

Course Outcomes of Botany

I Semester /Botany Core Course – 1- Fundamentals of microbes and Non -vascular Plants

Course Outcomes: On successful completion of this course, the students will be able to

- Identify, compare and distinguish various groups of microbes and primitive plants based on their characteristics.
- Explain origin of life on the earth.
- Classify fungi, lichens, algae and bryophytes based on their structure, reproduction and lifecycles and explain their evolutionary trends
- Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi.
- Evaluate the ecological and economic value of microbes, thallophytes and bryophytes.

II Semester / Botany Core Course – 2-Basics of Vascular plants and Phytogeography

Course Outcomes: On successful completion of this course, the students will be able to:

- Classify and compare Pteridophytes and Gymnosperms based on their morphology, anatomy, reproduction and lifecycles.
- Justify evolutionary trends in tracheophytes to adapt for land habitat.
- Critically understand various taxonomical aids for identification of Angiosperms.
- Analyze the morphology of the most common Angiosperm plants of their localities and recognize their families.
- Evaluate the ecological, ethnic and economic value of different tracheophytes and summarize their goods and services for human welfare.
- Locate different phyto geographical regions of the world and India and can analyze their floristic wealth.

III Semester/Botany Core Course –3-AnatomyandEmbryologyofAngiosperms, PlantEcology and Biodiversity

Course outcomes: On successful completion of this course, the students will be able to;

- Understand the organization of tissues and tissue systems in plants.
- Illustrate and interpret various aspects of embryology.
- Discuss the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities.
- Appraise various qualitative and quantitative parameters to study the population and community ecology.
- Correlate the importance of biodiversity and consequences due to its loss.
- Enlist the endemic/endangered flora and fauna from two biodiversity hot spots in India and assess strategies for their conservation.

IV Semester/ Botany Core Course –4 Plant PhysiologyandMetabolism

Course outcomes: On successful completion of this course, the students will be able to:

- Comprehend the importance of water in plant life and mechanisms for transport of water and solutes in plants.
- Evaluate the role of minerals in plant nutrition and their deficiency symptoms.
- Interpret the role of enzymes in plant metabolism.
- Critically understand the light reactions and carbon assimilation processes responsible for synthesis of food in plants.
- Analyze the biochemical reactions in relation to Nitrogen and lipid metabolisms.
- Evaluate the physiological factors that regulate growth and development in plants.
- Examine the role of light on flowering and explain physiology of plants under stress conditions.

V Semester/Botany Core Course –5 Cell Biology, Genetics and Plant Breeding

Course outcomes: On successful completion of this course, the students will be able to:

- Distinguish prokaryotic and eukaryotic cells and design the model of a cell.
- Explain the organization of a eukaryotic chromosome and the structure of genetic material.
- Demonstrate techniques to observe the cell and its components under a microscope.
- Discuss the basics of Mendelian genetics, its variations and interpret inheritance of traits in living beings.
- Elucidate the role of extra-chromosomal genetic material for inheritance of characters.
- Evaluate the structure, function and regulation of genetic material.
- Understand the application of principles and modern techniques in plant breeding.
- Explain the procedures of selection and hybridization for improvement of crops.

VSemester /Botany Core Course –5 plant ecology& phytogeography

Course outcomes: On successful completion of this course, the students will be able to:

- know the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities.
- Appraise various qualitative and quantitative parameters to study the population and community ecology.
- Correlate the importance of biodiversity and consequences due to its loss.
- Enlist the endemic/endangered flora and fauna from two biodiversity hot spots in India and assess strategies for their conservation.
- Students can locate different phyto geographical regions of the world and India and can analyze their floristic wealth.

