	Undergraduate	Certificate in Chemis	stry		
Semester I					
Nature of course	Course Code	Course title	Credit of course (L+T+P)	Class hours/ week	
Major* (*minor for other disciplines)	CHE51MJ13004	Inorganic & Physical Chemistry-I	<b>4</b> (3+1+0)	4	
Minor		From other Dept.	4	4	
Multidisciplinary course	CHE51MD50103	Chemistry in Everyday Life	<b>3</b> (3+0+0)	3	
Ability Enhancement Course		Language Proficiency courses (English, Hindi, others)	<b>2</b> (2+0+0)	2	
Skill Enhancement course	CHE51SE13003	Inorganic & Physical Chemistry Lab-I	3 (0+0+3)	6	
Value Added course	CHE51VA10102	Scientific Heritage of Ancient and Medieval India	2 (2+0+0)	2	
Value added Course		From Other Dept.	2	2	
		Total	20	23	
	:	Semester II			
Nature of course	Course Code	Course title	Credit of course (L+T+P)	Class hours/ week	
Major* (*minor for other disciplines)	CHE52MJ20004	Organic Chemistry-I	<b>4</b> (3+1+0)	4	
Minor		From other dept.	4	4	
Multidisciplinary course	CHE52MD50203	Industrial Chemistry	<b>3</b> (3+0+0)	3	
Ability Enhancement Course		Language Proficiency courses (English, Hindi, others)	2	2	
Skill Enhancement course	CHE52SE20003	Organic Chemistry Lab- I	<b>3</b> (0+0+3)	6	
Value Added course	CHE52VA10202	Chemistry of Ayurveda	<b>2</b> (2+1+0)	2	
Value added Course		From Other Dept.	2	2	

## 6. The Course Structure

Undergraduate Diploma in Chemistry					
Semester III					
Nature of course	<b>Course Code</b>	Course title	Credit of course (L+T+P)	Class hours/ week	
Major* (*minor for other disciplines)	CHE61MJ10004	Inorganic ChemII	<b>4</b> (3+1+0)	4	
Major* (*minor for other disciplines)	CHE61MJ30004	Physical ChemII	4 (3+1+0)	4	
Minor		From other dept.	4	4	
Multidisciplinary course	CHE61MD50303	Green Energy Systems	<b>3</b> (3+0+0)	3	
Ability Enhancement Course		Language Proficiency courses (English, Hindi, others)	2	2	
Skill Enhancement course	CHE61SE13103	Inorganic & Physical Chemistry Lab-II	<b>3</b> (0+0+3)	6	
		Total	20	23	
	Se	emester IV			
Nature of course	Course Code	Course title	Credit of course (L+T+P)	Class hours/week	
Major* (*minor for other disciplines)	CHE62MJ10104	Inorganic Chemistry-III	<b>4</b> (3+1+0)	4	
Major* (*minor for other disciplines	CHE62MJ20104	Organic Chemistry-II	<b>4</b> (3+1+0)	4	
Major	CHE62MJ20204	Organic Chemistry Lab -II	4 (0+0+4)	8	
Major	CHE62MJ30102	Physical Chemistry-III	<b>2</b> (2+0+0)	2	
Minor		From other Dept.	4	4	
Ability Enhancement Course		Language Proficiency courses (English, Hindi, others)	2	2	
		Total	20	24	

	Bachelor of S	cience in Chen	nistry			
	Semester-V					
Nature of course	Course Code	Course title	Credit of course (L+T+P)	Class hours/ week		
Major*	CHE71MJ30204	Physical	4	4		
(*minor for other		Chemistry-IV	(3+1+0)			
disciplines)						
Major*	CHE71MJ20304	Organic	4	4		
(*minor for other		Chemistry-III	(3+1+0)			
disciplines						
Major	CHE71MJ30304	Physical Chemistry	4	8		
		Lab -II	(0+0+4)			
Major	CHE71MJ10202	Inorganic	2	2		
		Chemistry-IV	(2+0+0)			
Minor		From other dept.	4	4		
Internship	CHE71IS60002	Internship	2	2		
		Total	20	24		
	Sei	mester-VI		1		
Nature of course	Course Code	Course title	Credit of course (L+T+P)	Class hours/week		
Major*	CHE72MJ10304	Inorganic	4	4		
(*minor for other		Chemistry-V	(3+1+0)			
disciplines)						
Major*	CHE72MJ30404	Physical	4	4		
(*minor for other		Chemistry-V	(3+1+0)			
disciplines						
Major	CHE72MJ10404	Inorganic	4	8		
		Chemistry Lab -II	(0+0+4)			
Major	CHE72MJ20404	Organic	4	4		
		Chemistry-IV	(3+1+0)			
Minor		From other dept.	4	4		
I	Total		20	24		

