

Semester	Code	Module Title	Credits	C/E/O	GPA/NGPA
7,8	MA4210	Mathematical Analysis and Special Functions	3	E	GPA
Hours/Week		Pre-requisites/Co-requisites	Evaluation (%)		
Lecture	Tute/Lab		CA	WE	
3	0	MA2034	30	70	

Learning Outcomes

After the successful completion of this course students should be able to

- Use Mathematical Analysis Techniques related to sequences and spaces of real and complex functions
- Apply the above knowledge to understand Special Functions

Syllabus Outline

Mathematical Analysis

- Riemann Integral
- Uniform continuity and convergence
- Sequences and series of functions
- Summability
- Functions of bounded variation
- Calculus of variations
- Analytic continuation
- Spaces of functions
- Introduction to measure theory and Lebesgue Integral

Special Functions

- Bernoulli, Euler and Stirling Numbers
- Gamma and Beta Functions
- Bessel Functions
- Hypergeometric Functions
- Orthogonal Polynomials
- Elliptic Integrals
- Zeta function
- Introduction to the Reimann Hypothesis