**EHST 1301**  
INTRODUCTION TO ENVIRONMENTAL TECHNOLOGY  
Wednesday in ESS-3404 from 6:00 to 8:50 p.m.  CRN: 82114  
Three credit hours  

**TERM**  
Full Term Fall Semester 2019

**INSTRUCTOR**  
Lou Rifici  
Assistant Professor of Biology  
On Campus:  Office: **EHCT 211H**, (216) 987-2097, voice mail available  
E-mail: louis.rifici@tri-c.edu

My Personal Web Site:  
http://www.cccprofessorlou.com

Office Hours:  M & W 12:30 until 3:30 pm; T & Th 12:30 until 2:30 pm  
or by appointment

*Course Outcomes and Objectives* are found at the end of this syllabus.

**NEEDED MATERIALS**  
Computer with Internet access, word processing, and printing capabilities

**PREREQUISITES**  
None.

**DETERMINING YOUR FINAL GRADE**

*Quizzes.* Quizzes motivate you to review lessons and readings and provide feedback on your progress. Each will consist of a variety of questions including scenarios that require you to analyze or develop solutions to problems.

*Midterm Test.* Testing you on the content, concepts, issues, and skills presented in the first half of the class, this test will consist of a variety of question types including multiple choice, matching, true/false, fill-in-the-blank, scenarios, and written answer. This test will be one hour long and start at the beginning of class on the date indicated in the schedule.

*Assignments and Worksheets.* When you complete assignments and worksheets, you practice what you have heard and read about in an effort to bring about greater retention and the development of skills. Assignments and worksheets, complete with instructions and due dates, will be announced in class.

*Environmental Careers.* You will choose a career in the environmental or health and safety. You will summarize the duties of the position, the education requirements, experience requirements, expected salary, and future outlook. A complete description of this written assignment will be provided on a separate sheet.
**Final Test.** Similar in form to the midterm, you will be tested on the content, concepts, issues, and skills presented in the last half of the class. Twenty-five points of this test will cover material from the first half of the course. This test will be an hour and a half long and start at the beginning of class on the date indicated in the schedule.

**Reading Assignments.** Web-based readings support the lecture material. Please see the course web page for instructions and a list of these readings. Complete your assigned readings before class. *This is a standing homework assignment* and is a key to getting the highest grade possible. Preparatory reading prior to class will improve your understanding of the lecture material presented and generate questions.

**Grading**

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Number</th>
<th>Point Value</th>
<th>Total Points</th>
<th>% of Final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>4</td>
<td>25</td>
<td>100</td>
<td>20.2</td>
</tr>
<tr>
<td>Midterm Test</td>
<td>1</td>
<td>100</td>
<td>100</td>
<td>20.2</td>
</tr>
<tr>
<td>Assignments and Worksheets</td>
<td>variable</td>
<td>variable</td>
<td>120</td>
<td>24.2</td>
</tr>
<tr>
<td>Environmental Careers Paper</td>
<td>1</td>
<td>50</td>
<td>50</td>
<td>10.1</td>
</tr>
<tr>
<td>Final Test</td>
<td>1</td>
<td>125</td>
<td>125</td>
<td>25.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>495</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

**Grading Scale:** A = >445 points (90%), B = 396 to 445 points (80%), C = 346.5 to 395 points (70%), D = 297 to 346 points (60%), F = <297 points

**Attendance and Makeup Policy**

The College Attendance Tracking Policy says:

“Regular class attendance is expected. Tri-C is required by law to verify the enrollment of students who participate in federal Title IV student aid programs and/or who receive educational benefits through other funding sources. Eligibility for federal student financial aid is, in part, based on your enrollment status.

Students who do not attend classes for the entire term are required to withdraw from the course(s). Additionally, students who withdraw from a course or stop attending class without officially withdrawing may be required to return all or a portion of the financial aid based on the date of last attendance. Students who do not attend the full session are responsible for withdrawing from the course(s).

