Indian Institute of Technology Delhi

short term course on

Modelling and Decision Making Techniques in Engineering and Management

(March 19-21, 2015)

Organized by

Department of Textile Technology
IIT Delhi

Sponsored by TEQIP II, MHRD

Course Coordinator:

Dr. Abhijit Majumdar
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Introduction
Models are hypothetical descriptions of complex entities or processes. Models are helpful to visualize something which cannot be observed directly. Manufacturing industries worldwide are experiencing gradual changes, largely characterized by a shift from mass production to flexible, intelligent and engineered production. Structure-property modelling, process modelling, process optimization and decision making are the integral steps of engineered production. Traditionally mathematical models and statistical tools have been used, with limited success, to model the industrial products and processes. In recent years, analytical models and intelligent models have gained popularity in solving complex modelling and optimization problems. The program will attempt to introduce various aspects of modelling, optimization and decision making techniques and tools.

Course contents
The course will not be focussing on any specific academic discipline. A broad spectrum of faculty members and researches working in the areas of mechanical, chemical, civil, metallurgy, mining, applied mechanics, materials science, textile engineering and management will benefit from this course.

Modelling techniques: Finite element modelling; Artificial neural network; Fuzzy logic; ANFIS.

Optimization techniques: Linear and quadratic programming; Genetic algorithm and particle swarm optimization.

Decision making: Decision making under certainty, uncertainty and risk; Multi-criteria decision making, AHP, TOPSIS and fuzzy MCDM.

Faculty
The course will be conducted by the faculty members from various engineering and management departments of IIT Delhi.

Who can participate?
The program is primarily designed for the faculty members of TEQIP II quality circle institutes under IIT Delhi. However, some participants from TEQIP II quality circle institutes under other IITs will also be accommodated.

Course objectives
The objective of the course is to familiarise the participants with the basic concepts of various modelling, optimization and decision making techniques which are used in wide variety of engineering and management problems.
Selection process
Since the maximum number of participants allowed in this course is 30, the offer will be made on first-come, first-served basis (date of receipt of application form) among the eligible applicants.

How to Apply
The interested faculty members from quality circle institutes under IIT Delhi and other IITs are required to send duly filled registration form to the following address.

**Dr. Abhijit Majumdar, Department of Textile Technology, IIT Delhi, Hauz Khas, New Delhi 110 016.**

Course fee
No course fee will be charged from the participants.

Boarding, Lodging and TA
Arrangements will be made to accommodate 20 participants, on twin sharing basis, at the Faculty Guest House of IIT Delhi. Besides, accommodation of few more participants will be arranged in hostel guest houses. Food will be arranged at Faculty Guest House for all the participants. Food and lodging is completely free for participants. TA will be provided to the participants as per the QIP norms (AC III tier).

REGISTRATION FORM

**Modelling and Decision Making Techniques in Engineering and Management**

**March 19-21, 2015**

**Name:**  
Name:  
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Academic qualification:  
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Designation:  
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Institution:  
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Address for correspondence:  
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Pin:  
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Telephone:  
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Mobile:  
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E-mail:  
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Accommodation needed: **Yes** / **No**

Signature of the applicant

Signature and seal of forwarding authority  
(HoD/Registrar/ Director)

Important Dates

**Last date for receiving completed application form:** **February 27, 2015**

**Publication of list of selected participants:** **March 2, 2015**

CONTACT DETAILS

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