

**TELANGANA SOCIAL WELFARE
RESIDENTIAL DEGREE COLLEGE FOR
WOMEN MANCHERIAL (635)**

DIST: MANCHERIAL.

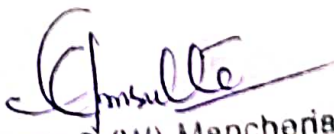
**DEPARTMENT OF BOTANY
PROGRAMME OUTCOMES
PROGRAMME SPECIFIC OUTCOMES
AND COURSE OUTCOMES**

TELANGANA SOCIAL WELFARE RESIDENTIAL DEGREE
COLLEGE FOR WOMEN MANCHERIAL (635) DIST:
MANCHERIAL. DEPARTMENT OF BOTANY

Department of Botany

Programme Outcomes, Programme Specific Outcomes and Course Outcomes

- The B.Sc. - Botany curriculum is designed to equip students with subject domain knowledge and technical skills pertaining to plants in a holistic manner. It aims to train the students in all the areas of plant sciences with a unique combination of core and elective papers with significant interdisciplinary components as per CBCS. Students have exposure to cutting-edge technologies that are currently used in the subject. They are made aware about the social and environmental issues, significance of plants and their relevance to the national economy.
- A student completing the course is able to understand different benches of Botany such as systematics, evolution, ecology, developmental biology, physiology, biochemistry, plant interactions with microbes and insects, morphology, anatomy, reproduction, genetics and molecular biology of various life-forms. To develop an aptitude towards science and nature, To equip the students with the basic skills in identifying and labelling different plants. On completion of BSC Botany course a candidate can opt for career in teaching or they can also opt for research work in universities and other institutions.
- The student completing the course is able to identify various life forms of plants, design and execute experiments related to basic studies on evolution, ecology, developmental biology, physiology, biochemistry, plant interactions with microbes and insects, morphology, anatomy, reproduction, genetics, microbiology, molecular biology, recombinant DNA technology, proteomics and transgenic technology.


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BOTANY B.Sc. BZC- I YEAR PAPER-I MICROBIAL DIVERSITY AND LOWER PLANTS


Course Objectives: This course aims to increase the understanding of the students about the diversity of lower plants, their classification, structure and growth. This course aims to increase the understanding of the students about the diversity of microorganisms including fungi, their classification, structure and growth and their economic importance, Bacteria, Mycoplasma, with reference to little leaf brinjal and papaya leaf curl.. of bacteria, virus and lower plants. To study the systematic position, Structure and functions of Algae and Fungi. To know the evolution of sporophytes in bryophytes and stelar evolution in Pteridophytes.

Course Learning Outcomes: The students will develop understanding about the diversity, identification, classification and economic importance of lower plants. The course will increase the understanding of the students about the classification, structure, role and infectious cycle of microbes and Fungi

BOTANY B.Sc. BZC- I YEAR PAPER-II GYMNOSPERMS, TAXONOMY OF ANGIOSPERMS AND ECOLOGY

Course Objectives: The course focuses on morphology, anatomy, reproduction and evolution in Pteridophytes and Gymnosperms. This course aims to add to understanding of the students about the diversity of plants, their Description, Identification, Nomenclature and their classification and diversity of flowering plants Dicot families and Monocot families including recent advances in the field. This course aims to introduce the concepts and principles of ecology, biological diversity, conservation, sustainable development, population, community and ecosystem structure and function, the ecological and climatic, abiotic and biotic factors ,the plant succession and application of these concepts to solve environmental problems.

Course Learning Outcomes:- The students develop the basic understanding of important characteristics, anatomy, reproduction and evolution along with economic importance of these two groups. The students will be learning 1. The students will know about the systematic position of Genera's, Species and , Families. 2. The students develop knowledge about plant nomenclature completion of this course the students will be learning 1. They will be understand the concept, types, development and functions of various ecosystems and their communication. 2. The various environmental factors governing these ecosystems are also clearly understood, gain knowledge about lifecycles of gymnosperms, and economic importance of Gymnosperm such as – Pinus and Gnetum. Geological time scale, Fossils, types of Fossils fossilization.


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BOTANY B.Sc. BZC- II YEAR PAPER -III PLANT ANATOMY AND EMBRIOLOGY

Course Objectives: This course aims To gain knowledge of plant cells tissues and their functions. Apical meristem of Root & Shoot, types of tissues, Vascular Bundles, Xylem, Phloem, Cambium, Periderm, Anomalous Secondary growth in plants and Wood. The structure of Stamen, Pistil, Ovule, Embryo Sac, Pollination types. Double fertilization, formation of seed, seed dormancy and strategies of seed disease cell. The growth of development growth regulators movements in the plants.

