

I – Academic Planner

A. Teaching Plan (Year: 2016-17) Semester: Odd and Even

Teacher's Name: Dr. PREETI GARG

Department: MATHEMATICS

S. No	UPC	Paper Name	Core/AECC/GE/SEC	Topic/Unit	Start Date	End Date
1.	235504	ALGEBRA IV	CORE B.Sc. (H) Maths (V) sem	Dual Spaces, Dual Basis, Double Dual, Transpose and its matrix in dual basis, Annihilators	20.07.2016	10.08.2016
				Diagonalization: Eigen values, Eigen vectors, Characteristic Polynomial, Diagonalizability	11.08.2016	31.08.2016
				Invariant Subspaces, Cayley Hamilton Theorem, The Minimal polynomial for a Linear Transformation	1.09.2016	15.09.2016
				Inner Product Spaces and Norms, Gram Schimdt Orthogonalisation Process, Orthogonal Complement, Bessel's Inequality	16.09.2016	10.10.2016
				Adjoints of Linear Operators, Least Square Approximations, Minimal Solutions to system of Linear Equations	17.10.2016	11.11.2016

2.	32351102	Algebra-I	Core B.Sc. (H) Maths (I sem)	Polar representation of complex numbers, nth roots of unity, De Moivre's theorem for rational indices and its applications.	20.07.2016	04.08.2016
				Equivalence relations, Functions, Composition of functions, Invertible functions, One to one correspondence and cardinality of a set, Well-ordering property of positive integers, Division algorithm, Divisibility and Euclidean algorithm, Congruence relation between integers, Principles of Mathematical Induction, statement of Fundamental Theorem of Arithmetic.	05.08.2016	07.09.2016
				Systems of linear equations, row reduction and echelon forms, vector equations, the matrix equation $Ax = b$, solution sets of linear systems, applications of linear systems, Linear independence.	08.09.2016	10.10.2016
				Introduction to linear transformations, matrix of a linear transformation, inverse of a matrix, characterizations of invertible matrices. Subspaces of R^n , dimension of subspaces of R^n and rank of a matrix, Eigen values, Eigen Vectors and Characteristic Equation of a matrix.	17.10.2016	11.11.2016
3.	32351101	CALCULUS LAB	Core B.Sc. (H) Maths (I sem)	Basics of Mathematica, Practical 1 to 3	20.07.2016	17.08.2016
				Practical 4,5,6,7,8	18.08.2016	10.11.2016
				Practical 9,10,11. Practical file submission and internal assessment	17.10.2016	11.11.2016

4.	32351401	Partial Differential Equations (THEORY)	Core (B.Sc. (H) Maths (IV sem)	Introduction, classification, construction and geometrical interpretation of first order partial differential equations (PDE), method of characteristic and general solution of first order PDE, canonical form of first order PDE, method of separation of variables for first order PDE. Classification of second order PDE, reduction to canonical forms, equations with constant coefficients, general solution.	02.01.2017	30.01.2017
				Mathematical modeling of vibrating string, vibrating membrane, Cauchy problem for second order PDE, homogeneous wave equation, initial boundary value problems, non-homogeneous boundary conditions, finite strings with fixed ends, non-homogeneous wave equation, Riemann problem, Goursat problem, spherical and cylindrical wave equation.	31.01.2017	20.02.2017
				Method of separation of variables for second order PDE, vibrating string problem, existence and uniqueness of solution of vibrating string problem, Conduction of heat in solids, gravitational potential, conservation laws and Burger's equations,	21.02.2017	11.03.2021
				Heat conduction problem, existence and uniqueness of solution of heat conduction problem, Laplace and beam equation, non-homogeneous problem.	20.03.2017	26.04.2017
5.	32351202	Differential Equations Lab	Core (B.Sc. (H) Maths II sem)	Practical 1 to 5	02.01.2017	30.01.2017
				Practical 6 to 10	31.01.2017	11.03.2017
				Practical 11 to 15	20.03.2017	26.04.2017

