MGM University, Chhatrapati Sambhajinagar

Name of Faculty: Faculty of Basic and Applied Sciences
Name of the College/Institute/Department/School: **School of Basic and Applied Sciences**
Name of the Programme: **M.Sc. Mathematics**
Programme Type (UG/PG): PG **Duration: 2 Years (4 semesters)**

First Year - Semester I												
Course Category	**Course Code**	**Course Title**	**Nature of Course**	**No. of Credits**	**Teaching (Contact hrs/ week)**		**Evaluation Scheme (Marks)**			**Minimum Passing (Marks)**		
					L	**P**	**Internal**	**External**	**Total**	**Internal**	**External**	**Total**
MM	MMM43MML501	Abstract Algebra	L	4	4	-	60	40	100	-	16	40
MM	MMM43MML502	Advance Real Analysis	L	4	4	-	60	40	100	-	16	40
MM	MMM43MML503	Advance Complex Analysis	L	4	4	-	60	40	100	-	16	40
ME	MMM43MEL50X	Major Elective I	L	3	3	-	60	40	100	-	16	40
ME	MMM43MEP50X	Major Elective I Lab	P	1	-	2	30	20	50	-	08	20
RM	MMM43RML501	Research Methodology	L	4	4		60	40	100	-	16	40
Total				20	19	02	330	220	550	-	88	220

	Course Code	**Course Title**
Elective for Sem I	MMM43MEL501	Descriptive and Inferential Statistics
	MMM43MEL502	Object Oriented Programming

Nature of Course: L- Lecture, P-Practical, S-Seminar, J-Project, I-Internship, D-Dissertation,
Course Category: MM-Major Mandatory, ME-Major Elective, MI-Minor, OE-Generic / Open electives, VSC-Vocational skill course, SEC-Skill Enhancement course, AEC-Ability Enhancement course, IKS-Indian Knowledge system, VEC-Value Education course, OJT-On Job Training / Internship / Apprenticeship, FP-Field project, CEP-Community engagement and service, CC-Co – curricular course, RM-Research methodology, RP-Research project

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First Year - Semester II													
Course Category	**Course Code**	**Course Title**	**Nature of Course**	**No. of Credits**	**Teaching (Contact hrs/ week)**		**Evaluation Scheme (Marks)**			**Minimum Passing (Marks)**		
					L	**P**	**Internal**	**External**	**Total**	**Internal**	**External**	**Total**
MM	MMM43MML504	Linear Algebra	L	4	4	-	60	40	100	-	16	40
MM	MMM43MML505	Measure and Integration	L	4	4	-	60	40	100	-	16	40
MM	MMM43MML506	Partial Differential Equation	L	4	4	-	60	40	100	-	16	40
ME	MMM43MEL50X	Major Elective II	L	3	3	-	60	40	100	-	16	40
ME	MMM43MEP50X	Major Elective II Lab	P	1	-	2	30	20	50	-	08	20
OJT	MMM43JTL501	On Job Training	I	4	-	8	60	40	100	-	16	40
Total				20	15	10	330	220	550	-	88	220

	Course Code	**Course Title**
Elective for Sem II	MMM43MEL503	Regression Analysis
	MMM43MEL504	Data Structures

Nature of Course: L- Lecture, P-Practical, S-Seminar, J-Project, I-Internship, D-Dissertation,
Course Category: MM-Major Mandatory, ME-Major Elective, MI-Minor, OE-Generic / Open electives, VSC-Vocational skill course, SEC-Skill Enhancement course, AEC-Ability Enhancement course, IKS-Indian Knowledge system, VEC-Value Education course, OJT-On Job Training / Internship / Apprenticeship, FP-Field project, CEP-Community engagement and service, CC-Co – curricular course, RM-Research methodology, RP-Research project

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Second Year - Semester III												
Course Category	**Course Code**	**Course Title**	**Nature of Course**	**No. of Credits**	**Teaching (Contact hrs/ week)**		**Evaluation Scheme (Marks)**			**Minimum Passing (Marks)**		
					L	**P**	**Internal**	**External**	**Total**	**Internal**	**External**	**Total**
MM	MMM43MML601	Integral Equation & Transform	L	4	4	-	60	40	100	-	16	40
MM	MMM43MML602	Functional Analysis	L	4	4	-	60	40	100	-	16	40
MM	MMM43MML603	Numerical Analysis	L	4	4	-	60	40	100	-	16	40
ME	MMM43MEL60X	Major Elective III	L	3	3	-	60	40	100	-	16	40
ME	MMM43MEP60X	Major Elective III Lab	P	1	-	2	30	20	50	-	08	20
RP	MMM43RPJ601	Research Project -I	J	4	-	8	60	40	100	-	16	40
Total				20	15	10	330	220	550		88	220

	Course Code	**Course Title**
Elective for Sem III	MMM43MEL601	Time Series Analysis
	MMM43MEL602	Python Programming

Nature of Course: L - Lecture, P-Practical, S-Seminar, J-Project, I-Internship, D-Dissertation,
Course Category: MM-Major Mandatory, ME-Major Elective, MI-Minor, OE-Generic / Open electives, VSC-Vocational skill course, SEC-Skill Enhancement course, AEC-Ability Enhancement course, IKS-Indian Knowledge system, VEC-Value Education course, OJT-On Job Training / Internship / Apprenticeship, FP-Field project, CEP-Community engagement and service, CC-Co – curricular course, RM-Research methodology, RP-Research project

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Second Year - Semester IV												
Course Category	**Course Code**	**Course Title**	**Nature of Course**	**No. of Credits**	**Teaching (Contact hrs/ week)**		**Evaluation Scheme (Marks)**			**Minimum Passing (Marks)**		
					L	**P**	**Internal**	**External**	**Total**	**Internal**	**External**	**Total**
MM	MMM43MML604	Classical Mechanics	L	4	4		60	40	100	-	16	40
MM	MMM43MML605	Fractional Calculus	L	4	4		60	40	100	-	16	40
MM	MMM43MML606	Operations Research	L	4	4		60	40	100	-	16	40
ME	MMM43MEL60X	Major Elective IV	L	3	3	-	60	40	100	-	16	40
ME	MMM43MEP60X	Major Elective IV Lab	P	1	-	2	30	20	50	-	08	20
RP	MMM43RPJ602	Research Project II	J	6	-	12	60	40	100	-	16	40
Total				22	15	14	330	220	550		88	220

	Course Code	**Course Title**
Elective for Sem IV	MMM43MEL603	Statistical learning & Data mining
	MMM43MEL604	Java Programming

Nature of Course: L- Lecture, P-Practical, S-Seminar, J-Project, I-Internship, D-Dissertation,
Course Category: MM-Major Mandatory, ME-Major Elective, MI-Minor, OE-Generic / Open electives, VSC-Vocational skill course, SEC-Skill Enhancement course, AEC-Ability Enhancement course, IKS-Indian Knowledge system, VEC-Value Education course, OJT-On Job Training / Internship / Apprenticeship, FP-Field project, CEP-Community engagement and service, CC-Co – curricular course, RM-Research methodology, RP-Research project

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Annexture I

	Data Science	Computer Applications
Elective for Sem I	Descriptive and Inferential Statistics	Object Oriented Programming
Elective for Sem II	Regression Analysis	Data Structures
Elective for Sem III	Time Series Analysis	Python Programming
Elective for Sem IV	Statistical learning & Data mining	Java Programming