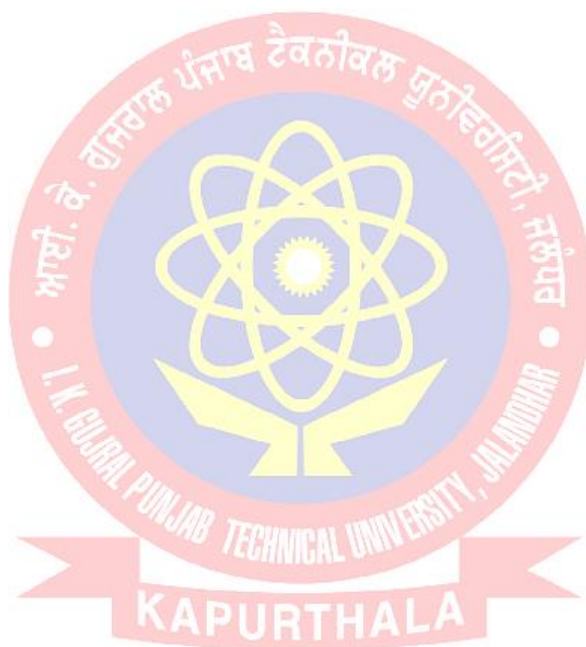


1.1.2 & 1.2.2

**Supporting Documents- Mathematical
Sciences**

**List of Programs in which CBCS/Elective
course system is implemented in the last year**



List of Programs in Which CBCS / Elective Course Implemented in the Last Academic Year

Name of the Department: Department of Mathematics

Program	Year of Syllabus Revision
M.Sc	2016
B.Sc	2019
Ph.D	2016

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(Signature of Head of Department)

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Head *[Signature]*
Department of Mathematical Sciences
J.K. Gujral Punjab Technical University
Kapurthala-141005 Pb. (India)

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Scheme and Syllab
M.Sc. Mathematics Batch 2012 onw

Third Semester

Contact Hours: 27

Course Code	Course Title	Load Allocation			Marks Distribution		
		L	T	P	Internal	External	Total
MMS-301	Topology	4	1	0	50	100	150
MMS-302	Operations Research	4	1	0	50	100	150
MMS-303	Mathematical Statistics	4	1	0	50	100	150
MMS-304	Functional Analysis	4	1	0	50	100	150
MMS-XXX	Elective -I	4	0	0	50	100	150
MMS-305	Seminar	0	0	2	50	-	50
Total		20	05	02	300	500	800

Fourth Semester

Contact Hours: 27

Course Code	Course Title	Load Allocation			Marks Distribution		
		L	T	P	Internal	External	Total
MMS-401	Discrete Mathematics	4	1	0	50	100	150
MMS-402	Mathematical Methods	4	1	0	50	100	150
MMS-403	Partial differential equations	4	1	0	50	100	150
MMS-YYY	Elective -II	4	1	0	50	100	150
MMS-ZZZ	Elective -III	4	0	0	50	100	150
MMS-404	Seminar	0	0	2	50	-	50
Total		20	05	02	300	500	800

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Head
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Elective –I MMS XXX (Any one subject to be opted)

MMS-501 Fluid Mechanics
MMS-502 Solid Mechanics
MMS-503 Coding Theory
MMS-504 Advanced Complex Analysis

Note1: Student is to adopt one course from the list of Elective II and one course from list of Elective III

Elective – II Courses: MMS 505, MMS 506, MMS 510, MMS 512

Elective – III Courses: MMS 507, MMS 508, MMS 509, MMS 511

MMS-505 Advanced Operations Research
MMS-506 Advanced Fluid Mechanics
MMS-507 Advanced Solid Mechanics
MMS-508 Number Theory and Cryptography
MMS-509 Theory of Linear Operators
MMS-510 Advanced Numerical Methods
MMS-511 Topological Vector Spaces
MMS-512 Fractional Calculus

Note 2:

Instructions for paper setters and candidates:

- (a) Eight questions are to be set preferably two questions from the each unit.
- (b) The students are required to attempt any five questions. All questions carry equal marks.
- (c) Duration of examination is three hours.

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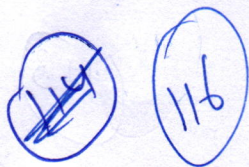
Fourth Semester

Contact Hours: 27 Hrs.

