MA101 (Part II): Mathematics I L-T-P-C: 3-1-0-8

Lectures: *Online (Each week, four to five video lectures will be uploaded along with interaction sessions with the instructors at 10:00 am and 3:00 pm on Thursdays. Tutorial classes from 8:00 am on Mondays.)*

Instructors: Dr. Jiten C. Kalita and Dr. Shyamashree Upadhyay

Office (JCK): E303 Academic Building, Indian Institute of Technology Guwahati 781039.
Office Hours: Mondays and Fridays 11:00 a.m. - 12:00 p.m. and by appointment.
Telephone: 2582614; **FAX**: 2582649; **E-mail:** jiten@iitg.ac.in **URL:** www.iitg.ac.in/jiten

Detailed Syllabus:

Vector functions of one variable - continuity and differentiability; functions of several variables - continuity, partial derivatives, directional derivatives, gradient, differentiability, chain rule; tangent planes and normals, maxima and minima, Lagrange multiplier method; repeated and multiple integrals with applications to volume, surface area, moments of inertia, change of variables; vector fields, line and surface integrals; Green's, Gauss' and Stokes' theorems and their applications.

Textbooks/ References:

1. 1. G. B. Thomas, Jr. and R. L. Finney, Calculus and Analytic Geometry, 9th Edn., Pearson Education India, 1996.
2. T. M. Apostol, Calculus - Vol.2, 2nd Edn., Wiley India, 2003
3. James Stewart, **Calculus,** 8th Edition, Cengage Learning, 2016.

Grading policy:

1. **Quizzes**: 20% weightage (Two quizzes: **Quiz-1** from single variable calculus on **13th December 2021 (Monday)** and **Quiz-2** from multivariable calculus on **7th February 2022 (Monday)**).
2. **Mid-term**: 30% weightage (during **January 8-12, 2022**).
3. **End-term**: 50% weightage (20% of the questions will be from single variable calculus) (during **March 4-8, 2022**).