

## **DEPARTMENT OF BOTANY (2019-2020)**

### **PROGRAMME OUTCOME**

PO-I A comprehensive knowledge relating to structural organization along with economical importance of viruses, bacteria with reference to vaccine production and role in agricultural and industrial Field.

PO-II A clear idea on cell , cellular inclusions with various organelles and regulation of cell cycle and its Division.

PO-III Structural organization of fungi and its role in food industry Pharmaceutics , Bio-fertilizer sector

PO-IV Fundamental knowledge about Archegoniates and Paleobotany.

PO-V Internal organization of various tissues in root, stem and leaf

PO-VI Morphology and economic importance of Cereals, Legamas, Spices, drug, yielding, plant and Timber plant

PO-VII Mendelian genetics, various gene interaction, variation in chromosome number and structure, mutation

PO-VIII Types of Nuclic acid and its role in cellular metabolism

PO-IX Structural and functional aspects of eco system principle of phyto geography

PO-X Plant identification rules and principles of botanical nomenclature and phylogeny of angiosperms

PO-XI Knowledge about pollination, fertilization, post fertilization changes

PO-XII Fundamental idea regarding physiology of plant in relation to wats, flowing and growth regulation.

PO-XIV Tissue culture and its application; Application of Biotechnology in quality improved traits.

## **PROGRAMME SPECIFIC OUTCOME**

- I. Fundamental knowledge about viruses, bacteria
- II. Acquisition of knowledge on biomolecules.
- III. Knowledge about prevention and control of plant diseases and the caused Organism
- IV. Understanding role of paleobotany and geological time scale.
- V. To know about Anatomy of various part of plants
- VI. Understanding and laborali idea on economic botany
- VII. Basic concept of chromosome & signees & their functions.
- VIII. Role of DNA in various metabolic pathway
- IX. Knowledge about Environment, its components and significance to modern civilization .
- X. Acquiring knowledge on flowering plants in systematic way.
- XI. To know about fertilization and post fertilization changes in plants.
- XII. Plant physiology in relation to work and physiology of flowerings
- XIII. Concept on plant metabolism and synthesis of ATP.
- XIV. Tissue culture and role of Biotechnology in improved horticultural varieties.

## **COURSE OUTCOME**

After successful completion of +3 Sc. Program in Botany, students shall able to learn:-

- C-I. 1 Economy important of Viruses with reference to vaccine Production.
  - 2 Role on viruses in research , medicine & diagnostics.
  - 3 Role of Bacteria in agriculture and industry.
  - 4 Role of algae in Environment agriculture , biotechnology and Industry .
- C-II. 1 Basic knowledge on Enzyme and Enzyme activity.
  - 2 Acquiring knowledge on structure, function and properties of Carbohydrates, Lipids, Proteins & Nucleic Acids.

- 3 About various organelles of cell & Regulation of cell cycle including cell divisions.
- C-III. 1 Learn about Mycology & Phyto pathology and their affinities with plants and animals .
- 2 Role of Fungi in Biotechnology , Mushroom cultivation .
- 3 Application of Fungi in food industry , Pharmaceutical preparation, in bio-fertilizers
- 4 Learning about general symptoms , host – Pathogen relationship ,disease cycle including Prevention & control of plant diseases .
- CIV . 1 Transition to land habit & adaptations to land habit of Archegoniate .
- 2 Ecological and economic importance of Bryophytes and Pteridophytes .
- 3 Learn about fossils and fossilization process including geological time scale .
- CV. 1 Acquiring knowledge on organization of shoot and root apex including various tissue system With practical
- 2 Detail learning about internal organization of various type of tissue in root, stem, leaf with Practical
- CVI 1 Fundamental concept on origin of cultivated plants along with importance of germplasm diversity
- 2 Brief account on Cereals , Legumes , Spices , Drug yielding plants with its economic importance
- CVII 1 Concept of Mendelian genetics and extra chromosomal inheritance
- 2 Basic fundamental knowledge on mutations and mutagens
- 3 Learning about population and evolutionary genetics
- CVIII 1 Details about Nucleic acid and its replication
- 2 Learn about mechanism of transcription and translations

CIX 1 Learn about fundamental , structural and functional aspects of eco system including biotic

Interaction and population ecology.

2 Knowledge about Phytogeography including vegetation of Odisha

CX 1 To know about plant systematics and Phylogeny of Angiosperms.

2 Rules and Principles relating to Botanical Nomenclature.

3 Origin and Evolution on Angiosperms.

CXI 1 Fundamental knowledge on Reproductive Biology of Angiosperms

2 Knowledge about pollination , fertilization and post-fertilization process.

XII 1 Detail knowledge on plant water relationship with practical.

2 To know about physiology of flowering and plant growth regulators

XIII 1 Fundamental knowledge on concept of Metabolism and Carbon assimilation

2 Detail knowledge on ATP synthesis

XIV 1 Basic concept on tissue culture and its application with practical

2 Knowledge regarding recombinant DNA technology

3 To know about application of biotechnology for improved quality traits