodation

Free lodging and boarding will be arranged in the Visitors Guest House of the institute to all the outstation participants for the five days. *TA and DA for attending the workshop will not be paid to the participants.*

Contact Information

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Registration Fees Details

Academicians: Rs. 2,000

Research Scholars/M.Tech/MSc   Rs.1,000

Industry and R&D Organizations: Rs. 5,000

Internal Faculty/Research Scholars/Students:Rs.500

A Five-Day National Workshop On Modeling, Simulation and Optimization of Bioprocesses

Using

SUPERPRO DESIGNER AND BERKELEY

MADONNA SOFTWARES

On the eve of Diamond jubilee celebrations
10th -14th Dec, 2018
(Under Continuous Education Programs)
Sponsored by TEQIP -III

Coordinators

Dr.R.Satish Babu
Dr.P.Anbumathi

Organized by

Department of Biotechnology
National Institute of Technology
Warangal-506 004. TS. India.

Modelling is often unfamiliar to biologists and chemists, who nevertheless need modelling techniques in their work. The general field of biochemical reaction engineering is one that requires a very close interdisciplinary interaction between applied microbiologists, biochemists, biochemical engineers.

The purpose of this workshop is to provide hands on experience necessary for the quantitative analysis of biological systems and other biological process phenomena. The engineer and the biologist are freed from the difficulties of mathematical solution and can tackle complex problems that were impossible before. Mass balances, when combined with kinetic rate equations, to form simple mathematical models, can be used with very great effect as a means of planning, conducting and analyzing experiments. Models are especially important as a means of obtaining a better understanding of process phenomena & biological systems. Models, when solved interactively by computer simulation, become much more understandable. The Berkeley Madonna simulation language will be used in this workshop. In this way it is possible to immediately determine the influence of changing various operating parameters on the bioreactor performance - a real learning experience. The simulation examples serve to enforce the learning process in a very effective manner and also provide hands-on confidence in the use of a simulation language. The participants can program their own examples, by formulating new mass balance equations or by modifying an existing example to a new set of circumstances. Other useful topics include data fitting (using MATLAB) and optimization (using Design Expert) also will be discussed in the workshop. Modeling metabolic networks and signal transduction pathways will be demonstrated with case studies.

OBJECTIVES OF THE COURSE

- To train academicians, research scholars and PG Students on computational tools to solve Engineering Problems.

- To provide hands on training to the participants.

COURSE CONTENT

- Development of mathematical models for biological systems.
- Simulation of the models
- Model analysis and Optimization methods
- Model Validation Methods.
- Design of Experiments
- Development of Statistical Models
- Development of Neural Network Models
- Curve fitting methodologies.
- Modeling metabolic networks and signal transduction pathways.
- Case studies

HIGHLIGHTS OF THE COURSE

- Lectures by faculty of NIT Warangal and from IITs.
- Intensive laboratory sessions using MATLAB, Superpro designer and Berkeley Madonna software's

ELIGIBILITY, SELECTION & DATES

This course is open to all AICTE approved engineering college teachers, Research Scholars, PG students working in any Engineering discipline and people working in Industry/R&D Organization. The number of participants is limited to 40. Brochure and registration form can also be downloaded from our institute website: http://www.nitw.ac.in. Eligible candidates may send their filled in registration form along with a Demand Draft taken in favour of **"TEQIP-III-Funds"**(SBI NITW, Code: SBIN 20149). The filled in Registration form along with the DD should reach on or before **10-*11-2018***.