

## Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
G111	Mathematics I	1	4	0	0	4	6

Prerequisites	
Admission Requirements	

Language of Instruction	
Course Type	
Course Level	Bachelor Degree
Objective	
Content	
References	

## Theory Topics

Week	Weekly Contents
1	Real functions of one real variable – Operations, properties, graphs.
2	Limit of a function, operations with limits. Limits of indeterminate forms.
3	Meaning of the derivative of a function. Derivative rules for algebraic functions.
4	Derivative rules for complex functions. Derivative of trigonometric and inverse trigonometric functions.
5	Derivative of exponential and logarithmic functions. Derivative of parametric and implicate functions.
6	Applications of derivative and related theorems. L'Hospital rule.
7	Mid-term 1. n.th derivative of a function, n.th derivative of a product – Leibnitz rule.
8	Taylor and Mc-Laurin series and applications.
9	Graphs of a real function of one real variable.
10	Indefinite and definite integral of a function. Techniques for finding the indefinite integral of a function – Integration by substitution.
11	Techniques for finding the indefinite integral of a function – Integration by parts, integration by partial fractions.
12	Mid-term 2. Indefinite integrals of trigonometric functions.
13	Techniques for finding the indefinite integral of a function – Integration by trigonometric substitution.
14	Definite integral – Riemann integral. Calculation of area under the graph of a function.