

Title of the Course		ALGEBRA AND DIFFERENTIAL EQUATIONS					
Paper Number		ALLIED MATHEMATICS I					
Category	Allied	Year	I	Credits	3	Course Code	
		Semester	I				
Instructional Hours per week		Lecture	Tutorial	Lab Practice	Total		
		5	1	--	6		
Pre-requisite		12 th Standard Mathematics					
Objectives of the Course		To explain the simple concepts of the theory of equations and to find the roots of the equations by using techniques in various methods.					
Course Outline		UNIT-I: Theory of Equations – Formation of Equations – Relation between roots and coefficients – Reciprocal equations.					
		UNIT-II: Transformation of Equations – Approximate solutions to equations – Newton's method and Horner's method.					
		UNIT-III: Matrices – Characteristic equation of a matrix – Eigen values and Eigen vectors – Cayley Hamilton theorem and simple Problems.					
		UNIT-IV: Differential equation of first order but of higher degree – Equations solvable for p, x, y – Partial differential equations – formations – solutions – Standard form $Pp+Qq=R$.					
		UNIT-V: Laplace transformation – Inverse Laplace transform.					

Extended Professional Component (is a part of internal component only, Not to be included in the External Examination question paper)	Questions related to the above topics, from various competitive examinations UPSC / TNPSC / others to be solved (To be discussed during the Tutorial hour)
Skills acquired from this course	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill
Recommended Text	Dr.S.Arumugam & Isaac – Allied Mathematics Paper- I, New Gamma Publishing House (2012), PalayamKottai.
Reference Books	<ol style="list-style-type: none"> 1. Narayanan.S and T.K.Manikavachagam Pillai-Differential Equations and its applications, S.Viswanathan Printers Pvt.Ltd,2006. 2. T.Veerarajan-Algebra and Trigonometry- Yes Dee Publishing Pvt.Ltd.,(2009)
Website and e-Learning Source	https://nptel.ac.in

Title of the Course		VECTOR CALCULUS AND FOURIER SERIES					
Paper Number		ALLIED MATHEMATICS II					
Category	Allied	Year	I	Credits	3	Course Code	
		Semester	II				
Instructional Hours per week		Lecture		Tutorial		Lab Practice	Total
		5		1		--	6
Pre-requisite		12 th Standard Mathematics					
Objectives of the Course		To know the concepts of vector differentiation and vector integration.					
Course Outline		UNIT-I: Vector differentiation–Gradient–Divergence and curl.					
		UNIT-II: Evaluation of double and triple integrals					
		UNIT-III: Vector integration–Line, surface and volume integrals.					
		UNIT-IV: Green’s, Stoke’s and Divergence theorems(without proof)–simple problems.					
		UNIT-V: Fourier series–Even and odd functions–Half range Fourier series.					

Extended Professional Component (is a part of internal component only, Not to be included in the External Examination question paper)	Questions related to the above topics, from various competitive examinations UPSC / TNPSC / others to be solved (To be discussed during the Tutorial hour)
Skills acquired from this course	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill
Recommended Text	<ol style="list-style-type: none"> 1. Dr.S.Arumugam & others- Allied Mathematics Paper-II ,New Gamma Publishing House, Palayamkottai, 2012. 2. T.K.ManicavachagomPillai–Calculus (VolII), S.Vishvanathan Printer and Publisher PVT.LTD(2012)
Reference Books	<ol style="list-style-type: none"> 1. Dr. S.Arumugam and others–Analytical Geometry 3D &Vector Calculus, New Gamma Publishing House, Palayamkottai. (2017). 2. Susan.J.C–Vector Calculus(4thEdition),Pearson Education, Boston(2012). 3. Murray Spiegel-Vector analysis –Schaum Publishing company, NewYork (2009).
Website and e-Learning Source	https://nptel.ac.in