The mission of the 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.

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.

National Workshop
On Modeling, Simulation and Optimization of Bioprocesses
Using MATLAB, DESIGN EXPERT AND BERKELEY MADONNA SOFTWARE
4th -6th October, 2013
Sponsored by TEQIP -II

Coordinator
Dr.R.Satish Babu

Organized by
Department of Biotechnology
National Institute of Technology
Warangal-506 004. AP. India.

About the Department
Patron: Prof. T. Srinivasa Rao, Director, NITW
Chairman: Prof.P.Nageswara Rao
Chief Coordinator: Dr.R.Satish Babu
Organizing Committee:
Dr.P.Srinivasa Rao
Mr.Onkara Perumal
Mr.K.Narasimhulu
Dr.S.Srinu Naik
Sri.A.Sarat Babu
Dr.Sirish Sonawane
Sri.K.Ananda Kishore
Sri.S.Srinath

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

Contact Information
Dr. R.Satish Babu
Coordinator, MSO2013
Department of Biotechnology
National Institute of Technology
Warangal-506 004.AP. India.
Email: rsatishbabur@gmail.com
Contact number: 09440607238

Registration Fees Details
For Faculty/Research scholars Rs. 1,500
Industry and R&D Organizations: Rs. 3,000

List of Speakers from IIT & NITW
1. Prof.G.Satyanarayana, IIT Madras
2. Prof. Kannan Pakshirajan, IIT Guwhati
3. Dr.Debasish Das, IIT Guwhati
4. Sri.A.Sarat Babu, NIT Warangal

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INTRODUCTION

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, and biochemical engineers. The purpose of this workshop is to provide the mathematical tools necessary for the quantitative analysis of biological kinetics 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. Models, when solved interactively by computer simulation, become much more understandable to non-engineers. 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.

OBJECTIVES OF THE COURSE

- To train academicians, research scholars on Modeling, Simulation & Optimization methods to solve Engineering problems.
- To provide hands on training to the participants.

COURSE CONTENT

- Development of Mathematical Models
- Simulation of Mathematical Models
- Design of Experiments
- Development of Statistical Models
- Development of Neural Network Models
- Optimization Methods
- Curve fitting methodologies.
- Model Validation Methods.
- Solving problems related to above mentioned topics using Matlab, Design Expert and Berkeley Madonna Software’s.

HIGHLIGHTS OF THE COURSE

- Lectures by faculty of NIT Warangal and from IITs.
- Intensive laboratory sessions using MATLAB, Design Expert and Berkeley Madonna Software’s

ELIGIBILITY, SELECTION & DATES

This course is open to all AICTE approved Engineering college teachers, Research scholars, working in Chemical Engineering, Biotechnology & related 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](http://www.nitw.ac.in). Eligible candidates may send their filled in registration form along with a Demand Draft taken in favour of Director NIT Warangal (SBH NITW, Code: 20149). The filled in Registration form along with the DD should reach on or before 27-09-2013.

TEQIP-II Sponsored
National Workshop on
Modeling, Simulation and Optimization of
Bioprocesses.
4-6 October, 2013
Department of Biotechnology
NIT Warangal, 506004 (A.P.)

Registration Form

1. Name:
2. Designation:
3. Organization:
4. Address for communication:
5. Email:
6. Phone/ Mobile No:
7. Accommodation required (Tick): Yes/No
8. DD Particulars:
   - Amount: Rs.
   - DD No:
   - Date:

Declaration The information provided is true to the best of my knowledge. If selected, I agree to abide by the rules and regulations of the course and shall attend the course completely.

Place & Date: (Signature of the applicant)