

Subject Code: 2SC1040403

Subject Title: Mathematics Practical

Course Objective:

This course is designed to enable students to acquire the understanding and practice the applications of Jacobian functions, integrals and advanced linear algebra applied to real life mathematical problems.

Teaching scheme (hours) per week		credit		Theory Marks		Practical Marks		Total
Theory	Practical	Theory	Practical	University Assessment	Cont. Assessment	University Assessment	Cont. Assessment	
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Contents			
Unit No.	Topic	Total Hours	Weight (%)
1	• Application of Beta functions. • Application of Gamma functions. • Application of double Integration. • Application of triple Integration.	24	25
2	• Application of Green's Theorem. • Application of Stokes' theorem. • Application of divergence theorems. • Application of Jacobian functions. • Application of Jacobian of implicit function.	24	25
3	• Applications of a linear transformation associated with given matrix. • Applications of a matrix associated with linear transformation. • Verifications on Rank-Nullity theorem in matrices. • Application of linear functional. • Application of Dual basis.	24	25
4	• Application to verify inner product space. • Application of minimal polynomial deduction. • Application of Adjoint Operator. • Application of Spectral Theorem.	24	25

Course Outcome:

After successfully completion of the course, the student will be able to ...

- Understand the concept of Jacobian functions.
- Understand the several forms of beta and gamma functions.
- Know about multiple integrals.
- Understand the concept of linear transformations.
- Understand the concept of linear transformation applied to various problems.
- Understand the several forms of linear functional and duality.
- Know about inner product space.
- Understand the concept of Adjoint Operator.

List of References:

- Integral Calculus, Shantinakaran S. Chand, New Delhi (Course Book)
- Advanced Calculus, D V Widder , Prentice Hall , New Delhi
- Advanced Calculus Vol : I & II, T M Apostol, Blaisdoll
- Advanced Calculus, R C Buck, MacMillan.
- an Introduction to Linear Algebra' by V. Krishnamurthy, V P Mainra, J L Arora, Affiliated
- East-west Press Pvt Ltd., New Delhi
- Linear Algebra , Ramchandra Rao, P. Bhimasankar, Tata MacGrawHill.
- Topics in Algebra, I N Herstein, Wiley Eastern Ltd.
- Linear Algebra, S K Berberion, Oxford University Press.
- Linear Algebra Problem Book, P R Holmos, Cambridge University Press.
- Linera Algebra, Sharma and Vashishtha, Krishna Prakashan, Meerut.
- Linear Algebra, Gupta K P, Pragati Prakashan, Meerut.
- Linear Algebra, G Paria, New Central book agency Ltd, Calcutta.
- Surekh Bij Ganit, I H Sheth, University Granth Nirman Board (Gujarati).
- Differential Calculus, Shantinakaran, Dr. P.K.Mittal, S. Chand, New Delhi
- Theory and Problems of Linear Algebra, Dr. R.D.Sharma, Dr. Ritu Jain, I.K.International Publication House Pvt. Ltd., New Delhi.