

AGI3551 Agricultural Biology

<b>Level</b>	3
<b>Course Code</b>	AGI3551
<b>Course Title</b>	Agricultural Biology
<b>Credit value</b>	5
<b>Core/Optional</b>	Core (Agriculture)
<b>Course Aim/s</b>	To provide knowledge through theory and experiments in a variety of biological and agricultural sciences.
<b>Course Learning Outcomes (CLO):</b>	<p>At the completion of this course student will be able to,</p> <p>CLO1: Explain the plant biology principles. [PO1] [PO2] [PO3]</p> <p>CLO2: Discuss the morphological and internal organization of plants. [PO1] [PO2] [PO3]</p> <p>CLO3: Identify the nature of the genetics and factors governing the heredity. [PO1] [PO2] [PO3]</p> <p>CLO4: Explain mendelian genetics. [PO1] [PO2] [PO3]</p> <p>CLO5: Explain the deviations of Mendelian genetics [PO1] [PO2] [PO3]</p> <p>CLO6: Discuss the possibilities of applying plant breeding for crop improvement. [PO1] [PO2] [PO3] [PO4]</p> <p>CLO7: Explain the plant metabolism and functions [PO1] [PO2] [PO3]</p> <p>CLO8: Identify the activities of an ecosystem. [PO1] [PO2] [PO3] [PO4]</p> <p>CLO9: Discuss the functioning of an ecosystem. [PO1] [PO2] [PO3] [PO4]</p>
<b>Content(Main topics, sub topics)</b>	<p><b>Outline Syllabus:</b></p> <p>Unit 1:Principles of biology</p> <p style="padding-left: 20px;">Session 1: What is Biology?</p> <p style="padding-left: 20px;">Session 2: The Cellular basis of Life</p> <p style="padding-left: 20px;">Session 3: Composition of Living Matter</p> <p style="padding-left: 20px;">Session 4: Identification, Classification and Nomenclature of Organisms</p> <p style="padding-left: 20px;">Session 5: Morphological Organization of the Plant</p> <p style="padding-left: 20px;">Session 6: Meristematic tissue</p> <p style="padding-left: 20px;">Session 7: Internal Organization of Plants</p> <p>Unit 2:Plant metabolism</p> <p style="padding-left: 20px;">Session 8: Photosynthesis I</p> <p style="padding-left: 20px;">Session 9: Photosynthesis II</p> <p style="padding-left: 20px;">Session 10: Photosynthesis III</p> <p style="padding-left: 20px;">Session 11: Respiration</p> <p style="padding-left: 20px;">Session 12: Fruit Formation and Ripening</p> <p style="padding-left: 20px;">Session13: Factors Affecting Fruit Quality</p> <p>Unit 3:Genetics and Plant Breeding</p> <p style="padding-left: 20px;">Session 14: Physical basis of Heredity and environmental influence</p> <p style="padding-left: 20px;">Session 15: Mendelian Genetics</p> <p style="padding-left: 20px;">Session 16: Deviations from Mendelian Inheritance</p> <p style="padding-left: 20px;">Session 17: Sex Determination and Sex linkage</p> <p style="padding-left: 20px;">Session 18: Pleiotropism and Multiple allelic Inheritances</p> <p style="padding-left: 20px;">Session 19: Mutations</p> <p style="padding-left: 20px;">Session 20: Gene activity and control</p> <p style="padding-left: 20px;">Session 21: Population genetics and Cytoplasmic Inheritance</p> <p style="padding-left: 20px;">Session 22: History and genetic basis of plant breeding</p> <p style="padding-left: 20px;">Session 23: Self incompatibility and male sterility in crop plants</p> <p style="padding-left: 20px;">Session 24: Pure line theory</p> <p style="padding-left: 20px;">Session 25: Breeding methods in cross pollinated plants</p>

Unit 4: Ecosystem and functioning

Session 26: Ecosystems I

Session 27: Ecosystems II

Session 28: Functioning – Cycling of Energy

Session 29: Functioning – Cycling of Matter

Session 30: Habitat and Niche

**Laboratory work : Yes**

1. Identification of microscopic parts and its handling
2. Preparation of temporary and permanent slides
3. Examine the morphological differences between monocot and dicot plant
4. Identification of types of inflorescence, fruits and leaf types
5. identification of eco-system