

**SYLLABI AND COURSES FOR BACHELOR OF SCIENCE IN CHEMISTRY (HONS) EXAMINATION, 2019-22**

**SEMESTER: I  
SCHEME OF TEACHING and EXAMINATION**

NATURE OF COURSE	COURSE CODE	COURSE NAME/TITLE	SCHEDULE OF TEACHING (HOURS PER WEEK)			CREDITS	MARKS				
			LECTURE	TUTORIAL	PRACTICAL		INTERNAL		MCQ	END SEMESTER EXAMINATION	
							Theory	Practical		Theory	Practical
Core	CHM05C101	Inorganic Chemistry-I: Atomic Structure and Chemical Bonding	4	-	4	6	20	10	20	60	40
Core	CHM05C102	Organic Chemistry-I: Basics and Hydrocarbons	4	-	4	6	20	10	20	60	40
AECC	AEC05AX02	Environment Studies	3	1	-	4	20	-	20	60	-
GE	PHY05GX01	Generic Elective-I*	4	-	4	6	20	10	20	60	40
GS	CCE05GX03	Governance, Constitution and International Relations	5	-	-	NCC**	20	-	20	60	-
		<b>TOTAL</b>	20	1	12	22	100	30	100	300	120
			33				650				

\*The students can opt for Generic courses offered by the other departments. Apart from those courses following courses will be offered by the University:

1.PHY05GX01 General Physics-I; 2.PHY05GX02 General Physics-II; 3.MTM05GX03 General Mathematics-III;4.MTM05GX04 General Mathematics-IV

\*\*NCC: Non Credit Course

- “Core” indicates Core course; A course is that knowledge which is deemed to be essential for students registered for a particular program me.
- “AECC” indicates ability enhancement compulsory course; AECC are the courses based upon the content that leads to knowledge enhancement of students.
- “DSE” indicates Discipline Specific Elective Course. Elective courses offered by the main discipline /subject of study are referred to as Discipline Specific Elective.
- “SEC” indicates Skill Enhancement Courses; SEC courses are value-based and/or skill-based and are aimed at providing hands-on-training, competencies, skills, etc. These courses may be chosen from a pool of courses designed to provide value-based and/or skill-based knowledge.
- “GE” indicates Generic Elective (GE) Course; An elective course chosen generally from an unrelated discipline/subject, with an intention to seek exposure is called a Generic Elective.

**SEMESTER: II**  
**SCHEME OF TEACHING and EXAMINATION**

NATURE OF COURSE	COURSE CODE	COURSE NAME/TITLE	SCHEDULE OF TEACHING (HOURS PER WEEK)			CREDITS	MARKS				
			LECTURE	TUTORIAL	PRACTICAL		INTERNAL		MCQ	END SEMESTER EXAMINATION	
							Theory	Practical		Theory	Practical
Core	CHM05C201	Organic Chemistry-II: Oxygen containing Functional Groups	4	-	4	6	20	10	20	60	40
Core	CHM05C202	Physical Chemistry-I: States of Matter and Ionic Equilibrium	4	-	4	6	20	10	20	60	40
AECC	AEC05AX01	General English and communication	3	1	-	4	20	-	20	60	-
GE	PHY05GX02	General Elective-II*	4	-	4	6	20	10	20	60	40
GS	CCE05GX01	Ethics, Integrity and Aptitude	5	0	-	NCC**	20	-	20	60	-
		TOTAL	20	1	12	22	100	30	100	300	120
			33				650				

\*The students can opt for Generic courses offered by the other departments. Apart from those courses following courses will be offered by the University:

1.PHY05GX01 General Physics-I; 2.PHY05GX02 General Physics-II;3.MTM05GX03 General Mathematics-III; 4.MTM05GX04 General Mathematics-IV

\*\*Non Credited Course

**SEMESTER: III**  
**SCHEME OF TEACHING and EXAMINATION**

NATURE OF COURSE	COURSE CODE	COURSE NAME/TITLE	SCHEDULE OF TEACHING (HOURS PER WEEK)			CREDITS	MARKS				
			LECTURE	TUTORIAL	PRACTICAL		INTERNAL		MCQ	END SEMESTER EXAMINATION	
							Theory	Practical		Theory	Practical
Core	CHM05C301	Inorganic Chemistry-II: s and p Block elements	4	-	4	6	20	10	20	60	40
Core	CHM05C302	Organic Chemistry-III: Heterocyclic Chemistry	4	-	4	6	20	10	20	60	40
Core	CHM05C303	Physical Chemistry-II: Chemical Thermodynamics and its applications	4	-	4	6	20	10	20	60	40
SEC		Skill Enhancement Course-I <sup>#</sup>	3	1	-	4	20	-	20	60	-
GE	MTM05GX03	General Elective-III*	5	1	-	6	20	-	20	60	-
		TOTAL	20	2	12	28	100	30	100	300	120
			34				650				

<sup>#</sup>The following skill enhancement courses will be offered by the University. Student can opt any one course:

1. CHM05KX01 Basic Analytical Chemistry; 2. CHM05KX02 Basics of Industrial Chemistry; 3. CHM05KX03 Clinical Biochemistry and Pharmaceutical Chemistry; 4. CHM05KX04 Fuel and Pesticide Chemistry

\*The students can opt for Generic courses offered by the other departments. Apart from those courses following courses will be offered by the University:

1. PHY05GX01 General Physics-I; PHY05GX02 General Physics-II; MTM05GX03 General Mathematics-III; .MTM05GX04 General Mathematics-IV

