M.PHIL MATHEMATICS

Programme Specific Outcomes (PSO)

PSO No.	Upon completion of M.Phil Mathematics Programme, the graduates will be able to:
PSO-1	Apply the knowledge of Mathematics, in all the fields of learning including higher research and its extensions.
PSO-2	Apply the concepts of Latex and Matlab in typeset mathematical documentation.
PSO-3	Develop research level thinking in the field of pure and applied mathematics.
PSO-4	Gain thorough knowledge in fuzzy mathematics which is very useful for their research.
PSO-5	Relate and Read mathematics independently and solve advanced mathematical problems.
PSO-6	Generate and protect a unique contribution to Mathematical acquaintance, as evidenced by the writing and defense of a thesis involving significant original research.
PSO-7	Interpret various concepts and theorems and equip to Join teaching Profession in Engineering and Arts and Science Colleges.
PSO-8	Formulate theorems and publish research papers on discovering new avenues in the relevant field of research.

I SEMESTER			
DSC 1	**RESEARCH AND EDUCATIONAL METHODOLOGY**		**18MCMA11**
Hrs/Week: 4	**Hrs/ Sem: 60**	**Hrs/Unit: 12**	**Credits: 4**

Course Outcomes

CO No.	Upon completion of this course, students will be able to:	PSO addressed	Blooms taxonomy classification
CO-1	Understand research methods and typeset mathematical document in Latex and MATLAB.	2	Understanding Applying
CO-2	Apply the basic knowledge of Banach Algebra and Spectral theory.	1,5	Applying
CO-3	Demonstrate Teaching Methods, Integrating ICT in teaching and ways for effective presentation with Power Point, Documentation and Evaluation.	7	Understanding & Evaluating
CO-4	Apply the fundamental concepts of Gelfand–Mazur snf Wiener's lemma.	1,3,6	Applying
CO-5	Create Graphics, Basics 2D and 3D Plots using MATLAB.	2	Creating

SEMESTER I			
DSC 2	**COMMUTATIVE ALGEBRA**		**18MCMA12**
Hrs/Week: 4	**Hrs/ Sem: 60**	**Hrs/Unit: 12**	**Credits: 4**

Course Outcomes

CO No.	Upon completion of this course, students will be able to:	PSO addressed	Blooms taxonomy classification
CO-1	Understand the basic concepts of rings, ideals, modules and homomorphisms.	1	Understanding
CO-2	Outline features to finitely generated modules	1,6	Understanding
CO-3	Access properties implied by different modules on commutative rings.	1,3,5	Applying Evaluating
CO-4	List out the important properties and applications of exact sequences.	1,3,6	Applying
CO-5	Analyze the Noetherian Rings and Artin Rings by means of illustrations.	1,3,6	Analyzing

PROJECT ORIENTED ELECTIVE COURSE

I SEMESTER			
DSE 1A	**ALGEBRAIC GRAPH THEORY**		**18MEMA1A**
Hrs/Week: 4	**Hrs/ Sem: 60**	**Hrs/Unit: 15**	**Credits: 4**

Course Outcomes

CO No.	Upon completion of this course, students will be able to:	PSO addressed	Blooms taxonomy classification
CO-1	Understand the concept of Spectrum of graphs.	1,3, 6	Understanding
CO-2	Generate new graphs via algebraic structures	1,6,8	Creating
CO-3	Explain about symmetry regularity of graphs and general properties of graph automorphism.	1,3,5	Understanding
CO-4	Summarize the concepts of vertex colouring and discuss some colouring problems.	1,3,5	Understanding
CO-5	Apply skills to do research in the field of algebraic graph theory.	1,3,5,6,8	Understanding Creating

I SEMESTER			
DSE 1B	**FUZZY MATHEMATICAL CONCEPTS**		**18MEMA1B**
Hrs/Week: 4	**Hrs/ Sem: 60**	**Hrs/Unit: 12**	**Credits: 4**

Course Outcomes

CO No.	Upon completion of this course, students will be able to:	PSO addressed	Blooms taxonomy classification
CO-1	Acquire necessary knowledge of important parts of fuzzy set theory, which enable them to create effective mathematical models of technical phenomena.	1,4,6,8	Understanding Creating
CO-2	Sketch visual representation of a Fuzzy Subsets and its operations.	1,4	Applying
CO-3	Develop research level thinking in the field of Fuzzy Mathematics.	1,4,6	Understanding
CO-4	Assimilate various fuzzy theoretic concepts like fuzzy algebra, fuzzy field and fuzzy metric space and familiarize with their applications.	1,4,5,6	Understanding Applying
CO-5	Apply the concepts of Fuzzy sets in different fields of Mathematics like Graph Theory, Topology and Algebra.	1,4,5,8	Applying

I SEMESTER			
DSE 1C	**ADVANCED GRAPH THEORY**		**18MEMA1C**
Hrs/Week: 4	**Hrs/ Sem: 60**	**Hrs/Unit: 12**	**Credits: 4**

Course Outcomes

CO No.	Upon completion of this course, students will be able to:	PSO addressed	Blooms taxonomy classification
CO-1	Understand the concepts of domination, Independence and Irredundance and their applications.	1,5	Understanding
CO-2	Determine the domination number and relate the graph theory to the real world problems.	1,3,5,6,8	Applying Evaluating
CO-3	Evaluate the Bounds on the Domination Number in terms of order, degree, diameter and girth.	1,3,5,6	Understanding
CO-4	Understand the important properties and the applications of exact sequences	1,3,6	Understanding Applying
CO-5	Explain about the efficient dominating set, codes and cubes in graph theory.	1,5	Understanding

I SEMESTER			
DSE 1D	**ALGEBRAIC TOPOLOGY**		**18MEMA1D**
Hrs/Week: 4	**Hrs/ Sem: 60**	**Hrs/Unit: 15**	**Credits: 4**

Course Outcomes

CO No.	Upon completion of this course, students will be able to:	PSO addressed	Blooms taxonomy classification
CO-1	Understand the notion of homotopy in topological spaces and the role of Jordan separation theorem and its consequences.	1,3,5	Understanding
CO-2	Recall and understand fundamental concepts in Algebra.	1	Remembering Understanding
CO-3	Access properties implied by imbedding graphs in the plane.	1,3	Understanding
CO-4	Determine the winding number of simple closed curve.	1,3,6,8	Evaluating
CO-5	Explain the fundamental group of the circle, retractions and fixed points in topological spaces.	1,3	Understanding Evaluating