



MAHARISHI MARKANDESHWAR UNIVERSITY SADOPUR-AMBALA,

(Established under Haryana Govt. Act No. 29 of 2010 and Approved by the UGC under Section 22 of the UGC Act, 1956)

DEPARTMENT OF CHEMISTRY SCHEME AND SYLLABI OF

M.Sc. Chemistry
(w.e.f. Session 2019-20)

FIRST SEMESTER

S.No.	Paper Code	Paper	Category	Hrs/Week			Cr.	Examination marks			
				L	T	P		Internal	Theory	Practical	Total
1	MCH-501	Inorganic Chemistry- I	CT	4	0	0	4.0	40	60	-	100
2	MCH-503	Organic Chemistry- I	CT	4	0	0	4.0	40	60	-	100
3	MCH-505	Physical Chemistry- I	CT	4	0	0	4.0	40	60	-	100
4	MCH-507/ MTH-509	Bio Sciences/ Basic Mathematics for Chemists	ET	3	0	0	3.0	40	60	-	100
5	MCH-511	Inorganic Chemistry Practical – I	CP	-	-	6	3.0	60	-	40	100
6	MCH-513	Organic Chemistry Practical – I	CP	-	-	6	3.0	60	-	40	100
7	MCH-515	Physical Chemistry Practical – I	CP	-	-	6	3.0	60	-	40	100
	Total			15	0	18	24.0	340	240	120	700



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SECOND SEMESTER

S.No.	Paper Code	Paper	Category	Hrs/Week			Cr.	Examination marks			
				L	T	P		Internal	Theory	Practical	Total
1	MCH-502	Inorganic Chemistry- II	CT	4	0	0	4.0	40	60	-	100
2	MCH-504	Organic Chemistry- II	CT	4	0	0	4.0	40	60	-	100
3	MCH-506	Physical Chemistry- II	CT	4	0	0	4.0	40	60	-	100
4	MCH-508	Spectroscopy and its applications in Organic Chemistry	CT	4	0	0	4.0	40	60	-	100
5	MCH-510	Inorganic Chemistry Practical- II	CP	-	-	6	3.0	60	-	40	100
6	MCH-512	Organic Chemistry Practical- II	CP	-	-	6	3.0	60	-	40	100
7	MCH-514	Physical Chemistry Practical- II	CP	-	-	6	3.0	60	-	40	100
	Total			16	-	18	25.0	340	240	120	700

*The students will be required to undergo six week industrial/ research training after second semester examination.



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Third Semester

S.No.	Paper Code	Category	Paper	Hrs/Week			Cr.	Examination marks			
				L	T	P		Internal	Theory	Practical	Total
1	MCH-517	CT	Industrial and Environmental Chemistry	4	0	0	4.0	40	60	-	100
2	MCH-519	CT	Analytical Techniques	4	0	0	4.0	40	60	-	100
3	MCH-521/523/ 525/527/529	SET	Elective- I	4	0	0	4.0	40	60	-	100
4	MCH-531/533/ 535/537/539	SET	Elective -II	4	0	0	4.0	40	60	-	100
5	MCH-541/543/ 545/547/549	SEP	Elective Practical -I	-	-	6	3.0	60	-	40	100
6	MCH-551/553/ 555/557/559	SEP	Elective Practical -II	-	-	6	3.0	60	-	40	100
7	MCH-561	CP	Summer training report		4		4.0	100			100
			Total	16	4	12	26	380	240	80	700



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M.Sc. Chemistry

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FOURTH SEMESTER

S.No.	Paper Code	Paper	Category	Hrs/Week			Cr.	Examination marks			
				L	T	P		Internal	Theory	Practical	Total
1	CS-516	Applications of computers in chemistry	CT	4	0	0	4.0	40	60	-	100
2	MCH-518	Special topics in Inorganic Chemistry	CT	4	0	0	4.0	40	60	-	100
3	MCH-520/522/524/526/528	Elective III	SET	4	0	0	4.0	40	60	-	100
4	MCH-530/532/534/536/538	Elective IV	SET	4	0	0	4.0	40	60	-	100
5	CS-540	Applications of computers in chemistry- Lab	CP	0	0	2	1.0	60		40	100
6*	MCH-542	Project		-	-	12	6.0	120		80	200
	OR	OR									
	MCH-544/546/548/550/552	Elective Practical-III	SEP			6	3	60	-	40	100
	MCH-554/556/558/560/562	Elective Practical-IV	SEP			6	3	60	-	40	100
	MCH-564	Open Elective	OE	2	0	0	2.0	40	60	-	100
	Total			18	0	14	25.0	340	240	120	700
	Educational Tour: Organizing Educational Tour aiming at giving practical exposure to second year students is expected (at their own cost).										

