

**Department Name: CHEMISTRY****Integrated MSc/ Programme Name:**

<b>SEMESTER-I</b>		
Course Code	Course Name	Credit
MAT110010	Mathematics-I	4
PHY110021	Introductory Physics-I	4
CHM110030	Principle of Chemistry-I	3
COM110050	Fundamental of Computer & C programming	4
EVS110060	Environmental studies	3
BIO110070	Introductory biology	4
CHM112090	Applied Chemistry Lab-I (common for all)	2
PHY112080	Applied Physics Lab-I	2
<b>SEMESTER-II</b>		
Course Code	Course Name	Credit
MAT120010	Mathematics-II	4
PHY120020	Introductory Physics-II	4
CHM120031	Principle of Chemistry-II	4
CHM120130	General Chemistry-I (core)	4
ENG120040	English for Communication	4
CHM122120	Applied Chemistry Lab-II (common for all)	2
PHY1221110	Applied Physics Lab-II	2
<b>SEMESTER-III</b>		
Course Code	Course Name	Credit
MAT210040	Mathematics for Chemistry	4
CHM211080	General Chemistry-II (core)	4
CHM211070	Physical Chemistry-I	4
CHM211010	Inorganic Chemistry-I	4
CHM211030	Organic Chemistry-I	4
CHM210041	Organic Chemistry for Life Science students	4
CHM213080	Seminar Presentation	2
CHM212060	Applied Chemistry Laboratory-III (Organic) (core)	3
CHM212050	Applied Chemistry Laboratory-IV (Inorganic) (core)	3
<b>SEMESTER-IV</b>		
Course Code	Course Name	Credit
CHM221120	Physical Chemistry-II	4
CHM221110	Advanced Organic Chemistry	4
CHM221140	Inorganic Chemistry-II	4
CHM221100	Basics of Quantum Mechanics, Molecular Spectroscopy & Photochemistry	4
CHM222150	Applied Chemistry Laboratory-V (Physical) (core)	3
CHM222160	Applied Material Science & Electronics Laboratory	3
	Seminar	NC

<b>SEMESTER-V</b>		
Course Code	Course Name	Credit
CHM315080	Polymer Chemistry	4
CHM315020	Environmental Chemistry	4
CHM315010	Materials Chemistry	4
CHM315040	Chemistry in Everyday Life	4
CHM315070	Chemistry of Biomolecules/Bio-organic Chemistry	4
<b>SEMESTER-VI</b>		
Course Code	Course Name	Credit
CHM321070	Advanced Physical Chemistry	4
CHM321080	Organic Spectroscopy	4
CHM321090	Advanced Inorganic chemistry	4
CHM321110	Heterocyclic chemistry	4
CHM322060	Biomolecular Laboratory	3
CHM324050	Project work	4
CHM324060	Seminar	3
<b>SEMESTER-VII</b>		
Course Code	Course Name	Credit
CHM411070	Applied inorganic chemistry I	4
CHM411080	Applied physical chemistry I	4
CHM411090	Applied organic chemistry I	4
	Symmetry & Statistical Thermodynamics	4
	Organic Photochemistry & Organic Reaction Types	4
	Coordination Mechanisms & Magnetism	4
CHM411040	Industrial Chemistry	4
CHM412050	PG lab-I (Applied Inorganic Chemistry Lab)	4
CHM412060	PG lab-II (Applied Organic Chemistry Lab)	4
<b>SEMESTER-VIII</b>		
Course Code	Course Name	Credit
CHM421010	<b>Electives:</b> Applied Electrochemistry	4
CHM421020	Modern Techniques of Analytical Chemistry	4
CHM421030	Catalysis & its Industrial Application	4
CHM421040	Novel synthetic strategy in organic chemistry	4
CHM422050	PG lab-III (Applied Physical Chemistry Lab)	4
CHM422060	PG lab-IV (Applied Industrial Chemistry Lab)	4
<b>SEMESTER-IX</b>		
Course Code	Course Name	Credit
CHM516010 CHM516020	<b>Electives:</b> (1)Chemistry of Natural Products (2)Industrial Reactions & Rearrangements	4
CHM516030 CHM516040	<b>Electives:</b> (1)Nanomaterials-Synthesis, Characterisation & Properties (2)Advanced Fuel Technology	4
	<b>Electives:</b> (1) Advanced Organometallic Chemistry and Catalysis (2) Organic Electronics	4
	Corrosion Science	4

CHM512080	PG lab-V (Applied Industrial Chemistry Lab)	4
CHM514090	PROJECT/SEMINAR	4
<b>SEMESTER-X</b>		
Course Code	Course Name	Credit
CHM521010	Unit Operation in Chemical Industry	4
	Advanced Quantum Chemistry, Photochemistry and Non-Equilibrium Thermodynamics	4
CHM524030	Project work, DISSERTATION & viva voce	16