**SEMESTER: IV**

**SCHEME OF TEACHING and EXAMINATION**

NATURE OF COURSE	COURSE CODE	COURSE NAME/TITLE	SCHEDULE OF TEACHING(HOURS PER WEEK)			CREDITS	MARKS				
			LECTURE	TUTORIAL	PRACTICAL		INTERNAL		MCQ	END SEMESTER EXAMINATION	
							Theory	Practical		Theory	Practical
Core	CHM05C401	Inorganic Chemistry-III: Coordination Chemistry	4	-	4	6	20	10	20	60	40
Core	CHM05C402	Organic Chemistry-IV: Biomolecules	4	-	4	6	20	10	20	60	40
Core	CHM05C403	Physical Chemistry-III: Phase Equilibria and Chemical Kinetics	4	-	4	6	20	10	20	60	40
SEC		Skill Enhancement Course-II <sup>#</sup>	3	1	-	4	20	-	20	60	-
GE	MTM05GX04	General Elective-IV*	5	1	-	6	20	-	20	60	-
		TOTAL	20	2	12	28	100	30	100	300	120
			34				650				

<sup>#</sup>The following skill enhancement courses will be offered by the University. Student can opt any one course:

1.CHM05KX01 Basic Analytical Chemistry; 2.CHM05KX02 Basics of Industrial Chemistry; 3.CHM05KX03 Clinical Biochemistry and Pharmaceutical Chemistry; CHM05KX04 Fuel and Pesticide Chemistry

\*The students can opt for Generic courses offered by the other departments. Apart from those courses following courses will be offered by the University:

1.PHY05GX01 General Physics-I; 2. PHY05GX02 General Physics-II; 3. MTM05GX03 General Mathematics-III; 4. .MTM05GX04 General Mathematics-IV

**SEMESTER: V**  
**SCHEME OF TEACHING and EXAMINATION**

NATURE OF COURSE	COURSE CODE	COURSE NAME/TITLE	SCHEDULE OF TEACHING (HOURS PER WEEK)			CREDITS	MARKS				
			LECTURE	TUTORIAL	PRACTICAL		INTERNAL		MCQ	END SEMESTER EXAMINATION	
							Theory	Practical		Theory	Practical
Core	CHM05C501	Inorganic Chemistry-IV: Organometallic Chemistry	4	-	4	6	20	20	10	60	40
Core	CHM05C502	Physical Chemistry-IV: Electrochemistry	4	-	4	6	20	20	10	60	40
DSE		Choose any two *	5	1	-	6	20	-	20	60	-
DSE			5	1	-	6	20	-	20	60	-
GS	CCE05GX04	History and Culture of India and the World	5	-	-	NCC**	20	-	20	60	-
		TOTAL	23	2	8	24	100	40	80	300	80
			33				600				

\* Students can select from following Discipline Specific Elective Courses:

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|--|---|
| <ol style="list-style-type: none"> <li>1. CHM05EX01 Polymer Chemistry</li> <li>2. CHM05EX02 Green Chemistry</li> <li>3. CHM05EX03 Industrial Chemicals and Environment</li> <li>4. CHM05EX04 Instrumental Methods of Chemical Analysis</li> <li>5. CHM05EX05 Inorganic Materials of Industrial Importance</li> <li>6. CHM05EX06 Molecular Modelling and Drug Design</li> </ol> | <ol style="list-style-type: none"> <li>7. CHM05EX07 Novel Inorganic Solids</li> <li>8. CHM05EX08 Analytical Methods in Chemistry</li> <li>9. CHM05EX09 Molecules of Life</li> <li>10. CHM05EX10 Research Methodology For Chemistry</li> </ol> |
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\*\*Non Credited Course

**SEMESTER: VI**  
**SCHEME OF TEACHING and EXAMINATION**

NATURE OF COURSE	COURSE CODE	COURSE NAME/TITLE	SCHEDULE OF TEACHING (HOURS PER WEEK)			CREDITS	MARKS				
			LECTURE	TUTORIAL	PRACTICAL		INTERNAL		MCQ	END SEMESTER EXAMINATION	
							Theory	Practical		Theory	Practical
Core	CHM05C601	Physical Chemistry- V: Quantum Chemistry and Spectroscopy	5	1	-	6	20	-	20	60	-
Core	CHM05C602	Organic Chemistry V: Macromolecules and Spectroscopy	4	-	4	6	20	10	20	60	40
DSE		Choose any two *	4	-	4	6	20	10	20	60	40
DSE			5	1	-	6	20	-	20	60	-
GS	CCE05GX02	Development Studies	5	0	-	NCC**	20	-	20	60	-
		TOTAL	23	2	8	24	100	20	100	300	80
				33			600				

\*Students can select following Discipline Specific Elective Courses:

1. CHM05EX01 Polymer Chemistry
2. CHM05EX02 Green Chemistry
3. CHM05EX03 Industrial Chemicals and Environment
4. CHM05EX04 Instrumental Methods of Chemical Analysis
5. CHM05EX05 Inorganic Materials of Industrial Importance
6. CHM05EX06 Molecular Modeling and Drug Design
7. CHM05EX07 Novel Inorganic Solids
8. CHM05EX08 Analytical Methods in Chemistry
9. CHM05EX09 Molecules of Life
10. CHM05EX10 Research Methodology for Chemistry
11. CHM05D601 Optional dissertation or project work in place of one elective paper

\*\*Non Credited Course