

BIOL 212 Botany: Plants as organisms

Credit Hours: 4

Scheduled hours per week

Lecture: 3

Lab: 2

Other: 0

Catalog Course Description: Development, structure, function, and evolution of vascular and non-vascular plants; physiological and ecological relationships.

Pre-requisites: BIOL 101/103; 102/104

Co-requisites: None

Course Learning Outcomes:

Students who successfully complete the course will be able to:

- Describe the typical plant cell structure.
- Classify & compare different type of plant tissues.
- Classify plants relative to the current taxonomic system.
- Explain alternation of generations & compare specific life cycle examples.
- Differentiate between vascular & non-vascular plants.
- Examine the morphology of roots, stems, leaves, flowers, fruits & seeds of flowering plants.
- Describe the morphology & reproductive cycles of gymnosperms, ferns, bryophytes, fungi & algae.
- Examine basic physiological functions of the typical plant including photosynthesis, respiration, growth responses, water movement & absorption, and tropisms.

Topics to be studied:

- Plant Cell Structure & Function.
- Plant Physiology.
- Diversity of Vascular Plant Tissues.
- Plant Cell Mitosis & Meiosis.
- Plant Life Cycles – Alternation of Generations.
- Plant Taxonomy.
- Morphology & Physiology of Flowering Seed Plants, Roots, Stems, Leaves, Flowers, Fruits & Seeds.
- Morphology & Physiology of Non-Flowering Seed Plants – Gymnosperms.
- Ferns & Relatives.
- Bryophytes.
- Fungi.
- Algae – Photosynthetic Protists.
- Cyanobacteria.

Relationship of Course to Program or Discipline Learning Outcomes:

Relationship of Course to Science Learning Outcomes:	
Students will learn the process and reasoning behind the Scientific Method and be able to conduct experiments that meet the requirements of the model.	X

Students exhibit the basic safety-related rules and regulations of working in the lab.	X
Students be able to recount the basic safety tenants associated with a specific scientific discipline.	X
Students will become proficient at Science Writing.	X
Students will recognize and identify the applications of their specific discipline in the 'real world.'	X
Students will accurately recount important milestones in the history of scientific inquiry in their discipline.	
10/20/2017	

Relationship of Course to General Education Learning Outcomes:	
Composition and Rhetoric Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.	X
Science & Technology Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.	X
Mathematics & Quantitative Skills Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	
Society, Diversity, & Connections Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	
Human Inquiry & the Past Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	
The Arts & Creativity Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	
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Special requirements of the course:

N.A.

Additional information:

N.A.

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