STRUCTURE OF THE CURRICULUM

DISTRIBUTION OF COURSES, CREDITS AND CONTACT HOURS

Programme: Master of Science in Chemistry (M.Sc. Chemistry)

Course Type	Total No. of Courses	Credits per Course	Total Credits	Percentage in Total Credits	Total Contact Hours
Core (Compulsory)					
(i) Theory	10	4	40	45	46
(ii) Laboratory	4	2	8	9	16
(iii) Research Review	1	2	2	2	2
(iv) Article Publication	1	2	2	2	4
(v) Application Development	1	2	2	2	2
(vi) Internship	1	2	2	2	Summer Vacation
(vii) Project	1	8	8	9	20
Elective (Optional)					
(i) Theory	6	4	24	27	24
Ability Enhancement					
(i) Soft and Quantitative Skills	1	1	1	1	2
(ii) Innovation Skills	1	1	1	1	1
(iii) Certificate / Value Added Courses / MOOC Courses	3	0	0	0	3
Total	**30**	**1-8**	**90**	**100**	**120**

SEMESTER-WISE DISTRIBUTION OF COURSES, CREDITS, MARKS AND CONTACT HOURS

Programme: Master of Science in Chemistry (M.Sc. Chemistry)

Type of Course	Course Code	Title of the Course	Credits	Marks	Contact Hours / Week
Semester I					
Core – Theory 1	24PCH101	Structure and Mechanism in Organic Chemistry	4	100	5
Core – Theory 2	24PCH102	Structure and Bonding in Inorganic Compounds	4	100	5
Core – Theory 3	24PCH103	Thermodynamics and Kinetics	4	100	5
Elective – Theory 1	24PCH201 / 240CH204 / 24PCH207 / 24PCH210	Nanotechnology/ Introduction to Computational Chemistry/ Introduction to Polymers/ Introduction to Pharmacognosy	4	100	4
Elective – Theory 2	24PCH213 / 24PCH216 / 24PCH219	Principles of Green Chemistry/ Fibers, Dyes and Finishing Processes/ Chemistry of Agricultural Systems	4	100	4
Core Laboratory -1	24PCH301	Inorganic Qualitative Analysis and Estimation of Metal ions	2	100	4
Core	24PCH601	Research Review	2	100	3
		Total	**24**	**700**	**30**
Semester II					
Core – Theory 4	24PCH104	Organic Reactions and their Mechanisms	4	100	5
Core – Theory 5	24PCH105	Coordination Chemistry and Organometallics	4	100	5
Core – Theory 6	24PCH106	Quantum Chemistry, Symmetry and Interfaces	4	100	5
Core Laboratory - 2	24PCH302	Organic Qualitative Analysis and Estimation Lab	2	100	4
Elective – Theory 3	24PCH202 / 240CH205 / 24PCH208 / 24PCH211	Carbon Nanomaterials / Software Tools for Computational Chemistry/	4	100	4

		Synthesis and Characterization Techniques/ Medicinal Chemistry			
Elective – Theory 4	24PCH214 / 24PCH217 / 24PCH220	Renewable Feed stocks and Biomass Conversion/ Dyeing and Finishing Textiles/ Soil Testing Techniques	4	100	4
Core	24PCH602	Research Report	*	CIA	1
Ability Enhancement Courses	24PCH451	Innovation Skills	1	100	2
		Total	**23**	**700**	**30**
Semester III					
Core – Theory 7	24PCH107	Organic Synthesis and Photochemistry	4	100	4
Core – Theory 8	24PCH108	Advanced Coordination Chemistry	4	100	4
Core – Theory 9	24PCH109	Electrochemistry & Spectroscopy	4	100	4
Core – Theory 10	24PCH110	Analytical Chemistry	4	100	4
Core Laboratory -3	24PCH303	Physical Chemistry Lab	2	100	4
Core Laboratory - 4	24PCH304	Analytical Chemistry Lab	2	100	4
Core	24PCH602	Research Report	*	CIA	2
Core	24PCH603	Application Development	2	100	2
Ability Enhancement	24PCH401	Scientific Ethics and Professionalism	1	100	2
		Total	**23**	**800**	**30**
Semester IV					
Elective – Theory 5	24PCH203 / 240CH206 / 24PCH209 / 24PCH212	Nanomaterials in Energy Technology/ Cheminformatics and Data Analysis/ Advanced Applications and Innovations in Polymers/ Pharmaceutical Technology	4	100	4
Elective - Theory 6	24PCH215 / 24PCH218 / 24PCH221	Sustainable Synthesis/ Advanced Tools in Textile Chemistry/ Data Analysis and GIS Applications	4	100	4
Core	24PCH602	Research Report	2	100	2

Core	24PCH604	Internship	2	100	-
Core	24PCH605	Project	8	100	20
		Total	**20**	**500**	**30**
Total			**90**	**2700**	**120**