Tri-C is responsible for identifying students who have not attended a course, before financial aid funds can be applied to students’ accounts. Therefore, attendance will be recorded in the following ways:

For in-person courses, students are required to attend the course by the 15th day of the semester, or equivalent for terms shorter than 5-weeks, to be considered attending. Students who have not met all attendance requirements for an in-person course, as described herein, within the first two weeks of the semester, or equivalent, will be considered not attending and will be reported for non-attendance and dropped from the course.

At the conclusion of the first two weeks of a semester, or equivalent, instructors report any registered students who have “Never Attended” a course. Those students will be administratively withdrawn from that course. However, after the time period in the previous paragraphs, if a student stops attending a class, wants or needs to withdraw, for any reason, it is the student's responsibility to take action to withdraw from the course. Students must complete and submit the appropriate Tri-C form by the established withdrawal.
deadline.

Tri-C is required to ensure that students receive financial aid only for courses that they attend and complete. Students reported for not attending at least one of their registered courses will have all financial aid funds held until confirmation of attendance in registered courses has been verified. Students who fail to complete at least one course may be required to repay all or a portion of their federal financial aid funds and may be ineligible to receive future federal financial aid awards. Students who withdraw from classes prior to completing more than 60 percent of their enrolled class time may be subject to the required federal refund policy.

If illness or emergency should necessitate a brief absence from class, students should confer with instructors upon their return. Students having problems with class work because of a prolonged absence should confer with the instructor or a counselor."

My Policy is:
You are not entitled to make up missed tests and/or assignments. Completing your tests at the scheduled time and place must be a priority. Personal illnesses and personal emergencies are the most valid reasons for missing tests, quizzes, and assignments.

- It is your responsibility to alter your personal schedule so you do not miss tests.
- According to Princeton’s Wordnet, an emergency is a sudden unforeseen crisis (usually involving danger) that requires immediate action.
- Discuss work-related absences with me before or immediately after they happen.

If you miss for a valid reason:
1. Call or write me WITHIN 24 HOURS of the missed date. — THERE ARE NO EXCEPTIONS TO THIS RULE.
   - Give me the reason for your absence
   - Receive instructions about make up, if available
   - Schedule your make up. There is one make up test date, see the schedule in this syllabus.
2. Take the make up test at the scheduled time and place.

Also note: I will decide the content of each make up test. Abuse of the make up policy can lead to it being revoked.

Attendance is not mandatory but will be taken in order to track your participation.

WITHDRAWAL POLICY Regular class attendance is expected. Tri-C is required by law to verify the enrollment of students who participate in Federal Title IV student aid programs and/or who receive educational benefits through other funding sources. Tri-C is responsible for identifying students who have not attended or logged into a class for which they are registered. At the conclusion of the first two weeks of a semester, instructors may report any registered students who have "Never Attended" a class so that those reported students will be administratively withdrawn from that class. However, it is the student’s responsibility to withdraw, using the appropriate Tri-C form, from any class which she/he is no longer attending or risk receiving a failing grade in that class. Student’s wishing to withdraw must complete and submit the appropriate Tri-C form by the established withdrawal deadline. The last day to withdraw from this course is November 15, 2019.

INCOMPLETE POLICY Instructors determine grades, subject to the College’s policies and procedures. A notation of “I” indicates that a student has not completed all course requirements because of circumstances judged by the instructor to be beyond the student’s control. Failure to complete such requirements no later
than the end of the fifth full week of the next semester will result in an “F” (Failing) grade.

YOUR PRIVACY Federal law and College Policy prohibit me from discussing your current and final grades with anyone but you. Therefore, I am unwilling to give grade information over the phone or via e-mail. Please utilize my office hours to discuss current and final grades with me.

