SOMAIYA VIDYAVIHAR UNIVERSITY
K J Somaiya College of Engineering

Somaiya TRUST

Applied Mathematics - I

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Course Information

Course Code	Course Title			
116U06C101	Applied Mathematics - I			
	TH	P	TUT	Total
Teaching Scheme(Hrs.)	03	--	01*	04
Credits Assigned	03	--	01	04

Syllabus

❖ Prerequisite:

- Differentiation Methods
- Basics of Complex numbers
- Basics of Matrices, Inverse and Adjoint of Matrix

❖ Course Outcomes:

At the end of successful completion of the course the student will be able to

CO1. Solve problems involving different forms and properties of complex numbers, hyperbolic functions and logarithm of complex numbers.

CO2. Apply the concept of rank of a matrix and numerical methods to solve system of linear equations.

CO3. Find Eigen values, Eigen vectors of a matrix, apply Cayley-Hamilton theorem, diagonalise a matrix and find functions of square matrices.

CO4. Find partial derivatives of multivariable functions, apply the concept of partial differentiation to find maxima and minima of multivariable functions (2-3 variables)

CO5. Apply Euler's theorem to prove results related to Homogeneous functions.

Syllabus

- Complex Numbers, Hyperbolic Functions and Logarithm of Complex Number (12)
- Matrix Theory: Rank of Matrix (8)
- Matrix Theory: Eigen values & Eigen vectors (12)
- Partial Differentiation and Application (9)
- Homogeneous Functions (4)

Detailed Syllabus on LMS

Hidden features: Self-Learning topics

Tutorial covering all topics

Books

Text Books

Sr. No.	Name/s of Author/s	Title of Book	Name of Publisher with country	Edition and Year of Publication
1.	B. S. Grewal	*Higher Engineering Mathematics*	Khanna Publications, India	43rd Edition 2014
2.	Shanti Narayan	*A text book of Matrices*	S. Chand, India	10th Edition 2004
3.	P. N. Wartikar and J. N. Wartikar	*A text book of Applied Mathematics Vol I & II*	Pune VidyarthiGruha, India	6th Edition 2012

Reference Books

Sr. No.	Name/s of Author/s	Title of Book	Name of Publisher with country	Edition and Year of Publication
1.	Erwin Kreyszig	*Advanced Engineering Mathematics*	Wiley Eastern Limited, India	10th Edition 2015
2.	Dennis G. Zill and Michael R. Cullen	*Advanced Engineering Mathematics*	Narosa Publication India	3rd Edition 2010
3.	Glyn James	*Advanced Modern Engineering Mathematic*	Pearson Publication India	4th Edition 2010
4.	Ramana B.V.	*Higher Engineering Mathematics*	Tata Mcgraw Hill New Delhi, India	34th Edition (reprint) 2019

Examination Scheme

- Continuous Assessment : 50Marks =

In Semester Test (30) + Average of Internal Assessment (20)

- End Semester Exam (ESE) 50 Marks
- Term Work: Average of graded Tutorials (25 marks)

Marks							
CA		ESE	TW	O	P	P&O	Total
ISE	IA						
30	20	50	25	--	--	--	125