

MGM University, Chhatrapati Sambhajinagar

Name of Faculty: Basic & Applied Science

Name of the College/Institute/Department/School: Department of Chemistry, School of Basic & Applied Sciences (SBAS)

Name of the Programme: M. Sc. Chemistry

Programme Type (UG/PG): PG

Duration: 02 Years (04 Semester)

First Year-Semester-I M. Sc. Chemistry												
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	MCH43MML501	Group Theory & Coordination Chemistry	L	3	3	-	60	40	100	-	16	40
MM	MCH43MML502	Organic Reaction Mechanism & Stereochemistry	L	3	3	-	60	40	100	-	16	40
MM	MCH43MML303	Thermodynamics & Electrochemistry	L	3	3	-	60	40	100	-	16	40
MM	MCH43MMP501	Inorganic Chemistry Lab Course-I	P	2	-	4		20	50	-	8	20
MM	MCH43MMP502	Organic Chemistry Lab Course-I	P	2	-	4	30	20	50	-	8	20
MM	MCH43MMP503	Physical Chemistry Lab Course-I	P	1	-	2	30	20	50	-	8	20
ME	Major Elective-I		L	3	3	-	60	40	100	-	16	40
	MCH43MEL501	Chromatographic Methods of Analysis										
	MCH43MEL502	Material Chemistry										
	MCH43MEL503	Computational & Quantum Chemistry										
ME	MCH43MEP501	Analytical Chemistry Lab Course-I	P	1	-	2	30	20	50	-	8	20
RM	MCH43RML501	Research Methodology	L	4	4	-	60	40	100	-	16	40
				22	16	12	-	-	700	-	-	-

Note:

Nature of Course: L- Lecture, P-Practical, S-Seminar, J-Project, I-Internship, D-Dissertation,

MGM University, Chhatrapati Sambhajnagar

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

First Year-Semester-II (M. Sc. Chemistry)													
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	MCH43MML504	Inorganic Reaction Mechanism & Organotransition Metal Chemistry	L	3	3	-	60	40	100	-	16	40	
MM	MCH43MML505	Organic Reactions & Rearrangements	L	3	3	-	60	40	100	-	16	40	
MM	MCH43MML506	Chemical Dynamics & Biophysical Chemistry	L	3	3	-	60	40	100	-	16	40	
MM	MCH43MMP504	Inorganic Chemistry Lab Course-II	P	2	-	4	30	20	50	-	8	20	
MM	MCH43MMP505	Organic Chemistry Lab Course-II	P	2	-	4	30	20	50	-	8	20	
MM	MCH43MMP506	Physical Chemistry Lab Course -II	P	1	-	2	30	20	50	-	8	20	
ME		Major Elective-II	L	3	3	-	60	40	100	-	16	40	
		MCH43MEL504											Spectroscopic Methods of Analysis
		MCH43MEL505											Pharmaceutical & Forensic Analysis
	MCH43MEL506	Spectroscopic & Thermal Methods of Analysis											
ME	MCH43MEP502	Analytical Chemistry Lab Course-II	P	1	-	2	30	20	50	-	8	20	
FP	MCH43FPP501	Field Project-I	J	4	-	8	60	40	100	-	16	40	
				22	12	20	-	-	700	-	-	-	

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Exit option: PG Diploma in Chemistry (44 Credits) after Three Year UG Degree.

Second Year - Semester III M. Sc. Chemistry (Organic Chemistry) Specilization												
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	MCH43MML607	Applications of Spectroscopy	L	3	3	-	60	40	100	-	16	40
MM	MCH43MML608	Reagents in Organic Synthesis	L	3	3	-	60	40	100	-	16	40
MM	MCH43MML609	Photochemistry & pericyclic reactions	L	3	3	-	60	40	100	-	16	40
MM	MCH43MMP607	Organic Chemistry Lab Course-III	P	2	-	4	30	20	50	-	8	20
MM	MCH43MMP608	Organic Chemistry Lab Course -IV	P	2	-	4	30	20	50	-	8	20
MM	MCH43MMP609	Organic Chemistry Lab Course-V	P	1	-	2	30	20	50	-	8	20
ME	Major Elective-III		L	3	3	-	60	40	100	-	16	40
	MCH43MEL607	Asymmetric Synthesis & Bioorganic Chemistry										
	MCH43MEL608	Advanced Stereochemistry										
	MCH43MEL609	Chemistry of Nanomaterials										
ME	MCH43MEP603	Organic Chemistry Lab-VI	P	1	-	2	30	20	50	-	8	20
RP	MCH43RPJ601	Minor Research Project	J	4	-	8	60	40	100	-	16	40
				22	12	20			700			

