SARDAR PATEL UNIVERSITY
NEP Structure B.Sc. Semester: IV
(Under Choice Based Credit Scheme)
Syllabus with Effect from: 2024

Course Type	Course Code	Name of Course	T / P	Credit	Contact Hours Per Week	Exam Duration in hrs	Component of Marks		
							Internal	External	Total
Ability Enhancement Course									
	US04AEENG01	Functional English	P	2	2	2	25	25	50
Major Course (Any One Subject)									
Chemistry	US04MACHE01	Organic Chemistry	T	4	4	2:30	50	50	100
	US04MACHE02	Analytical Chemistry - I	T	4	4	2:30	50	50	100
	US04MACHE03	Chemistry Practical	P	4	8	3	50	50	100
Physics	US04MAPHY01	Electromagnetic Theory and Spectroscopy	T	4	4	2:30	50	50	100
	US04MAPHY02	Classical, Quantum and Solid State Physics	T	4	4	2:30	50	50	100
	US04MAPHY03	Physics Practical	P	4	8	3	50	50	100
Zoology	US04MAZOO01	Vertebrata and Animal Behaviour	T	4	4	2:30	50	50	100
	US04MAZOO02	Physiology & Wild Life	T	4	4	2:30	50	50	100
	US04MAZOO03	Zoology Practical	P	4	8	3	50	50	100
Bio Chemistry	US04MABIC01	Understanding of Biomolecules and Immunology	T	4	4	2:30	50	50	100
	US04MABIC02	Essentials of Clinical Biochemistry-II	T	4	4	2:30	50	50	100
	US04MABIC03	Biochemistry Practical	P	4	8	3	50	50	100
Botany	US04MABOT01	Phycology, Mycology and Phytopathology	T	4	4	2:30	50	50	100
	US04MABOT02	Genetics and Bioinformatics	T	4	4	2:30	50	50	100
	US04MABOT03	Botany Practical	P	4	8	3	50	50	100

Course Type	Course Code	Name of Course	T / P	Credit	Contact Hours Per Week	Exam Duration in hrs	Component of Marks		
							Internal	External	Total
Biotechnology	US04MABTE01	Introduction to Animal and Plant Biotechnology	T	4	4	2:30	50	50	100
	US04MABTE02	Bioinstrumentation	T	4	4	2:30	50	50	100
	US04MABTE03	Biotechnology Practical	P	4	8	3	50	50	100
Microbiology	US04MAMIC01	Microbiology of Food, Milk and Human Host	T	4	4	2:30	50	50	100
	US04MAMIC02	Environmental Microbiology	T	4	4	2:30	50	50	100
	US04MAMIC03	Microbiology Practical	P	4	8	3	50	50	100
Industrial Chemistry	US04MAICH01	Chemical Plant Utilities& Unit Operations	T	4	4	2:30	50	50	100
	US04MAICH02	Analytical Chemistry							
	US04MAICH03	Industrial Chemistry Practical	P	4	8	3	50	50	100
Industrial Chemistry Vocational	US04MAICV01	Industrial Chemistry	T	4	4	2:30	50	50	100
	US04MAICV02	Introduction to Analytical Chemistry							
	US04MAICV03	Practical	P	4	8	3	50	50	100
Mathematics	US04MAMTH01	Partial Differential Equations	T	4	4	2:30	50	50	100
	US04MAMTH02	Numerical Analysis	T	4	4	2:30	50	50	100
	US04MAMTH03	Problems and Exercises in Partial Differential Equation & Numerical Analysis	P	4	8	3	50	50	100
Electronics and Communication	US04MAELC01	Signals and Systems	T	4	4	2:30	50	50	100
	US04MAELC02	Digital Electronic Circuits							
	US04MAELC03	Practical	P	4	8	3	50	50	100
Computer Science	US04MACSC01	Advanced C Programming and Introduction to Data Structures	T	4	4	2:30	50	50	100
	US04MACSC02	Web Application Development – II	T	4	4	2:30	50	50	100
	US04MACSC03	Practical Based on US04MACSC01 and US04MACSC02	P	4	8	3	50	50	100

