



CE 3703: ENVIRONMENTAL ENGINEERING DESIGN

Instructor Details

Instructor: Roneisha Worthy, PhD
My Office: L-159
Office Hrs: Mondays: 12:00 – 1:00 pm,
2:00 – 3:00 pm
Wednesdays: 12:00 – 1:00,
2:00 – 3:00 pm
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Only

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Course Details

Term: Spring 2017
Classroom: Q 216
Time: MW 3:30-4:45
Credit: 3-0-3 (Lecture-Lab-Total)
Hours:

Prerequisites: CE 3702 and CE 3704
Corequisite: None

2016-2017 COURSE DESCRIPTION: This course introduces students to environmental engineering design of unit processes and pollution abatement systems such as: water treatment plant design, wastewater treatment plant design, and sludge management system design.

REQUIRED or ELECTIVE: Required for EnvE program and Elective for CE program.

TEXT BOOK: **Introduction to Environmental Engineering** by Mackenzie L. Davis and David A. Cornwell, McGraw-Hill Book Company, Current Edition (Fifth Edition, 2013; ISBN: 978-0-7-340114-0).

REFERENCES:

1. **Unit Operations and Processes in Environmental Engineering** by Tom D. Reynolds and Paul A. Richards, PWS Publishing Company, Current Edition (Second Edition, 1995, ISBN: 053494884-7).
2. **Integrated Design and Operation of Water Treatment Facilities** by Susumu Kawamura, John Wiley & Sons, Inc., Current Edition (Second Edition, 2000, ISBN: 0-471-35093-1).
3. **Water Treatment Principles and Design** by MWH, John Wiley & Sons, Inc., Current Edition (Second Edition, 2005, ISBN: 0-471-11018-3).
4. **Wastewater Engineering Treatment and Reuse** by Metcalf & Eddy, Inc., McGraw-Hill Book Company, Current Edition (Fourth Edition, 2003, ISBN-13: 978-0-07-041878-3, ISBN-10: 0-07-041878-0).
5. **Wastewater Treatment Plants Planning, Design and Operation** by Syed R. Qasim, CRC Press, Current Edition (Second Edition, 1999, ISBN: 1-56676-688-5).

OTHER MATERIALS: Handouts may be provided as needed. **KSU email** and **Desire 2 Learn (D2L)** systems will be used for messages and part of the content delivery. Students should access these sites regularly.

COURSE LEARNING OUTCOMES:

1. Analyze and design water treatment process units using applicable design codes and regulations.[c, h]
2. Analyze and design wastewater treatment process units using applicable design codes and regulations.[c, h]
3. Analyze and design sludge treatment units using applicable design codes and regulations. [c, h]
4. Demonstrate the ability to work in a group. [d]
5. Demonstrate the ability to write technical and professional reports using modern software such as Words, Excel, PowerPoints, AutoCAD, etc. [k]

TOPICS COVERED:

1. Water treatment plant design
2. Wastewater treatment plant design
3. Sludge treatment unit design

ABET PROGRAM OUTCOMES:

ABET	Environmental Engineering	Description
a	1	an ability to apply knowledge of mathematics, science, and engineering
b	2	an ability to design and conduct experiments, as well as to analyze and interpret data
c	3	an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
d	4	an ability to function on multi-disciplinary teams
e	5	an ability to identify, formulate, and solve engineering problems
f	6	an understanding of professional and ethical responsibility
g	7	an ability to communicate effectively
h	8	the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
i	9	a recognition of the need for, and an ability to engage in life-long learning
j	10	a knowledge of contemporary issues
k	11	an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

COURSE REQUIREMENTS:

1. **Attendance:** Students are expected to attend class. Advance notice of an absence should be provided whenever possible. Makeup exams, quizzes, and acceptance of late assignments will be considered only for documented medical reasons, emergency circumstances, or other university sponsored activities. *The instructor can initiate withdrawal of a student from the course or fail the student in the course if a student is absent in 3 classes without any valid reason/excuse.*

