

Tompkins Cortland Community College Course Outline

Course No. (Credit Hours): BIOL 105 (4 credits)

Course Title: General Biology II

Instructor: Ms. Abigail Costello

Contact Information: acostello@unatego.stier.org

Location: Unatego High School

Semester: Spring

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.

Course Prerequisites & Basic Skills: High school biology and chemistry with minimum regents exam grades of 80% within the past five years. Basic skill requirements such as math, reading, and writing are required to successfully complete this course. The ability to take well organized notes during class lectures; to work in groups during lecture and laboratory sessions; to follow oral and written directions; and to read textbook material that contains a large amount of technical vocabulary to interpret complex diagrams and flowcharts.

Student Learning Outcomes:

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.

Texts and Materials: All texts supplied by the school.

Starr, C., Taggart, R., Evers, C. & Starr, L. (2013). *Biology: Unity and Diversity of Life*. 13th ed., AP ed. Pacific Grove: Brooks/Cole Cengage Learning.

Quammen, D. (2009, February). Darwin's First Clues. *National Geographic*.

Ridley, M. (2009, February). Modern Darwins. *National Geographic*.

Fothergill, A. (Executive Producer). (2006). *Planet earth* [Television series]. United Kingdom: BBC One & BBC HD.

The History Channel (Producer). (2008). *Evolve* [Television series]. United States: History Channel.

Horvath, T. (2008). Economically viable strategy for prevention of invasive species introduction: Case study of Otsego Lake, New York. *Aquatic Invasions*, 3(1), 3-9.

Various peer reviewed scientific journal articles at student and teacher choosing.

Class Modalities/Learning Strategies: Lectures and laboratory exercises form the core of this course. Students will also have to choose, read, and present a recent peer reviewed journal article on a biology topic of their choice. Additionally, the instructor may wish to include structured discussion sessions, student presentations, and/or original student research.

Course Content: *Dates & assignment subject to change. *

Week of	Topic & Chapter	Lab	Assignments
1/29	Evolution	Pocket Mice & Natural Selection	Quiz 1 Quiz 2 (Darwin Article #1)
2/5	Evolution	Hardy-Weinberg Modeling (1) Natural Selection of Population - Dots (2)	Quiz 3 (Darwin Article #2) Quiz 4
2/12	Evolution & Taxonomy	Cladogram (3) Comparing DNA with BLAST (4)	Quiz 5
2/26	Human Evolution Review EXAM 1 (Evolution)	Primordial Soup (5)	EXAM 1 (Evolution)
3/4	Ecology & Biodiversity	Human Demographics (6)	Quiz 6
3/11	Ecology & Biodiversity	Climate Change Investigation (7)	Quiz 7 Quiz 8
3/18	Ecology & Biodiversity Plants	Lettuce Seed Environmental Toxin Bioassay (8) Whole Plant Transpiration (9)	
3/25	Plants EXAM 2 (Ecology & Plants)	Flower Dissection (10)	EXAM 2 (Ecology & Plants)
4/8	Animal Behavior	Animal Behavior (11)	Quiz 9 Quiz 10
4/15	Human Body – Reproduction & Development	Comparative Anatomy Human & Pig Uterus (12)	Quiz 11
4/22	Human Body Systems	Skeletal Stations (13)	Quiz 12

4/29	Human Body Systems	Heart Dissection Eye Dissection (tentative to time & supplies)	
5/6	Human Body Review EXAM 3 (An. Behavior & Human body)		EXAM 3 (An. Behavior & Human body)
5/13	Final Exam Review FINAL EXAM	Final Exam Review	FINAL EXAM
5/20	Journal Article Project	Journal Article Project	Project Part 1
5/27	Journal Article Project	Journal Article Project	Project Part 2
6/3	Journal Article Project	Journal Article Project	Project Part 3
6/10	Journal Article Project	Journal Article Project	Project Part 4

Required Readings, Presentations, Assignments, etc.:

