

## Program Outcomes – UG Programme

**PO1. Disciplinary Knowledge:** Capable of demonstrating comprehensive knowledge and understanding of one or more other disciplines that form a part of an undergraduate programme of study .

**PO 2: Critical Thinking:** Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives. Critically evaluate practices, policies and theories by following scientific approach to knowledge development .

**PO3: Communication Skills:** Ability to express thoughts and ideas effectively in writing and orally; communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully; and present complex information in a clear and concise manner to different groups .

**PO 4: Social Interaction:** Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group and act together as a group or a team in the interests of a common cause. Elicit views of others, mediate disagreements and help reach conclusions in group settings.

**PO 5: Effective Citizenship:** Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

**PO 6: Moral and Ethical Awareness:** Ability to embrace moral/ ethical values in conducting one's life, possess knowledge of the values and beliefs of multiple cultures and a global perspectives; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups .

**PO 7: Environment and Sustainability:** Understand the issues of environmental contexts and sustainable development.

**PO 8: Self-directed and Life-long Learning:** Acquire the ability to engage in independent and life-long learning in the broadest context socio- technological changes. Critical sensibility to lived experiences, with self awareness and reflexivity of both and society.

**PO 9: Information and Digital Literacy:** Capability to use ICT in a variety of learning situations. Demonstrate ability to access, evaluate and use a variety of relevant information sources; and use appropriate software for analysis of data.

**PO 10: Research –related skills:** A sense of inquiry and capability for asking relevant/ appropriate questions, problematizing, synthesizing and articulating; Ability to recognize cause- and- effect relationships, define problems, formulate hypotheses, interpret and draw conclusions from data, ability to plan, execute and report the results of an experiment or investigation. Ability to apply one's learning to real life situations .

### **Program Specific Outcomes (BSc Chemistry)**

**PSO 1: Scientific Problem solving skill** Sound knowledge of fundamentals which can develop the problem solving skills using chemical principles.

**PSO 2: Analytical skills:** Develop analytical skills such as synthesizing, separating, characterizing chemical compounds and chemical reaction with the help of sophisticated instruments.

**PSO 3: Skills related to employability:** Develop deep knowledge in some applied areas of chemistry such as pesticides chemistry, pharmaceutical chemistry etc. which helps in employability.

**PSO 4: Learning on life processes:** Develop basic understanding the role of chemistry in natural products as well as biological system.

<b>Semester I</b>		
<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>
1.1	CHAB0101	Inorganic Chemistry-I: Atomic Structure & Chemical Bonding
1.2	CHSI0102	Physical Chemistry-I: States of Matter & Ionic Equilibrium
1.3	CHAB6101	Inorganic Chemistry-I: Atomic Structure & Chemical Bonding - Lab
1.4	CHIS6102	Physical Chemistry-I: States of Matter & Ionic Equilibrium – Lab
Chemistry General Elective –I		
1.5	CHAH0105	Atomic Structure, Bonding, General Organic Chemistry and Aliphatic Hydrocarbons
1.6	CHAH6105	Atomic Structure, Bonding, General Organic Chemistry and Aliphatic Hydrocarbons Lab
1.7	CHCK0120	Chemistry of S- and P-Block Elements, States of Matter and Chemical Kinetics
1.8	CHCK6114	Chemistry of S- and P-Block Elements, States of Matter and Chemical Kinetics Lab
<b>Semester II</b>		
2.1	CHBH0103	Organic Chemistry-I: Basics & Hydrocarbons
2.2	CHCT0104	Physical Chemistry-II: Chemical Thermodynamics & its Applications
2.3	CHBH6103	Organic Chemistry-I Basics & Hydrocarbons Lab
2.4	CHCT6104	Physical Chemistry-II: Chemical Thermodynamics & its Applications Lab
2.5	CHES0002	Environmental Studies
Chemistry General Elective –II		
2.6	CHCF0106	Chemical Energetics, Equilibria and Functional Organic Chemistry
2.7	CHCF6106	Chemical Energetics, Equilibria and Functional Organic Chemistry Lab
2.8	CHOS0119	Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
2.9	CHOS6113	Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy Lab
2.9.1		Service Learning
<b>Semester III</b>		
3.1	CHSP0107	Inorganic Chemistry II: Metallurgy and s- and p-block elements
3.2	CHOG0108	Organic Chemistry II: Halogenated Hydrocarbons and Oxygen and Sulphur Containing Functional Groups
3.3	CHPC0109	Physical Chemistry III: Phase Equilibria, Electrochemical Cells and Surface Chemistry
3.4	CHSP6107	Inorganic Chemistry II: Metallurgy and s- and p-block elements Lab
3.5	CHOG6108	Organic Chemistry II: Halogenated Hydrocarbons and Oxygen and Sulphur Containing Functional Groups Lab

