

CHATRAPATHI SIVAJI TRI SATHA JAYANTHI (CSTS) GOVT. KALASALA

Enter to Learn - Leave to Serve

Jangareddigudem, EluruDist

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DEPARTMENT OF BOTANY

PROGRAMME INFORMATION	
Program Title	B.Sc. (Botany,Zoology,Chemistry(BZC)/ ,Botany, Horticulture,Chemistry(BCH)
Awarding Institution	CSTS GOVERNMENT KALASALA, JANGAREDDIGUDEM
Teaching Institution	CSTS GOVERNMENT KALASALA, JANGAREDDIGUDEM
Faculty	Faculty of Botany
Department	Department of Botany
Mode and Period of study	Three Years Full Time

- These are our core Botany courses, which cover topics in General, Vascular,Non-Vascular, microbiology,Anatomy,Embryology,physiology in all years of study.
- From 1st to 5th Semesters both programmes follow the same core course content in the 6th Semester Long term internship programme
- Practical experience in the lab is a major part of all Botany courses.

Programme Outcomes :

1. Understand the basic concepts of Botany in relation to its allied core courses.
2. Perceive the significance of microbes and plants for human welfare, and structural and functional aspects of plants.
3. Demonstrate simple experiments related to plant sciences, analyze data, and interpret them with the theoretical knowledge.
4. Work in teams with enhanced inter-personal skills.
5. Develop the critical thinking with scientific temper.
6. Effectively communicate scientific ideas both orally and in writing.

Botany Outcomes:

1. Students will be able to identify, compare and distinguish various groups of microbes and primitive plants based on their characteristics.
2. Students will be able to explain the evolution of tracheophytes and also distribution of plants on globe.
3. Students will be able to discuss on internal structure, embryology and ecological adaptations of plants, and want of conserving Biodiversity.
4. Students will be able to interpret life processes in plants in relation to physiology and metabolism.
5. Students will be able to describe ultrastructure of plant cells, inheritance and crop improvement methods.
6. Students will independently design and conduct simple experiments based on the knowledge acquired in theory and practicals of the different sub-courses in Botany.

Semester - I**Course: 1 Fundamentals of Microbes and Non-vascular Plants****Course Outcomes:**

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

CO-1: Explain origin of life on the earth.

CO-2: Illustrate diversity among the viruses and prokaryotic organisms and can categorize them.

CO -3: Classify fungi, lichens, algae and bryophytes based on their structure, reproduction and life cycles.

CO-4: Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi

CO-5: Recall and explain the evolutionary trends among amphibians of plant kingdom for their shift to land habitat. Evaluate the ecological and economic value of microbes, thallophytes and bryophytes.

5x6 mapping matrix of Cos –Pos is prepared in this regard for **Fundamentals of Microbes and Non-vascular Plants** course in B.Sc program

COS/POS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	2	3	-	-	-	-
CO2	2	3	2	2	1	2
CO3	1	3	2	-	-	2
CO4	1	3	2	1	-	1
CO5	2	2	-	2	1	2
AVERAGE	1.6	2.8	1.2	1	0.4	1.4

“1” – Slight (Low) Correlation,
 “2” – Moderate (Medium) Correlation,
 “3” – Substantial (High) Correlation,
 “-” – Indicates there is no correlation

Semester - I

Practicals :Fundamentals of Microbes and Non-vascular Plants Lab

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

Demonstrate the techniques of use of lab equipment, preparing slides and identify the material and draw diagrams exactly as it appears. 2. Observe and identify microbes and lower groups of plants on their own. 3. Demonstrate the techniques of inoculation, preparation of media etc. 4. Identify the material in the permanent slides etc.

Semester - II -Basics of Vascular plants and Phytogeography

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

CO-1; Classify and compare Pteridophytes and Gymnosperms based on their morphology, anatomy, reproduction and life cycles.

CO-2:Justify evolutionary trends in tracheophytes to adapt for land habitat.

CO-3: Explain the process of fossilization and compare the characteristics of extinct and extant plants.

CO-4 : Critically understand various taxonomical aids for identification of Angiosperms.

CO-5: Analyze the morphology of the most common Angiosperm plants of their localities and recognize their families.

CO-6 :Evaluate the ecological, ethnic and economic value of different tracheophytes and summarize their goods and services for human welfare.

CO-7 :Locate different phytogeographical regions of the world and India and can analyze their floristic wealth.

