महात्मा गाँधी केन्द्रीय विश्वविद्यालय
MAHATMA GANDHI CENTRAL UNIVERSITY
(Established by an Act of Parliament)
Chanakya Parisar, Zila School Campus, Motihari
District-East Champaran, Bihar - 845401

गणित विभाग
Department of Mathematics
School of Physical Sciences
E-mail: headmathematics@mgcub.ac.in

POSTGRADUATE PROGRAMME

Under Choice Based Credit System

M.A./M.Sc. Mathematics

(Effective for the students admitted in the Academic Year: 2023-24 onwards)

PROGRAMME STRUCTURE

Semester	Core Course (16)	Elective Course (4)	Open Elective Course (OE) (4)
I	C1 Algebra I C2 Real Analysis C3 Topology C4 Ordinary Differential Equations C5 Operations Research		
II	C6 Algebra II C7 Differential Geometry of Curves and Surfaces C8 Complex Analysis C9 Numerical Analysis C10 Partial Differential Equations		
III	C11 Calculus of Variation and Integral equations C12 Classical Mechanics C13 Measure and Integration	Elective Course -1 Elective Course -2	OE-1 OE-2
IV	C14 Functional Analysis C15 Fluid Dynamics C16 Dissertation/ Project/Seminar	Elective Course -3 Elective Course -4	OE-3 OE-4

List of Courses for M.A./M. Sc. Mathematics

Details of Course Codes, Course Titles and Credits

Semester	Course Code	Course Title	Credits
I	MATH4101	Algebra I	4
	MATH4102	Real Analysis	4
	MATH4103	Topology	4
	MATH4104	Ordinary Differential Equations	4
	MATH4105	Operations Research	4
		Total Credits	**20**
II	MATH4201	Algebra II	4
	MATH4202	Differential Geometry of Curves and Surfaces	4
	MATH4203	Complex Analysis	4
	MATH4204	Numerical Analysis	4
	MATH4205	Partial Differential Equations	4
		Total Credits	**20**
III	MATH4301	Calculus of Variation and Integral equations	4
	MATH4302	Classical Mechanics	4
	MATH4303	Measure and Integration	4
	Open Elective Courses		
	MATH4304	MATLAB	2 (Practical)
	MATH4305	LATEX	2 (Practical)
	Elective Courses (Students have to choose <u>TWO</u> Elective Courses from MATH4306 to MATH4318)		
	MATH4306	Wavelet Analysis	4
	MATH4307	Advanced Measure Theory	4
	MATH4308	Theory of Optimization	4
	MATH4309	Mathematical Modelling	4
	MATH4310	Special Functions	4
	MATH4311	Fractional Calculus	4
	MATH4312	Advanced Algebra	4

	MATH4313	Module Theory	4
	MATH4314	Advanced Topology	4
	MATH4315	Number Theory	4
	MATH4316	Coding Theory	4
	MATH4317	Discrete Mathematics	4
	MATH4318	Differentiable Manifolds	4
		Total Credits	**20***
IV	MATH4401	Functional Analysis	4
	MATH4402	Fluid Dynamics	4
	MATH4403	**Dissertation/Project/Seminar**	4
	Open Elective Courses		
	MATH4404	Mathematica	2 (Practical)
	MATH4405	Sage Math	2 (Practical)
	Elective Courses (Students have to choose <u>TWO</u> Elective Courses from MATH4406 to MATH4419)		
	MATH4406	Theory of Distributions	4
	MATH4407	Automata Theory and Formal Languages	4
	MATH4408	Operator Theory	4
	MATH4409	Mathematical Statistics	4
	MATH4410	Theory of Relativity	4
	MATH4411	Finite Element Method	4
	MATH4412	Fuzzy Sets and Applications	4
	MATH4413	Commutative Algebra	4
	MATH4414	Computational PDE	4
	MATH4415	Riemannian Geometry	4
	MATH4416	Algebraic Topology	4
	MATH4417	Cryptography and Network Security	4
	MATH4418	Theory of Elasticity	4
	MATH4419	Advanced Complex Analysis	4
		Total Credits	**20***

Note:
1. *1 Credit = 1 hour of Teaching/2 hours of Practical per student per week.*
2. *Dissertation/Project/Seminar (50% on Record+50% on Presentation).*