

Course Curriculum of M.Sc. Chemistry Program



Department of Chemistry
School of Technology
Pandit Deendayal Energy University

Course structure

<u>Semester-I</u>						
Course Code	Course Name	Teaching Scheme				
		L	T	P	Credit	Contact Hr.
20MSC501T	Organic Chemistry-I	3	0	0	3	3
20MSC501P	Organic Chemistry-I Practical	0	0	3	1.5	3
20MSC502T	Inorganic Chemistry-I	3	0	0	3	3
20MSC502P	Inorganic Chemistry-I Practical	0	0	3	1.5	3
20MSC503T	Physical Chemistry-I	3	0	0	3	3
20MSC503P	Physical Chemistry-I Practical	0	0	3	1.5	3
20MSC504T	Analytical Chemistry-I	2	0	0	2	2
20MSC504P	Analytical Chemistry-I Practical	0	0	3	1.5	3
20MSC505T	Environmental and Green Chemistry	2	0	0	2	2
Total		13	0	12	19	25

<u>Semester-II</u>						
Course Code	Course Name	Teaching Scheme				
		L	T	P	Credit	Contact Hr.
20MSC506T	Organic Chemistry-II	3	0	0	3	3
20MSC506P	Organic Chemistry-II Practical	0	0	3	1.5	3
20MSC507T	Inorganic Chemistry-II	3	0	0	3	3
20MSC507P	Inorganic Chemistry-II Practical	0	0	3	1.5	3
20MSC508T	Physical Chemistry-II	3	0	0	3	3
20MSC508P	Physical Chemistry-II Practical	0	0	3	1.5	3
20MSC509T	Analytical Chemistry-II	2	0	0	2	2

20MSC509P	Analytical Chemistry-I Practical	0	0	3	1.5	3
20MSC510T	Theoretical & Computational Chemistry	2	1	0	3	5
20MSC510P	Theoretical & Computational Chemistry Practical	0	0	2	1	
Total		13	1	14	21	28

Semester-III						
Course Code	Course Name	Teaching Scheme				
		L	T	P	Credit	Contact Hr.
	Stream Elective-I	2	0	0	2	2
	Stream Elective-II	2	0	0	2	2
	Stream Elective-III	2	0	0	2	2
	Stream Elective-IV	2	0	0	2	2
	Stream Elective-V	2	0	0	2	2
	Stream Elective Lab*	0	0	3	1.5	3
20RM601	Research Methodology	1	0	0	1	1
20MSC635P	Research Project Phase I*	0	0	16	8	16
Total		11		19	20.5	30
Semester-IV						
Course Code	Course Name	Teaching Scheme				
		L	T	P	Credit	Contact Hr.
20MSC636P	Research Project (Experiment, Dissertation & Seminar)	0	0	40	20	40

Total		0	0	40	20	40
Total Course details		37	1	85	85.5	123

Specialization Electives & Laboratories:

*Note- The students will chose the respective specialization streams in Sem-III. Each specialization has 5 course and one specialization lab. Further, the project phase- I & II will be in line with specialization chosen by the student.

Stream Electives Theory

Analytical Chemistry		
I.	20MSC611T	Atomic & Molecular Spectroscopy
II.	20MSC612T	Advanced Instrumental Techniques-I
III.	20MSC613T	Advanced Instrumental Techniques-II
IV.	20MSC614T	Electro Analytical and Radio Analytical Methods of Analysis
V.	20MSC615T	Method Development and Validation
Pharmaceuticals Chemistry		
I.	20MSC616T	Chemical Biology
II.	20MSC617T	Medicinal Chemistry-I
III.	20MSC618T	Medicinal Chemistry-II
IV.	20MSC619T	Pharmaceutical Chemistry and Biochemistry
V.	20MSC620T	Formulation Development
Industrial Chemistry		
I.	20MSC621T	Paints, pigments & cosmetics
II.	20MSC622T	Polymer Chemistry & Composite Materials
III.	20MSC623T	Materials and Nano Chemistry
IV.	20MSC624T	Fine chemicals (Petrochemicals, oil, soap and pesticides)
V.	20MSC625T	Petroleum Chemistry & Catalysis

Organic Chemistry		
I.	20MSC626T	Reagents and Organic synthesis
II.	20MSC627T	Stereochemistry and Photochemistry
III.	20MSC628T	Heterocycles and vitamins
IV.	20MSC629T	Chemistry of Natural Products
V.	20MSC630T	Asymmetric synthesis/catalysis

Stream Elective Lab

Course Code	Subject
20MSC631P	Analytical Chemistry Lab
20MSC632P	Pharmaceuticals Chemistry Lab
20MSC633P	Industrial Chemistry Lab
20MSC634P	Organic Chemistry Lab