

# Indrashil University



## Department of Chemistry School of Science

### B.Sc. Chemistry Semesters I-IV

#### Course Profile Academic Year: 2023 – 2024

## Course structure: Semester I

Semester-I		Minimum Semester Credit Required: 22 Cumulative Semester Credit Required: 22		
Course Type	Course Code	Course Name	L-T-P	Credits
Major Discipline Core (MDC)	CH1 101	MDC-1: Organic Chemistry-I	2-0-0	2
	CH1 102	MDC-2: Analytical Chemistry-I	2-0-0	2
	CH1 103	MDC-3: Lab-1: Organic Practicals-I	0-0-4	2
	CH1 104	MDC-4: Lab-2: Analytical Practicals-I	0-0-4	2
Minor Discipline Elective (MDE)	CH1 105	MDE-1: Chemistry in Daily Life	2-0-0	2
	CH1 106	MDE-2: Lab-3: Chemistry in Daily Life	0-0-4	2
Multi-Disciplinary (MDS)	CH1 107	MDS-1: Biology for Chemists	2-0-0	2
	CH1 108	MDS-2: Lab-4: Biology for Chemists	0-0-4	2
Ability Enhancement Course (AEC)	CH1 109	AEC-1: English Language-1	2-0-0	2
Skill Enhancement Course (SEC) /Internship	CH1 110	SEC-1: Computer Technology & IT Skills for Chemists	1-0-2	2
Value Added Course (VAC)/ Indian Knowledge System (IKS)	CH1 111	IKS-1: (Indian Knowledge System course for Science students) <b>Traditional Yoga and its Modernization for Health Benefits</b>	1-0-2	2
<b>Total</b>			<b>12L+0T+20P = 32 hrs.</b>	<b>22</b>

## Course structure: Semester II

Semester II		Minimum Semester Credit Required: 22 Cumulative Semester Credit Required: 44		
Course Type	Course Code	Course Name	L-T-P (Hour)	Credits
Major Discipline Core (MDC)	CH1 201	Inorganic Chemistry-I	2-0-0	2
	CH1 202	Physical Chemistry-I	2-0-0	2
	CH1 203	Inorganic Chemistry - I Laboratory	0-0-4	2
	CH1 204	Physical Chemistry - I Laboratory	0-0-4	2
Minor Discipline Elective (MDE)	CH1 205	Chemistry of Materials	2-0-0	2
	CH1 206	Chemistry of Materials Laboratory	0-0-4	2
Multi-Disciplinary (MDS)	CH1 207	Physics of Semiconductor Devices	2-0-0	2
	CH1 208	Physics of Semiconductor Devices Laboratory	0-0-4	2
Ability Enhancement Course (AEC)	CH1 209	AEC-1: English Language-2	2-0-0	2
Skill Enhancement Course (SEC)	CH1 210	SEC-1: Techniques of Chemical Analysis	1-0-2	2
Value Added Course (VAC)	CH1 211	Health and Nutrition	1-0-2	2
<b>Total</b>			<b>12L+0T+20P</b>	<b>22</b>

## Course structure: Semester III

<b>Semester-III</b>		<b>Minimum Semester Credit Required: 22 Cumulative Semester Credit Required: 66</b>		
<b>Course Type</b>	<b>Course Code</b>	<b>Course Name</b>	<b>L-T-P</b>	<b>Credits</b>
Major Discipline Core <b>(MDC)</b>	<b>CH2 101</b>	Organic Chemistry-II	2-0-0	2
	<b>CH2 102</b>	Inorganic Chemistry-II	2-0-0	2
	<b>CH2 103</b>	Physical Chemistry-II	2-0-0	2
	<b>CH2 104</b>	Organic Chemistry-II Laboratory	0-0-4	2
	<b>CH2 105</b>	Inorganic Chemistry - II Laboratory	0-0-4	2
	<b>CH2 106</b>	Physical Chemistry – II Laboratory	0-0-4	2
Minor Discipline Elective <b>(MDE)</b>				
Multi-Disciplinary <b>(MDS)</b>	<b>CH2 107</b>	Semiconductor Devices	2-0-0	2
	<b>CH2 108</b>	Semiconductor Devices Laboratory	0-0-4	2
Ability Enhancement Course <b>(AEC)</b>	<b>CH2 109</b>	Soft Skills	2-0-0	2
Skill Enhancement Course <b>(SEC)</b>	<b>CH2 110</b>	Laboratory Operations and Safety Measures	2-0-0	2
Indian Knowledge System <b>(IKS)</b>	<b>CH2 111</b>	Indian Culture and Civilization	2-0-0	2
<b>Total</b>			<b>14L+0T+16L=30</b>	<b>22</b>

