

# MSc Chemistry

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## Semester 1

Course Code	Course Title	Credit Hours
CHM-551	Physical Chemistry – I	4(3 – 1)
CHM-553	Organic Chemistry – I	4(3 – 1)
CHM-555	Inorganic Chemistry – I	4(3 – 1)
MTH-571	Mathematics for Chemists	2(2 – 0)
CHM-557	Biochemistry – I	3(3 – 0)
CHM-559	Analytical Chemistry – I	3(3 – 0)
	<b>Total</b>	<b>20</b>

## Semester 2

Course Code	Course Title	Credit Hours
CHM-552	Physical Chemistry – II	4(3 – 1)
CHM-554	Organic Chemistry – II	4(3 – 1)
CHM-556	Inorganic Chemistry – II	4(3 – 1)
CHM-558	Biochemistry – II	3(3 – 0)
CHM-560	Analytical Chemistry – II	3(3 – 0)
CHM-562	Introductory Spectroscopy	2(2 – 0)
	<b>Total</b>	<b>20</b>

## Semester 3

The students have to adopt one specialization set from the followings

### Specialization in Organic Chemistry

Course Code	Course Title	Credit Hours
ENG-601	EFE (English for Employment)	3(3 – 0)
CHM-651	Spectroscopic Organic Techniques	3(3 – 0)
CHM-653	Rearrangements and Pericyclic Reactions	3(3 – 0)

CHM-655	Pharmaceutical Chemistry	3(3 – 0)
CHM-657	Organic Chemistry Practicals	2(0 – 2)
	<b>Total</b>	<b>14</b>

### Specialization in Analytical Chemistry

Course Code	Course Title	Credit Hours
ENG-601	EFE (English for Employment)	3(3 – 0)
CHM-659	Electro Analytical Techniques	3(3 – 0)
CHM-661	Polarography and Chromatography	3(3 – 0)
CHM-663	Spectroscopic Techniques	3(3 – 0)
CHM-665	Analytical Chemistry Practicals	2(0 – 2)
	<b>Total</b>	<b>14</b>

### Specialization in Biochemistry

Course Code	Course Title	Credit Hours
ENG-601	EFE (English for Employment)	3(3 – 0)
CHM-667	Biological Metabolism	3(3 – 0)
CHM-669	Human Physiology	3(3 – 0)
CHM-671	Biochemistry of Nucleic Acids	3(3 – 0)
CHM-673	Biochemistry Practicals	2(0 – 2)
	<b>Total</b>	<b>14</b>

### Specialization in Physical Chemistry

Course Code	Course Title	Credit Hours
ENG-601	EFE (English for Employment)	3(3 – 0)
CHM-675	Kinetics of Complex Reactions	3(3 – 0)
CHM-677	Thermodynamics and Spectroscopy	3(3 – 0)
CHM-683	Material Chemistry	3(3 – 0)
CHM-685	Physical Chemistry Practicals	2(0 – 2)
	<b>Total</b>	<b>14</b>

### Specialization in Inorganic Chemistry

Course Code	Course Title	Credit Hours
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ENG-601	EFE (English for Employment)	3(3 – 0)
CHM-687	Main Group Organometallic and Organic Reagents	3(3 – 0)
CHM-689	Spectroscopic Methods of Analysis	3(3 – 0)
CHM-691	Metal Cluster Compounds	3(3 – 0)
CHM-693	Inorganic Chemistry Practicals	2(0 – 2)
	<b>Total</b>	<b>14</b>

## Semester 4

<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hours</b>
CHM-680	Thesis	6(6 – 0)
	<b>Total</b>	<b>06</b>
	<b>Specialization in Analytical Chemistry</b>	
CHM-679	Seminar	1(1 – 0)
STA-595	Introduction to Statistical Theory	3(3 – 0)
CHM-652	Thermal Methods of Analysis	3(3 – 0)
CHM-654	Electrophoresis	3(3 – 0)
CHM-656	Atomic Spectroscopy	3(3 – 0)
CHM-658	Instrumental Techniques	3(3 – 0)
	<b>Total</b>	<b>16</b>
	<b>Specialization in Organic Chemistry</b>	
CHM-679	Seminar	1(1 – 0)
STA-595	Introduction to Statistical Theory	3(3 – 0)
CHM-660	Organic Polymers	3(3 – 0)
CHM-662	Reactive Intermediates and Photochemistry	3(3 – 0)
CHM-664	Disconnection Approach	3(3 – 0)
CHM-666	Organic Catalyst and Catalysis	3(3 – 0)
	<b>Total</b>	<b>16</b>
	<b>Specialization in Biochemistry</b>	
CHM-679	Seminar	1(1 – 0)
STA-595	Introduction to Statistical Theory	3(3 – 0)
CHM-668	Molecular Biochemistry	3(3 – 0)

CHM-670	Clinical Diagnosis	3(3 – 0)
CHM-672	Biochemistry of Vitamins and Minerals	3(3 – 0)
CHM-674	Medical Biochemistry	3(3 – 0)
	<b>Total</b>	<b>16</b>
	<b>Specialization in Inorganic Chemistry</b>	
CHM-679	Seminar	1(1 – 0)
STA-595	Introduction to Statistical Theory	3(3 – 0)
CHM-676	X-ray Spectroscopy	3(3 – 0)
CHM-678	Homogeneous Catalysis	3(3 – 0)
CHM-684	Radio Nuclear Chemistry	3(3 – 0)
CHM-686	Magneto Chemistry	3(3 – 0)
	<b>Total</b>	<b>16</b>
	<b>Specialization in Physical Chemistry</b>	
CHM-679	Seminar	1(1 – 0)
STA-595	Introduction to Statistical Theory	3(3 – 0)
CHM-688	Applications of Symmetry and Group Theory	3(3 – 0)
CHM-690	Quantum Mechanics	3(3 – 0)
CHM-692	Nuclear and Radiation Chemistry	3(3 – 0)
CHM-694	Electrochemical Aspects of Solutions	3(3 – 0)
	<b>Total</b>	<b>16</b>

Note: Research students (Thesis will opt only two courses & other will study four courses with compulsory Introduction to Statistical Theory)