

# MSc (2 Years) Chemistry

(2 Years)  
4 Semesters

Total Credit Hours 68

## Admission Criteria

- BSc with at least 45% marks

## Scheme of Studies MSc Chemistry

COURSE TITLE	COURSE CODE	CR. HRS
<b>Semester 1</b>		
Inorganic Chemistry	Chem-Inorg-5101	4(3+1)
Organic Chemistry	Chem-Org-5101	4(3+1)
Physical Chemistry	Chem-Phy-5101	4(3+1)
Analytical Chemistry	Chem-Ana-5101	4(3+1)
Mathematics for Chemist	Chem-Math-5101	2(2+0)
<b>Semester 2</b>		
Inorganic Chemistry	Chem-Inorg-5202	4(3+1)
Organic Chemistry	Chem-Org-5202	4(3+1)
Physical Chemistry	Chem-Phy-5202	4(3+1)
Environmental Chemistry	Chem-Env-5201	2(2+0)
Analytical Chemistry/ Biochemistry/Applied Chemistry/Fuel Chemistry etc.	Chem-Ana-5202/ Chem-Bio-5201/ Chem-App-5201/ Chem-Ful-5201	4(3+1)

**Specialization in Inorganic / Organic / Physical /  
Analytical Chemistry / Applied Chemistry /  
Bio Chemistry and Fuel Chemistry**

Specialization	Course Title	Course Code	Cr. Hrs
<b>Semester 3</b>			
<b>Papers – I</b>			
Inorganic	Inorganic reaction mechanism	Chem-Inorg-6103	3(3+0)
Organic	Synthesis and Mechanism-I	Chem-Org-6103	
Physical	Electrochemistry & statistical thermodynamics	Chem-Phy-6103	
Analytical	Spectroscopic methods of analysis	Chem-Ana-6103	
Applied	Common Industries-I	Chem-App-6102	
Bio Chemistry	General biochemistry related to biomedical sciences	Chem-Bio-6102	
Fuel Chemistry	Chemistry of coal conversion processes-I	Chem-Ful-6102	
<b>Papers – II</b>			
Inorganic	Bioinorganic Chemistry	Chem-Inorg-6104	3(3+0)
Organic	Reactive intermediate and rearrangement reactions	Chem-Org-6104	
Physical	Polymer Chemistry	Chem-Phy-6104	
Analytical	Electrochemical Methods	Chem-Ana-6104	
Applied	Agro based industries	Chem-App-6103	
Bio Chemistry	Physical techniques in biochemistry	Chem-Bio-6103	
Fuel Chemistry	Petroleum and petrochemicals	Chem-Ful-6103	
<b>Papers – III</b>			
Inorganic	Spectroscopy & instrumental methods of analysis	Chem-Inorg-6105	3(3+0)
Organic	Organic spectroscopy	Chem-Org-6105	
Physical	Quantum chemistry & molecular spectroscopy	Chem-Phy-6105	
Analytical	Emission spectroscopy & radiochemical methods	Chem-Ana-6105	
Applied	Common industries II	Chem-App-6104	
Bio Chemistry	Molecular biology	Chem-Bio-6104	
Fuel Chemistry	Characterization of fossil fuels by advance instruments	Chem-Ful-6104	
<b>Practical – I</b>			
Inorganic	As per courses	Chem-Inorg-6106	1(0+1)
Organic		Chem-Org-6106	
Physical		Chem-Phy-6106	
Analytical		Chem-Ana-6106	
Applied		Chem-App-6105	
Bio Chemistry		Chem-Bio-6105	
Fuel Chemistry		Chem-Ful-6105	
<b>Elective Course-I</b>			
Course code will depend on course selected from other specializations	(Other than the field of specialization) Title will be the same as offered in a particular specialization		3(3+0)
Research Project/Advanced Special Practical	Thesis /Advanced Special Practical-I	Chem-RS-6101 Chem-Asp-6101	2(4/2)
	<b>Total</b>		<b>15</b>

Specialization	Course Title	Course Code	Cr. Hrs
<b>Semester 4</b>			
<b>Paper-IV</b>			
Inorganic Organic Physical Analytical Applied Bio-Chemistry Fuel Chemistry	Organometallic chemistry Reaction mechanism determination, biomolecules and synthetic drugs Advanced chemical kinetics Hyphenated techniques Organic based industries Physiological Chemistry & chemotherapy Chemistry of coal conversion processes II	Chem-Inorg-6207 Chem-Org -6207  Chem-Phy-6207 Chem-Ana-6207 Chem-App-6206 Chem-Bio-6206 Chem-Ful-6206	<b>3(3+0)</b>
<b>Paper-V</b>			
Inorganic Organic Physical Analytical Applied Bio-Chemistry Fuel Chemistry	Elementary group theory Natural product chemistry Radiation & photochemistry Advanced chromatography Industrial products Microbiology & immunology Petroleum & petrochemical II	Chem-Inorg-6208 Chem-Org -6208 Chem-Phy-6208 Chem-Ana-6208 Chem-App-6207 Chem-Bio-6207 Chem-Ful-6207	<b>3(3+0)</b>
<b>Paper-VI</b>			
Inorganic Organic Physical Analytical Applied Bio-Chemistry Fuel Chemistry	Nuclear chemistry Synthesis & mechanism III Solid state chemistry, surface chemistry & catalysis Special topics Metallurgy Nutrition Characterization of fossil fuels by advance instrumental techniques	Chem-Inorg-6209 Chem-Org -6209 Chem-Phy-6209  Chem-Ana-6209 Chem-App-6208 Chem-Bio-6208  Chem-Ful-6208	<b>3(3+0)</b>
<b>Practical-II</b>			
Inorganic Organic Physical Analytical Applied Bio-Chemistry Fuel Chemistry	Based on courses	Chem-Inog-6210 Chem-Org-6210 Chem-Phy-6210 Chem-Ana-6210 Chem-App-6209 Chem-Bio-6209 Chem-Ful-6209	<b>1(0+1)</b>
<b>Elective Course-II</b>			
	(Other than the field of Specialization)		<b>3(3+0)</b>
	Title will be the same as offered in a particular specialization		<b>3(3+0)</b>
Research Project/Advanced Special Practical	Thesis /Advanced Special Practical-II	Chem-RS-6101 Chem-Asp-6101	<b>2(4/2)</b>
<b>Total</b>			<b>15</b>