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:

<table>
<thead>
<tr>
<th>Relationship of Course to Science Learning Outcomes:</th>
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<tbody>
<tr>
<td>Students will learn the process and reasoning behind</td>
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<tr>
<td>the Scientific Method and be able to conduct</td>
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<tr>
<td>experiments that meet the requirements of the model.</td>
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X
### West Virginia University at Parkersburg

#### Uniform Course Syllabus (UCS)

<table>
<thead>
<tr>
<th>Students exhibit the basic safety-related rules and regulations of working in the lab.</th>
<th>X</th>
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<tbody>
<tr>
<td>Students be able to recount the basic safety tenants associated with a specific scientific discipline.</td>
<td>X</td>
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<tr>
<td>Students will become proficient at Science Writing.</td>
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<td>Students will recognize and identify the applications of their specific discipline in the ‘real world.’</td>
<td>X</td>
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<td>Students will accurately recount important milestones in the history of scientific inquiry in their discipline.</td>
<td>10/20/2017</td>
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#### 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. | |

**Special requirements of the course:**
- N.A.

**Additional information:**
- N.A.

**Prepared by:** Uta Hempel

**Date:** 10/20/2017

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_WVUP UCS Form Revised June 2017_