

**SARDAR PATEL UNIVERSITY**  
**NEP Structure B.Sc. Semester: II**  
**(Under Choice Based Credit Scheme)**  
**Syllabus with Effect from: 2023**

| Course Type                           | Course Code | Name of Course   | T / P | Credit | Contact Hours Per Week | Exam Duration in hrs | Component of Marks |          |       |
|---------------------------------------|-------------|--|-------|--------|------------------------|----------------------|--------------------|----------|-------|
|                                       |             |  |       |        |                        |                      | Internal           | External | Total |
| <b>Ability Enhancement Course</b>     |             |  |       |        |                        |                      |                    |          |       |
|                                       | US02AEENG01 | Functional English   | P     | 2      | 2                      | 2                    | 25                 | 25       | 50    |
| <b>Major Course (Any One Subject)</b> |             |  |       |        |                        |                      |                    |          |       |
| <b>Chemistry</b>                      | US02MACHE01 | General Chemistry-II   | T     | 4      | 4                      | 2:30                 | 50                 | 50       | 100   |
|                                       | US02MACHE02 | Chemistry Practical-II   | P     | 4      | 8                      | 3                    | 50                 | 50       | 100   |
| <b>Physics</b>                        | US02MAPHY01 | Vector Algebra, Relativity, Network Analysis and Basic Electronics | T     | 4      | 4                      | 2:30                 | 50                 | 50       | 100   |
|                                       | US02MAPHY02 | Physics Practical  | P     | 4      | 8                      | 3                    | 50                 | 50       | 100   |
| <b>Zoology</b>                        | US02MAZOO01 | Animal Diversity and Physiology-2                                  | T     | 4      | 4                      | 2:30                 | 50                 | 50       | 100   |
|                                       | US02MAZOO02 | Zoology Practical  | P     | 4      | 8                      | 3                    | 50                 | 50       | 100   |
| <b>Bio Chemistry</b>                  | US02MABIC01 | Molecules of Life  | T     | 4      | 4                      | 2:30                 | 50                 | 50       | 100   |
|                                       | US02MABIC02 | Biochemistry Practical   | P     | 4      | 8                      | 3                    | 50                 | 50       | 100   |
| <b>Botany</b>                         | US02MABOT01 | Biodiversity (Microbes, Algae, Fungi and Archegoniate)             | T     | 4      | 4                      | 2:30                 | 50                 | 50       | 100   |
|                                       | US02MABOT02 | Botany Practical   | P     | 4      | 8                      | 3                    | 50                 | 50       | 100   |
| <b>Biotechnology</b>                  | US02MABTE01 | Biomolecules and Classical Genetics                                | T     | 4      | 4                      | 2:30                 | 50                 | 50       | 100   |
|                                       | US02MABTE02 | Biotechnology Practical  | P     | 4      | 8                      | 3                    | 50                 | 50       | 100   |
| <b>Microbiology</b>                   | US02MAMIC01 | Fundamentals of Microbiology                                       | T     | 4      | 4                      | 2:30                 | 50                 | 50       | 100   |
|                                       | US02MAMIC01 | Microbiology Practical   | P     | 4      | 8                      | 3                    | 50                 | 50       | 100   |
| <b>Industrial Chemistry</b>           | US02MAICH01 | Process Calculation and Engineering Equipment                      | T     | 4      | 4                      | 2:30                 | 50                 | 50       | 100   |
|                                       | US02MAICH02 | Industrial Chemistry Practical                                     | P     | 4      | 8                      | 3                    | 50                 | 50       | 100   |



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|  |             |  |       |        |                        |                      | Internal           | External | Total |
| <b>Industrial Chemistry Vocational</b> | US02MAICV01 | Industrial Chemistry                             | T     | 4      | 4                      | 2:30                 | 50                 | 50       | 100   |
|  | US02MAICV02 | Practical  | P     | 4      | 8                      | 3                    | 50                 | 50       | 100   |
| <b>Mathematics</b>                     | US02MAMTH01 | Algebra  | T     | 4      | 4                      | 2:30                 | 50                 | 50       | 100   |
|  | US02MAMTH02 | Problems and Exercises in Algebra                | P     | 4      | 8                      | 3                    | 50                 | 50       | 100   |
| <b>Electronics and Communication</b>   | US02MAELC01 | Electronics Devices and Circuits                 | T     | 4      | 4                      | 2:30                 | 50                 | 50       | 100   |
|  | US02MAELC02 | Electronics and Communication Practical          | P     | 4      | 8                      | 3                    | 50                 | 50       | 100   |
| <b>Computer Science</b>                | US02MACSC01 | Computer Fundamentals - II                       | T     | 4      | 4                      | 2:30                 | 50                 | 50       | 100   |
|  | US02MACSC02 | Practical Based on US02MACSC01                   | P     | 4      | 8                      | 3                    | 50                 | 50       | 100   |
| <b>Electronics</b>                     | US02MAELE01 | AC Fundamentals                                  | T     | 4      | 4                      | 2:30                 | 50                 | 50       | 100   |
|  | US02MAELE02 | Electronics Practicals.                          | P     | 4      | 8                      | 3                    | 50                 | 50       | 100   |
| <b>Minor Course (Any One Subject)</b>  |             |  |       |        |                        |                      |                    |          |       |
| <b>Chemistry</b>                       | US02MICHE01 | Basic Chemistry - II                             | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|  | US02MICHE02 | Chemistry Practical-I                            | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Physics</b>                         | US02MIPHY01 | Network Theory, AC Bridges and Basic Electronics | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|  | US02MIPHY02 | Physics Practical                                | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Zoology</b>                         | US02MIZOO01 | Chordate Diversity                               | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|  | US02MIZOO02 | Zoology Practical                                | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Biochemistry</b>                    | US02MIBIC01 | Fundamentals of Biochemistry-II                  | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|  | US02MIBIC02 | Biochemistry Practical                           | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Botany</b>                          | US02MIBOT01 | Introduction to Archegoniate                     | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|  | US02MIBOT02 | Botany Practical                                 | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |



