Tompkins Cortland Community College

Master Course Syllabus

Course Discipline and Number: BIOL 119 **Year: 2024-2025**

Course Title: Botany **Credit Hours: 3**

I. Course Description: This course provides an introduction to plant biology including the structure, function, physiology and development, genetics and evolution, and ecology of plants. Topics include the structure and function of plant cells and tissues; plant physiology and development; plant genetics and evolution; systematics and taxonomy of plants; plant ecology; and the relationship between plants and human welfare. BIOL 119 fulfills the SUNY General Education Natural Sciences requirement. Prerequisites: Prior completion or concurrent enrollment in ENGL 100; MATH 090 if required by placement testing; prior completion or concurrent enrollment in RDNG 116 if required by placement testing. 3 Cr. (2 Lec., 2 Lab.) Spring semester.

II. Additional Course Information:

- BIOL 119 is an elective option for students in Biological Sciences, Environmental Science, and other majors for Lab Science, Liberal Arts, and Unrestricted Elective requirements.
- The course provides core knowledge and skills for students in the Sustainable Farming and Food Systems program.

III. Student Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Explain plant cell structure and function
2. Describe the process and function of photosynthesis and respiration
3. Recognize the form and function of plant structural tissues and the ways in which these tissues relate to plant system functionality
4. Differentiate among the major groups of plants, and understand the evolutionary mechanisms involved in their development
5. Describe the basic elements of plant genetics and reproduction
6. Describe the fundamental and evolving relationships between plants and people
7. Explain the importance of plant diversity and ecological relationships

IV. Tompkins Cortland General Education & SUNY Competency Goals

☒ Critical thinking (Tompkins Cortland GE Goal; SUNY Competency)
This course will use an inquiry-based approach to explore plant biology. Students will apply theoretical concepts to hands-on plant based experiments designed to explore basic concepts of plant growth, plant physiology, and plant ecology. Students will design and perform laboratory experiments testing a variety of theoretical concepts related to botany, and will collect, analyze, interpret and present data from these experiments. This outcome will also be addressed through lectures, readings, writing exercises, discussion, laboratory exercises, examinations, and field observations.

☒ Social/Global Awareness
This course will examine the social dimensions of botany, and the importance of plants for the success of human societies. Students will explore the ways in which the relationship between humans and plants impacts our health, our environment, our food choices, and our economic systems. The course will emphasize the role of plants in maintaining a healthy environment, healthy soil, healthy air, and healthy water. Particular emphasis will be placed on the role of plants in sustainable and resilient agricultural systems.

☐ Information Management

☐ This course does not address either of these Tompkins Cortland or SUNY General Education Goals.

V. Essential Topics/Themes

1. Plant Structure and Function
2. Plant Physiology and Development
3. Plant Genetics and Evolution
4. Plant Taxonomy and Systematics
5. Plant Ecology
6. Plants and Human Welfare

VI. Methods of Assessment/Evaluation

Method	**% Course Grade**
• Examinations	35-65%
• Quizzes	0-25%
• Participation and Engagement	5-10%
• Writing Assignments	0-15%
• Laboratory Exercises	10-25%
• Research Project	5-25%

VII. Text –required

Capon, B. *Botany for Gardeners*. 3rd ed., Timber Press, Portland, OR, 2010.

Editions listed are current as of date of syllabus. More recent editions may be used.

VIII. Bibliography of Supplemental Materials

Mauseth, James D. *Botany: An Introduction to Plant Biology*. 6th ed., Jones & Bartlett Learning, Burlington, MA. 2017.(Recommended)

Mauseth, James D. *Botany: A Lab Manual*. 6th ed., Jones & Bartlett Learning, Burlington, MA, 2017.

Urry, L.A., Cain, M.L., Minorsky, P.V., Wasserman, S.A., and Reece, J.B. *Campbell Biology.* 11th ed., Pearson Education, London, 2016.

Elpel, T.J. *Botany in a Day: The Patterns Method of Plant Identification*. 6th ed., HOPS Press, Pony, Montana, 2013.

Editions listed are current as of date of syllabus. More recent editions may be used.

IX. Other Learning Resources

Audiovisual - The Botany of Desire (2009) Kikim Media.
Electronic - The Botanical Society of America - https://www.botany.org/
Other

Attendance Policy: *To maintain good grades, regular attendance in class is necessary. Absence from class is considered a serious matter and absence never excuses a student from class work. It is the responsibility of all instructors to distribute reasonable attendance policies in writing during the first week of class. Students are required to comply with the attendance policy set by each of their instructors. Students are not penalized if they are unable to attend classes or participate in exams on particular days because of religious beliefs, in accordance with Chapter 161, Section 224-a of the Education Law of the State of New York. Students who plan to be absent from classroom activity for religious reasons should discuss the absence in advance with their instructors. See college catalog for more information.*

Services for Students with Disabilities: *It is the College's policy to provide, on an individual basis, appropriate academic adjustments for students with disabilities, which may affect their ability to fully participate in program or course activities or to meet course requirements. Students with disabilities should contact the Coordinator of Access and Equity Services, to discuss their particular need for accommodations. All course materials are available in alternate formats upon request.*

Academic Integrity: *Every student at Tompkins Cortland Community College is expected to act in an academically honest fashion in all aspects of his or her academic work: in writing papers and reports, in taking examinations, in performing laboratory experiments and reporting the results, in clinical and cooperative learning experiences, and in attending to paperwork such as registration forms.*
Any written work submitted by a student must be his or her own. If the student uses the words or ideas of someone else, he or she must cite the source by such means as a footnote. Our guiding principle is that any honest evaluation of a student's performance must be based on that student's work. Any action taken by a student that would result in misrepresentation of someone else's work or actions as the student's own — such as cheating on a test, submitting for credit a paper written by another person, or forging an advisor's signature — is intellectually dishonest and deserving of censure.
Several degree programs offer student learning opportunities (such as internships, field work, and clinical experiences) outside the standard classroom setting. As part of the learning process, students must understand and engage in conduct that adheres to principles guiding employment within the professional workplace. These behaviors include, but are not limited to, academic integrity, accountability, reliability, respect, use of appropriate language and dress, civility, professional ethics, honesty, and trustworthiness. Disciplinary action may be initiated for inappropriate conduct occurring while participating in any course-related project or event.