VI SEMESTER- PAPER – VII – ELECTIVE

Paper VII -(C): Plant tissue culture and its biotechnological applications

Course outcomes: On successful completion of this course, the students will be able to:

- Know the production of exact copies of plants that have desirable traits.
- Understand the production of multiples of plants in the absence of seeds
- Analyse the regeneration of whole plants from plant cells that have been genetically modified
- Know the applications of Biotechnology and develop interest towards research in Biotechnology

Course 6C: Plant Tissue Culture (Skill Enhancement Course (Elective), Credits: 05)

- Learning Outcomes: Students at the successful completion of the course will be able to:
- Comprehend the basic knowledge and applications of plant tissue culture.
- Identify various facilities required to set up a plant tissue culture laboratory.
- Acquire a critical knowledge on sterilization techniques related to plant tissue culture.
- Demonstrate skills of callus culture through hands on experience.
- Understand the biotransformation technique for production of secondary metabolites.

Course 7C: Mushroom Cultivation (Skill Enhancement Course (Elective), Credits: 05)

- Learning Outcomes: Students at the successful completion of the course will be able to:
- Understand the structure and life of a mushroom and discriminate edible and poisonous mushrooms.
- Identify the basic infrastructure to establish a mushroom culture unit.
- Demonstrate skills preparation of compost and spawn.
- Acquire a critical knowledge on cultivation of some edible mushrooms.
- Explain the methods of storage, preparation of value-added products and marketing.

3rd SEMESTER/HORTICULTURE CORE COURSE-3

BASICS OF VEGETABLE SCIENCE (OLERICULTURE)

COURSE OUTCOMES: On successful completion of this course the students will be able to

1. Distinguish the growing of vegetables according to season and climate.
2. Get detailed knowledge on cultivation aspects of different vegetables.
3. Understand and explain the special intercultural operations done in vegetables crops.
4. Study of Morphology and Taxonomy of different vegetable crops.
5. Study of different varieties of vegetable crops.
6. Identify the disease and pests of vegetable crops and their management.

4th SEMESTER/HORTICULTURE CORE COURSE-4

BASICS OF FRUIT SCIENCE (POMOLOGY)

COURSE OUTCOMES: On successful completion of this course, the students will be able to

1. Realize the value of fruits in terms of human nutrition and economy of nation.
2. Explain the potential fruit zones in various states of our country.
3. Classify the fruiting plants based on temperature requirements.
4. Acquire knowledge related to various cultivation practices for different fruit crops.
5. Demonstrate the special intercultural operations done in fruit crops.
6. Comprehend the knowledge on varieties of different fruit crops.
7. Develop knowledge on various entrepreneurial skills related to fruit science
8. Examine pests and diseases of fruit crops and develop skills to manage the same.
9. Explain about Integrated orchard Management.

5th SEMESTER /HORTICULTURE CORE COURSE-5 C

COMMERCIAL FLORICULTURE & ORNAMENTAL HORTICULTURE

COURSE OUTCOMES: On successful completion of this course, the students will be able to

1. Students obtained specialized knowledge in science and cultivation techniques of the main floriculture crops.
2. They become capable of identifying the main flowering species.
3. Categorize the role of higher plants in the living world.
4. Describe the structural components of higher plants.

Y.A GOVERNMENT COLLEGE FOR WOMEN
CHIRALA – 23155, A.P.
DEPARTMENT OF BOTANY
B.Sc., Honours in BOTANY: MAJOR
w.e.f AY 2023-24 onwards

1 -Semester : INTRODUCTION TO CLASSICAL BIOLOGY.

Course: 1

Hours/Week: 5

Credits: 4

Learning objectives

The student will be able to learn the diversity and classification of living organisms and understand their chemical, cytological, evolutionary and genetic principles.

Learning Outcomes

1. Learn the principles of classification and preservation of biodiversity
2. Understand the plant anatomical, physiological and reproductive processes.
3. Knowledge on animal classification, physiology, embryonic development and their economic importance.
4. Outline the cell components, cell processes like cell division, heredity and molecular processes.
5. Comprehend the chemical principles in shaping and driving the macromolecules and life process.

