Semster I

PLANT ANATOMY

BO1141

- Understand basic anatomical features of monocot and dicot plants
- Able to identify different types of tissues and tissue systems in plants
- Know the basic concepts in reproductive botany and palynology
- Develop skills in specimen preparation for microscopic observation(light microscopy)
- Outline and describe the process of woody secondary growth in stems.

Number of contact Hours

Theory :2

Practical -2

Semester II

METHODOLOGY AND PERSPECTIVES IN PLANT SCIENCE

BO 1221

- Learn methods of data analysis for experimental data.
- To interpret scientific data using basic statistical methods
- Enable the student to systematically pursue his particular discipline in science in relation to other disciplines that come under the rubric of science

Number of contact Hours

Theory- 2

Practical -2

Semester III

MICROBIOLOGY, PHYCOLOGY, MYCOLOGY AND PLANT PATHOLOGY

BO 1341

- Understand different forms of bacteria
- Able to perform gram staining
- Could identify major classes of algae and fungi
- Preparation and identification of macro and micro preparations of vegetative and reproductive structures of algae and fungi mentioned in the syllabus
- Able to identify algal and fungal specimens up to generic level
- Could understand economic importance ,structure ,reproduction and life cycle of algae fungi and lichens mentioned in the syllabus
- Could identify the disease mentioned in the syllabus with respect to causal organism and symptoms

  Number of contact Hours

  Theory -3

  Practical -2

SEMSTER IV

BRYOPHYTES, PTERIDOPHYTES , GYMNOSPERMS AND PALEOBOTANY

BO 1441

- Able to understand the life cycle of bryophytes pteridophytes and gymnosperms mentioned in the syllabus
- Identify the external and internal features of bryophytes pteridophytes and gymnosperms mentioned in the syllabus
- Number of contact Hours
- Theory -3
- Practical -2

SEMESTER V

ANGIOSPERM MORPHOLOGY, SYSTEMATIC BOTANY, ECONOMIC BOTANY, ETHANOBOTANY, AND PHARMACOGNOSY.

BO1541

After completion of this course, the student will demonstrate basic knowledge in each of the following :

- Know the vegetative characteristics of the plant.
- Learn about the reproductive characteristics of the plant.
- Understand the plant morphology.
- Understand the diversity of angiosperms.
- Understand the comparative account among the families of angiosperms.
- Know the economic importance of the angiosperm plants.
- Understand the distinguishing features of angiosperm families

Number of contact Hours
Theory -4
Practical -3

ENVIRONMENTAL STUDIES AND PHYTOGEOGRAPHY

BO1542

- Familiarize the concept of natural resources, advantage problems they face and conservation
- Understand the role of individuals in conservation of natural resources, sustainable life styles and practice them
- Understand concept ,definition, structure and function of different ecosystems
- To familiarize biodiversity ,its conservation and global initiatives in conservation

- Understand environmental pollution ,legislation and various environmental organization and apply the concept to rectify the problems
- Understand the concept of phytogeography, definition and identify various phytogeographical regions of India

Number of contact Hours
Theory -5
Practical -2

CELL BIOLOGY, GENETICS AND EVOLUTIONARY BIOLOGY

BO1542

- List the fundamental features of prokaryotic and eukaryotic cells and methods used to examine them.
- Describe the structure, composition and role of eukaryotic cell membranes.
- Recognise and give roles for the major cell organelles.
- Identify and give roles for components of the extracellular matrix.
- Recall types of cell-cell junctions.
- List the basic tissues and define their specialised structures and embryological origins.
- Name specific processes and proteins involved in membrane transport.
- State the major stages of the cell cycle.
- Relate various parameters important in the control of membrane potential.
- Give examples of intercellular chemical messengers.
- Understand receptor subclasses and their possible uses in cell signalling.
- Give mechanisms by which different messenger-receptor interactions bring about long or short-term changes in cell state.

Number of contact Hours
Theory -4
Practical -2

SEMESTER VI

PLANT PHYSIOLOGY AND BIOCHEMISTRY

BO 1641

- Demonstrate and explain research equipments to compare plant response to a changing environment.
- Understand the major effects and physiological mechanisms of growth regulators in plant
- Ability to handle materials safely and analyse various data's in the laboratory.
- Students will be able to determine stomatal index, water absorption and transpirational ratio.
- Understand developmetal patterns and processes of plant.
- Able to demonstrate an understanding of fundamental biochemical principles,structure and function of biomolecules

  Number of contact Hours

  Theory -5

  Practical -2

MOLECULAR BIOLOGY, GENERAL INFORMATICS AND BIOINFORMATICS

BO 1642

- Describe the flow and regulation of biological information.
- Describe the techniques used to collect sequence and expression data.
- Identify appropriate biological data bases for specific analyses.
- Manipulate on-line resources appropriately.
- Analyse gene expression and interpret its significance.
- Manage bioinformatics tools.
- Apply appropriate statistical methods to determine sequence similarities.
- Understand the chemical and molecular processes that occur in and between cells.
- Gain insight into the most significant molecular and cell-based methods used today to expand their understanding of biology.

Number of contact Hours
Theory -4
Practical -2

HORTICULTURE, PLANT BREEDING AND RESEARCH METHODOLOGY

BO 1643

- Understand and describe various methods used in plant breeding
- Judge which methods are appropriate for specific objectives and situation
- Able to carry out emasculation and hybridization
- Apply horticultural concepts to select, manage and improve plants
- Able to do horticultural methods like cutting, layering, grafting and budding
- Familiarize garden tools and implements
- Understand and apply research approaches techniques and strategies in appropriate manner

Number of contact Hours
Theory -4
Practical -2

MUSHROOM CULTIVATION AND MARKETING

Open course BO1551.2

- is able to distinguish the principal differences of mushroom cultivation from the cultivation of plants and animals
- can determine the most important species of cultivated mushrooms and knows the basic ways of the cultivation of each of them
- knows the most important kinds of substrata for mushroom cultivation
- understand the methods of cultivation of commonly cultivated mushrooms in our country

Number of contact Hours
Theory -3

BIOTECHNOLOGY

BO1651

- Will be able to identify ,analyze and understand problems related to biotechnology
- Will be able to decide and apply appropriate tools and techniques in biotechnology
- In genetic engineering programmes, it is possible to map the whole genome of an organism in order to find out the function of genes, and transfer of desirable genes to another organism to create a genetically modified organism.
- Gene bank and DNA clone bank have been constructed to make available different types of genes of its known function.
- Cell culture and protoplast fusion technique have resulted in hybrid plants through inter generic crosses which are not possible through conventional methods.
- Through cell culture technique industrial production of essential oils, alkaloids, pigments etc. have been boosted up.

Number of contact Hours
Theory -3