Tompkins Cortland Community College

Master Course Syllabus

Course Discipline and Number: ENVS102 **Year: 2025-2026**

Course Title: Technology and the Environment **Credit Hours: 3**

I. Course Description: This course examines the technological aspects of resource problems. Topics include air and water pollution, conventional and alternative energy sources, climate change, and management of non-renewable resources. Technical and economic constraints are considered, along with alternatives for future development. Local and global issues are addressed, including the socioecological challenges to sustainable development. ENVS102 is intended for all students, regardless of major field of study. ENVS102 fulfills the SUNY General Education Natural Sciences requirement, but is not a laboratory science course. ENVS102 also fulfills the SUNY General Education Diversity, Equity, Inclusion, and Social Justice requirement. Prerequisites: Prior completion of, or concurrent enrollment in, ENGL100 or ESL 120, 121, and 122. 3 Cr. (3 Lec.) Fall and spring semesters.

II. Additional Course Information:

1. This course satisfies a SUNY General Education Natural Sciences (non-lab) and DEISJ requirements.
2. ENVS102 is required of all ENVS and CONT majors (Must earn a grade of C or above).
3. Some sections use Write to Learn strategies.
4. Online homework is required.
5. Students will frequently work in groups.

III. Student Learning Outcomes

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

1. Describe the ways in which they impact and are impacted by the natural environment.
2. Describe accepted scientific concepts and how they relate to environmental issues.
3. Evaluate solutions to environmental problems considering the social, economic, and ecological dimensions of sustainability.
4. Describe the historical and contemporary socioecological challenges to sustainable development.

IV. Tompkins Cortland Institutional Learning Outcomes; Program Learning Outcomes; SUNY General Education Outcomes

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.

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

☐ 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.

SLO:

3. Evaluate solutions to environmental problems in light of the social, economic, and ecological dimensions of sustainability.

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. (ILO: Scientific inquiry and quantitative reasoning)	Describe accepted scientific concepts and how they relate to environmental issues.
Describe the social, economic, and ecological dimensions of sustainability. (ILO: Sustainability)	Evaluate solutions to environmental problems in light of the social, economic, and ecological dimensions of sustainability.
Evaluate solutions to environmental problems. (ILO: Critical and Creative Reasoning)	Evaluate solutions to environmental problems in light of the social, economic, and ecological dimensions of sustainability.

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 - Students will:

a. identify, analyze, and evaluate arguments as they occur in their own or others' work; and
b. develop well-reasoned arguments.

☐ INFORMATION MANAGEMENT - Students will:

a. perform the basic operations of personal computer use;
b. understand and use basic research techniques; and
c. locate, evaluate and synthesize information from a variety of sources.

☒ GENERAL EDUCATION CATEGORY - Area(s): **Diversity, Equity, Inclusion, and Social Justice** & **Natural Sciences**

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

SUNY Student Learning Outcome:

SUNY Natural Sciences SLO	**Course SLO**
Demonstrate 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.	Describe accepted scientific concepts and how they relate to environmental issues.
Apply scientific data, concepts, and models in one of the natural (or physical) sciences.	Describe accepted scientific concepts and how they relate to environmental issues.

SUNY DEISJ SLO	**Course SLO**
Describe the historical and contemporary societal factors that shape the development of individual and group identity involving race, class, and gender.	Describe the historical and contemporary socioecological challenges to sustainable development.
Analyze the role that complex networks of social structures and systems play in the creation and perpetuation of the dynamics of power, privilege, oppression, and opportunity.	Evaluate solutions to environmental problems considering the social, economic, and ecological dimensions of sustainability.
Apply the principles of rights, access, equity, and autonomous participation to past, current, or future social justice action.	Evaluate solutions to environmental problems considering the social, economic, and ecological dimensions of sustainability.

☐ This course does not address any of the above Tompkins Cortland ILOs, PLOs, or SUNY General Education Outcomes.

V. Essential Topics/Themes

1. Value of Ecosystem Services / Externalized Costs of Unsustainable Development*
2. Energy (Sources, Impacts, Alternatives, etc.)
3. Climate Change
4. Farming and Food Systems
5. Environmental Toxicology
6. Water Resource Issues
7. Urban Design and Smart Growth*
8. Solutions to Environmental Problems
9. Socioecological Barriers to Sustainable Development*

* These topics may be covered as discrete units, or the instructor may choose to integrate them as part of the Climate Change unit.

VI. Methods of Assessment/Evaluation

Method	% Course Grade
1. Exams	20-60%
2. Reading responses	10-30%
3. Term papers or multiple smaller written assignments	10-30%
4. Quizzes	0-30%
5. Participation in discussion	0-30%

VII. Texts – ☒ Required ☐ Recommended ☐ Used for more than one course (list courses)

1. ENVS102 Course Pack
2. Other OER sources that support topics not covered in the required text.

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

VIII. Bibliography of Supplemental Materials

1. Withgott, J., & Laposata, M. 2012. *Essential Environment: The Science Behind the Stories*. Upper Saddle River, NJ: Pearson.
2. Klein, Naomi. 2014. *This Changes Everything: Capitalism vs. the Climate*. New York: Simon & Schuster.
3. Mann, Michael. 2021. *The New Climate War: The Fight to Take Back Our Planet*. PublicAffairs
4. Project Drawdown (A great resource for exploring solutions)
5. Hawken, Paul. 2021. *Regeneration: Ending the climate crisis in one generation*. Penguin Books, New York
6. Bigelow, B., & Swinehart, T. 2015. *A People's Curriculum for the Earth: Teaching Climate Change and the Environmental Crisis*. Milwaukee, WI: Rethinking Schools.

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

IX. Other Learning Resources

Audiovisual: None specified

Electronic: Various electronic resources, publications, and datasets (e.g., National Aeronautics and Space Administration [NASA], National Oceanic and Atmospheric Administration [NOAA], Intergovernmental Panel on Climate Change [IPCC])

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 their 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 their own. If the student uses the words or ideas of someone else, they 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.