ACADEMIC CREDIT Academic Credit According to the Ohio Department of Higher Education, one (1) semester hour of college credit will be awarded for each lecture hour. Students will be expected to work on out-of-class assignments on a regular basis which, over the length of the course, would normally average two hours of out-of-class study for each hour of formal class activity. For laboratory hours, one (1) credit shall be awarded for a minimum of three laboratory hours in a standard week for which little or no out-of-class study is required since three hours will be in the lab (i.e. Laboratory 03 hours). Whereas, one (1) credit shall be awarded for a minimum of two laboratory hours in a standard week, if supplemented by out-of-class assignments which would normally average one hour of out-of-class study preparing for or following up the laboratory experience (i.e. Laboratory 02 hours). Credit is also awarded for other hours such as directed practice, practicum, cooperative work experience, and field experience. The number of hours required to receive credit is listed under Other Hours on the syllabus. The number of credit hours for lecture, lab and other hours are listed at the beginning of the syllabus. Make sure you can prioritize your time accordingly. Proper planning, prioritization and dedication will enhance your success in this course.

ACADEMIC MISCONDUCT Any student found to have committed or to have attempted to commit any act of dishonesty, including cheating, plagiarism, or other forms of academic dishonesty, is subject to the disciplinary sanctions outlined in the Student Judicial System.

Refer to the Student Conduct Code 3354:1-30-03.5 and Student Judicial System 3354:1-30-03.6 for more information about violations and College disciplinary procedures. The Student Conduct and Academic Honor code can be accessed via My Tri-C Space on the Student Services tab. The policies are located in the College Guidelines channel located near the bottom of the page.

ESTABLISHING AND MAINTAINING A HEALTHY CLASSROOM ENVIRONMENT All of us must work to establish and maintain a classroom environment that is inviting, inclusive, and supports learning. Please read my specific Rules for the Classroom located at the class webpage:
http://www.cccprofessorlou.com/resources/Classroom%20Etiquette%202012.pdf

CAMPUS POLICE AND SECURITY SERVICES are dedicated to protecting life and property, while detecting and preventing crime. The department includes police officers, detective bureau, K-9 patrol, security officers, dispatchers, administrative staff, and student patrols.

FOR ASSISTANCE OR TO REPORT A CRIME CALL: Non-emergencies: 216-987-4325
Emergencies: 216-987-4911

When on campus always take note of the two nearest exits and emergency signs in all classrooms. If there is an emergency alarm informing all to evacuate or a fire alarm, immediately take your personal belongings with you. Do not reenter the building until notified by emergency personnel. If there is an alarm for seeking shelter due to inclement weather, go to the lowest level and stay away from windows. Follow the directions of the announcements. A “Lock Down” announcement will require all campus members to stay in the building and not to evacuate/leave.

CONCEALED CARRY STATEMENT College policy prohibits the possession of weapons on college property by
students, faculty and staff, unless specifically approved in advance as a job-related requirement (i.e., Tri-C campus police officers) or, in accordance with Ohio law, secured in a parked vehicle in a designated parking area only by an individual in possession of a valid conceal carry permit. As a Tri-C student, your behavior on campus must comply with the student code of conduct which is available on page 29 within the Tri-C student handbook, available at http://www.tri-c.edu/student-resources/documents/studenthandbook.pdf. You must also comply with the College’s Zero Tolerance for Violence on College Property available at http://www.tri-c.edu/policies-and-procedures/documents/3354-1-20-10-zero-tolerance-for-violence-policy.pdf.

ACCESSIBILITY STATEMENT If you need any special course adaptations or accommodations because of a documented disability, please notify your instructor within a reasonable length of time, preferably the first week of the term with formal notice of that need (i.e. an official letter from the Student Accessibility Services (SAS) office). Accommodations will not be made retroactively. For specific information pertaining to ADA accommodation, please contact your campus SAS office or visit online at http://www.tri-c.edu/accessprograms/. Blackboard accessibility information is available at http://access.blackboard.com.

Eastern (216) 987-2052 - Voice
Metropolitan (216) 987-4344 – Voice. (216) 987-4048 – TTY.
Western (216) 987-5079 – Voice. (216) 987-5117 – TTY.
Off-Site (216) 987-5079 - Voice

LEARNING RESOURCE CENTER Tutors are available in ESS-1108 (987-2256). Check there for hours and availability. If you decide to use a tutor, seek one as soon as possible, make regular visits, and come prepared for each visit. I am available to tutor you by appointment.