	B.Sc. (Hon	ours) in Chemist	ry	
		or	~~	
B.S	Sc. (Honours wi	th Research) in (	<u>Chemistry</u>	
	Ser	nester VII	Credit of	Class
Nature of course	Course Code	Course title	course (L+T+P)	hours/ week
Major* (*minor for other disciplines)	CHE81MJ10504	Advanced Inorganic Chemistry-I	<b>4</b> (3+1+0)	4
Major * (*minor for other disciplines	CHE81MJ20504	Advanced Organic Chemistry-I	<b>4</b> (3+1+0)	4
Major* (*minor for other disciplines)	CHE81MJ30504	Advanced Physical Chemistry -I	<b>4</b> (3+1+0)	4
Major	CHE81MJ10604	Advanced Inorganic Chemistry Lab	4 (0+0+4)	8
Minor (OEIC)		From other Dept.	4	4
		Total	20	24
	Sen	nester VIII		
(	<b>Option I: B.Sc.</b>	(Honours) in Ch	emistry	
Nature of course	Course Code	Course title	Credit of course (L+T+P)	Class hours/ week
Major* (*minor for other disciplines)	CHE82MJ40104	Advanced Instrumental Techniques	<b>4</b> (3+1+0)	4
Major	CHE82MJ30604	Advanced Physical Chemistry Lab	4 (0+0+4)	8
Major	CHE82DE	Core Elective 1 <sup>A</sup>	4 (3+1+0)	4
Major	CHE82DE	Core Elective 2 <sup>A</sup>	4 (3+1+0)	4
$Minor (O\overline{EIC})$		From other Dept.	4	4
	Total		20	24
А	to be selected from the	ne elective basket 'A' o	f the Dept.	

<b>Option II<sup>#</sup>: B.Sc. (Honours with Research) in Chemistry</b>					
Nature of course	Course Code	Course title	Credit of course (L+T+P)	Class hours/week	
Major* (*minor for other disciplines)	CHE82MJ40104	Advanced Instrumental Techniques	<b>4</b> (3+1+0)	4	
Major	CHE82MJ30604	Advanced Physical Chemistry Lab	<b>4</b> (0+0+4)	8	
Major	CHE82MJ12312	Project	<b>12</b> (0+0+12)	24	
Minor (OEIC)		From other Dept.	4	4	
		Total	24	40	
<sup>#</sup> Only for stu	dents securing CGPA	of 7.5 or above in Sem	. VI of the prog	ramme	
	Master of Se	cience in Chemis	stry		
	Se	mester-IX			
Nature of course	Course Code	Course title	Credit of course (L+T+P)	Class hours/ week	
Major	CHE91MJ40204	Molecular Spectroscopy	<u>4</u> (3+1+0)	4	
Major	CHE91MJ20604	Advanced Organic Chemistry Lab	<b>4</b> (0+0+4)	8	
Major	СНЕ91DE	Core Elective 3 <sup>B</sup>	<b>4</b> (3+1+0)	4	
Major	CHE91DE	Core Elective 4 <sup>B</sup>	<b>4</b> (3+1+0)	4	
Major	CHE91MJ12404	Dissertation*	<b>4</b> (0+0+4)	8	
		Total	20	28	
<sup>B</sup> Courses to be selected from the elective basket 'B' of specialization papers					
*Projects will be a	*Projects will be assigned and the evaluation in semester IX (4Cr) will be based on literature				
review report subn	nitted and the presenta	tion -cum-viva voce ex	xamination. The	experimental	
work will continue	and the final dissertat	ion will be submitted i	n semester X.		

