

Short term course on Mathematical Modeling

About the Course:

Mathematics is an indispensable tool for studying physical and other systems. With the advancement of science, Mathematics has also evolved; which sometimes gave birth to new theories.

This course is intended to give a theoretical introduction to modeling with different case studies. Also, how using simulation the system may be analysed will be discussed. For this, lab classes will be arranged in addition to the theory classes.

Who Can Apply:

Research scholars, PG Students and young researchers.

Number Of Seats:

Total number of seats is limited to about **15** due to significant component of laboratory and tutorial sessions in the course.

Registration Fees:

Faculty: Rs. 5000/- (with accommodation)
Rs. 3000/- (without accommodation)

Research Scholar: Rs. 3000/- (with accommodation)
Rs. 1500/- (without accommodation)

Registration fee include breakfast and lunch.

Venue:

Department of Mathematics,
National Institute of Technology,
Durgapur-713209,
India

Important Dates:

Course Dates: 10 -14 October, 2017

Registration Deadline: 22 September, 2017.

Course Coverage:

Introduction to modeling:

Discrete-continuous models, linear-nonlinear models, deterministic and stochastic models.

Modeling using differential equations, difference equations. Models using ordinary differential equations (ODEs) and partial differential equations (PDEs).

Modeling with stochastic ODEs, PDEs, Wiener process, stochastic stability.

Basics of continuous dynamical systems: One dimensional dynamical systems, two dimensional linear and nonlinear dynamical systems, Poincare-Bendixson theorem and linear stability of limit cycle,.

Lab Sessions: Simulations using MATLAB, MATCONT.

Resource Persons:

Dr. Sarit Maitra

Assistant Professor
Department of Mathematics
National Institute of Technology
Durgapur - 713209, West Bengal, India

Dr. Pinaki Pal

Assistant Professor
Department of Mathematics
National Institute of Technology
Durgapur - 713209, West Bengal, India

Convener/ Contact Person:

Dr. Sarit Maitra & Dr. Pinaki Pal
Department of Mathematics
NIT Durgapur
e-mail: sarit2010.nt@gmail.com,
pinaki.math@gmail.com
Mobile: 9434788192 / 9434788193