LEARNING OUTCOMES ASSESSMENT Occasionally, in addition to submitting assignments to their instructors for evaluation and a grade, students will also be asked to submit completed assignments, called ‘artifacts,’ for assessment of course and program outcomes and the College’s Essential Learning Outcomes (ELOs). The artifacts will be submitted in Blackboard or a similar technology. The level of mastery of the outcome demonstrated by the artifact DOES NOT affect the student’s grade or academic record in any way. However, some instructors require that students submit their artifact before receiving their final grade. Some artifacts will be randomly selected for assessment, which will help determine improvements and support needed to further student success. If you have any questions, please feel free to speak with your instructor or contact the Learning Outcomes Assessment office.

RECYCLING ON CAMPUS Please use the recycling bins located on campus to dispose of your cans, bottles, and paper. Do not place trash or non-recyclable materials into the recycling bins. Be a part of this important effort to conserve resources and reduce pollution.
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>EHST 1301 Lecture Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8/28</td>
<td>Introduction to Environmental Technology</td>
</tr>
<tr>
<td>2</td>
<td>9/4</td>
<td>Basic chemical and physical properties of hazardous materials</td>
</tr>
<tr>
<td>3</td>
<td>9/11</td>
<td>Hydrology and water quality</td>
</tr>
<tr>
<td>4</td>
<td>9/18</td>
<td>Hydrology and water quality, continued</td>
</tr>
<tr>
<td>5</td>
<td>9/25</td>
<td><strong>Quiz 1</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stormwater management technologies</td>
</tr>
<tr>
<td>6</td>
<td>10/2</td>
<td>Stormwater management technologies, continued</td>
</tr>
<tr>
<td>7</td>
<td>10/9</td>
<td>Sanitary sewer technologies and wastewater treatment technologies</td>
</tr>
<tr>
<td>8</td>
<td>10/16</td>
<td>Sanitary sewer technologies and wastewater treatment technologies, continued</td>
</tr>
<tr>
<td>9</td>
<td>10/23</td>
<td><strong>Quiz 2</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drinking water purification technologies</td>
</tr>
<tr>
<td>10</td>
<td>10/30</td>
<td><strong>Midterm Test</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Human toxicology</td>
</tr>
<tr>
<td>11</td>
<td>11/6</td>
<td>Human toxicology, continued</td>
</tr>
<tr>
<td>12</td>
<td>11/13</td>
<td>Basic ecology and ecotoxicology</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Environmental Careers Paper Due</strong></td>
</tr>
<tr>
<td>13</td>
<td>11/20</td>
<td><strong>Quiz 3</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Introduction to Waste and Waste Management</td>
</tr>
<tr>
<td>14</td>
<td>11/27</td>
<td>Air and air pollution control</td>
</tr>
<tr>
<td>15</td>
<td>12/4</td>
<td><strong>Quiz 4</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Air pollution control, continued</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Course conclusions</td>
</tr>
<tr>
<td>Finals</td>
<td>12/11</td>
<td><strong>Comprehensive Final Test</strong></td>
</tr>
<tr>
<td>Week</td>
<td></td>
<td>Make up day</td>
</tr>
</tbody>
</table>

** This schedule is tentative and subject to change at the discretion of the faculty member. All changes will be announced.**
EHST 1301: Introduction to Environmental Technology’s Relationship to Program and Institutional Outcomes

The requirements, classroom topics, classroom activities, and assignments offered in EHST 1301 are specifically designed for you to achieve the Course Outcomes and Objectives, Program Outcomes, and two Essential Learning Outcomes.

Catalog Description: Comprehensive overview of topics relating to the environmental technology field. Concentration on developing awareness of the many facets of science and technology that are involved in environmental management. Field trips may be required.

Course Outcome 1: Recognize common hazard terms and suggest strategies for safely approaching and handling chemical substances.

Objective(s):
1. List and describe common effects of chemical substances on human health.
2. Recognize common hazard terms.
3. Locate basic chemical and physical properties of chemical substances in online publications or databases.
4. Utilize chemical and physical properties of chemical substances to predict hazards and manage the professional's approach to the substances.