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|  |             |  |       |        |                        |                      | Internal           | External | Total |
| <b>Biotechnology</b>                   | US02MIBTE01 | Biomolecules   | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|  | US02MIBTE02 | Biotechnology Practical  | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Microbiology</b>                    | US02MIMIC01 | Fundamentals of Microbiology                                       | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|  | US02MIMIC02 | Practicals: Based on US02MIMIC01                                   | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Industrial Chemistry</b>            | US02MIICH01 | Introduction to Industrial Chemistry -II                           | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|  | US02MIICH02 | Industrial Chemistry Practical                                     | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Industrial Chemistry Vocational</b> | US02MIICV01 | Introduction to Chemical Plant Utilities                           | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|  | US02MIICV02 | Practical  | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Mathematics</b>                     | US02MIMTH01 | Matrices and Complex Numbers                                       | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|  | US02MIMTH02 | Problems and Exercises in Matrices and Complex Numbers (Practical) | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Electronics and Communication</b>   | US02MIELC01 | Electronics Devices and Circuits                                   | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|  | US02MIELC02 | Electronics and Communication Practical                            | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Statistics</b>                      | US02MISTA01 | Descriptive Statistics for Bivariate data                          | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|  | US02MISTA01 | Statistics Practical   | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Computer Science</b>                | US02MICSC01 | Computer Basics and Logic Gates                                    | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|  | US02MICSC02 | Practical Based on US02MICSC01                                     | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Electronics</b>                     | US02MIELE01 | AC Circuits.   | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|  | US02MIELE02 | Electronics Practicals.  | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |



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| <b>Multi / Inter Disciplinary (Any One Subject)</b> |             |   |       |        |                        |                      |                    |          |       |
| <b>Chemistry</b>                                    | US02IDCHE01 | Fundamentals of Chemistry-II                                | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|   | US02IDCHE02 | Chemistry Practical-II                                      | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
|   | US02MDCHE01 | Environmental Pollution - II                                | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|   | US02MDCHE02 | Chemistry Practical-II                                      | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Physics</b>                                      | US02IDPHY01 | Introductory electronics, network circuits and a.c. bridges | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|   | US02IDPHY02 | Physics Practical   | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Zoology</b>                                      | US02IDZOO01 | Chordates   | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|   | US02IDZOO02 | Zoology Practical   | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Biochemistry</b>                                 | US02IDBIC01 | Basic concepts of Biochemistry-II                           | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|   | US02IDBIC02 | Biochemistry Practical                                      | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Botany</b>                                       | US02IDBOT01 | Plants and Human Welfare -II                                | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|   | US02IDBOT02 | Botany Practical  | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Biotechnology</b>                                | US02IDBTE01 | Introduction to genetics & chromosomes                      | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|   | US02IDBTE02 | Biotechnology Practical                                     | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Microbiology</b>                                 | US02IDMIC01 | Fundamentals of Microbiology                                | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|   | US02IDMIC02 | Microbiology Practical                                      | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Industrial Chemistry</b>                         | US02IDICH01 | Introduction to Instrumentation and Process                 | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|   | US02IDICH02 | Industrial Chemistry Practical                              | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Mathematics</b>                                  | US02IDMTH01 | Basics of Matrices  | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|   | US02IDMTH02 | Problems and Exercises in Basics of Matrices (Practical)    | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Computer Science</b>                             | US02IDCSC01 | Basics of Computers - II                                    | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|   | US02IDCSC02 | Practical Based on US02IDCSC01                              | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Electronics</b>                                  | US02IDELE01 | Impedance Circuits.   | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|   | US02IDELE02 | Electronics Practicals.                                     | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |
| <b>Statistics</b>                                   | US02IDSTA01 | Foundations of Statistics-II<br>(Effect from June, 2024)    | T     | 2      | 2                      | 1:30                 | 25                 | 25       | 50    |
|   | US02IDSTA02 | Practical in Statistics-II<br>(Effect from June, 2024)      | P     | 2      | 4                      | 2                    | 25                 | 25       | 50    |