**MSc (2Yrs) Programme Name:**

<b>SEMESTER-I</b>		
Course Code	Course Name	Credit
CHM611010	Physical Chemistry I	4
CHM611020	Organic Chemistry I	4
CHM611030	Inorganic Chemistry I	4
CHM611040	Analytical Chemistry	4
CHM612050	Organic Chemistry Practical	2
CHM611010	Physical Chemistry I	4
<b>SEMESTER-II</b>		
Course Code	Course Name	Credit
CHM621010	Physical Chemistry II	4
CHM621020	Organic Chemistry II	4
CHM621030	Inorganic Chemistry II	4
CHM621040	Industrial Chemistry (Old)	4
CHM621050	Organic Spectroscopy (revised)	4
CHM622050	Inorganic Chemistry Practical	2
CHM623060	Seminar	2
<b>SEMESTER-III</b>		
Course Code	Course Name	Credit
CHM711010	Advanced Quantum Chemistry	4
CHM711020	Advanced Electrochemistry(old)	4
CHM711030	Organic Photochemistry and Pericyclic Reaction(Revised)	4
CHM716030	Medicinal Chemistry	4

CHM716040	Organic Spectroscopy (old)	4
CHM716050	Reaction dynamics and exotic molecules	4
CHM716060	Unit Operation in chemical industries	4
CHM716060	Nanomaterial: Synthesis and Characterization	4
CHM716070	Nuclear Chemistry	4
CHM716080	Chemistry of Biomolecule	4
CHM716090	Environmental Chemistry	4
CHM716110	Phase Diagram for two, three and alloy system	4
CHM712120	Physical Chemistry Laboratory	2
CHM714130	Project	4
<b>SEMESTER-IV</b>		
Course Code	Course Name	Credit
CHM721010	Organic Photochemistry and Pericyclic Reaction(Old)	4
CHM721030	Advanced Electrochemistry (Revised)	
CHM721020	Theories and Mechanisms of reactions in Inorganic complexes	4
CHM726030	Organometallic Chemistry	4
CHM726040	Bioinorganic Chemistry	4
CHM726050	Polymer Chemistry	4
CHM726060	Computational Chemistry	4
CHM726070	Modern Techniques in Organic Synthesis	4
CHM726080	Statistical analysis of Data and error analysis	4
CHM726090	Supramolecular Chemistry	4
CHM726100	Advanced organometallic catalysis	4
CHM724110	Project	8

**PhD Programme Name:**

<b>SEMESTER-I</b>		
Course Code	Course Name	Credit
	Research Methodology	4

	Instrumental Techniques for Characterization of Materials	4
	Reaction & Reagents in Organic Synthesis	4
	Water Pollution & its Remediation	4

**Department of Chemistry**

**2 year M.Sc.**

**M. Sc. (First Year)**

**Semester I**

S. No.	Course Title	Credits	Course Code
1	Physical Chemistry I	4	CHM611010
2	Organic Chemistry I	4	CHM611020
3	Inorganic Chemistry I	4	CHM611030
4	Analytical Chemistry	4	CHM611040
5	Organic Chemistry Practical	2	CHM612050

**Semester II**

S No	Title	Credit	Course Code
1	Physical Chemistry II	4	CHM621010
2	Organic Chemistry II	4	CHM621020
3	Inorganic Chemistry II	4	CHM621030
4	Industrial Chemistry (Old)	4	CHM621040
5	Organic Spectroscopy (revised)	4	CHM621050
6	Inorganic Chemistry Practical	2	CHM622050
7	Seminar	2	CHM623060

**M. Sc. (Second Year)**

**Semester III**

S No	Title	Credit	Course Code
1	Advanced Quantum Chemistry	4	CHM711010
2	Advanced Electrochemistry(old)	4	CHM711020
3	Organic Photochemistry and Pericyclic Reaction(Revised)		CHM711030
3	Medicinal Chemistry	4	CHM716030
4	Organic Spectroscopy (old)	4	CHM716040
5	Reaction dynamics and exotic molecules	4	CHM716050
6	Unit Operation in chemical industries	4	CHM716060
7	Nanomaterial: Synthesis and Characterization	4	CHM716060
8	Nuclear Chemistry	4	CHM716070
9	Chemistry of Biomolecule	4	CHM716080

10	Environmental Chemistry	4	CHM716090
11	Phase Diagram for two, three and alloy system	4	CHM716110
12	Physical Chemistry Laboratory	2	CHM712120
13	Project	4	CHM714130

#### Semester IV (Specialization)

S No	Title	Credit	Course Code
1	Organic Photochemistry and Pericyclic Reaction(Old)	4	CHM721010
2	Advanced Electrochemistry (Revised)		CHM721030
2	Theories and Mechanisms of reactions in Inorganic complexes	4	CHM721020
3	Organometallic Chemistry	4	CHM726030
4	Bioinorganic Chemistry	4	CHM726040
5	Polymer Chemistry	4	CHM726050
6	Computational Chemistry	4	CHM726060
7	Modern Techniques in Organic Synthesis	4	CHM726070
8	Statistical analysis of Data and error analysis	4	CHM726080
9	Supramolecular Chemistry	4	CHM726090
10	Advanced organometallic catalysis	4	CHM726100
11	Project	8	CHM724110

**Department of Chemistry**  
**Ph.D Course structure**

S No	Course Name	Credits	Code
1	Research Methodology	4	
2	Instrumental Techniques for Characterization of Materials	4	
3	Reaction & Reagents in Organic Synthesis	4	
4	Water Pollution & its Remediation	4	