Module Code	**MA2023**	Title	**Calculus**			
Credits	**02**	**Hours/ Week**	**Lectures**	**02**	**Pre-requisites**	MA1023
			Lab/Tutorials	**–**		

Learning Outcomes

At the end of this module the student should be able to

- Perform vector differentiation and integration and evaluate vector and scalar quantities in various engineering applications.
- Apply Divergence, Stokes' and Green's theorem in various situations.
- Apply Cauchy's integral formula to solve engineering problems.
- Perform contour integration techniques.
- Apply conformal mapping in physical system modeling.

Outline Syllabus

Vector Calculus

- Double integral, triple integral, vector functions;
- Introduction to vector calculus. Vector differentiation and differential operators.
- Space curves and line integral, surface integrals;
- Divergence theorem, Stokes' theorem and Green's theorem in a plane.
- Some basic applications.

Complex Variables

- Analytical function and Cauchy-Reimann equation.
- Cauchy's integral formula and applications.
- Taylor and Laurent's series.
- Contour integration.
- Introduction to conformal mapping.

Note: For MPR,ER,TT students excluding CS students