

Online – QIP Short Term Course on Differential Equations: Solution Techniques and Applications

Organized by: **Department of Mathematics IIT Guwahati**

Invitation

The Department of Mathematics, IIT Guwahati cordially invites and welcomes you to the five days online QIP Short Term Course on Differential Equations: Solution Techniques and Applications during September 07-12, 2020

Background

Differential Equations (DEs) arise in various branches of applied mathematics, science and engineering. To teachers and professional engineers it is worthwhile to understand the basics of DEs. In general, it is difficult to solve DEs in analytical form; and one has to know the qualitative properties of the solutions. In this situation, one seeks an approximate solution, which may be through asymptotic or numerical methods. With the help of modern computers one can solve various DEs modeled from real life problems. The short-term course plans to provide the fundamentals and recent developments in this area.

About IIT Guwahati

Indian Institute of Technology Guwahati, the sixth member of the IIT fraternity, was established in 1994. The academic programme of IIT Guwahati commenced in 1995. At present the Institute has eleven departments and five inter-disciplinary academic centres covering all the major engineering, science and humanities disciplines, offering BTech, BDes, MA, MDes, MTech, MSc and PhD programmes. Within a short period of time, IIT Guwahati has been able to build up world class infrastructure for carrying out advanced research and has been equipped with state-of-the-art scientific and engineering instruments.

Department of Mathematics

The Department of Mathematics at IIT Guwahati, since its very inception in 1995, has strived to be a centre of excellence in mathematics and computing, and it has been vigorously engaged in research, teaching and training. Having started the PhD programme in 1996, the department initiated a 2-year M.Sc. programme in Mathematics and Computing in 2000. From academic year 2006-2007, the department started a unique 4-year B.Tech. programme in Mathematics and Computing - the first of its kind in the country. An interdisciplinary M.Tech. Programme in Data Science jointly offered by three Departments, namely, Mathematics, Computer Science & Engineering and Electronics & Electrical Engineering has been started in 2019.

Course Objectives

- To provide fundamentals of ordinary and partial differential equations, existence, uniqueness, maximum principle, Techniques to obtain Analytical Solution
- To make aware of various numerical techniques to solve ODEs/PDEs
- Stability analysis and error estimates of the numerical schemes
- To introduce different mathematical software like MATLAB, SCILAB, etc.
- Applications of DEs in other branches of Science and Engineering

Resource Person

Faculty members of IIT Guwahati and guest faculty members from other premier Institution/Organization will deliver lectures.

Eligibility and Registration

The course is open to teachers of Engineering Colleges approved by AICTE. **No course fee** is charged for participants sponsored by AICTE approved institutions.

Participants from Industry and Government organizations are eligible, provided they pay the course fee of Rs. 5000/- and Rs. 3000/- respectively. The payment is to be made through online and the details will be given in the registration link.

Registration link: www.iitg.ac.in/maths/ext/desta2020

For any query Contact:

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Important Dates

- The last date for the receipt of duly endorsed applications: 28.08.2020
- Intimation of Selection: 31.08.2020