## Course structure: Semester IV

<b>Semester-IV</b>		<b>Minimum Semester Credit Required: 22 Cumulative Semester Credit Required: 88</b>		
<b>Course Type</b>	<b>Course Code</b>	<b>Course Name</b>	<b>L-T-P</b>	<b>Credits</b>
Major Discipline Core <b>(MDC)</b>	<b>CH2 201</b>	Organic Chemistry-III	2-0-0	2
	<b>CH2 202</b>	Inorganic Chemistry-III	2-0-0	2
	<b>CH2 203</b>	Physical Chemistry-III	2-0-0	2
	<b>CH2 204</b>	Organic Chemistry-III Laboratory	0-0-4	2
	<b>CH2 205</b>	Inorganic Chemistry-III Laboratory	0-0-4	2
	<b>CH2 206</b>	Physical Chemistry-III Laboratory	0-0-4	2
Minor Discipline Elective <b>(MDE)</b>	<b>CH2 207</b>	Application of Semiconductors	2-0-0	2
	<b>CH2 208</b>	Application of Semiconductors Laboratory	0-0-4	2
Multi-Disciplinary <b>(MDS)</b>				
Ability Enhancement Course <b>(AEC)</b>	<b>CH2 209</b>	Professional Communications	2-0-0	2
Skill Enhancement Course <b>(SEC)</b>	<b>CH2 210</b>	Software for Scientific Learning	2-0-0	2
Indian Knowledge System <b>(IKS)</b>	<b>CH2 211</b>	Renewable Energy	2-0-0	2
<b>Total</b>			<b>14L+0T+16L = 32 h</b>	<b>22</b>

## Course structure: Semester V

Semester-V		Minimum Semester Credit Required: 22 Cumulative Semester Credit Required: 110		
Course Type	Course Code	Course Name	L-T-P	Credits
Major Discipline Core (MDC)	CH3 101	Organic Chemistry-IV	2-0-0	2
	CH3 102	Inorganic Chemistry-IV	2-0-0	2
	CH3 103	Physical Chemistry-IV	2-0-0	2
	CH3 104	Organic Chemistry-IV Laboratory	0-0-4	2
	CH3 105	Inorganic Chemistry-IV Laboratory	0-0-4	2
	CH3 106	Physical Chemistry-IV Laboratory	0-0-4	2
Minor Discipline Elective (MDE)	CH3 107	Semiconducting Materials for Microelectronics	2-0-0	2
	CH3 108	Semiconducting Materials for Microelectronics Laboratory	2-0-0	2
	CH3 109	Semiconducting Materials for Solar Energy	0-0-4	2
	CH3 110	Semiconducting Materials for Solar Energy Laboratory	0-0-4	2
Multi-Disciplinary (MDS)				
Ability Enhancement Course (AEC)				
Skill Enhancement Course (SEC)	CH3 111	Tools for Literature Search	2-0-0	2
Indian Knowledge System (IKS)				
<b>Total</b>			<b>14L+0T+20L = 32 h</b>	<b>22</b>

## Course structure: Semester VI

Semester-VI		Minimum Semester Credit Required: 22 Cumulative Semester Credit Required: 132		
Course Type	Course Code	Course Name	L-T-P	Credits
Major Discipline Core (MDC)	CH3 201	Organometallic and Catalysis	2-0-0	2
	CH3 202	Medicinal Chemistry	2-0-0	2
	CH3 203	Spectroscopic Techniques	2-0-0	2
	CH3 204	Organometallic and Catalysis Laboratory	0-0-4	2
	CH3 205	Medicinal Chemistry Laboratory	0-0-4	2
	CH3 206	Spectroscopic Techniques Laboratory	0-0-4	2
Minor Discipline Elective (MDE)	CH3 207	Semiconducting Materials for Photonics	2-0-0	2
	CH3 208	Semiconducting Materials for Photonics Laboratory	0-0-4	2
Multi-Disciplinary (MDS)				
Ability Enhancement Course (AEC)	CH3 209	Personality Development	2-0-0	2
Skill Enhancement Course (SEC)				
Indian Knowledge System (IKS)/Value Added Course (VAC)				
Research Project/On the Job Training (RP/OJT)	CH3 210	Project	0-0-8	4
		Total	10L+0T+24L = 34 h	22