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| 2/3/2025 | DATE | MSD | DIVISION |
| ☑ | REQUIRED COURSE | ☐ | NEW COURSE |
| ☑ | ELECTIVE COURSE | ☑ | REVISION |

# Lake Land College

## Course Information Form

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|---|---|---|---|---|---|---|---|---|---|---|---|
| **COURSE NUMBER:** | BIO-111 | **TITLE:** *(30 Characters Max)* | General Botany | | | | | | | | |
| **SEM CR HRS:** | 4.0 | **Lecture:** | 3.0 | **Lab:** | 2.0 | **ICCB Lab:** | 2.0 | **ECH:** | 5.0 | | |
| **Course Level:** | ☑ Gen Ed/IAI ☐ Baccalaureate/Non-IAI ☐ Career/Technical ☐ Dev Ed/Not in Degree Audit | | | **Clinical Practicum:** | 0.0 | **Work-based Learning:** | 0.0 | **WBL ECH:** | 0.0 | | |
| **Course PCS & CIP:** | 11 - 26.0301 | **IAI Code** | L1910L & BIO910 | **Contact Hours (Minutes Per Week)** | | | | | | | |
| **Repeatable (Y/N):** | N | **Pass/Fail (Y/N):** | N | **Variable Credit (Y/N):** | N | **Min:** | | **Max:** | | **16 Wks** | 250 | **8 wks** | 500 |
| **Prerequisites:** | BIO-100 | | | | | | | | | | |
| **Corequisites:** | None | | | | | | | | | | |
| **Catalog Description: (40 Word Limit)** | A survey of the plant kingdom with emphasis on evolutionary advancements and the structure and function of plants and their ecological and human relevance. An introduction to bacteria, viruses, protists and fungi is included in this course. | | | | | | | | | | |

| List the Major Course Segments (Units) | Contact Lecture Hours | Contact Lab Hours | Clinical Practicum | Work-based Learning |
|---|---|---|---|---|
| Overview, classification, characteristics of life, cell review, bacteria and viruses | 7 | 4 | | |
| Kingdom protista and kingdom fungi | 6 | 6 | | |
| Plant tissues, roots and stems | 7 | 4 | | |
| Leaves, water in plants, photosynthesis, growth and development of plants | 9 | 4 | | |
| Survey of kingdom plantae | 16 | 12 | | |
| TOTAL | 45 | 30 | 0 | 0 |

| EVALUATION | | | | | | | |
|---|---|---|---|---|---|---|---|
| **QUIZZES** | ☑ | **EXAMS** | ☑ | **ORAL PRES** | ☐ | **PAPERS** | ☑ |
| **LAB WORK** | ☑ | **PROJECTS** | ☐ | **COMP FINAL** | ☑ | **OTHER** | ☐ |

| COURSE MATERIALS | | |
|---|---|---|
| **TITLE:** | Stern's Introductory Plant Biology | |
| **AUTHOR:** | J. Bidlack and S. Jansky | |
| **PUBLISHER:** | McGraw-Hill | |
| **VOLUME/EDITION/URL:** | 15th | |
| **COPYRIGHT DATE:** | 2021 | |

| MAJOR COURSE SEGMENT | HOURS | LEARNING OUTCOMES |
|---|---|---|
| | | *The student will be able to:* |
| ***Overview, classification, characteristics of life, cell review, bacteria and viruses*** | | |
| Introduction, diversification of plant study | 1 | 1. Summarize the importance and diversity of plant sciences. |
| Classification, taxonomy, systematics | 3.5 | 1. Explain and utilize the binomial system of nomenclature, classification and taxonomy.<br>2. Demonstrate the proper use of a dichotomous key to identify plants.<br>3. Construct a dichotomous key to classify a number of plant species. |
| Characteristics of life review | 0.5 | 1. Describe characteristics shared by all living organisms. |

