Department of Botany
B.Sc. 1st and 2nd Semester (NEP)

The B.Sc. in Science (Botany) program's updated curriculum provides the fundamental knowledge and practical abilities needed to study plants holistically. All aspects of plant biology would be taught to students through a special blend of core, elective, and vocational papers with substantial cross-disciplinary elements. Modern technologies that are currently employed in the study of plant life forms, their evolution, and interactions with other creatures within the ecosystem will be introduced to the students. Additionally, the value of plants to the national economy and their significance for the environment and society would be made clear to the students.

The B.Sc. Botany Programme combines theoretical instruction in the classroom with hands-on laboratory experiences. Activities and projects both in and out of the field would be planned to provide students with practical experience and education. B.Sc Botany is an option for prospective students who have an interest in the plant world and ecosystems, who enjoy travelling to far-flung locations, and who have aspirations of working in the field of research or in professions such as botanist, conservationist, or ecologist, amongst others.

Programme Outcomes (PO)

After the completion of B.Sc. Degree Programme, the students will be able to:

PO1: Professional knowledge: A comprehensive understanding of the major concepts, theoretical principles, and experimental findings pertaining to a variety of areas in the field of biosciences, including chemistry, botany, and zoology, should be acquired.

PO2: Environment and sustainability: Recognise the effects of the professional engineering solutions in social and environmental situations, showcasing the understanding of sustainable development and its necessity.

PO3: Research and Analysis: Exhibit analytical ability and mastery of a variety of instruments and methods utilised in scientific and multidisciplinary research.

PO4: Critical thinking and Cognitive skills: Effectively and efficiently communicate complex scientific knowledge. Analyse and resolve plant and animal science-related issues without depending on educated guesses or assumptions.

PO5: Effective Communication: Show that you have a thorough awareness of historical precedents and are able to analyse contemporary art forms and issues both orally and in writing.

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PO6: Instruments and Experiments: Acquired expertise in using scientific equipment, organising and carrying out laboratory experiments, and deriving logical conclusions from those experiments.

PO7: Employability and higher Education: Demonstrate mastery of the professional, employability, and soft skills necessary for placements and higher study.

PO8: Ethics: Established moral, ethical, and social values in one's social and personal life, resulting in a highly developed and refined personality in the scientific sector.

PO9: Interdisciplinary Learning: Include extracurricular learning objectives in the academic programme, such as career development, lifelong learning, interdisciplinary learning, and opportunities to broaden one's knowledge across fields.

PO10: Science and Society: Use logic based on scientific knowledge to evaluate legal, cultural, societal, health, and safety concerns, as well as the ensuing obligations pertinent to professional science practice.

Programme Specific Outcomes (PSO)

At the completion of the programme, student will attain the ability to:

PSO1: Research on taxonomy will aid in the study of plants.

PSO2: Working in a laboratory will effectively provide knowledge of numerous procedures and scientific equipment.

PSO3: The fields of microbiology and plant diseases will provide knowledge about the different types of bacteria and plant diseases, respectively, as well as how to control them.

PSO4: Understanding basic genetics will enable one to understand complex contemporary biology.

PSO5: Research in RDT, Molecular Biology, Biotechnology, and other fields will be helpful in creating genetically modified crops, safeguarding threatened species, and producing a variety of vaccinations on a wide scale, like the recently created Corona-19 vaccine.

PSO6: Developing public knowledge of the different types of pollution and how to prevent them.

PSO7: Learn about gender, sustainability, the environment, human values, and professional ethics. You should also know the distinction between acting and reacting to different social concerns.

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SEMESTER I

Course Type: Major
Course Code: UBOTMAJ11001
Course Name: Origin of Life and Plant Diversity

Course Outcomes

After the completion of the course, the student will be able to:

CO1: Origin and evolution of Life

CO2: Introduction to plant and other life forms

CO3: Different groups of plants.

CO4: Handling microscopy, staining and mounting of plant specimens, and,

CO5: Methods of collection, identification and preservation of plant specimens

CO6: Schematic knowledge of collection and subsequent plant specimens.

CO7: Proper arrangement of preserved plant specimens.

CO8: Choosing suitable staining and mounting protocols for study of plant specimens.

Course type: Minor
Course code: UBOTMIN10001
Course Name: Biodiversity of Plant Kingdom

Course Outcomes

After the completion of the course, the student will be able to:

CO1: Concept of biodiversity.

CO2: Economic and ecological Importance of different plant groups.

CO3: Diversity in habits, habitats, and organization of plants.

CO4: Evolutionary trends within plants groups.

CO5: Identification of microbes.

CO6: Identification of Algae and Fungi through microscopic or morphological study.

CO7: Identification of Higher group of plants through anatomical or morphological study.

Course Type: Skill Enhancement Course
Course Code: UBOTSEC11001
Course Name: Basic Laboratory Techniques and Management

Course Outcomes

After the completion of the course, the student will be able to:

CO1: Good laboratory practices, Operation, and maintenance of basic laboratory instruments

CO2: Basics of measurements

CO3: Understanding hazards and risks to ensure a safe laboratory environment.

CO4: Management of laboratory waste

CO5: Setting up a laboratory

CO6: Chemical preparation and labeling of chemicals

CO7: Safety measures in the laboratory

CO8: Ability to establish a laboratory setting

CO9: Maintaining laboratory chemicals and their preparation

CO10: Learn to work with different instruments

SEMESTER II

Course Type: Major
Course Code: UBOTMAJ12002
Course Name: Biomolecules and Cell Biology

Course Outcomes

After the completion of the course, the student will be able to:

CO1: Clear idea about the structures and purposes of basic components of prokaryotic and eukaryotic cells, especially macromolecules, membranes, and organelles.

CO2: Detailed knowledge

CO3: Qualitative test of macromolecules.

CO4: Measurement of cell size.

CO5: Technique of Chromosome study.

CO6: Students learn to distinguish different biomolecules and can check their presence in different samples

CO7: Student learn the structure and function of different parts of cell and its importance.
Able to investigate protein, carbohydrate and lipid with their active role in cellular function.

Course Type: Skill Enhancement Course
Course Code: UBOTSEC12002
Course Name: Nursery, Gardening and Floriculture

Course Outcomes

After the completion of the course, the student will be able to:

CO1: History and significance of nursery and gardening.

CO2: Importance of floriculture in commercial sector.

CO3: Different types of gardening and their characteristic features.

CO4: Methods of cultivation, processing and marketing of crops.

CO5: Basic nursery and gardening operations.

CO6: Plant propagation techniques-their advantages and disadvantages.

CO7: Cultivation, harvesting and post-harvesting techniques of economically important flower crops.

CO8: Applying the concept to develop nursery and garden designing.

CO9: Training of cultivation of commercially important flower and ornamental crops.

CO10: Dealing with common plant diseases and their management.

Teacher-In-Charge
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