* In fourth Semester students will either opt for Project (MCH-542) or for two elective practical subjects (Elective Practical –III and IV).

Details of Electives

	Inorganic Chemistry Specialization		Organic Chemistry Specialization		Physical Chemistry Specialization		Pharmaceutical Chemistry Specialization		Pesticides and Agrochemicals Specialization	
Elective I	MCH - 521	Spectroscopy of Inorganic Compounds	MCH - 523	Photo Chemistry and Pericyclic Reactions	MCH - 525	Electro and surface chemistry	MCH - 527	Disconnection, Asymmetric Synthesis and Heterocyclic compounds	MCH - 529	Pesticide Formulations & Pesticides Synthesis-I
Elective II	MCH - 531	Nuclear Chemistry	MCH - 533	Natural Products and Hetrocyclic Chemistry	MCH - 535	Solid state Chemistry and Liquid Crystals	MCH - 537	Medicinal Chemistry & Natural Products	MCH - 539	Advanced Agrochemicals, Biopesticides and Fertilizers
Elective Practical I	MCH - 541	Inorganic Chemistry Special Practical I	MCH - 543	Organic Chemistry Special Practical I	MCH - 545	Physical Chemistry Special Practical I	MCH - 547	Pharmaceutical Chemistry Special Practical-I	MCH - 549	Laboratory Course in Pesticides and Agrochemicals -I
Elective Practical II	MCH - 551	Inorganic Chemistry Special Practical II	MCH - 553	Organic Chemistry Special Practical II	MCH - 555	Physical Chemistry Special Practical II	MCH - 557	Pharmaceutical Chemistry Special Practical-II	MCH - 559	Laboratory Course in Pesticides and Agrochemicals -II
Elective III	MCH - 520	Bioinorganic Chemistry	MCH - 522	Advance organic synthesis	MCH - 524	Statistical Thermo dynamics and advanced Kinetics	MCH - 526	Pharmaceutical Management and Drug preparation	MCH - 528	Pesticide Formulations & Pesticides Synthesis-II
Elective IV	MCH - 530	Organometallic Chemistry	MCH - 532	Bio-organic and medicinal Chemistry	MCH - 534	Macro molecules and Biophysical Chemistry	MCH - 536	Drug Engineering	MCH - 538	Biochemistry and Toxicology of Pesticides
Elective Practical III	MCH - 544	Inorganic Chemistry Special Practical -III	MCH - 546	Organic Chemistry Special Practical- III	MCH - 548	Physical Chemistry Special Practical -III	MCH - 550	Pharmaceutical Chemistry Special Practical-III	MCH - 552	Laboratory Course in Pesticides and Agrochemicals -III
Elective Practical IV	MCH - 554	Inorganic Chemistry Special Practical -IV	MCH - 556	Organic Chemistry Special Practical- IV	MCH - 558	Physical Chemistry Special Practical -IV	MCH - 560	Pharmaceutical Chemistry Special Practical-IV	MCH - 562	Laboratory Course in Pesticides and Agrochemicals -IV

OPEN ELECTIVE

Open Elective	MCH-564	Environmental and Analytical Chemistry
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DEPARTMENT OF CHEMISTRY SCHEME AND SYLLABI OF M.Sc. Chemistry (Four Semesters) Course (w.e.f. Session 2019-20)

Under Choice Based Credit System

(Effective from the Academic Session 2019-20)

Credits requirement for completion of the Programme: 100

Credits Compulsory Courses: 67

Credits Elective Courses: 03

Credits Open Elective Courses: 02

Credits Specialization Elective Courses: 28

Credits Total: 100

SEMESTER-WISE DISTRIBUTION OF CREDITS:

Semester I (CT-12, ET-3, CP-9) = 24

Semester II (CT-16, CP-9) = 25

Semester III (CT-8, CP-04, SET-08, SEP-6) = 26

Semester IV (CT-08, SET-08, CP-1, SEP-6, OE-2) = 25

CATEGORIES OF SUBJECTS:

CT-Compulsory Theory, ET- Elective Theory, CP- Compulsory Practical, OE-Open elective,

SET- Specialization elective theory, SEP-Specialization elective Practical