This course aims at making the students acquainted with the fundamentals and present understanding of the mechanisms associated with development, differentiation and structure of various plant organs, the metabolic and physiological changes occurring in them. The paper contains structure and function of reproductive organs and their significance in plant reproduction. Pollination, Fertilization, Embryogenesis, Aeropalynology are the areas which are stressed upon.

Course Learning Outcomes: On completion of this course Student will develop the understanding of growth, development and reproduction in plants as well as understand the physiological and metabolic changes happening along with the environmental impact. 1. Students will able to differentiate reproductive organs at Morphological, Anatomical, Physiological and Biochemical level. 2. This knowledge will be help to apply in agriculture for production of hybrids. 3. The allergic problems in Humans can be justified on the basis of pollens.


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BOTANY -B.Sc. BZC -II YEAR PAPER -IV CELL BIOLOGY AND PLANT PHYSIOLOGY

Course Objectives: The paper deals the structure of cell components and their functions. The structure & function of cell inclusion, cell division, DNA- RNA types and their structure. Define the process photosynthesis and types of Dark reactions. understand the concept of Photoperiodism, physiology of flowering, seed dormancy, Senescence and Abscission. Structure, properties, mechanism of Enzymes and Metabolism of Nitrogen. Student will able to know the chemical structure of Amino acid, protein and basic enzymology., Plants, Water related function of Ascent of Sap, Transpiration, Absorption and phloem transport. Student will gain idea about plant water relation, function and mechanism of Ascent of sap, Transpiration, Phloem transport. water theories of mineral absorption. know the growth and development, plant growth regulators, plant movement. Mechanism of Photosynthesis and Respiration (Define the process aerobic and anaerobic respiration, glycolysis, TCA, ETS and ATP) and Nitrogen Metabolism in Plants. Physiology of flowering, Phytochromes, Photoperiodism, and Senescence and abscission. The growth of development growth regulators movements in the plants. This course aims to educate student about the mechanism and physiology life processes in plants. It focus on the plant nutrient uptake and translocation, photosynthesis, respiration and nitrogen metabolism.

Course

Learning Outcomes: On completion of this course students will be: 1. They understand the pattern of inheritance various life forms. 2. They develop a strong fundamentals basics for further molecular studies, Students will be able to understand the various physiological life processes in plants 2. They will also gain about the various uptake and transport mechanisms in plants and are able to coordinate the various processes. They understand the role of various hormones, signalling compounds, thermodynamics and enzyme kinetics. During the course students will gain knowledge about various mechanisms such as channel or transport proteins involved in nutrient uptake in plants.

BOTANY-B.Sc. BZC- III YEAR PAPER -V BIODIVERSITY AND CONSERVATION

Course Objectives: The paper deals with origin, diversification, utility and conservation strategies of natural resources. It focuses the roles of various organization related to the plant scenes.

Course Learning Outcomes: On completion of this course students will be able

1. They understand the pattern origin, diversification and cultivation of plants in nature.
 2. They are able to design the strategies for conservation of these natural resources.
 3. They become well worst with the role and functions of various organizations.
- To understand ecological relationship between organisms and their environment.
 - To identify diversity of life forms in an ecosystem.
 - To understand the role that biodiversity plays in conservation science

BOTANY B.Sc. BZC- III YEAR PAPER -VI TISSUE CULTURE AND BIOTECHNOLOGY

Course Objectives:- The course aims at the concept, scope, instrumentation, basic requirements and applied aspects of plant tissue culture. It focuses on various types plants cultures. **Course Objectives:** This course would provide students with an understanding of principles and techniques of plant tissue culture, concepts and methods associated with development and analysis of transgenic plants, and their applications in basic and applied research.

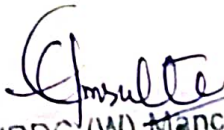
Course Objectives: This course is designed to provide a contextual and inquiry-based learning of modern-day advances in the field of recombinant DNA technology...

Course Learning Outcomes: - On completion of this course students will be able understand the basic properties of plant cell and with apply their basic knowledge of PTC in various fields for conservation, medicine, product development etc. The students will learn about

1. Concepts, tools and techniques related to in vitro propagation of plants.
2. Different methods used for genetic transformation of plants, use of Agrobacterium as a vector for plant transformation, components of a binary vector system.
3. Various case studies related to basic and applied research in plant sciences using transgenic technology.
4. Principles and methods used for phenotypic, genetic and molecular analysis of transgenic plants.

Students will acquire understanding of:

1. Basic principles and modern age applications of recombinant DNA technology.
2. Learning molecular and technical skills along with applications of the instrumentation.
3. Designing/conducting experiments and analysing experimental data,
4. Ethics of Recombinant DNA Technology.


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