Course Code	Course Title	Load Allocation			Marks Distribution			Credits
		L	T	P	Internal	External	Total	
MSM -401	Mechanics-II	4	1	0	20	80	100	5
MSM -402	Mathematical Statistics-II	4	1	0	20	80	100	5
MSM-403	Differential Geometry	4	1	0	20	80	100	5
MSM -YYY	Elective-II	4	1	0	20	80	100	5
MSM -ZZZ	Elective-III	4	1	0	20	80	100	5
MSM -404	Seminar	0	0	2	50	-	50	1
Total		20	05	02	150	400	550	26

[Signature]

Head *[Signature]*
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Scheme and Syllabus of
M.Sc. Mathematics Batch 2017 onwards

Elective-I MSM XXX (Any one subject to be opted)

MSM -501 Coding Theory

MSM -502 Operations Research

Note1: Student is to adopt one course from the list of Elective-II and one course from list of Elective-III

Elective-II Courses: MSM-503, MSM-504, MSM-505, MSM-506

Elective-III Courses: MSM-507, MSM-508, MSM-509, MSM-510, MSM-511

MSM -503 Advanced Complex Analysis

MSM -504 Advanced Operations Research

MSM -505 Advanced Fluid Mechanics

MSM -506 Advanced Solid Mechanics

MSM -507 Theory of Linear Operators

MSM -508 Advanced Numerical Methods

MSM -509 Topological Vector Spaces

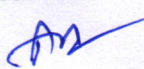
MSM -510 Fractional Calculus

MSM -511 Discrete Mathematics

Note 2:

Instructions for paper setters and candidates:

- a) The entire question paper should be distributed into three sections viz. Section-A, Section-B, Section-C.
- b) The Section-A should cover the entire syllabus, the Section-B should cover Unit-I & II and the Section-C should cover Unit-III & IV of the syllabus.
- c) Section-A should contain eight questions of two marks each. This section should cover the entire syllabus. All questions in this section should be compulsory.
- d) Section-B and Section-C should contain three questions each carrying 16 (sixteen) marks.
- e) Student should be asked to attempt at least two questions from Section-B and Section-C each.
- f) The awards for internal and external examination should be in 20:80 ratio.
- g) The Duration of examination is three hours.

Head 
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Fourth Semester

Contact Hours: 27 Hrs.

S.No.	Course Code	Course Title	Load Allocation			Marks Distribution			Credits
			L	T	P	Internal	External	Total	
1.	UC-MSM-401-18	Differential Geometry	4	1	0	40	60	100	4
2.	UC-MSM-WWW-18	Elective	4	1	0	40	60	100	4
3.*	UC-MSM-XXX-18	Elective	4	1	0	40	60	100	12
	UC-MSM-YYY-18								
	UC-MSM-ZZZ-18								
	UC-MSM-411-18	Dissertation	-	-	12	200	100	300	
4.	UC-MSM-412-18	Seminar	0	0	2	50	0	50	2
Total								550	22

TOTAL NUMBER OF CREDITS = 90

Note*: Students may opt either three Elective Theories or Dissertation.

LIST OF DEPARTMENTAL/INTERDISCIPLINARY ELECTIVES

Elective- UC-MSM-WWW-18, UC-MSM-XXX-18, UC-MSM-YYY-18, UC-MSM-ZZZ-18 (Any one subject to be opted)

MSM-501-18 Discrete Mathematics

MSM-502-18 Coding Theory

MSM-503-18 Operations Research

MSM-504-18 Advanced Number Theory

MSM-505-18 Advanced Complex Analysis

MSM-506-18 Advanced Operations Research

MSM-507-18 Advanced Fluid Mechanics

MSM-508-18 Advanced Solid Mechanics

MSM-509-18 Theory of Linear Operators

MSM-510-18 Advanced Numerical Methods

MSM-511-18 Topological Vector Spaces

MSM-512-18 Fractional Calculus

Examination and Evaluation

Theory			
S. No.	Evaluation criteria	Weightage in Marks	Remarks
1	Mid term/sessional Tests	24	Internal evaluation (40 Marks) MSTs, Quizzes, assignments, attendance, etc., constitute internal evaluation. Average of two mid semester test will be considered for evaluation.
2	Attendance	6	
3	Assignments	10	
4	End semester examination	60	External evaluation