ENGINEERING MATHEMATICS (M2)

About M2:

If you are able to understand the concepts of M-I, the concepts of M-II will be easier to understand as it is the continuation but on advance level. The learning methodology includes rigorous practice of the concepts. To equip students with techniques to understand the mathematical models of physical system.

Examination Scheme

In-Semester Exam :30 Marks

End-Semester Exam :70 Marks

Team Work (TW) :25 Marks

Course Contents:

Unit I: First Order Ordinary Differential Equations

Exact differential equations, Equations reducible to exact form. Linear differential equations, Equations reducible to linear form, Bernoulli's equation.

Unit II: Applications of Differential Equations

Applications of Differential Equations to Orthogonal Trajectories, Newton's Law of Cooling, Kirchhoff's Law of Electrical Circuits, Rectilinear Motion, Simple Harmonic Motion, One dimensional Conduction of Heat.

Unit III: Integral Calculus

Reduction Formulae, Beta and Gamma functions, Differentiation Under Integral Sign and Error functions.

Unit IV: Curve Tracing

Tracing of Curves – Cartesian, Polar and Parametric curves, Rectification of curves.

Unit V: Solid Geometry

Cartesian, Spherical polar and cylindrical coordinate systems, Sphere, Cone and Cylinder.

Unit VI: Multiple Integrals and their Applications

Double and Triple integrations, change of order of integration, Applications to find Area, Volume, Mass, Centre of Gravity and Moment of Inertia.