	S	emester-X					
	<b>Option I: M.Sc. in Chemistry</b>						
Nature of course	Course Code	Course title	Credit of course (L+T+P)	Class hours/week			
Major	CHE92MJ30704	Phase Equilibria and Statistical Thermodynamics	<b>4</b> (3+1+0)	4			
Major	CHE92MJ12508	Dissertation	<b>8</b> (0+0+8)	16			
Major	CHE92DE	Core Elective 3 <sup>C</sup>	<b>4</b> (3+1+0)	4			
Major	СНЕ92DЕ	Core Elective 4 <sup>C</sup>	<b>4</b> (3+1+0)	4			
	20	28					
<sup>C</sup> Courses t	to be selected from the	e elective basket 'Ç' of	specialization p	bapers			
		emester-A					
	Option II":	<b>WI.Sc. in Chemi</b>	stry	1			
Nature of course	Course Code	Course title	Credit of course (L+T+P)	Class hours/week			
Major	CHE92MJ30704	Phase Equilibria and Statistical Thermodynamics	4 (3+1+0)	4			
Major	CHE92MJ12508	Dissertation	<b>16</b> (0+0+16)	32			
		Total	20	36			
<sup>#</sup> Only for stu	idents securing CGPA	A of 7.5 or above in Sen	n. VI of the pro	gramme			

## **Elective Basket 'A'**

[For students opting for B.Sc. (Hons.) in Semester VIII]						
Nature of Course	Course Code No.	Course Title	Credit of course (L+T+P)	Class hours/ week		
Core Elective	10704	Basics of Supramolecules and Its Advancement	4 (3+1+0)	4		
Core Elective	20704	Green Chemistry I: Solvents & Synthesis	4 (3+1+0)	4		
Core Elective	30804	Solid State and Structural Chemistry	4 (3+1+0)	4		
Core Elective	20804	Green Chemistry II: Catalysis	4 (3+1+0)	4		
Core Elective	20904	Nucleoside, Advances in Nucleic Acid and Proteins	4 (3+1+0)	4		
Core Elective	21004	Chemistry of Natural Products	4 (3+1+0)	4		
Core Elective	21104	Agrochemicals	4 (3+1+0)	4		
Core Elective	30904	Nano Chemistry	4 (3+1+0)	4		

Note: A few of these courses would be floated at the beginning of semester-VIII, out of which two courses will have to be opted by the students of B.Sc. Hons. Or PG Diploma in Chemistry

Elective Basket 'B'					
[to be opted	d in Semeste	r IX according to	the specializ	zation]	
Nature of Course	Course Code No.	Course Title	Credit of course (L+T+P)	Class hours/ week	
Come Electives	10804	Inorganic Materials and Their Applications	4 (3+1+0)	4	
(for specialization in Inorganic Chemistry)	10904	Inorganic Reaction Mechanism, Organometallics and Advanced Bioinorganic Chemistry	4 (3+1+0)	4	
Core Electives (for specialization	21204	Modern Organic Synthesis	4 (3+1+0)	4	
in Organic Chemistry)	21304	Chemistry of Biomolecules	4 (3+1+0)	4	

Core Electives	31004	Applied Electrochemistry	4 (3+1+0)	4
(for specialization in Physical Chemistry)	31104	Advanced Photochemistry	4 (3+1+0)	4

Elective Basket 'C'				
[to be opted	<u>d in Semeste</u>	er X according to t	the specializa	ation]
Nature of Course	Course Code No.	<b>Course Title</b>	Credit of course (L+T+P)	Class hours/ week
Core Electives	11004	Chemistry of Materials	4 (3+1+0)	4
(for specialization in Inorganic Chemistry)	11104	Applications of Spectroscopy Techniques to Inorganic Systems	4 (3+1+0)	4
Core Electives	21404	Advanced Medicinal Chemistry	4 (3+1+0)	4
Organic Chemistry)	21504	Spectroscopy and Chiroptical Properties	4 (3+1+0)	4
Core Electives (for specialization in Physical Chemistry)	31304	Advanced Quantum Mechanics and Surface Chemistry	4 (3+1+0)	4
	40304	Lasers in Chemistry	4 (3+1+0)	4

## **Important Points to note:**

- 1. The numbers of students opting for B.Sc. (Hons with Research) will be capped to a maximum of 50% of the total strength.
- 2. While augmenting the seats in lateral entry scheme, the department's capacity will also be considered and a capping may be defined by the departmental committee
- **3.** The multidisciplinary courses available in the university or on the SWAYAM portal will be reviewed and students can choose any course approved by the departmental committee.
- **4.** The suitability of other courses on SWAYAM portal for minor, major, AEC, SEC, VACs will be checked and students can opt for the courses approved by the departmental committee.
- **5.** Allotment of different branches of specialization will be done at the end of eighth (8) semester. An order of preference must be submitted by each student for the three different specializations, Organic, Inorganic or Physical Chemistry. Based on the two parameters, the choice and performance upto 8<sup>th</sup> semester, the specialization will be allotted subject to maximum of 40% of total strength of students in one specialization.