



Department of Applied and Interdisciplinary Sciences
Sardar Patel University
Syllabus Structure: B.Sc. Applied 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	Basic Chemistry-I : (Atomic Structure, Periodic Properties, Hydrocarbons, Haloalkanes and Haloarenes)	UT01MAACH01	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
2	Chemistry Practical -1 (Organic and Inorganic Qualitative Analysis)	UT01MAACH02	Core (Disciplinary Major)	P	4	8	3	50	50	100
3	Physics-1	UT01IDACH01	Interdisciplinary Minor	T	2	2	1.30	25	25	50
4	Physics Practical-1 (Mechanics)	UT01IDACH02	Inter Disciplinary Minor	P	2	4	2	25	25	50
5	Bioinorganic Chemistry	UT01MDACH01	MDC	T	2	2	1.30	25	25	50
	Basic Instrumentation (Effect from 2025-26)	UT01MDACH01	MDC	T	2	2	1.30	25	25	50
6	Bioinorganic Chemistry Practical	UT01MDACH02	MDC	P	2	4	2	25	25	50
	Basic Instrumentation Practical (Effect from 2025-26)	UT01MDACH02	MDC	P	2	4	2	25	25	50
7	English-1	UT01AEACH01	AEC (Compulsory)	T	2	2	1.30	25	25	50
8	Basic IT Tools	UT01SEACH01	SEC	T	2	2	1.30	25	25	50
	IKS-1	UT01VAACH01	VAC	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	Basic Chemistry-II (Chemical Bonding, Ionic Equilibria, States of Matter, Basics of Thermodynamics)	UT02MAACH01	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
2	Chemistry Practical -2 (Titrimetric Analysis)	UT02MAACH02	Core (Disciplinary Major)	P	4	8	3	50	50	100
3	Physics-2	UT02IDACH01	Interdisciplinary Minor	T	2	2	1.30	25	25	50
4	Physics Practical-2 (Electronics)	UT02IDACH02	Inter Disciplinary Minor	P	2	4	2	25	25	50
5	Sophisticated Instrumental Analysis	UT02MDACH01	MDC	T	2	2	1.30	25	25	50
6	Sophisticated Instrumental Analysis Practical	UT02MDACH02	MDC	P	2	4	2	25	25	50
7	PDP	UT02AEACH01	AEC (Compulsory)	T	2	2	1.30	25	25	50
8	Accounting and Tally	UT02SEACH01	SEC	T	2	2	1.30	25	25	50
9	IKS-2	UT02VAACH01	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	Organic Chemistry (Stereochemistry, Alcohol- Phenol -Ethers, Carbonyls, Carboxylic acid and its derivatives)	UT03MAACH01	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
2	Physical Chemistry 1 – (Thermodynamics-1, Thermodynamics-2, Chemical kinetics-1, Chemical kinetics-2)	UT03MAACH02	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
3	Chemistry Practical -3 (pH metry, Conductometry, Chemical Kinetics practicals)	UT03MAACH03	Core (Disciplinary Major)	P	4	8	3	50	50	100
4	Biophysical Chemistry	UT03MDACH01	MDC	T	2	2	1.30	25	25	50
5	Biophysical Chemistry Practicals	UT03MDACH02	MDC	P	2	4	2	25	25	50
6	Functional Grammar and Composition	UT03AEACH01	AEC (Compulsory)	T	2	2	1.30	25	25	50
7	Finance for Everyone	UT03SEACH01	SEC	T	2	2	1.30	25	25	50
8	IPR	UT03VAACH01	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 (Nomenclatures, Heterocyclic compounds of Chemical significance, Natural product 1- Carbohydrates and proteins, Natural product-2- Steroids and Alkaloids,	UT04MAACH01	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
2	Applied Chemistry-1 (Cement, Fertilizer, Glass and Ceramics, Lubricants and Oils)	UT04MAACH02	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
3	Chemistry Practical-4 (Inorganic and Organic Qualitative Analysis-Two Component Mixture)	UT04MAACH03	Core (Disciplinary Major)	P	4	8	3	50	50	100
4	Applied Physics-1	UT04IDACH01	(Interdisciplinary Minor)	T	2	2	1.30	25	25	50
5	Applied Physics Practical-1	UT04IDACH02	(Inter Disciplinary Minor)	P	2	4	2	25	25	50
6	Marketing and Mass communication	UT04AEACH01	AEC (Compulsory)	T	2	2	1.30	25	25	50
7	Maintenance and Testing of Home Appliances	UT04SEACH01	SEC	T	2	2	1.30	25	25	50
8	Environmental Safety	UT04VAACH01	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	Fundamentals of Organic Chemistry (Types of reaction and Types of mechanism, Intermediates, Selected Reaction Mechanism, Dyes)	UT05MAACH01	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
2	Spectroscopy and Microscopy – (UV-IR, 1H & 13C, Mass, Microscopic Techniques)	UT05MAACH02	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
3	Chemistry Practical -5 (Inorganic and Organic Qualitative Analysis-3 Component mixtures)	UT05MAACH03	Core (Disciplinary Major)	P	4	8	3	50	50	100
4	Electroanalytical Techniques (Basic of Electrochemistry, PH metry and Conductometry)	UT05IDACH01	(Disciplinary Minor)	T	4	4	2.30	50	50	100
5	Electroanalytical Techniques Practical (pH metric and Conductometric Analysis)	UT05IDACH02	(Disciplinary Minor)	P	4	8	3	50	50	100
6	QA & RA	UT05SEACH01	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	Spectroscopy	UT06MAACH01	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
2	Polymer Chemistry	UT06MAACH02	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
3	Applied Chemistry Practicals	UT06MAACH03	Core (Disciplinary Major)	P	4	8	3	50	50	100
4	(Paint and Coatings – Pigment, Resin, Solvents and Additives in Paints)	UT06IDACH01	(Disciplinary Minor)	T	2	2	1.30	25	25	50
5	(Paint and Coatings – Pigment, Resin, Solvents and Additives in Paints) - Practicals	UT06IDACH02	(Disciplinary Minor)	P	2	4	2	25	25	50
6	Life Skills	UT06AEACH01	AEC	T	2	4	1.30	25	25	50
7	Internship	UT06RPACH01	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

(Credit



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Framework for 3-Year B.Sc. Applied 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	Inorganic Chemistry-I	UT07MAACH01	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
2	Organic Chemistry - I	UT07MAACH02	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
3	Practical's – Inorganic/Organic	UT07MAACH03	Core (Disciplinary Major)	P	4	8	3	50	50	100
4	Advanced Analytical Chemistry-I	UT07IDACH01	(Disciplinary Minor)	T	2	2	1.30	25	25	50
5	Advanced Analytical Chemistry-I - Practical's	UT07IDACH02	(Disciplinary Minor)	P	2	4	2	25	25	50
6	Internship/OJT	UT07RPACH01			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	Inorganic Chemistry-II	UT08MAACH01	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
2	Organic Chemistry-II	UT08MAACH02	Core (Disciplinary Major)	T	4	4	2.30	50	50	100
3	Physical Chemistry-II	UT08MAACH03	Core (Disciplinary Major)	P	4	8	3	50	50	100
4	Instrumental Methods of Analysis - I	UT08IDACH01	(Disciplinary Minor)	T	2	2	1.30	25	25	50
5	Instrumental Methods of Analysis-I - Practical	UT08IDACH02	(Disciplinary Minor)	P	2	4	2	25	25	50
6	Internship/OJT	UT08RPACH01			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. Applied 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