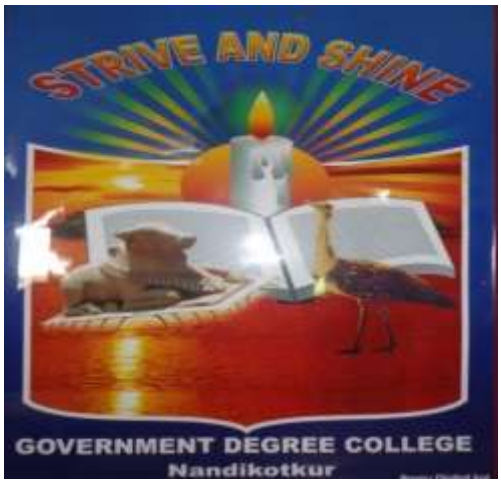
GOVERNMENT DEGREE COLLEGE

NANDIKOTKUR, Nandyal (Dist.,)

DEPARTMENT OF BOTANY



Programme Outcomes (POs)
Programme Specific Outcomes(PSOs)
&
Course Outcomes (COs)

PROGRAMME OUTCOMES

PO Number	Upon completion of B.Sc Degree Programme the graduates will be able to acquire
PO1	**Domain Knowledge:** Students understand the basic scientific principles and theories related to various phenomena in their disciplines and their relevance in the day-to-day life .Students develop demonstrating comprehensive knowledge and understanding of one or more other disciplines that form a part of an undergraduate programme of study.
PO2	C**ommunication Skills:**Students able to express thoughts and ideas effectively in writing and orally and communicate with others using appropriate media, confidently share views and express herself/himself,
PO3	**Critical thinking:**Student will be able to analyze and synthesize data from a variety of sources and draw valid conclusions and support them with evidence and examples.
PO4	**Creativity:** Students will be able to • create, perform, or think in different and diverse ways about the same objectsor scenarios, • innovate and perform tasksin a better manner
PO5	**Teamwork / Coordination:** Being able to facilitate a group's cooperative effort and act together as a group or team to achieve a common goal. Work effectively as an individual as well as a member of the team.
PO6	**Digital and technological skills:** The graduates will be able to demonstrate the capability to: • use ICT in a variety of learning and work situations, • access, evaluate, and use a variety of relevant information sources, and use appropriate software for analysis of data.
PO7	**Research-related skills**: The graduates will be able to demonstrate: • a keen sense of observation, inquiry, and capability for asking relevant/ appropriate questions, • the capacity to develop appropriate methodology and tools for data collection
PO8	**Environmental awareness and action:** The graduates should be able to demonstrate the acquisition of and ability to apply the knowledge, skills, attitudes, and values required to take appropriate actions for effective waste management, conservation of biological diversity, management of biological resources and biodiversity, forest and wildlife conservation, and sustainable development and living
PO9	**Community engagement and service:** The graduateswillbe able to demonstrate the capability to participate in community-engaged services/ activities for promoting the wellbeing of society
PO10	**Career opportunities:** Students after graduation have several career and employment opportunities such as research firms, agriculture industry, health care industry, pharmacy industry, chemical industry, diagnostic laboratories, software

	companies, banks, higher studies etc.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

The Department of Botany, Government Degree College,Nandikotkur offers Three Year (comprising 6 semesters) Undergraduate Programme in Botany with objective of empowering students to acquire comprehensive understanding of Botany as an academic discipline. Upon completion of B.Sc. Botany Degree Programme successfully, the students shall acquire the following skills and competencies

PSO Number	On successful completion of this course, the students will be able to:	PO Addressed
PSO1	Understand the importance of plants, their diversity and its conservation. students will be able to identify, compare and distinguish various groups of microbes and primitive plants based on their characteristics.	1
PSO2	Achieve knowledge of pure and applied botany. Students acquire fundamental Botanical knowledge through theory and practicals. students will be able to explain the evolution of tracheophytes and also distribution of plants on globe	1,3,5
PSO3	Student will able to discuss on internal structure, embryology and ecological adoptions of plants, and want of conserving biodiversity	2,8
PSO4	Students will be able to interpret life process in plants in relation to physiology and metabolism.	1,3
PSO5	To create awareness about cultivation, conservation and sustainable utilization of biodiversity	8
PSO6	Achieve knowledge of plant tissue culture techniques and production of secondary metabolits.	1,3
PSO7	Acquired the knowledge on cultivation ,storage, preparation of value added products of some edible mushrooms and marketing .	1,3 ,10

PSO-PO Mapping

		PO									
		1	2	3	4	5	6	7	8	9	10
PSO	1	*									
	2	*		*		*					
	3		*						*		
	4	*		*							
	5								*		
	6	*		*							
	7	*		*							*

