

 FLORIDA ATLANTIC UNIVERSITY	COURSE CHANGE REQUEST Graduate Programs		UGPC Approval _____ UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner Posted _____ Catalog _____
	Department Civil, Environmental & Geomatics Engineering College College of Engineering & Computer Science		
Current Course Prefix and Number ENV6507		Current Course Title Waste Water Treatment	
<i>Syllabus must be attached for ANY changes to current course details. See <u>Guidelines</u>. Please consult and list departments that may be affected by the changes; attach documentation.</i>			
Change title to: Change prefix From: _____ To: _____ Change course number From: _____ To: _____ Change credits* From: _____ To: _____ Change grading From: _____ To: _____ <small>*Review Provost Memorandum</small>		Change description to: Change prerequisites/minimum grades to: None Change corequisites to: None Change registration controls to: Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade.	
Effective Term/Year for Changes: Fall 2019		Terminate course? Effective Term/Year for Termination:	
Faculty Contact/Email/Phone Ramesh Teegavarapu, 297-3444			
Approved by Department Chair _____ College Curriculum Chair _____ College Dean _____ UGPC Chair _____ UGC Chair _____ Graduate College Dean _____ UFS President _____ Provost _____		Date 02/26/2019 3/11/19 3/11/2019 _____ _____ _____ _____	

Email this form and syllabus to UGPC@fau.edu one week before the UGPC meeting.

**Department of Civil Environmental and Geomatics Engineering
Florida Atlantic University
Course Syllabus**

1. Course title/number, number of credit hours	
Wastewater Engineering – ENV 6507	3 credit hours
2. Course prerequisites, corequisites, and where the course fits in the program of study	
Prerequisites: None	
3. Course logistics	
<p><i>Term:</i> Spring 2016 This is a classroom lecture course <i>Class location and time:</i> W 7:10 – 10:00 pm (Lecture) CM-125</p> <p>Homework assignments are given weekly, typically. Field trips will be scheduled. A major design report and oral presentation is required. Examinations consist of a midterm and a final.</p>	
4. Instructor contact information	
<i>Instructor's name</i> <i>Office address</i> <i>Office Hours</i> <i>Contact telephone number</i> <i>Email address</i>	Dr. Daniel E. Meeroff, Professor and Associate Chair Engineering West (EG-36) Bldg., Room 206 TBA 561-297-3099 dmeeroff@fau.edu
5. TA contact information	
<i>TA's name</i> <i>Office address</i> <i>Office Hours</i> <i>Contact telephone number</i> <i>Email address</i>	TBA
6. Course description	
Wastewater characterization, collection, and pumping. Physical, chemical and biological treatment unit process design including screening, sedimentation, filtration, activated sludge, disinfection, sludge digestion, and sludge disposal.	
7. Course objectives/student learning outcomes/program outcomes	
<i>Course objectives</i>	A. Present the fundamental principles applied in the analysis, design, modeling, and operation of engineered solutions for wastewater management. B. Present the issues and constraints involved with wastewater engineering applications. C. Relate theory to real life problems with the design of engineered systems for wastewater management. D. Expose students to the complex interaction between environmental problems and the needs of society.

