

B.Sc. (Honours) in Mathematics (Syllabus approved by Board of Studies meeting on 11.07.2018)

Department of Pure & Applied Mathematics

School of Mathematical and Computational Sciences

UNDER THE

CHOICE BASED CREDIT SYSTEM (CBCS)

SCHEME OF EXAMINATION

All papers of B.Sc.(Honors'in Mathematics) First, Second, Third and Fourth Semesters are compulsory. In Fifth and Sixth Semesters TWO PAPERS(02) are core papers and each student has to choose three papers from the list of given optional papers. An examinee has to attempt total five (05) questions out of eight(08) i.e. one compulsory and four optional. Question No. 1 is compulsory and will consist of short answered type ten(10) questions spread all over the syllabus carrying 20 marks (2 marks of each question). Rest of all questions will carry 10 marks each.

In addition to this in the final semester (i.e. Fourth Semester of M.Sc. in Mathematics) a student can choose **two optional papers** and one **project dissertation (selection based on the criteria fixed by Department Head)** under the supervision/guidance of any of the faculty members in the relevant areas of Mathematics closely to the subjects taught at M.Sc. level. Supervisor and topic of the dissertation for student is being allotted at the level of Department in consultation with HOD by a team of faculty members. The dissertation evaluation of 100 marks is evaluated by a committee **consisting of HOD, supervisor and external subject expert**. Each paper (except project dissertation) is of 100 marks and its distribution is as under:

Internal Assessment: 40 (30 marks of internal examination + 05 marks of assignment + 05 maximum marks on attendance)

End Semester Examination: 60

		B'2c' (uon	's) in Mathematics	Credit/
Semester	Course Type	Code	Course Name	Hours
			Calculus (Theory)	04
I	Core	C1.1	Practical (Lab)	02
		C 1.1	Algebra	06
		C 1.2	Differential Calculus	06
	Generic Elective	GE 1.1 GE 1.2	Object Oriented Programming in C++	06
		GE 1.3	Finite Element Methods	06
		C2.1	Real Analysis	06
	Core	C 2.2	Differential Equations (Theory)	04
II			Practical (Lab)	02
		C 2.2 GE 2.1	Algebra and Matrix Theory	06
	Generic Elective Core		Mathematical Finance	06
		GE 2.2	Econometrics	06
		GE 2.3	Theory of Real Functions	06
		C3.1		06
		C3.2	Group Theory I	04
		C3.3	PDE and System of ODE (Theory)	02
	100	C3.3	Practical (Lab)	06
		GE 3.1	Ordinary Differential Equations	00

111	Generic		and Vector Calculus	
	Elective	GE 3.2	Cryptography and Network Security	06
	07.0	GE 3.3	Information Security	06
	SEC	SEC 1.1	Logic and Sets	06
		SEC 1.2	Computer Graphics	06
	Core	C4.1	Numerical Methods (Theory)	04
		C4.1	Practical (Lab)	02
		C4.2	Riemann Integration and series of Functions	06
		C4.3	Ring Theory and Linier Algebra I	06
IV	Generic Elective	GE4.1	Partial Differential Equations, Laplace Transform and Fourier Series	06
		GE 4.2	Applications of Algebra	06
		GE 4.3	Combinatorial Mathematics	06
	SEC	SEC 2.1	Graph Theory	06
		SEC 2.2	Operating System: Linux	06
	Core	C 5.1	Multivariate Calculus	06
		C 5.2	Group Theory II	06
	DSE	DSE 1.1	Portfolio Optimization	06
V	(Any One)	DSE 1.2	Number Theory	06
		DSE 1.3	Analytical Geometry	06
	DSE (Any One)	DSE 2.1	Industrial Mathematics	06
		DSE 2.2	Boolean Algebra and Automata Theory	06
		DSE 2.3	Probability and Statistics	06
VI	Core	C 6.1	Metric Space and Complex Analysis	06
		C 6.2	Ring Theory and Linear Algebra II	06
	DSE	DSE 3.1	Theory of Equations	06
	(Any One)	DSE 3.2	Bio-Mathematics	06
	()	DSE 3.3	Linear Programming	06
	DSE	DSE 4.1	Mathematical Modeling	06
	(Any One)	DSE 4.2	Mechanics	06
	(mi) one)	DSE 4.3	Differential Geometry	06



M.Sc. in Mathematics

(Syllabus approved by Board of Studies meeting on 29.06.2017)

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School of Mathematical and Computational Sciences

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SCHEME OF EXAMINATION

All papers of M.Sc. First and Second Semesters are compulsory. In M.Sc. Third and Fourth Semester **Two papers** are **core papers** and each student has to choose three among the given list of **optional papers** (**Including Project**). A candidate has to attempt five questions. Question No. 1 is compulsory which will consist of short answered type ten questions spread all over the syllabus carrying 20 marks (2 marks each). Rest all questions will carry 10 marks each.

Supervisor and topic of the dissertation for student will be allotted at the level of Department. The dissertation evaluation of 100 maks evaluated by a committee consisting of HOD, supervisor and external subject expert. Each paper (except

project dissertation) is of 100 marks and its distribution is as under:

Internal Assessment: 40

End Semester Examination: 60

M.Sc. in Mathematics

Semester		Core Course	Credit Hours
	MSC 1.1	Algebra - I	04
	MSC 1.2	Real Analysis	04
I	MSC 1.3	Topology-I	04
	MSC 1.4	Differential Geometry - I	04
	MSC 1.5	Discrete Mathematical Structures	04
II	MSC 2.1	Algebra - II	04
	MSC 2.2	Complex Analysis	04
	MSC 2.3	Topology-II	04
	MSC 2.4	Differential Geometry - II	04
	MSC 2.5	Graph Theory	04
Ш	MSC 3.1	Functional Analysis	04
(Core Group)	MSC 3.2	Theory of Differential Equations -I	04
	MSO 3.1	Fuzzy Sets, Fuzzy Logic and their Applications –I	04
	MSO 3.2	Integral Equations	04

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	MSO 3.3	Operations Research- I	04
III	MSO 3.4	Differential Geometry of Manifolds	04
Group ANY	MSO 3.5	Difference Equations –I	04
	MSO 3.6	Information Theory and its Applications	04
	MSO 3.7	Object Oriented Programming with C++	04
	MSO 3.8	Number Theory and Cryptography	04
IV (Core Group)	MSC 4.1	Advanced Functional Analysis	04
	MSC 4.2	Theory of Differential Equations –II	04
	MSO 4.1	Fuzzy Sets, Fuzzy Logic and their Applications–II	04
	MSO 4.2	Finsler Geometry	04
IV (Optional Group ANY THREE)	MSO 4.3	Operations Research- II	04
	MSO 4.4	Complex Manifolds	04
		Difference Equation –II	04
	A STATE OF THE STA	Financial Mathematics and its	04
	MSO 4.6	Applications	
		Project	04

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