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Botany

Programme Specific Outcomes (PSOs)

- Identify, compare and distinguish various groups of microbes and primitive plants based on their characteristics.
- Explain the evolution of tracheophytes and also distribution of plants on globe
- Understand the organization of tissues and tissue systems in plants.
- Comprehend the importance of water in plant life and mechanisms for transport of water and solutes in plants.
- Distinguish prokaryotic and eukaryotic cells and design the model of a cell.
- Know the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities.
- Know the production of exact copies of plants that have desirable traits.
- Comprehend the basic knowledge and applications of plant tissue culture

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Botany

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- Comprehend the importance of water in plant life and mechanisms for transport of water and solutes in plants.
- Distinguish prokaryotic and eukaryotic cells and design the model of a cell.
- Know the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities.
- Know the production of exact copies of plants that have desirable traits.
- Comprehend the basic knowledge and applications of plant tissue culture

I -Semester INTRODUCTION TO APPLIED BIOLOGY.

Course: 2

Hours/Week: 5

Credits: 4

Learning objectives

The student will be able to learn the foundations and principles of microbiology, immunology, biochemistry, biotechnology, analytical tools, quantitative methods, and bioinformatics.

Learning Outcomes

1. Learn the history, ultrastructure, diversity and importance of microorganisms.
2. Understand the structure and functions of macromolecules.
3. Knowledge on biotechnology principles and its applications in food and medicine.
4. Outline the techniques, tools and their uses in diagnosis and therapy.
5. Demonstrate the bioinformatics and statistical tools in comprehending the complex biological data.

II SEMESTER Non-Vascular Plants
(Algae, Fungi, Lichens and Bryophytes)

Course 3:

Hours/Week: 5

Credits -3

i. Learning Objectives: By the end of this course the learner has:

1. To realize the characteristics and diversity of non-vascular plants.
2. To recognize the ecological and economic value of algae, fungi, lichens and bryophytes.
3. To inquire the habit, habitat, morphological features and life cycles of selected genera of non-vascular plants.

ii. Learning Outcomes: On completion of this course students will be able to:

1. Compile the general characteristics of algae and their significance in nature.
2. Compare and contrast the characteristics of different groups of algae.
3. Summarise the important features of fungi and their economic value.
4. Distinguish the characteristics of different groups of fungi.
5. Elaborate the features and significance of amphibians of plant kingdom
6. Explain the diversity among non-vascular plants.

II Semester

Course 4: Origin of Life and Diversity of Microbes

Credits -3

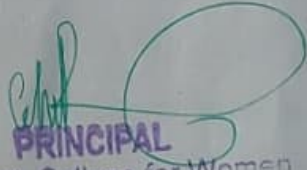
I. Learning Objectives: By the end of this course the learner has:

1. To get awareness on origin and evolution of life.
2. To understand the diversity of microbial organisms.
3. To get awareness on importance of microbes in nature and agriculture.

II. Learning Outcomes: On completion of this course students will be able to:

1. Illustrate diversity of viruses, multiplication and economic value.
2. Discuss the general characteristics, classification and economic importance of special groups of bacteria.
3. Explain the structure, nutrition, reproduction and significance of eubacteria.
4. Evaluate the interactions among soil microbes.
5. Compile the value and applications of microbes in agriculture.

Y.A GOVT DEGREE COLLEGE (W) CHIRALA			
DEPARTMENT OF BOTANY			
COURSE OUTCOMES DECLARATION FOR A.Y 2023-2024. (Sem-I & II)			
CLASS: I B.SC MAJOR			
S.NO	NAME OF THE STUDENT	UNIVERWITY REGISTERNO.	
			SIGNATURE OF THE STUDENT
1	A SOWJANYA	AK305093001	A. sowjanya
2	D JHANSI	AK305093002	D. Jhansi
3	D SUREKHA	AK305093004	D. Surekha
4	G DEVIKA RANI	AK305093005	G. Devika Rani
5	N TEJASWINI	AK305093006	N. Tejaswini
6	SD YASMEEN	AK305093007	SD. Yasmeen
7	T SWAPNA	AK305093008	T. Swapna
8	Y JHANSI	AK305093010	Y. Jhansi


PRINCIPAL
 Y.A Govt. College for Women
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