A.S.D.GOVERNMENT DEGREE COLLEGE FOR (W),(A), KAKINADA
DEPARTMENT OF BOTANY

I B.Sc., BOTANY HONOURS - 2024-2025

Semester - I

Course I INTRODUCTION TO CLASSICAL BIOLOGY

Course Code: BSCB24101

Course Outcomes :

CO1: Understand the principles of Nomenclature, classification, conservation of Biodiversity, causes, effects and prevention of environmental pollution.

CO2: Understand the plant taxonomic, physiological and reproductive processes and apply the knowledge of Economic Botany for entrepreneurship.

CO3: Understand the animal classification, physiology, embryonic development and apply the knowledge gained in Economic Zoology to grow into Entrepreneurs.

CO4: Differentiate prokaryotic and eukaryotic cells, understand the basic structure and functions of cell organelles, basic concepts of Molecular Biology and Origin of life.

CO5: Comprehend the chemical principles of Chemistry and apply them in daily life and develop responsibility towards environment by applying the concepts of Green Chemistry.

Course:II INTRODUCTION TO APPLIED BIOLOGY

Course Code: BSCB24102

Course Outcomes :

CO1: Understand the history, ultrastructure, diversity and importance of microorganisms.

CO2: Understand the structure and functions of macromolecules.

CO3: Acquire the knowledge on biotechnology principles and its applications in food and medicine.

CO4: Compare the techniques, tools and their uses in diagnosis and therapy.

CO5: Demonstrate the bioinformatics and statistical tools in comprehending the complex biological data.

BOTANY SEMESTER II - Course –III
NON-VASCULAR PLANTS (Algae, Fungi, Lichens and Bryophytes)
Course Code: BOT24201

Course Outcomes :

CO 1 : Compile the general characteristics of algae and their significance in nature**.**

CO 2: Compare and contrast the characteristics of different groups of Algae

CO 3 : Summarize the important features of fungi and their economic value.

CO 4 : Distinguish the characteristics of different groups of fungi.

CO 5 : Explain the diversity among non-vascular plants and to get awareness on origin and evolution of life.

BOTANY SEMESTER II - Course -IV

ORIGIN OF LIFE AND DIVERSITY OF MICROBES

Course Code: BOT24202

Course Outcomes : On the completion of the course the student should be able to

CO 1 : To get awareness on importance of microbes in nature and agriculture. Illustrate diversity ofviruses, multiplication and economic value.

CO 2 : Discuss the general characteristics, classification and economic importance of special groups of bacteria.

CO 3 : Explain the structure, nutrition, reproduction and significance of eubacteria.

CO 4 : Evaluate the interactions among soil microbes.

CO 5 : Compile the value and applications of microbes in agriculture

BOTANY SEMESTER III – Course -V

Vascular Plants

(Pteridophytes, Gymnosperms and Taxonomy of Angiosperms)

Course code: Bot 23301

On successful completion of this practical course, student shall be able to:

CO 1 :. Infer the evolution of vasculature, heterospory and seed habit in Pteridophytes

CO 2 :. Illustrate the general characteristics of Gymnosperms along with their uses

CO 3 :. Discuss about some Taxonomic aids and their applications in plant systematics

CO 4 :. Compare and contrast the vegetative and floral characteristics of some angiospermic families

CO 5 : Evaluate the economic value of plant species from the families under the study

BOTANY SEMESTER III – Course -VI

Plant Pathology and Plant Diseases
Course code: Bot 23302

CO 1 :. Identify major groups of plant pathogens and classify plant diseases.

CO 2 :. Explain various stages in infection, plant pathogenesis and responsible factors

CO 3 :. Elaborate the preventive and control measures for plant diseases

CO 4 : Discuss about some diseases of field crops and their management

CO 5 : Discuss about some diseases of horticultural crops and their management

BOTANY SEMESTER III – Course -VII
Plant Breeding
Course code: Bot 23303

CO 1 : Compare and contrast the methods of reproduction and also pollination mechanisms

CO 2 :. Design appropriate pollination method for a given crop plant.

CO 3 : Recommend the best possible breeding method for a crop species.

CO 4 : Propose the steps for production of hybrid varieties of crop plants

CO 5 : Apply molecular techniques to develop a tailored plant variety

BOTANY SEMESTER III – Course -VIII
Plant Biotechnology
Course code: Bot 23304

CO 1 :. Explain the scientific techniques and tools used in plant tissue culture laboratories
CO 2 :.. Appraise the applications of plant tissue culture in agriculture and horticulture sectors
CO 3 :. Acquire skills related to various aspects in plant tissue culture.
CO 4 : Evaluate the role of transgenic plants in solving certain plant related beneficiary issues

CO 5 : Justify the role of plant biotechnology in bioenergy and phytoremediation

BOTANY SEMESTER IV Course -IX
Anatomy and Embryology of Angiosperms.
Course code: Bot 23401

CO 1 :. Categorize various tissues and evaluate their role in plants
CO 2 :.. Explain anomalous secondary growth in some plants and justify the value of timber plants.
CO 3 :. Summarize the events in micro-sporogenesis and development of male gametophyte
CO 4 : Discuss the events in mega-sporogenesis and development of female gametophyte

CO 5 : Propose the incidents in embryogenesis of an angiospermic plant species

BOTANY SEMESTER IV Course -X
Plant Ecology, Biodiversity and Phytogeography
Course code: Bot 23402

CO 1 :. Explain the interactions among the biotic and abiotic components in an ecosystem
CO 2 :.. Summarize the characteristics of a population and a community.
CO 3: Anticipate the environmental problems arising due to climate change.
CO 4 : Assess the value of biodiversity and choose appropriate conservation strategy.

CO 5 : Make a survey on the distribution of various plant groups in a specified geographical area.

BOTANY **SEMESTER** IV **Course** -XI
Plant Resources and Utilization
Course code: Bot 23403

CO 1: Explain the significance of plants in human nutrition.
CO 2: List out different plant products used by human beings.
CO 3: Evaluate the commercial plant products and their utilization
CO 4: Discuss the uses of medicinal and aromatic plants for human health care.
CO 5 : Appraise the importance of timber and non-timber products for value added products

BOTANY SEMESTER V
Course 6A : PLANT PROPAGATION

CO 1 : Make use of different plant propagation structures for plant multiplication.
CO 2 : Assess the benefits of Asexual Propagation of Certain economically valuable planta Apomictics and Adventive Polyembroyony
CO 3 : Demonstrate Skills related to Vegetative Propagation Techniques such as Cutting, Layering,
CO 4 : Evaluate and use a suitable Propagation technique for a given plant species
CO 5 : Demonstrate Skills related to Vegetative Propagation Techniques such as Grafting & Budding

BOTANY SEMESTER V
Course -7A: Seed Technology

CO 1 : Explain the causes for seed dormancy and methods to break dormancy.
CO 2: Understand critical concepts of seed processing and seed storage procedures.
CO 3 : Acquire skills related to various seed testing methods.
CO 4 : Identify seed borne pathogens and prescribe methods to control them.
CO 5 : Understand the legislations on seed production and procedure of seed certification

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