



Department of Applied and Interdisciplinary Sciences
Sardar Patel University
Syllabus Structure: B.Sc. Advanced Organic Chemistry

Semester-I (Effect from June,2024)										
Sr. No	Subject	Course Code	Course Type	T/P	Credit	Number of hours per week	Exam Duration In Hrs	Component of Marks		
								Internal	External	Total
1	Classical Concept of Chemistry	UT01MAAOC01	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
2	Chemistry Practical -1 (Organic and Inorganic Qualitative Analysis)	UT01MAAOC02	Core (Disciplinary Major)	P	4	8	3.0	50	50	100
3	Chemical Separation Methods	UT01IDAOC01	Interdisciplinary Minor	T	2	2	1.30	25	25	50
4	Chemical Separation Methods Practical	UT01IDAOC02	Inter Disciplinary Minor	P	2	4	2	25	25	50
5	Basic Instrumentation	UT01MDAOC01	MDC	T	2	2	1.30	25	25	50
6	Basic Instrumentation Practical	UT01MDAOC02	MDC	P	2	4	2	25	25	50
7	English-1	UT01AEAOC01	AEC (Compulsory)	T	2	2	1.30	25	25	50
8	Applications of Computers in Chemistry	UT01SEAOC01	SEC	T	2	2	1.30	25	25	50
	Basic IT Tools (Effect from 2025-26)	UT01SEAOC01	SEC	T	2	2	1.30	25	25	50
	IKS-1	UT01VAAOC01	IKS	T	2	2	1.30	25	25	50
					22					550

Credits for semester-I

Major Course	Minor Course	MDC	AEC	SEC	VAC/IKS	Internship	Total
8	4	4	2	2	2		22



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Semester-II										
Sr. No	Subject	Course Code	Course Type	T/P	Credit	Number of hours per week	Exam Duration In Hrs	Component of Marks		
								Internal	External	Total
1	Fundamentals of Chemistry	UT02MAAOC01	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
2	Chemistry Practical -2 (Titrimetric Analysis)	UT02MAAOC02	Core (Disciplinary Major)	P	4	8	3	50	50	100
3	Basic Analytical Chemistry	UT02IDAOC01	Interdisciplinary Minor	T	2	2	1.30	25	25	50
4	Basic Analytical Chemistry Practical	UT02IDAOC02	Inter Disciplinary Minor	P	2	4	2	25	25	50
5	Sophisticated Instrumental Analysis	UT02MDAOC01	MDC	T	2	2	1.30	25	25	50
6	Sophisticated Instrumental Analysis Practical	UT02MDAOC02	MDC	P	2	4	2	25	25	50
7	PDP	UT02AEAOC01	AEC (Compulsory)	T	2	2	1.30	25	25	50
8	Accounting and Tally	UT02SEAOC01	SEC	T	2	2	1.30	25	25	50
9	IKS-2	UT02VAAOC01	VAC	T	2	2	1.30	25	25	50
					22					550

Credits for semester-II

Major Course	Minor Course	MDC	AEC	SEC	VAC/IKS	Internship	Total
8	4	4	2	2	2		22



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Semester-III										
Sr. No	Subject	Course Code	Course Type	T/P	Credit	Number of hours per week	Exam Duration In Hrs	Component of Marks		
								Internal	External	Total
1	Essential Organic Chemistry	UT03MAAOC01	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
2	Organometallic Chemistry	UT03MAAOC02	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
3	Organic Chemistry Practical	UT03MAAOC03	Core (Disciplinary Major)	P	4	8	3	50	50	100
4	Biophysical Chemistry	UT03MDAOC01	MDC	T	2	2	1.30	25	25	50
5	Biophysical Chemistry Practical	UT03MDAOC02	MDC	P	2	4	2	25	25	50
6	Functional Grammar and Composition	UT03AEAOC01	AEC (Compulsory)	T	2	2	1.30	25	25	50
7	Finance for Everyone	UT03SEAOOC01	SEC	T	2	2	1.30	25	25	50
8	IPR	UT03VAAOC01	VAC	T	2	2	1.30	25	25	50
					22					550

Credits for semester-III

Major Course	Minor Course	MDC	AEC	SEC	VAC/IKS	Internship	Total
12	0	4	2	2	2		22



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Semester-IV										
Sr. No	Subject	Course Code	Course Type	T/P	Credit	Number of hours per week	Exam Duration In Hrs	Component of Marks		
								Internal	External	Total
1	Heterocyclic Chemistry & Natural Products	UT04MAAOC01	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
2	Organic Photochemistry & Pericyclic Chemistry	UT04MAAOC02	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
3	Organic Chemistry Practical-2	UT04MAAOC03	Core (Disciplinary Major)	P	4	8	3	50	50	100
4	Nanoscience and Nanotechnology	UT04IDAOC01	(Interdisciplinary Minor)	T	2	2	1.30	25	25	50
5	Nanoscience and Nanotechnology Practical	UT04IDAOC02	(Inter Disciplinary Minor)	P	2	4	2	25	25	50
6	Marketing and Mass communication	UT04AEAOC01	AEC (Compulsory)	T	2	2	1.30	25	25	50
7	Maintenance and Testing of Home Appliances	UT04SEAOC01	SEC	T	2	2	1.30	25	25	50
8	Environmental Safety	UT04VAAOC01	VAC	T	2	2	1.30	25	25	50
					22					550