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| Cell study history, cell structures | 3.75 | 1. Describe the contributions of various scientists to the study of cells.<br>2. Demonstrate proper use of compound light and dissecting microscopes.<br>3. Identify plant cell structures and explain their function. |
| Domain bacteria, domain archaea viruses | 2.25 | 1. Explain the various forms, locomotion, distribution, nutrition and reproduction of members of the domain Bacteria and domain Archaea.<br>2. Recognize the ecological and human relevance of bacteria.<br>3. Describe the structure of viruses and their modes of replication.<br>4. Recognize the ecological and human relevance of viruses. |
| *Kingdom protista and kingdom fungi* | | |
| Kingdom protista: plant-like protists and fungus-like protists | 7.25 | 1. Explain the characteristics of the kingdom Protista.<br>2. Evaluate the effectiveness of using these criteria for classifying organisms.<br>3. Describe the characteristics and life cycles of the phyla of the kingdom Protista.<br>4. Identify representative organisms.<br>5. Summarize the ecological and human relevance of protists. |
| Kingdom fungi and lichens | 4.75 | 1. Explain the characteristics of the kingdom Fungi and lichens.<br>2. Describe the characteristics and life cycles of the divisions (phyla) of the kingdom of Fungi.<br>3. Identify representative organisms.<br>4. Summarize the ecological and human relevance of Fungi and lichens. |
| *Plant tissues, roots and stems* | | |
| Plant tissues | 3.75 | 1. Describe the various meristems and the tissues they produce. |
| Roots | 1.75 | 1. Explain the functions, development, growth and types of root systems.<br>2. Summarize the human relevance of plant roots. |
| Stems | 5.5 | 1. Explain the origin, development, growth and form of plant stems.<br>2. Summarize the human relevance of plant stems. |
| *Leaves, water in plants, photosynthesis, growth and development of plants* | | |
| Leaves | 3.75 | 1. Describe the various meristems and the tissues they produce. |
| Water in plants | 1 | 1. Describe the importance of water in plants. Summarize the path water takes through the plant. |
| Photosynthesis | 4 | 1. Discuss the importance of light to phototrophic autotrophs and ecosystems.<br>2. Summarize the light-dependent and the light-independent reactions of photosynthesis. |
| Growth and development | 4.25 | 1. Recognize the importance of plant hormones on plant development and growth.<br>2. Demonstrate the effects of plant hormones on greenhouse plants.<br>3. Describe types of plant movements and the role of phytochrome in flowering. |

| *Survey of kingdom plantae* | | |
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| The bryophytes | 5.5 | 1. Distinguish among the characteristics and methods of reproduction of liverworts, hornworts and mosses.<br>2. Assess the ecological and human relevance of the bryophytes. |
| Seedless vascular plants: ferns and allies | 7.5 | 1. Distinguish among the characteristics and methods of reproduction of ferns and their allies.<br>2. Assess the ecological and human relevance of ferns and their allies.<br>3. Interpret plant keys and field guides to identify plants from Illinois ecosystems and describe the adaptations that allow them to survive and thrive in their ecosystems. |
| Gymnosperms and the evolution of seeds | 5.5 | 1. Describe the evolutionary advantages of seed production.<br>2. Distinguish among the characteristics and methods of reproduction of the gymnosperm divisions.<br>3. Assess the ecological and human relevance of gymnosperms. |
| Angiosperms | 9.5 | 1. Distinguish among the classes of the division Magnoliophyta (Anthophyta) and their reproduction methods.<br>2. Relate the importance of pollinators in plant reproduction.<br>Identify flower structures and distinguish among the various fruit types.<br>3. Assess the ecological and human relevance of flowers, fruits and seeds. |
| | 75 | |

| Outcomes* | Outcome Title | At the successful completion of this course, students will be able to: |
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| Course Outcome 1 | Importance Plants | Assess the importance of plants and the study of plants. |
| Course Outcome 2 | Binomial Nomenclat | Demonstrate the system of binomial nomenclature, classification and taxonomy of the bacteria, protists, fungi and plants. |
| Course Outcome 3 | Bact Prot Fungi Char | Describe the characteristics of bacteria, protists and fungi and assess their ecological and economic importance. |
| Course Outcome 4 | Plantae Divisions | Explain the characteristics of the kingdom Plantae and its major divisions (phyla), identifying examples of each division and assessing their ecological and economic importance. |
| Course Outcome 5 | Plantae Reproduction | Differentiate among the methods of reproduction and the various reproductive structures of the members of kingdom Plantae. |
| Course Outcome 6 | Morph Root Stem Leaf | Explain the external and internal morphology of roots, stems and leaves, relating ecological and economic importance of these structures. |
| Course Outcome 7 | Plant Physiology | Describe basic plant physiology, including photosynthesis, hormones, growth, dormancy and tropisms. |
| Primary Laker Learning Competency | Scientific Literacy: Students apply the scientific process to real-life situations. | |
| Secondary Laker Learning Competency | Communication: Students communicate through the exchange of information. | |

**Course and program outcomes will be used in the software for outcomes assessment and should include at least 1 primary and 1 secondary Laker Learning Competency. Limit to 3-5.*