2. **Homework:** Each group will be responsible for submitting a weekly Project Progress Report. These reports will be part of the Homework Grade Component in addition to your Engineering Logbook.
3. **Exams/Quizzes:** Exams and/or quizzes will be initiated at the discretion of the instructor. Primary cause for exam and/or quiz scheduling will be associated with student work ethic. Exam/Quiz grades will be included in the “Projects” Grading Category.
4. **Class/Lab Decorum:** No cell phone use, checking emails, eating, and/or multitasking are allowed during the class. For emergency, cell phone can be operated in vibration mode; however, students can receive an emergency call only stepping out of the class room. No feet on the table and/or on the nearby chair are allowed during the class. It is also encouraged not to bring any foods in the class.
5. **What is Plagiarism?** KSU defines Plagiarism as the practice of taking someone else’s work or ideas and passing them off as one’s own. When unaware or uncertain on how to properly cite a particular source, please do not neglect to add the citation — KSU considers not doing so as plagiarism. If you have questions on how to cite your work, please contact me immediately! For more information, please refer to the “Plagiarism Policy” under the *Policies* section of this syllabus.
6. **Plagiarism Policy:** KSU considers committing plagiarism as an act of academic dishonesty, and takes all occurrences very seriously. Any instances where academic dishonesty is suspected will result in an automatic grade of a zero for all students involved. The instructor reserves the right to remove any student from the class if the student’s behavior is of a disruptive nature or if there is an evidence of academic dishonesty. Further disciplinary action may be taken such as suspension or expulsion from the University.
7. **FERPA:** The Family Education Rights and Privacy Act (FERPA) is a federal law designed to protect the privacy of educational records by limiting access to these records, and precludes Southern Polytechnic State University from providing information regarding the student to anyone without written authorization. Examples of records not released are grades; grade point average; the specific number of hours/credits enrolled, passed, or failed; Social Security Number; student ID number; name of parents or next of kin; and/or residency status.
8. **Ethics/Sexual Harassment Policy:** Sexual harassment in any situation is reprehensible. It subverts the mission of the University, and threatens the careers of students, faculty, and staff. It is viewed as a violation of Title VII of the 1964 Civil Rights Act as amended by the 1991 Civil Rights Act. Sexual harassment will not be tolerated at Southern Polytechnic. Southern Polytechnic State University is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, color, sex, national origin, disability, age, sexual orientation, or veteran status. In adhering to this policy, the University abides by the requirements of Title IX of the Education Amendments of 1972; by Title VII of the Civil Rights Act of 1964, as amended by the Civil Rights Acts of 1991; by Sections 504 and 504 of Rehabilitation Act of 1973; by Executive Order 11246, as amended by 38 U.S.C. 2012; the Vietnam Era Veterans Readjustment Assistance Act of 1972, as amended; and by other

applicable statutes and regulations relating to equality of opportunity. This policy on sexual harassment applies to the entire University and to the conduct of students, faculty, and staff alike.

9. **Honor Code:** KSU has an Honor Code and a procedure for handling cases when academic misconduct is alleged. All students should be aware of them. Information about the Honor Code and the misconduct procedure may be found at <http://www.spsu.edu/honorcode/>.
10. **Grade Dispute/Appeal:** Final grade dispute/appeal must be submitted within a week of the final exam. The procedure has been outlined in the SPSU/KSU website that can be accessed via the link at http://www.spsu.edu/business/faq_suggestions/gafaq.htm.
11. **ADA Provisions:** “Students with disabilities, as defined by the Americans with Disabilities Act (ADA) of 1990, should contact the instructor during the first week of the semester regarding the accommodations necessary to complete the requirements of this course. The instructor, with the help of KSU, will make reasonable adjustments to take into consideration the specific handicap of each student covered under the ADA. The students can also contact KSU ADA coordinator at 678-915-7244 for additional help.”
12. **Communications, Grading, and Response Timeframe:** The best way to communicate with an instructor is by KSU email. Grading of homework/ assignments /exams may take at least one week. I will try to respond to any discussions/ comments/ questions within 48 hours. However, I may not be available during the weekend.
13. **Grade Dispute/Appeal:** Final grade dispute/appeal must be submitted within a week of the final exam. The procedure has been outlined in the KSU website.
14. **Contacts to get Help:**
 - For D2L Technical Support, go to <https://d2lhelp.view.usg.edu/> or call 678-915-HELP
 - For Wimba Technical Support, go to <http://www.wimba.com/services/support/>
 - For KSU Writing Center help, go to writingcenter.kennesaw.edu or stop by English Building, Room 242 (Kennesaw campus) or Johnson Library, Room 121 (Marietta campus)

GRADING POLICY

All exams and assignments must be completed satisfactorily in order to pass the course. The evaluation process described below is subject to change by the instructor. Changes will be announced in the class.

1. Course Requirements and Grading

Projects (includes: oral and written evaluations and quizzes/exams):	50 %
Homework and Engineering Logbook:	25%
Peer Evaluation:	25%

2. Grading Scale

A	90.0-100.0	B	80.0-89.4	C	70.0-79.4
D	60.0-69.4	F	< 60.0		