Credits for semester-IV

Major Course	Minor Course	MDC	AEC	SEC	VAC/IKS	Internship	Total
12	4	0	2	2	2		22



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Semester-V										
Sr. No	Subject	Course Code	Course Type	T/P	Credit	Number of hours per week	Exam Duration In Hrs	Component of Marks		
								Internal	External	Total
1	Organic Reaction Mechanism	UT05MAAOC01	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
2	Applied Organic Chemistry	UT05MAAOC02	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
3	Organic Chemistry Practical	UT05MAAOC03	Core (Disciplinary Major)	P	4	8	3	50	50	100
4	Analytical Clinical Biochemistry	UT05IDAOC01	(Disciplinary Minor)	T	4	4	2.30	50	50	100
5	Physical Organic Chemistry practical	UT05IDAOC02	(Disciplinary Minor)	P	4	8	3	50	50	100
6	QA & RA	UT05SEAOC01	SEC	T	2	2	1.30	25	25	50
					22					550

Credits for semester-V

Major Course	Minor Course	MDC	AEC	SEC	VAC/IKS	Internship	Total
12	8	0	0	2	0		22



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Semester-VI										
Sr. No	Subject	Course Code	Course Type	T/P	Credit	Number of hours per week	Exam Duration In Hrs	Component of Marks		
								Internal	External	Total
1	Green Chemistry in Organic Synthesis	UT06MAAOC01	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
2	Medicinal Organic Chemistry	UT06MAAOC02	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
3	Organic Chemistry Practical	UT06MAAOC03	Core (Disciplinary Major)	P	4	8	3	50	50	100
4	Bioorganic Chemistry	UT06IDAOC01	(Disciplinary Minor)	T	2	2	1.30	25	25	50
5	Bioorganic Practical	UT06IDAOC02	(Disciplinary Minor)	P	2	4	2	25	25	50
6	Life Skills	UT06AEAOC01	AEC	T	2	4	1.30	25	25	50
7	Internship	UT06RPAOC01	SEC/RP		4	120 total		0	100	100
					22					550

Credits for semester-VI

Major Course	Minor Course	MDC	AEC	SEC	VAC/IKS	Internship	Total
12	4	0	2	0		4	22



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(Credit Framework for 3-Year B.Sc. Advanced Organic Chemistry Programme)

Semester	Major Course	Minor Course	MDC	AEC	SEC	VAC/IKS	Internship	Total
I	8	4	4	2	2	2		22
II	8	4	4	2	2	2		22
III	12	0	4	2	2	2		22
IV	12	4	0	2	2	2	0	22
V	12	8	0	0	2	0	0	22
VI	16 (12+4)	4	0	2	0	0	4	22
Total	68 (64+4)	24 (12+12)	12	10	10	8	4	132



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Semester-VII										
Sr. No	Subject	Course Code	Course Type	T/P	Credit	Number of hours per week	Exam Duration In Hrs	Component of Marks		
								Internal	External	Total
1	Advanced Organic Chemistry-I	UT07MAAOC01	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
2	Organocatalytic: Catalyst from Organic Molecules	UT07MAAOC02	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
3	Advanced Organic/Inorganic Chemistry Practical	UT07MAAOC03	Core (Disciplinary Major)	P	4	8	3	50	50	100
4	Advanced Analytical Chemistry	UT07IDAOC01	(Disciplinary Minor)	T	2	2	1.30	25	25	50
5	Advanced Analytical Chemistry Practical	UT07IDAOC02	(Disciplinary Minor)	P	2	4	2	25	25	50
6	Internship/OJT	UT07RPAOC01			6	180 total			150	150
					22					550

Credit for semester -VII

Major Course	Minor Course	MDC	AEC	SEC	VAC/IKS	Internship	Total
12	4	0	0	0		6	22



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Semester-VIII										
Sr. No	Subject	Course Code	Course Type	T/P	Credit	Number of hours per week	Exam Duration In Hrs	Component of Marks		
								Internal	External	Total
1	Advanced Organic Chemistry-II	UT08MAAOC01	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
2	Organic Chemistry of Drug Design and Development	UT08MAAOC02	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
3	Asymmetric Synthesis and Click Chemistry in Organic Synthesis	UT08MAAOC03	Core (Disciplinary Major)	P	4	8	3	50	50	100
4	Organic High polymers	UT08IDAOC01	(Disciplinary Minor)	T	2	2	1.30	25	25	50
5	Organic High polymers Practical	UT08IDAOC02	(Disciplinary Minor)	P	2	4	2	25	25	50
6	Internship/OJT	UT08RPAOC01			6	120 total			150	150
					22					

Credit for semester -VIII

Major Course	Minor Course	MDC	AEC	SEC	VAC/IKS	Internship	Total
12	4	0	0	0		6	22



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(Credit Framework for 4-Year B.Sc. Advanced Organic Chemistry Programme)

Semester	Major Course	Minor Course	MDC	AEC	SEC	VAC/IKS	Internship	Total
I	8	4	4	2	2	2		22
II	8	4	4	2	2	2		22
III	12	0	4	2	2	2		22
IV	12	4	0	2	2	2	0	22
V	12	8	0		2		0	22
VI	16 (12+4)	4	0	2	0		4	22
VII	12	4	0	0	0		6	22
VIII	12	4	0	0	0		6	22
Total	92 (88+4)	32	12	10	10	8	12	176