Course Type	Course Code	Name of Course	T / P	Credit	Contact Hours Per Week	Exam Duration in hrs	Component of Marks		
							Internal	External	Total
Minor Subject (Any One Subject)									
Chemistry	US04MICHE01	Analytical Chemistry-II	T	2	2	1:30	25	25	50
	US04MICHE02	Chemistry Practical-II	P	2	4	2	25	25	50
Physics	US04MIPHY01	Physics of Solids	T	2	2	1:30	25	25	50
	US04MIPHY02	Physics Practical	P	2	4	2	25	25	50
Zoology	US04MIZOO01	Basic Physiology	T	2	2	1:30	25	25	50
	US04MIZOO02	Zoology Practical	P	2	4	2	25	25	50
Biochemistry	US04MIBIC01	Introduction to Biomolecules-I	T	2	2	1:30	25	25	50
	US04MIBIC02	Biochemistry Practical	P	2	4	2	25	25	50
Botany	US04MIBOT01	Plants Morphology and Taxonomy	T	2	2	1:30	25	25	50
	US04MIBOT02	Botany Practical	P	2	4	2	25	25	50
Biotechnology	US04MIBTE01	Fundamental of Molecular Biology & Genetic Engineering	T	2	2	1:30	25	25	50
	US04MIBTE02	Biotechnology Practical	P	2	4	2	25	25	50
Microbiology	US04MIMIC01	Environmental Microbiology	T	2	2	1:30	25	25	50
	US04MIMIC02	Microbiology Practical	P	2	4	2	25	25	50
Industrial Chemistry	US04MIICH01	Unit Operations	T	2	2	1:30	25	25	50
	US04MIICH02	Industrial Chemistry Practical	P	2	4	2	25	25	50
Industrial Chemistry(Voc)	US04MIICV01	Fluid Mechanics	T	2	2	1:30	25	25	50
	US04MIICV02	Practical	P	2	4	2	25	25	50
Mathematics	US04MIMTH01	Graph Theory	T	2	2	1:30	25	25	50
	US04MIMTH02	Problems and Exercises in Graph Theory	P	2	4	2	25	25	50
		OR							
	US04MIMTH03	Number Theory	T	2	2	1:30	25	25	50
	US04MIMTH04	Problems and Exercises in Number Theory	P	2	4	2	25	25	50
		OR							
	US04MIMTH05	Mechanics	T	2	2	1:30	25	25	50
	US04MIMTH06	Problems and Exercises in Mechanics	P	2	4	2	25	25	50
Statistics	US04MISTA01	Index Numbers and Vital Statistics	T	2	2	1:30	25	25	50
	US04MISTA02	Practical	P	2	4	2	25	25	50

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		OR							
	US04MIMTH07	Advanced Calculus	T	2	2	1:30	25	25	50
	US04MIMTH08	Problems and Exercises in Advanced Calculus	P	2	4	2	25	25	50
Computer Science	US04MICSC01	Fundamentals of Web Application Development	T	2	2	1:30	25	25	50
	US04MICSC02	Practical Based on US04MICSC01	P	2	4	2	25	25	50
Electronics	US04MIELE01	Transistor Circuits	T	2	2	1:30	25	25	50
	US04MIELE02	Electronics Practicals.	P	2	4	2	25	25	50
Electronics & Communication	US04MIELC01	Digital Electronic Circuits	T	2	2	1:30	25	25	50
	US04MIELC02	Practicals	P	2	4	2	25	25	50
Skill Enhancement Course (Any One Subject)									
Chemistry	US04SECHE01	Soil Analysis Practical	P	2	4	2	25	25	50
Physics	US04SEPHY01	Transducers and Sensors	T	2	2	1:30	25	25	50
	US04SEPHY02	Experimental techniques in Physics	P	2	4	2	25	25	50
Biochemistry	US04SEBIC01	Tools and Techniques in Biochemistry-IV	T	2	2	1:30	25	25	50
Botany	US04SEBOT01	Hydroponics-2	T	2	2	1:30	25	25	50
Statistics	US04SESTA01	Statistical Inference in Biostatistics	T	2	2	1:30	25	25	50
	US04SESTA02	Statistics Practical – IV (Effect from June, 2006)	P	2	4	1:30	25	25	50
Computer Science	US04SECSC01	Information Technology Fundamentals – IV (ITF-IV)	T	2	2	1:30	25	25	50
Electronics	US04SEELE01	Renewable Energy Sources	T	2	2	1:30	25	25	50
	US04SEELE02	Digital Electronics Practical	P	2	4	1:30	25	25	50
Mathematics	US04SEMTH01	Numerical Methods Practical	P	2	4	1:30	25	25	50
	US04SEMTH02	Graph Theory-2 (Effect from June, 2026)	T	2	2	1:30	25	25	50
Ind. Chemistry	US04SEICH01	Introduction to Green Chemistry	T	2	2	1:30	25	25	50
Vale Added Course (Any One)									
	US04VABSC01	NCC Army - 2	T	2	2	1:30	25	25	50
	US04VABSC02	Integrated Personality Development	T	2	2	1:30	25	25	50
	US04VABSC03	Life Skills and Self Enhancement	T	2	2	1:30	25	25	50