Essential Learning Outcome:
Information Literacy: Acquire, evaluate, and use information from credible sources in order to meet information needs for a specific research purpose.

Course Outcome 2: Choose a possible career path in environmental, health and safety to explore further.

Objective(s):
1. Describe the need for and role of environmental technology in the contemporary environmental, health and safety community.
2. Identify sources of employment in the environmental, health and safety field and explore one’s suitability for one or more environmental, health and safety careers.

Course Outcome 3: Explain the use and application of environmental technology in human health and environmental protection.

Objective(s):
1. Describe the need for and role of environmental technology in the contemporary environmental, health and safety community.
2. List and describe common pollutants in and characteristics of sanitary sewage.
3. Describe the relationship between drinking water source and drinking water treatment approaches.
4. List and describe the steps in a typical drinking water treatment train.
5. List and describe the steps in a typical sanitary sewage treatment train.
6. List and describe the common elements of modern municipal solid waste landfill design and hazardous waste landfill design.
7. List and describe the basic design and processes of municipal solid waste incinerators.

Course Outcome 4: Correlate the release of chemical substances from various sources with pollution problems in environmental media.

Objective(s):
1. List and describe common pollutants in and characteristics of sanitary sewage.
2. Differentiate between the acute toxic effects in humans and chronic toxic effects in humans.
3. List common effects of chemical substances on ecological processes or ecological health.
4. Explain common methods used to evaluate the ecological process/health effects of chemical substances.
5. Explain common methods used to evaluate the human health effects of chemical substances.
6. List and describe common ambient air pollutants and their sources.
7. Identify environmental media (i.e., water, air, soil) and/or compartments (i.e., surface water, stormwater, groundwater, ambient air, biota) and their general characteristics.
8. List and describe the components of typical solid waste and their sources.
9. List and describe common measures of water quality.
10. Describe the elements of the natural and urban hydrologic cycles.
11. List and describe common water pollutants and sources.
12. List and describe common stormwater pollutants and sources.

**Course Outcome 5:** Identify 'green' technology solutions to pollution problems as non-traditional alternatives to pollution problems, when appropriate.

**Objective(s):**
1. Describe the need for and role of environmental technology in the contemporary environmental, health and safety community.
2. List and describe 'green' alternatives to municipal solid waste landfilling and incineration.
3. Differentiate between 'green' and 'grey' infrastructure, design, or methodology in environmental, health, and safety.
4. List and describe 'green' and 'grey' approaches to stormwater management.

**EHST Program Outcomes and the College’s Essential Learning Outcomes:** You (the EHST student) must be aware of the EHST Program’s outcomes and the College’s ELOs as you must meet them to be awarded a degree/certificate. The EHST Program Outcomes are:
1. Effectively and efficiently contribute to an organization’s environment, health and safety programs.
2. Recognize, evaluate, and control workplace hazards and environmental stressors.
3. Recognize and administer quality-assurance and quality-control protocols and methodologies to ensure data integrity and reliability for sampling, reporting, permitting, and compliance.
4. Recognize, interpret, and explain environmental, health and safety laws and regulations.
5. Evaluate environmental, health and safety conditions in the workplace and effectively and efficiently explain, both orally and in writing, the appropriate control methods.
6. Evaluate, select, and apply environmental, health and safety technologies and software applications.
7. Articulate the value of a safe workplace and environmental stewardship.
8. Effectively and efficiently transfer environmental, health and safety knowledge.
9. Understand and demonstrate ethical behavior in environmental, health and safety.

*As approved by EHST Advisory Committee, December 10, 2014*

See the most recent College Catalog for a complete list and descriptions of the Essential Learning Outcomes.

*Continued*
Bloom’s Taxonomy

Create

Evaluate

Analyze

Apply

Understand

Remember

Combining parts to make a new whole
Judging the value of information or ideas
Breaking down information into component parts
Applying the facts, rules, concepts, and ideas
Understanding what the facts mean
Recognizing and recalling facts

© tips.uark.edu

For a better understanding of your relationship with Bloom’s Taxonomy visit https://tips.uark.edu/using-blooms-taxonomy/