

Technical College of the Lowcountry
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CET 246 Environmental Systems Technology

Course Description

This course covers a study of the sources, treatment, collection and distribution of water and waste water.
3 Cr (3 lec/pres, 0 lab, 0 other)

Course Focus

The course focus is course is to introduce the fundamentals concepts involved in environmental engineering technology. Sources of drinking water, the parameters of water quality, water purification and distribution are covered. In addition, sanitary sewers, wastewater treatment and disposal and water pollution are covered.

Text and References

Nathanson, Jerry, 2008, Basic Environmental Technology, 5th edition, Prentice Hall

Course Goals

The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives.

1. understand natural hydrologic cycle
2. review urban hydrologic cycle
3. understand streamflow water supply
4. discuss ground source water supply
5. identify water adequate sources
6. review basic chemistry
7. calculate concentrations solution
8. understand pH
9. understand dissolved oxygen
10. review aqueous suspension/colliod
11. calculate TDS/TSS
12. know water turbidity
13. compute BOD
14. scrutinize water testing
15. review biological parameters water
16. discuss coliform testing
17. calculate indicator concentrations organism
18. review drinking water standards
19. describe water treatment steps
20. compute tank detention time
21. calculate overflow rate
22. design sedimentation basin
23. compute filtration rate
24. recognize disinfection techniques

25. review water distribution systems
26. restate pipe materials
27. compute hydrostatic pressure
28. review piping pressure loss
29. predict Hazen-Williams flow
30. identify pipe fitting equivalent length
31. design water distribution system
32. evaluate pipe Hardy Cross network
33. scrutinize pump types
34. observe pump discharge curve
35. calculate pump operating point
36. investigate water storage
37. compute distribution storage system
38. discuss water pollution
39. recall prohibited discharge
40. consider wastewater system piping
41. design sewer reach
42. describe wastewater treatment system
43. compute food microbe ratio
44. design digester volume

Student Contributions

Each student will spend approximately 2.5-5 hours per week preparing for class and completing assignments to turn in weekly and will be in class on time. There will be class quizzes and a final exam. All cell phones and pagers must be silenced during class.

Course Evaluation

The grade scale is as follows:	90 – 100 =	A
	80 – 89 =	B
	70 – 79 =	C
	60 – 69 =	D
	Below 60 =	F

Course grades will be determined from the following weighting scheme:

Attendance/Homework completion	40%
Quizzes	40%
Final Exam	20%

Course Schedule

The class meets for 1 lecture per week for 4.25 hours. Course content will be taught in the order that the content goals are presented in the syllabus.

ADA Statement

The Technical College of the Lowcountry provides access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodation, contact the counselor for students with disabilities at (843) 525-8228 during the first ten business days of the academic term.

Academic Misconduct

There is no tolerance at TCL for academic dishonesty and misconduct. The College expects all students to conduct themselves with dignity and to maintain high standards of responsible citizenship.

It is the student's responsibility to address any questions regarding what might constitute academic misconduct to the course instructor for further clarification.

The College adheres to the Student Code for the South Carolina Technical College System. Copies of the Student Code and Grievance Procedure are provided in the *TCL Student Handbook*, the Division Office, and the Learning Resources Center.

Attendance

The College's statement of policy indicates that students must attend ninety percent of total class hours or they will be in violation of the attendance policy.

- Students not physically attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
- Students taking an online/internet class must sign in **and** communicate with the instructor within the first ten calendar days from the start of the semester to indicate attendance in the class. Students not attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
- Reinstatement requires the signature of the division dean.

In the event it becomes necessary for a student to withdraw from the course **OR if a student stops attending class, it is the student's responsibility to initiate and complete the necessary paperwork.** Withdrawing from class may have consequences associated with financial aid and time to completion.

When a student exceeds the allowed absences; the student is in violation of the attendance policy. The instructor **MUST** withdraw the student with a grade of "W", "WP", or "WF" depending on the date the student exceeded the allowed absences and the student's progress up to the last date of attendance *or* under extenuating circumstances and at the discretion of the faculty member teaching the class, allow the student to continue in the class and make-up the work. This exception must be documented at the time the allowed absences are exceeded.

Absences are counted from the first day of class. There are no "excused" absences. All absences are counted, regardless of the reason for the absence.

- A student must take the final exam or be excused from the final exam in order to earn a non-withdrawal grade.

A copy of TCL's **STATEMENT OF POLICY NUMBER: 3-1-307 CLASS ATTENDANCE (WITHDRAWAL)** is on file in the Division Office and in the Learning Resources Center.

Hazardous Weather

In case weather conditions are so severe that operation of the College may clearly pose a hardship on students and staff traveling to the College, notification of closing will be made through the following radio and television stations: WYKZ 98.7, WGCO 98.3, WGZO 103.1, WFXH 106.1, WWVV 106.9, WLOW 107.9, WGZR 104.9, WFXH 1130 AM, WLVH 101.1, WSOK 1230 AM, WAEV 97.3, WTOC TV, WTGS TV, WJWJ TV, and WSAV TV. Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. www.tcl.edu/textalert.asp

Emergency Text Message Alert

Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. Participants receive immediate notification of emergency events and weather cancelations via text messaging on their cell phones. Participants can also opt in to receive non-emergency news and announcements. Go to www.tcl.edu. On the homepage, click on “emergency Text Alert at TCL” and fill out the form or go to www.tcl.edu/textalert.asp