3.6	CHPC6109	Physical Chemistry III: Phase Equilibria, Electrochemical Cells and Surface Chemistry Lab
	Skill Enhancement Course 1 (Elective)	
3.7.1	CHBA0113	Basic Analytical Chemistry
3.7.2	CHCI0114	Chemoinformatics
3.7.3	CHCP0115	Chemistry of Cosmetics and Perfumes
<b>Semester IV</b>		
4.1	CHCC0110	Inorganic Chemistry III: Chemistry of d- and f-block elements
4.2	CHHC0111	Organic Chemistry III: Chemistry of Amines, Amides, Nitriles and Heterocycles
4.3	CHEC0112	Physical Chemistry IV: Conductance, Chemical Kinetics and Photochemistry
4.4	CHCC6110	Inorganic Chemistry III: Chemistry of d- and f-block elements Lab
4.5	CHHC6111	Organic Chemistry III: Chemistry of Amines, Amides, Nitriles and Heterocycles Lab
4.6	CHEC6112	Physical Chemistry IV: Conductance, Chemical Kinetics and Photochemistry Lab
	Skill Enhancement Course 2 (Elective)	
4.7.1	CHPY0116	Pesticide Chemistry
4.7.2	CHFC0117	Fuel Chemistry
4.7.3	CHIP0118	Intellectual Property Rights
<b>Semester V</b>		
5.1	CHBM0121	Organic Chemistry IV: Biomolecules
5.2	CHQS0122	Physical Chemistry V: Quantum Chemistry and Spectroscopy
5.3	CHBM6115	Organic Chemistry IV: Biomolecules Lab
5.4	CHQS6116	Physical Chemistry V: Quantum Chemistry and Spectroscopy Lab
	Discipline Specific Elective I	
5.5.1	CHAC0123	Application of Computers in Chemistry
5.5.2	CHAM0124	Analytical Methods in Chemistry
5.5.3	CHAC6117	Applications of computers in Chemistry Lab
5.5.4	CHAM6118	Analytical Methods in Chemistry Lab
	Discipline Specific Elective II	
5.6.1	CHNS0125	Novel Inorganic Solids
5.6.2	CHPC0126	Polymer Chemistry
5.6.3	CHNS6119	Novel Inorganic Solids Lab
5.6.4	CHPC6120	Polymer Chemistry Lab
<b>Semester VI</b>		
6.1	CHOC0127	Inorganic Chemistry IV: Organometallic Chemistry
6.2	CHSP0128	Organic Chemistry V: Spectroscopy
6.3	CHOC6121	Inorganic Chemistry IV: Organometallic Chemistry Lab
6.4	CHSP6122	Organic Chemistry V: Spectroscopy Lab
	Discipline Specific Elective III	
6.5.1	CHII0130	Inorganic materials and Industrial Importance
6.5.2	CHGC0129	Green Chemistry
6.5.3	CHII6124	Inorganic materials and Industrial Importance Lab
6.5.4	CHGC6123	Green Chemistry Lab
	Discipline Specific Elective IV	
6.6.1	CHEC0131	Industrial Chemicals and Environment
6.6.2	CHRM0132	Research Methodology for Chemistry
6.6.3	CHCE6125	Industrial Chemicals and Environment Lab

### Mapping of BSc Courses to PO/PSO

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PSO 1	PSO 2	PSO 3	PSO 4
1.1	H	H	H					H	M		H	L		
1.2	H	H	H					H	M		H	L		
1.3	H	H	H	M				M	M	L	H	M		
1.4	H	H	H	M				M	M	L	H	M		
1.5	H	H	H					L	M		H			
1.6	H	H	H	M				L	M		H	L		
1.7	H	H	H					L	M		H			
1.8	H	H	H	M				L	M		H	L		
2.1	H	H	H					H	M		H	L		
2.2	H	H	H					H	M		H	L		
2.3	H	H	H	M				M	M	L	H	M		
2.4	H	H	H	M				M	M	L	H	M		
2.5	H	H	H	H	H	L	H	H						
2.6	H	H	H					L	M		H			
2.7	H	H	H	M				L	M		H	L		
2.8	H	H	H					L	M		H			
2.9	H	H	H	M				L	M		H	L		
2.9.1	M	M	H	H	H	H	H	H					L	
3.1	H	H	H					H	M		H			
3.2	H	H	H					H	M		H			
3.3	H	H	H					H	M		H			
3.4	H	H	H	M				M	M	L	H	M		
3.5	H	H	H	M				M	M	L	H	M		
3.6	H	H	H	M				M	M	L	H	M		
3.7.1	H	H	H	H	M		M	M	M	M	H	H	H	
3.7.2	H	H	H	H	M			M	H	M	H	M	H	
3.7.3	H	H	H	H	M			M	M	M	H	H	H	
4.1	H	H	H					H	M		H			
4.2	H	H	H					H	M		H			M
4.3	H	H	H					H	M		H			L
4.4	H	H	H	M				M	M	L	H	M		
4.5	H	H	H	M				M	M	L	H	M		M
4.6	H	H	H	M				M	M	L	H	M		
4.7.1	H	H	H	H	M		H	M	M	M	H	H	H	H
4.7.2	H	H	H	H	M		H	M	M	M	H	H	H	