6.	32351202	C4: Differential Equations	Core (B.Sc. (H) Maths II sem)	Differential equations and mathematical models, order and degree of a differential equation, exact differential equations and integrating factors of first order differential equations, reducible second order differential equations, application of first order differential equations to acceleration-velocity model, growth and decay model	02.01.2017	30.01.2017
				General solution of homogeneous equation of second order, principle of superposition for a homogeneous equation, Wronskian, its properties and applications, Linear homogeneous and non-homogeneous equations of higher order with constant coefficients, Euler's equation, method of undetermined coefficients, method of variation of parameters, applications of second order differential equations to mechanical vibrations	31.01.2017	11.03.2017
				Introduction to compartmental models, lake pollution model (with case study of Lake Burley Griffin), drug assimilation into the blood (case of a single cold pill, case of a course of cold pills, case study of alcohol in the bloodstream), exponential growth of population, limited growth of population, limited growth with harvesting	20.03.2017	06.04.2017
				Equilibrium points, interpretation of the phase plane, predator-prey model and its analysis, competing species and its analysis, epidemic model of influenza and its analysis, battle model and its analysis	06.04.2017	26.04.2017

B. Outstation Field visits for students

Project Name / Paper Name			
Destination		Travel Mode	
Departure Month		Return	

Faculty-in-Charge		Number of Students going	
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C. Internal Assessment: House Exam (Test/Presentation etc.) & Assignment*

Course Code	Course Name	Unique Paper Code	Topic Name	Day and Date	Date/s of Exhibiting the Assessment Sheet to students, Discussing the marks, Returning/Retaining
563	B.Sc.(H) Maths I Sem	32351102	Unit 1	12.08.2016 Friday	18.08.2016
563	B.Sc. (H) Maths I sem	32351102	Unit III	18.10.2016 Tuesday	31.10.2016
563	B.Sc. (H) Maths I sem	32351101	Practical 1 to 11	07.11.2016 Monday	07.11.2016
563	B.Sc. (H) Maths V sem	235504	Diagonalization	06.09.2016 (Tuesday)	15.09.2016
563	B.Sc. (H) Maths V sem	235504	Inner product Spaces	18.10.2016 Tuesday	25.10.2016
563	B.Sc.(H) Maths II Sem	32351202	Unit 1,II	28.03.2017 (Tuesday)	10.04.2017
563	B.Sc.(H) Maths IV Sem	32351401	Unit II, III	13.04.2017 (Thursday)	17.04.2017
563	B.Sc. (H) Maths (II sem) Lab	32351202	Practical 1 to 15	25.04.2017 (Tuesday)	25.04.2017

***Marks of the Internal Assessment to be submitted to the College 15 days before the last working day of every semester**

D. Organization of Department/College Society Meetings by Staff Advisor/Convener

Department/Society	Meeting Date	Purpose
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Tensors-The mathematical Society		Date of elections of office bearers is decided
Tensors-The mathematical Society		Elections of office bearers held
Tensors-The mathematical Society		To discuss about SUPREMUM

E. College Functions

College Function	Function Date	Role to be played
Founder's Day	01.02.2017	Stage Committee member
Annual Day	April 2017	Stage decoration committee

For Departments

A. Department activities for students – Election/Freshers/Welcome/Farewell/Department Seminars/Society functions

Event	Date	Timing	Venue	Event In-charge / Supervisor
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Department Election				
Fresher's Welcome				
Farewell				
Department Society functions				
Department Seminars				
Any Other: Placement Drive with Avenues				

B. FDP/Seminar/Workshops/Lectures to be attended and/or to be conducted

Event Topic	"From Numbers to Rings".				
Type / Nature (FDP/Webinar/Workshop etc.)	Qazi Zameeruddin Memorial Lecture				
Organizing In-charge					
Details regarding invited Resource Person	Prof. Pramod Kanwar, Ohio University, U.S.A.				
Nature of Participation (e.g. Invited Speaker, Participant etc.)					
Date/s	22.02.2017	Timing/s	10.00 a.m	Mode	Physically

C.