



TRIPURA UNIVERSITY
Department of Mathematics

M.Sc. in Mathematics

Programme Specific Outcome

At the end of the programme student-

- Inculcate mathematical reasoning, be equipped with skills to analyze problems, find solutions of them, formulate an hypothesis, evaluate and validate results, and draw reasonable conclusions thereof.
- get knowledge on various topics in pure and applied mathematics, which will enable them to pursue research at reputed academic institutions
- get the knowledge of a wide range of mathematical techniques and application of mathematical methods/tools in other scientific and engineering domains
- develop effective scientific and/or technical communication skills(both oral and writing)
- get proper preparation for appearing in NET, SET, GATE, etc.
- choose career options in Financial sector, Banking sector, IT sector, R&D Department of varous industrial sections, Administrative services, Teaching, independent consultant, or become enterpreneur with the knowledge of Mathematics.

SEMESTER I- (Core Course (C): 16 Credits)

Course Code	Name of the Course	Credit Distribution			Total Credit	Marks (Scaled)
		L	T	P		
MATH 701C	Linear Algebra	4	0	0	04	100
MATH 702C	Real Analysis	4	0	0	04	100
MATH 703C	Complex Analysis	4	0	0	04	100
MATH 704C	Ordinary Differential Equations	4	0	0	04	100
Sub-Total		16	0	0	16	400

SEMESTER II-(Core Course (C): 12 Credits; Foundation Course (F): 4 Credits)

Course Code	Name of the Course	Credit Distribution			Total Credit	Marks
		L	T	P		
MATH 801C	Abstract Algebra	4	0	0	04	100
MATH 802C	Topology	4	0	0	04	100
MATH 803C	Integral Equations and	4	0	0	04	100

	Calculus of Variations					
CSK 801F	Computer Skill-III	4	0	0	04	100
Sub-Total		12	0	0	12	400

SEMESTER III- 25 Credits (Core Course (C): 16 Credits)

Course Code	Name of the Course	Credit Distribution			Total Credit	Marks
		L	T	P		
MATH 901C	Functional Analysis	4	0	0	04	100
MATH 902C	Numerical Analysis	4	0	0	04	100
MATH 903C	Partial Differential Equations	4	0	0	04	100
MATH 904C	Project-I	4	0	0	04	100
Sub-Total		16	0	0	16	400

SEMESTER IV- 18 Credits (Core Course (C): 12 Credits)

Course Code	Name of the Course	Credit Distribution			Total Credit	Marks
		L	T	P		
MATH 1001C	Lebesgue Measure and Integration	4	0	0	04	100
MATH 1002C	Computer Programming with practical	2	0	2	04	100
MATH 1003C	Project-II	4	0	0	04	100
Sub-Total		10	0	02	12	300

L: Lecture, T: Tutorial, P: Practical

LIST OF ELECTIVE COURSE

Course Code	Elective Course	Credit	
		Theory	Practical
MATH 705E	Operations Research	04	00
MATH 706E	Logic	04	00
MATH 707E	Mathematical Finance	04	00
MATH 708E	Fuzzy Set Theory	04	00
MATH 805E	Category Theory	04	00
MATH 806E	Discrete Mathematics	04	00
MATH 807E	Fuzzy Logic and Applications	04	00
MATH 808E	Dynamical Systems	04	00
MATH 905E	Fuzzy Topology	04	00

MATH 906E	Set Theory	04	00
MATH 807E	Differential Topology	04	00
MATH 908E	Rough Sets and Applications	04	00
MATH 909E	Abstract Measure Theory	04	00
MATH 1004E	Classical Mechanics and Fluid Mechanics	04	00
MATH 1005E	Sequence Space, Summability Theory and its Applications	04	00
MATH 1006E	Riemannian Geometry	04	00
MATH 1007E	Algebraic Topology 4	04	00
MATH 1008E	Number Theory	04	00
MATH 1009E	Advanced Topology	04	00
MATH 1010E	Graph Theory	04	00
MATH 1011E	Fixed Point Theory	04	00

Programme Outcomes

- (1) Knowledge Domain: Demonstrate an understanding of the basic concepts in Mathematics and its importance in our practical life.
- (2) Problem Analysis: Analyze and solve the well-defined problems in Mathematics and related subjects. Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decision. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.
- (3) Modern tool usage: Learn, select, and apply appropriate methods and procedures, resources, and computing tools such as MATLAB, MATHEMATICA etc. with an understanding of the limitations.
- (4) Technical Skills: Understand tools of modeling, simulation, and data analysis to bear on real-world problems, producing solutions with the power to predict and explain complex phenomena.
- (5) Ethics: Analyze relevant academic, professional and research ethical problems and commit to professional ethics and responsibilities with applicable norms of the data analysis and research practices.
- (6) Communication: Effectively communicate about their field of expertise on their activities, with their peer and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations.
- (7) Project Management: Apply knowledge and understanding of principles of Mathematics effectively as an individual, and as a member or leader in diverse teams to manage projects in multidisciplinary environment.
- (8) Research Proposal: Define, design and deliver a significant piece of research work that is clear and concise. Demonstrate the necessary skills and knowledge of deeper understanding of their chosen research area. Understand the philosophy of research in mathematical sciences and appreciate the value of its development.
- (9) Life-long learning: Demonstrate the ability to read and learn Mathematical tools on their own that encourage independent exploration in the specific area of Mathematics and related fields. Continue to acquire Mathematical knowledge and skills appropriate to professional activities in the context of technological change.