7x6 mapping matrix of Cos –Pos is prepared in this regard for course **Basics of Vascular plants and Phytogeography** in B.Sc program

COS/POS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	-	1	1	-	1
CO2	1	-	-	-	-	-
CO3	2	-	-	1	-	1
CO4		-	2	-	3	-
CO5	-	-	3	-	2	1
CO6	1	3	2	1	-	-
CO7	-	2	-	-	2	1
AVERAGE	1	0.7	1.14	0.43	1	0.57

Semester - II

Practicals:(L) Basics of Vascular plants and Phytogeograph

Practical Outcomes: On successful completion of this course students shall be able to :

CO-1:Demonstrate the techniques of section cutting, preparing slides, identifying of the material and drawing exact figures.

CO-2:Compare and contrast the morphological, anatomical and reproductive features of vascular plants.

CO-3:Identify the local angiosperms of the families prescribed to their genus and species level and prepare herbarium.

CO-4:Exhibit skills of preparing slides, identifying the given twigs in the lab and drawing figures of plant twigs, flowers and floral diagrams as they are.

CO-5Prepare and preserve specimens of local wild plants using herbarium techniques.

Semester - III - 3 Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity

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

CO-1:Understand on the organization of tissues and tissue systems in plants.

Illustrate and interpret various aspects of embryology.

CO-2:Discuss the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities.

CO-3 :Appraise various qualitative and quantitative parameters to study the population and community ecology.

CO-4 :Correlate the importance of biodiversity and consequences due to its loss.

CO-5: Enlist the endemic/endangered flora and fauna from two biodiversity hot spots in India and assess strategies for their conservation

CO-7 :Locate different phytogeographical regions of the world and India and can analyze their floristic wealth.

5x6 mapping matrix of Cos –Pos is prepared in this regard for course **Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity** in B.Sc program.

COS/POS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	2	-	-	-	1	1
CO2	2	1	3	-	2	-
CO3	1	-	3	1	2	1
CO4	1	-	-	-	2	2
CO5	1	2	1	-	2	3
AVERAGE	1.4	0.6	1	0.14	1.8	1

Semester - III

Practicals: Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity Lab

Practical Outcomes: On successful completion of this practical course students shall be able to :

CO-1:Get familiarized with techniques of section making, staining and microscopic study of vegetative, anatomical and reproductive structure of plants.

CO-2:Observe externally and under microscope, identify and draw exact diagrams of the material in the lab.

CO-3:Demonstrate application of methods in plant ecology and conservation of bio diversity and qualitative and quantitative aspects related to populations and communities of plants.

Semester - IV - 4 - Plant Physiology and Metabolism

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

CO-1:Comprehend the importance of water in plant life and mechanisms for transport of water and solutes in plants.

CO-2:Evaluate the role of minerals in plant nutrition and their deficiency symptoms.

CO-3:Interpret the role of enzymes in plant metabolism.

CO-4:Critically understand the light reactions and carbon assimilation processes responsible for synthesis of food in plants.

CO-5:Analyze the biochemical reactions in relation to Nitrogen and lipid metabolisms.

CO-6:Evaluate the physiological factors that regulate growth and development in plants.

CO-7:Examine the role of light on flowering and explain physiology of plants under stress conditions.

7x6 mapping matrix of Cos –Pos is prepared in this regard for course **Plant Physiology and Metabolism** in B.Sc program.

COS/POS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	-	3	-	-	1
CO2	1	3	2	-	-	1
CO3	1	3	2	-	1	-
CO4	1	1	3	-	1	-
CO5	-	-	3	-	-	1
CO6	-	-	2	-	1	-
CO7	-	--	2	1	-	1
AVERAGE	0.57	0.71	2.42	0.14	0.42	0.57

Semester – IV

Practicals (L) Plant Physiology and Metabolism

Practical outcomes:

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

CO-1:Conduct lab and field experiments pertaining to Plant Physiology, that is, biophysical and biochemical processes using related glassware, equipment, chemicals and plant material.

CO-2:Estimate the quantities and qualitative expressions using experimental results and calculations
Demonstrate the factors responsible for growth and development in plants.

Semester - IV

Course: 5 :Cell Biology, Genetics and Plant Breeding Hrs/Wk: 4

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

CO-1:Distinguish prokaryotic and eukaryotic cells and design the model of a cell.

CO-2:Explain the organization of a eukaryotic chromosome and the structure of genetic material.

