Tompkins Cortland Community College

Master Course Syllabus

Course Discipline and Number: ENVS202 **Year: 2024-2025**

Course Title: Integrated Pest Management **Credit Hours: 3**

I. Course Description: This course will provide an introduction to the scientific concepts and principles of entomology, plant pathology, and weed science. Students will learn to identify common insect, disease, and weed pests and understand how cultural, biological, and chemical controls can be used to manage pests in a sustainable farming system. ENVS 202 fulfills the SUNY Natural Sciences requirement. Prerequisite: ENVS143 or Instructor permission. 3 Cr. (2 Lec. 3 Lab) Summer semester.

II. Additional Course Information:

1. This course is required for students enrolled in Sustainable Farming and Food Systems AAS
2. This course can be used to fulfill a science elective requirement or an unrestricted elective requirement.

III. Student Learning Outcomes

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

1.	Identify and explain the biology and ecology of insects, weeds, and disease-causing organisms and physiological disorders typically found in a sustainable farming system.
2.	Explain methodologies used in making scientifically based pest management decisions including the economic dimension to decision making.
3.	Apply an inquiry-based approach to diagnose plant health conditions and make integrated management decisions.
4.	Describe ecologically sound pest management and how to apply these concepts to the management of a sustainable farming enterprise/agroecosystem.

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.

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.

Program Learning Outcomes

Complete this section for program-specific courses (e.g., those that share the same discipline code 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: Sustainable Farming and Food Systems
List the PLO(s) that are meaningfully developed and assessed in this course AND the specific SLO(s) through which the development and assessment will occur.

PLO2) Describe the scientific basis for building healthy soil and developing ecologically sound pest management and nutrient cycling practices, and apply these concepts to the management of a sustainable farming enterprise/agroecosystem. SLO 3, 4

SUNY General Education Competencies

If this course assesses a SUNY GEN ED Competency, 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' work; acknowledge limitations such as perspective and bias; and
c. develop well-reasoned (logical) arguments to form judgments and/or draw conclusions.

Course SLO(s):

☐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.

Course SLO(s):

☒ SUNY GENERAL EDUCATION KNOWLEDGE AND SKILLS AREA(s): Natural Sciences (and Scientific Reasoning).
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:

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; and;

· application of scientific data, concepts, and models in one of the natural (or physical) sciences.

Course SLO(s):

SLO 2: Explain methodologies used in making scientifically based pest management decisions

including the economic dimension to decision making.

SLO 3: Apply an inquiry based approach to diagnose plant health conditions and make integrated management decisions.

☐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. Plant Health
2. Principles of Plant Pathology
3. Principles of Entomology
4. Principles of Weed Science
5. Plant Taxonomy
6. Integrated Pest Management techniques in the Field and in the Greenhouse
7. Biological, Cultural and Chemical Control of Insects, Diseases and Weeds including Health and Saftey
8. Identification of Common Insects, Diseases, and Weeds in Integrated Vegetable Production Systems in NY
9. Plant Nutrient Deficiency and Abiotic Disorders
10. Postharvest Diseases

VI. Methods of Assessment/Evaluation

Method	**% Course Grade**
1. Participation and Discussion	10-20
2. Quizzes and Exams	40-70
3. Writing Assignments	0-20
4. Identification Projects	30-60

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

High school instructors may consult with staff in the CollegeNow office for additional information and guidance.

	OER
1. The Organic Gardeners Handbook of Natural Pest and Disease Control: A Complete Guide to Maintaining a Healthy Garden and Yard the Earth Friendly Way. Bradley, F.M., and Ellis, B.W. 2010. Rodale Organic Gardening Books. (ISBN 978-1605296777)	☐

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

VIII. Bibliography of Supplemental Materials

1. Sustainable Vegetable Production From Start-Up to Market, Grubinger, V. 1999. NRAES. (ISBN 0-935817-45-X)
2. Organic Vegetable Production: A Complete Guide. Davies, G., and Lennartsson, M., eds. 2006. Crowood Press. (ISBN 978 1861-2678-87)
3. Organic Weed Management, Gilman, S., 2002. Chelsea Green, White River Junction. (ISBN 1-931498-29-6)
4. Plant Pathology (5th Ed.) Agrios, George N. 2004. Academic Press, San Diego. (ISBN 978-0120445653)

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

IX. Other Learning Resources

Audiovisual:
Electronic: **https://attra.ncat.org/** **http://www.weedid.wisc.edu/weedid.php** **https://nysipm.cornell.edu/agriculture/vegetables**
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 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.