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Second Year - Semester IV M. Sc. Chemistry (Organic Chemistry) Specialization												
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	MCH43MML610	Organic Synthesis: Retro synthetic Approach	L	3	3	-	60	40	100	-	16	40
MM	MCH43MML611	Chemistry of Heterocyclic & Bioactive Molecules	L	3	3	-	60	40	100	-	16	40
MM	MCH43MML612	Chemistry of Natural Products	L	3	3	-	60	40	100	-	16	40
	MCH43MML613	Green Chemistry	L	3	3	-	60	40	100	-	16	40
ME		Major Elective-IV	L	4	4	-	60	40	100	-	16	40
	MCH43MEL610	Medicinal Chemistry										
	MCH43MEL611	Chemoinformatics										
	MCH43MEL612	Organic High Polymers										
RP	MCH43RPJ602	Major Research Project	J	6	-	12	60	40	100	-	16	40
				22	16	12			600			

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Award of 2 Years-4 Sem. M. Sc. Chemistry PG Degree (88 credits) after Three Year UG Degree or 1 Year-2 Sem. M. Sc. Chemistry PG Degree (44 credits) after Four Year UG Degree

MGM University, Chhatrapati Sambhajinagar

Second Year - Semester III M. Sc. Chemistry (Analytical Chemistry) Specialization												
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	MCH43MML614	Applications of Spectroscopy	L	3	3	-	60	40	100	-	16	40
MM	MCH43MML615	Food Fertilizers & Pesticide Analysis	L	3	3	-	60	40	100	-	16	40
MM	MCH43MML616	Quality Assurance & Quality Control	L	3	3	-	60	40	100	-	16	40
MM	MCH43MMP610	Analytical Chemistry Lab Course Lab-III	P	2	-	4	30	20	50	-	8	20
MM	MCH43MMP611	Analytical Chemistry Lab Course-IV	P	2	-	4	30	20	50	-	8	20
MM	MCH43MMP612	Analytical Chemistry Lab Course-V	P	1	-	2	30	20	50	-	8	20
ME	Major Elective-III		L	3	3	-	60	40	100	-	16	40
	MCH43MEL613	Chemistry of Nanomaterials										
	MCH43MEL614	Isolation, Extraction & Purifications Techniques										
	MCH43MEL615	Cosmetic Analysis										
ME	MCH43MEP604	Analytical Chemistry Lab-VI	P	1	-	2	30	20	50	-	8	20
RP	MCH43RPJ601	Minor Research Project	J	4	-	8	60	40	100	-	16	40
				22	12	20			700			

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MGM University, Chhatrapati Sambhajinagar

Second Year - Semester IV M. Sc. Chemistry (Analytical Chemistry) Specialization													
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	MCH43MML617	Advanced Instrumental Methods of Analysis	L	3	3	-	60	40	100	-	16	40	
MM	MCH43MML618	Pharmaceutical & Forensic Analysis	L	3	3	-	60	40	100	-	16	40	
MM	MCH43MML619	Electro-Analytical Techniques	L	3	3	-	60	40	100	-	16	40	
	MCH43MML620	Green Chemistry & Biorefinary Techniuques	L	3	3	-	60	40	100	-	16	40	
ME		Major Elective-IV	L	4	4	-	60	40	100	-	16	40	
		MCH43MEL616											Analysis of Ores, Alloys & Minerals
		MCH43MEL617											Environmental and Industrial Material Analysis
	MCH43MEL618	Polymer and Petrochemical Analysis											
RP	MCH43RPJ602	Major Research Project	J	6	-	12	60	40	100	-	16	40	
				22	16	12			600				

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Award of 2 Years-4 Sem. M. Sc. Chemistry PG Degree (88 credits) after Three Year UG Degree or 1 Year-2 Sem. M. Sc. Chemistry PG Degree (44 credits) after Four Year UG Degree.