CO-3: Demonstrate techniques to observe the cell and its components under a microscope.

CO-4 : Discuss the basics of Mendelian genetics, its variations and interpret inheritance of traits in living beings.

CO-5:Elucidate the role of extra-chromosomal genetic material for inheritance of characters.

CO-6:Evaluate the structure, function and regulation of genetic material.

CO-7:Understand the application of principles and modern techniques in plant breeding.

CO-8:Explain the procedures of selection and hybridization for improvement of crops.

8x6 mapping matrix of Cos –Pos is prepared in this regard for course **Cell Biology, Genetics and Plant Breeding** in B.Sc program

COS/POS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	-	-	1	1	2
CO2	2	-	-	-	1	-
CO3	1	-		3	-	-
CO4	2	-	3	-	-	1
CO5	-	-	2	-	2	1
CO6	-	-	3	-	1	-
CO7	1	3	2	-	-	1
CO8	2	3	-	-	-	2
AVERAGE	1.37	0.75	1.25	0.5	0.62	0.87

Semester – IV

Practicals:(L) Cell Biology, Genetics and Plant Breeding Lab Hrs/Wk: 2

Practical Outcomes: After successful completion of this practical course the student shall be able to:

CO-1:Show the understanding of techniques of demonstrating Mitosis and Meiosis in the laboratory and identify differentstages of cell division.

CO-2:Identify and explain with diagram the cellular parts of a cell from a model or picture and preparemodels Solve the problems related to crosses and gene interactions.

CO-3:Demonstrate plant breeding techniques such as emasculation and bagging.

Semester-V (Skill Enhancement Course - Elective)

Course: 6B Vegetable Crops – Cultivation Practices Hrs/Wk: 4

Learning Outcomes: Students at the successful completion of the course will be able to:

CO-1: Identify different vegetable plants and realize their value in human nutrition.

CO-2: Analyse the types of soils to cultivate vegetable crops.

CO-3: Demonstrate skills on agronomic practices for cultivation of vegetable crops.

CO-4: Acquire knowledge on water, weed and disease managements in vegetable farming.

CO-5: Comprehend aspects related to harvesting and storage of produce.

5x6 mapping matrix of Cos –Pos is prepared in this regard for course **Vegetable Crops – Cultivation Practices** in B.Sc program

COS/POS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	2	3	-	-	3	2
CO2	1	-	3	-	-	2
CO3	2	2	1	3	1	-
CO4	1	2	-	3	2	3
CO5	-	-	-	2	2	-
AVERAGE	1.2	1.4	0.8	1.6	1.6	1.4

Vegetable Crops – Cultivation Practices – Practical syllabus Learning Outcomes: On successful completion of this practical course, student will be able to:

CO-1:List out, identify and handle different garden implements.

CO-2:Identify the important vegetable crops grown in their locality.

CO-3:Demonstrate various skills in cultivation of vegetable crops.

CO-4: Identify pests, diseases and their remedies that are specific to a vegetable crop.

Semester-V (Skill Enhancement Course - Elective)

Course: 7B Vegetable Crops – Post Harvest Practices Hrs/Wk: 4

Learning Outcomes: Students at the successful completion of the course will be able to:

CO-1: Understand various practices for vegetable produce from harvesting to marketing.

CO-2: Demonstrate skills on storage, processing and preservation of vegetables.

CO-3: Summarize causes for spoilage of vegetables before and during storage and methods to prevent and control them.

CO-4:Make use of preservation methods to reduce the loss of vegetable produce.

CO-5: Explain about value added products, packaging and marketing of vegetables.

5x6 mapping matrix of Cos –Pos is prepared in this regard for course **Vegetable Crops – Post Harvest Practices** in B.Sc program

COS/POS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	-	3	3	2	-
CO2	-	-	2	3	1	2
CO3	-	-	3	2	2	-
CO4	-	1	-	3	1	2
CO5	1	-	-	2	3	3
AVERAGE	0.4	0.2	1.6	2.4	1.8	1.4

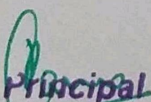
Vegetable Crops – Post Harvest Practices – Practical syllabus Learning Outcomes: On successful completion of this practical course, student will be able to:

CO-1: Identify stages of maturity in vegetable crops.

CO-2 : Handle material for storage of vegetables.

CO-3: Identify physical and biological causes for spoilage of vegetables.

CO-4: Make some value-added products of vegetables.


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