- 3 Unit Exams (100 pts each) = 300 pts
 - Multiple choice & short answer question format
- Final Exam = 250 pts
 - Lab inclusive, multiple choice & short answer question format
- Laboratory reports (13 reports x 20pts each) = 260 pts
 - Each lab will be recorded in a lab notebook and require a title, objectives, hypothesis, procedure/methods, Data, analysis & discussion.
- Research Project = 130pts
 - 4 parts: Summary of a peer reviewed research article, an outline of the article, a presentation as the author of the article, and a 5-page written paper connecting the research article to the course content and scientific method covered in BIOL 105
- Weekly participation quizzes (12 quizzes x 5ptseach) = 60 pts
 - 5 question quizzes on the week's lecture content

Evaluation/Grading System:

Method	% Course Grade
3 examinations covering several chapters	30%
A cumulative final examination covering all core concepts	25%
Laboratory reports or other evaluation of work completed in the lab and research project	39%
Attendance & Participation (via weekly quizzes)	6%

EVALUATION/GRADING SYSTEM

Letter grades are based on point totals as follows.

	Grade	Point Percentage	GPA
High Achievement	A	93-100	4.0
	A-	90-92	3.7
Good Achievement	B+	87-89	3.3
	B	83-86	3.0
	B-	80-82	2.7
	C+	77-79	2.3
Satisfactory Achievement	C	73-76	2.0
Below Satisfactory Achievement	C-	70-72	1.7
	D+	67-69	1.3
	D	63-66	1.0
	D-	60-62	0.7
No Credit	F or WF	<59	0

Make-Up Policy/Late Work: Late work will be accepted up until grades are due with penalty. Make-up exams will also be allowed at times determined by the instructor.

Attendance Policy: Unatego High School believes that classroom participation is related to and affects a student's performance and grasp of subject matter, and, as such, is properly reflected in a student's final grade. To obtain credit in a course, a student must attend a minimum of 90% of the scheduled class. This means a student could be absent no more than 27 periods for a full year science course (including lab periods) or 13.5 periods of a half-year course.

Student Responsibilities: Students are expected to examine, connect, and integrate essential knowledge of biological topics rather than simply accumulate isolated facts. Students will develop this conceptual understanding as the course content works its way from the evolution of living things through ecology. The course also emphasizes developing science practices such as advanced inquiry and reasoning skills, to further connect concepts in and across domains.

To accomplish this feat, students will complete laboratory work, weekly quizzes, unit exams, laboratory notebooks, presentations to peers, and formal laboratory write-ups, all which are evaluated for student understanding. Students will also dissect a current peer reviewed scientific journal article for deep understanding and discuss current events in biology to understand how science works as a process to provide new biological information to society, therefore allowing society to better understand the natural world.

Statement of Academic Integrity Students are expected to do their own works on tests, quizzes, reports, homework, and all other forms of academic expression. Any student found to having in any way presented work not his/her own (including plagiarism) will, as a minimum, lose full credit for the assignment, test, or quiz, and face other possible disciplinary consequences. (As stated in the Unatego Student-Parent Handbook 2-14-2015) Please refer to the College's [statement of academic integrity](#) (summarized below) and the [policy for violations](#).

Tompkins Cortland Community College's Statement of 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.

Additional Resource Assistance: Students seeking additional assistance with class material can make an appointment to meet with the instructor during the school wide tutorial (study hall) period. Students may also email the instructor or leave messages in Google classroom. Note that TC3 campus and online tutoring resources, as well as study skills assistance, are at <https://www.tompkinscortland.edu/library>.

Appropriate Academic Adjustments (Accommodations):

It is the College's policy to provide, on an individual basis, appropriate academic adjustments for students with disabilities that may affect their ability to fully participate in college course activities or to meet course requirements. Students with disabilities should contact Carolyn Boone, Coordinator of Access and Equity Services at 607-844-8222 (ext. 4283) or BCL@tompkinscortland.edu to share their particular need for appropriate academic adjustments.

Tompkins Cortland Community College Expectations and Resources

Students and families should review the guidelines provided on College Now's website for information on College expectations and policies, implications for academic standing and financial aid, accessing learning resources and services, and transferring college credits. Student Resource links appear on the right side of the CollegeNow homepage at www.tompkinscortland.edu/academics/collegenow

