Tompkins Cortland Community College

Master Course Syllabus

Course Discipline and Number: BIOL 105 **Year: 2025-2026**

Course Title: General Biology II **Credit Hours: 4**

I. Course Description: This course is intended for students who plan to transfer to an upper-level program in science, environmental science, medicine, or a science-related field. Students who have a strong interest in a rigorous study of biology may also enroll. Topics include evolution, biodiversity, botany, and ecology. Substantial outside preparation for lectures and laboratories is required. Prior completion of BIOL 104 is not required. BIOL 105 fulfills the SUNY General Education Natural Sciences Knowledge and Skills Area. Students may not apply credit for both BIOL 102 and BIOL 105 toward their degree. Prerequisites: High school biology and chemistry with minimum regents exam grades of 80% within the past five years or BIOL 101; prior completion of, or concurrent enrollment in, ENGL 100 and MATH 098 if required by placement. 4 Cr. (3 Lec., 3 Lab.) Fall and spring semesters.

II. Additional Course Information:

1. This course will satisfy program requirements for a science, laboratory science, math/science elective, liberal arts, or unrestricted elective.
2. Outdoor and off-campus field trips are required for students in BIOL 105. Generally, students are responsible for transportation. Appropriate attire for field trips will be discussed in class.
3. This course requires a minimum of 2 hours of lecture and 3 hours of lab per week for a 15-week semester.

III. Student Learning Outcomes

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

1. Describe and apply the methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of data analysis or mathematical modeling.
2. Apply scientific data, concepts, and models to observed phenomena.

IV. Tompkins Cortland Institutional Learning Outcomes; Program Learning Outcomes; SUNY General Education Competencies and Knowledge and Skills Areas

Tompkins Cortland ILOs

Complete this section for “service” courses only (e.g. courses that are required of all students; courses that are not program specific but satisfy liberal arts requirements; or commonly used in multiple academic programs to meet non-program-specific requirements). Check only Institutional Learning Outcomes (ILOs) that are meaningfully developed and assessed in this course. For each ILO chosen, include the SLO to which it aligns.

Students will:

☐ Communicate effectively, in oral and written forms, taking into consideration audience and purpose.

☒ Apply principles and methods of scientific inquiry and quantitative reasoning appropriate to their discipline.

SLO 2) Apply scientific data, concepts, and models to observed phenomena.

☒ Use information, critical thinking, and the creative process to solve problems and reach conclusions.

SLO 1) Describe and apply the methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of data analysis or mathematical modeling.

☐ Use technology appropriate to their discipline.

☒ Describe the ways in which social, economic, or environmental sustainability depends on their own and the collective contributions of a diversity of ideas and people.

2) Apply scientific data, concepts, and models to observed phenomena.

Program Learning Outcomes

Complete this section for program-specific courses (e.g. those that share the same 4 letter designation as the academic program or satisfy requirements in related programs). List the academic program(s) here and note which Student Learning Outcomes align to specific Programmatic Learning Outcomes. Please see the MCS Instructions for more details.

Specify the Academic Program: **Environmental Studies A.S.**

PLO	SLO
Describe accepted scientific concepts and how they relate to environmental issues	1) Describe and apply the methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of data analysis or mathematical modeling.
Apply the scientific method and quantitative analysis to environmental issues.	2) Apply scientific data, concepts, and models to observed phenomena.
Describe the social, economic, and ecological dimensions of sustainability. (ILO: Sustainability)	2) Apply scientific data, concepts, and models to observed phenomena.
Evaluate solutions to environmental problems. (ILO: Critical and Creative Reasoning)	2) Apply scientific data, concepts, and models to observed phenomena.

SUNY General Education Outcomes

If this course **assesses** a SUNY GEN ED Outcome, check all that apply and indicate which course outcome(s) address each checked item:

☐ CRITICAL THINKING & REASONING - Students will:

a. clearly articulate an issue or problem;
b. identify, analyze, and evaluate ideas, data, and arguments as they occur in their own or others'
c. work; acknowledge limitations such as perspective and bias; and
d. develop well-reasoned (logical) arguments to form judgments and/or draw conclusions.

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☐ INFORMATION LITERACY - Students will:

a. locate information effectively using tools appropriate to their need and discipline; evaluate information with an awareness of authority, validity, and bias; and demonstrate an understanding of the ethical dimensions of information use, creation, and dissemination.

☒ SUNY GENERAL EDUCATION KNOWLEDGE AND SKILLS AREA(s): Natural Sciences

For courses that are approved to meet one (or more) of the ten SUNY General Education Knowledge and Skills Areas, indicate which area the course fulfills, and which outcome(s) are aligned with the SUNY outcomes for that area:

SUNY GE Outcome:
"Students will demonstrate scientific reasoning applied to the natural world, including an understanding of the methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of data analysis or mathematical modeling.

Course SLO:
1) Describe and apply the methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of data analysis or mathematical modeling.

SUNY GE Outcome:
"Students will demonstrate scientific reasoning applied to the natural world, including application of scientific data, concepts, and models in one of the natural (or physical) sciences.

Course SLO

2) Apply scientific data, concepts, and models to observed phenomena.

☐ This course does not address any of the above Tompkins Cortland ILOs, PLOs, or SUNY General Education Competencies or Knowledge and Skills Areas.

V. Essential Topics/Themes

1. Ecology
2. Evolution
3. Biodiversity and Taxonomy
4. Scientific Method

VI. Methods of Assessment/Evaluation

Method	% Course Grade
1. Hourly Exams	20-60%
2. Cumulative Final Exam	~20%
3. Lab Reports and Research Projects	20-50%
4. Attendance and participation	0-10%

VII. Texts – ☒ Required ☐ Recommended ☐ Used for more than one course

High school instructors may consult with CollegeNow for additional information.

	OER
1. Uri, et.al. *Campbell Biology in Focus*. 2014, Pearson Education Canada.	☐

Editions listed are current as of date of syllabus. More recent editions may be used. Concurrent Enrollment instructors may request biology department chair approval of an alternate text.

VIII. Bibliography of Supplemental Materials

1. Supplemental materials will be provided from the popular press and current scientific literature.

IX. Other Learning Resources

Audiovisual: Video mini-lectures are provided by the instructor. Other videos, podcasts, and other media may be used.

Electronic: None specified

Other: None specified

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 academic adjustments. 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.