



SARDAR PATEL UNIVERSITY
Vallabh Vidyanagar, Gujarat
(Reaccredited with 'A' Grade by NAAC (CGPA 3.25)
Syllabus with effect from the Academic Year 2021-2022

Bachelor of Science - Home Science
(B.Sc.- H.Sc.) (Home Science) Semester (I)

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| Course Code | UH01CBSC59 | Title of the Course | Basic Science-I |
| Total Credits of the Course | 02 | Hours per Week | 02 |

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| Course Objectives: | <ol style="list-style-type: none">1. To impart basic information about the fundamentals of chemistry.2. To provide knowledge regarding various acids, bases and salts.3. To explain the concepts of cell structure and reproduction in plants.4. To acquaint the students with fundamentals of heat transfer. |
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| Course Content | | |
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| Unit | Description | Weightage* (%) |
| 1. | Fundamentals of Chemistry: (a) Scope, usefulness and branches (b) Classification of matter and Laws of chemical combination, (c) Structure of atom, Bohr's Model of atom, Electronic Configuration, Atomic number, Mass number, Valence shell, and Valence electrons. (d) Modern Periodic table, Symbols, Radicals, Chemical Formulas, (e) Chemical Bonding and Chemical Reactions, | 20 |
| 2. | Solutions, Colloids, Acids, Bases and Salts: (a) Solution: Types of Solution, Methods for representing Concentration of solution, Molarity, Normality, Formality, Molality, Percentage W/W, W/V, V/V, Mole Concept. (b) Colloids: Types of Colloids, Difference of True, Colloidal and Suspension solution, Properties of Colloids, Gel and Emulsion, Application of Colloids. (c) Acid, Base and salts/ pH : Acid (Definition, Properties and types), Base (Definition, Properties and types), pH-Definition, pH Scale, Explanation, Usefulness of pH, Indicator, Buffer Solution. | 20 |
| 3. | Biological Science: (a) Introduction: Definition, Salient features, Importance on the frontiers of science and technology, major branches and brief history of biology. (b) Plant and animal cell (c) Plant metabolism: Photosynthesis and Respiration | 20 |



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| | (d) Transport of materials in living systems: Diffusion, Osmosis | |
| 4. | Plant Morphology (a) Form, Structure and function of vegetative and reproductive parts of seed bearing plants (b) Unisexual and bisexual flowers. (c) Pollination, fertilization and reproduction in plants. | 20 |
| 5. | Temperature and its measures: (a) Calorimetric, (b) Change of state with applications, (c) Heat transfer-modes and examples. | 10 |

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| Teaching-Learning Methodology | Lectures, Interactive sessions, ICT enabled teaching and learning experiences in terms of video lessons, Discussion, Project Work , Demonstrations, Practical guidance |
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| Evaluation Pattern | | |
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| Sr. No. | Details of the Evaluation | Weightage |
| 1. | Internal Written Examination (As per CBCS R.6.8.3) | 15% |
| 2. | Internal Continuous Assessment in the form of Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3) | 15% |
| 3. | University Examination | 70% |

| Course Outcomes: Having completed this course, the learner will be able to | |
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| 1. | Revive their knowledge and understand the basic concepts in science. |
| 2. | Understand fundamental aspects of science and have a profound pillar for upcoming syllabus. |



Suggested References:

| Sr. No. | References |
|---------|--|
| 1. | G. D. Tuli., & B. S. Bahl. (1983). <i>Intermediate Inorganic Chemistry</i> .S. New Delhi: Ram Nagar,Chand & Company LTD. |
| 2. | P.L. Soni.,& Katyal M. (2007). <i>Textbook of Inorganic Chemistry</i> . Sultan: Chand & Sons. |
| 3. | Dutta A.C. (1980). <i>A class book of Botany</i> . John Brown, Calcutta- 13: Oxford university press. Faraday House. |
| 4. | Sharma V.K. (1990). <i>Biology class XI</i> . Daryaganj: Publishers 23. |
| 5. | Maheshwari P.Manoharlal (1996). <i>Biology Part 1-7</i> . New Delhi-110002: NCERT |
| 6. | Kenneth W. (1975). <i>Basic Physics</i> .University of California, Irvins New Delhi : Oxford and IBH Publishing Co. |

On-line resources to be used if available as reference material

On-line Resources

<http://www.edudel.nic.in/>

