



Panel discussion on
Engineer's perspective on Mathematics in Engineering-From Theory to Practice
Organised on 27th March 2019 for 1st Year B. Tech Students of IITRAM

In order to appreciate the application of Mathematics in Engineering, a panel discussion session was conducted on 27th March 2019 from 2 to 3:30 pm. This panel discussion was aimed at developing a closer connect towards understanding the applications of Mathematics for solving Engineering Problems. 109 students of 1st year B. Tech and some Faculty members, Research scholars as well as Teaching Assistants participated during the session.

Three short presentations were delivered by Dr. Axay Mehta, Dr. Dileep Gupta and Dr. Kannan Iyer to demonstrate the application of Mathematics in Electrical, Mechanical and Civil Engineering disciplines, respectively. Dr. Axay Mehta and his students demonstrated a real pendulum model controlled by application of Differential equation to change unstable equilibrium condition of pendulum to stable equilibrium condition through applied torque. Interestingly, even after different modes of disturbances, the pendulum quickly comes to upright vertical stable state. The working pendulum model was highly appreciated by all the students and faculty members during the session. Dr. Dileep Gupta presented the application of Mathematics principles in Heat exchangers used in Air conditioners and other applications. The discussion involved real life examples from nature, simulation using Differential equations and Finite element method and was liked by one and all. Dr. Kannan Iyer presented the application of Mathematical concepts such as Linear algebra, Matrices, Differential equations, Eigen vectors and Laplace equation in different of Civil Engineering problems such as analysis of trusses and buildings, analysis of foundations for dynamic equipment, evaluation of natural frequency of different structures, evaluation of soil deformation and flow through porous media.

Dr. Gautam Borisagar coordinated the panel discussion session and various questions were raised for addressing the difficulties faced by students during their study of Mathematics. Some of the interesting questions included:

- a. What should be the order of learning topics? Should we begin with application or basic concepts? e.g. velocity should be taught first or derivative!
- b. How to make students more interactive?



c. Is it good to make teaching student centric? Is it possible? What are the challenges?

The faculty actively participated in addressing the questions and the deliberations were quite effective in providing various suggestions to above questions. Prof. Shanti Prasanna (Dean, IITRAM) and Prof. Rama Mohan also enlightened the discussion with their valuable suggestions and inputs. It is anticipated that many student queries were answered and students found motivation to study Mathematics with greater interest, while appreciating the wide application of Mathematics principles in solving Engineering Problems. The session concluded with a thanks note by Dr. Gautam Borisagar and Prof. Shanti Prasanna.



[Some glimpses of the session](#)



Acknowledgement:

Sincere gratitude is expressed to Prof. Shiva Prasad (Director General, IITRAM), Prof. A. U. Digraskar (Director, IITRAM), Dr. N. N. Bhuptani (Registrar, IITRAM) and Prof. Shanti Prasanna (Dean, IITRAM) for their support and guidance for conducting the panel discussion session. The session coordinators extend sincere thanks to Dr. Axay Mehta and Dr. Dileep Gupta whose valuable contributions enlightened the session. Special thanks are extended to Faculty members, Research scholars and Teaching assistants for their active participation in the discussion session. We also extend thanks to administration team (including IT team) for their support in organizing the session. Thanks are also extended to students of 1st year B. Tech for their active participation during the session.

Session Coordinators & Report Preparation:

Dr. Gautam Borisagar and Dr. Kannan Iyer (Faculty, IITRAM)

Photographs: Courtesy –IT Department (IITRAM)