COURSE OUTCOMES (COs)

SEMESTER-I

Course Code: 20C1306A

Course Name: Fundamentals of Microbes and Non-vascular Plants. (Viruses, Bacteria, Fungi, Lichens, Algae andBryophytes)

CO Number	On successful completion of this course, the students will be able to:	PSO Addressed
CO1	Illustrate diversity among the viruses and prokaryotic organisms and can categorize them.	1
CO2	Classify fungi, lichens, algae and bryophytes based on their structure, reproduction and life cycles.	6
CO3	Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi	2
CO4	Recall and explain the evolutionary trends amongg amphibians of plant kingdom for their shift to land habitat.	3
CO5	Evaluate the ecological and economic value of microbes,thalophytes and bryophytes	2

SEMESTER-II

Course Code: 20C2306A

Course Name: Basics of Vascular plants and Phytogeography (Pteridophytes, Gymnosperms, Taxonomy of Angiosperms and Phytogeography)

CO Number	On successful completion of this course, the students will be able to:	PSO Addressed
CO1	Classify and compare Pteridophyte and Gymnosperms based on Their morphology, anatomy, reproduction and life cycles. Justify evolutionary trends in trachea phytesto adapt for land habitat.	1
CO2	Explain the process of fossilization and compare the characteristics of extinct and extant plants. Critically understand various taxonomical aids for identification of Angiosperms.	2
CO3	Analyze the morphology of the most common An giosperm plants of their localities and recognize their families Classify and compare pteridophyte and Gymnosperms based on their morphology, anatomy, reproduction and Life cycles	1,4
CO4	Justify evolutionary trends in tracheophytes to adapt for land habitat.	9,10
CO5	Explain the process of fossilization and compare the characteristics of extinct and extant plants.	2,10

SEMESTER-III

Course Code: 20C3306A

Course Name: Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity

CO Number	On successful completion of this course, the students will be able to:	PSO Addressed
CO1	Understand on the organization of tissues and tissues systems in plants.	1
CO2	Illustrate and interpret various aspects of embryology.	3,6
CO3	Discuss the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities.	4
CO4	Correlate the importance of biodiversity and consequences due to its loss.	2,6
CO5	Appraise various qualitative and quantitative parameters to study the population and community and community ecology.	1,7

SEMESTER-IV

Course Code: 20C4306A

Course Name:Plant Physiology and Metabolism

CO Number	On successful completion of this course, the students will be able to:	PSO Addressed
CO1	Comprehend the importance of water in plants life and mechanism for transport of water and solutes in plants.	
CO2	Evaluate the role of minerals in plant nutrition and their deficiency symptoms	1
CO3	Interpret the role of enzymes in plant metabolism.	6
CO4	Critically understand the light reactions and carbon assimilation process responsible for synthesis of food in plants.	1,2
CO5	Analyze the biochemical reactions in relation to Nitrogen metabolism	3,4
CO6	Evaluate the physiological factors that regulate growth and development in plants.	1,9

Course Code:20C4306B

Course Name:Cell Biology, Genetics and Plant Breeding

CO Number	On successful completion of this course, the students will be able to:	PSO Addressed
CO1	Distinguish prokaryotic and eukaryotic cells and design the model of a cell.	4
CO2	Explain the organization of a eukaryotic chromosome and the structure of genetic material.	2,5
CO3	Demonstrate techniques to observe the cell and its components under a microscope	1,4
CO4	Discuss basics of Mendelian genetics, its variations and interpret inheritance of traits in living being.	3
CO5	Understand the application of principles and modern techniques in plant breeding.	1

SEMESTER-V

Long Term Internships

SEMESTER-VI

Course Code:20C53066C

Course Name:Plant Tissue Culture

CO Number	On successful completion of this course, the students will be able to:	PSO Addressed
CO1	Comprehenced the basic knowledge and applications of Plant Tissue culture	1
CO2	Identify various Facilities required to setup a plant tissue culture laboratory	2,5
CO3	Acquire a critical knowledge on sterilization techniques related to plant tissue culture.	3
CO4	Demonstrate skills of Callus culturer through handon experience.	5,6
CO5	Understand the biotransformation technique for production of secondary metabolits	2
	Course Code:20C53067C	
	Course Name:Mushroom Cultivation	
CO Number	On successful completion of this course, the students will be able to:	PSO Addressed
CO1	Understand the structurer and life of a Mushroom and Descriminate edible and poisonous Mushrooms	1,2
CO2	Identify the basic infrastructurer to establish a mushroom culture unit	5,3
CO3	Demonstrate skill preparation of compost and spawn	6
CO4	Acquire a critical knowledge on cultivation of some edible mushrooms	8
CO5	Explain the methods of storage ,preparation of value-added products and marketing	7