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<p><i>Student learning outcomes & relationship to ABET a-k objectives</i></p>	<ol style="list-style-type: none"> 1. Ability to understand the chemistry, biological, ecological, and physical concepts necessary to analyze basic wastewater engineering problems. (a, b, c, e, f, h, k) 2. Ability to understand the of the physical, chemical, and biological unit processes for wastewater treatment and to apply these concepts to determine design specifications (a, b, e, f, h, k) 3. Ability to understand the important local, regional, and global problems as they relate to wastewater engineering problems (b, e, f, h, j) 4. Ability to understand the process of wastewater engineering management, including pertinent laws and regulations (e, f, h, j, k) 5. Ability to perform advanced-level design in wastewater engineering (a, b, e, f, h, k) 6. Ability to communicate effectively about issues in environmental engineering (d, e, f, g, i) 										
<p><i>Relationship to program outcomes</i></p>	<p>Outcome 1: An ability to apply knowledge in civil engineering and related subjects significantly beyond the baccalaureate level.</p>	<p>High</p>									
	<p>Outcome 2: An ability to communicate their ideas in written, oral, and graphical forms.</p>	<p>High</p>									
	<p>Outcome 3: An ability to independently conduct research or a significant practice-oriented project in civil engineering.</p>	<p>High</p>									
<p>8. Course evaluation method</p>											
<table border="0"> <tr> <td>Class assignments</td> <td style="text-align: right;">18%</td> </tr> <tr> <td>Midterm</td> <td style="text-align: right;">17%</td> </tr> <tr> <td>Final exam</td> <td style="text-align: right;">33%</td> </tr> <tr> <td>Design report/presentation</td> <td style="text-align: right;">27%</td> </tr> <tr> <td>Class participation</td> <td style="text-align: right;">5%</td> </tr> </table>	Class assignments	18%	Midterm	17%	Final exam	33%	Design report/presentation	27%	Class participation	5%	<p><i>Note:</i> The minimum grade required to pass the course is C.</p> <ul style="list-style-type: none"> • <i>Academic Service-Learning assessments count toward the Design report/presentation component of the grade.</i> • <i>Reflection assignment counts toward the Class Assignments component of the grade.</i>
Class assignments	18%										
Midterm	17%										
Final exam	33%										
Design report/presentation	27%										
Class participation	5%										
<p>9. Course grading scale</p>											
<p>Grading Scale: 90 and above: "A", 87-89: "A-", 83-86: "B+", 80-82: "B", 77-79 : "B-", 73-76: "C+", 70-72: "C", 67-69: "C-", 63-66: "D+", 60-62: "D", 51-59: "D-", 50 and below: "F."</p>											
<p>10. Policy on makeup tests, late work, and incompletes</p>											
<p><i>Makeup tests</i> are given only if there is solid evidence of a medical or otherwise serious emergency that prevented the student of participating in the exam. Makeup exam should be administered and proctored by department personnel unless there are other pre-approved arrangements. As one worst quiz will be dropped, there will be no make-up quizzes.</p> <p><i>Late work</i> is not unacceptable.</p> <p><i>Incomplete grades</i> are against the policy of the department. Unless there is solid evidence of medical or otherwise serious emergency situation incomplete grades will not be given.</p>											
<p>11. Special course requirements ACADEMIC SERVICE-LEARNING STATEMENT</p>											
<p>This course is designated as an "academic service-learning" course. The assistance you provide to the agency/organization during your academic service-learning (AS-L) experience is a service to the community and will</p>											

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allow you to apply knowledge from the course to local, national, and/or global social issues. Throughout this course you will be participating in AS-L activities while demonstrating civic engagement at campus, local, national, and/or global community levels. You will also reflect on your AS-L experience and the impact on the community as well as your professional development. Academic service-learning notation of hours will post to your transcript with submission of hours to your faculty instructor. An Academic Service-Learning Student Survey is required to be taken at the end of your AS-L project. Please visit the Weppner Center for LEAD & Service-Learning website, www.fau.edu/leadandserve, for the survey link and more information on FAU's Academic Service-Learning program. Minimum Hours: 10

Assumption of Risk Statement for Student:

I understand that there are certain physical risks inherent in every form of service-learning. I understand the risks associated with this Academic Service-Learning assignment. I nonetheless agree to assume those risks so as to gain the benefits from participation in this valuable learning experience. I hereby release the State of Florida, the Board of Trustees, Florida Atlantic University and its agents and employees from any and all liability associated with my participation in this assignment at Florida Atlantic University.

12. Classroom etiquette policy

University policy requires that in order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular phones and laptops, are to be disabled in class sessions.

13. Disability policy statement

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS)—in Boca Raton, SU 133 (561-297-3880); in Davie, LA 203 (954-236-1222); or in Jupiter, SR 110 (561-799-8585)—and follow all SAS procedures.

14. Honor code policy

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and place high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. See University Regulation 4.001 at [www.fau.edu/regulations/chapter4/4.001 Code of Academic Integrity.pdf](http://www.fau.edu/regulations/chapter4/4.001%20Code%20of%20Academic%20Integrity.pdf)

15. Required texts/reading

1. Metcalf and Eddy, Wastewater Engineering: Treatment and Reuse, Fifth Edition. McGraw-Hill, 2013. ISBN: 978-0-07-340118-8.
2. Handouts provided by instructor.
3. Blackboard registration.

16. Supplementary/recommended readings

1. "Recommended Standards for Water Works" (Ten-State Standards), Health Education Services, Albany, NY, Latest version.
2. "Gravity Sanitary Sewer Design and Construction," ASCE Manuals and Reports on Engineering Practice No: 60, WPCF Manual of Practice No FD-5, 1982.
3. "Design of Municipal Wastewater Treatment Plants," WEF Manual of Practice No: 8, ASCE Manual and Report on Engineering Practice No: 76, Vol.I & Vol.II., 1991.
4. Vesilind, P.A., Treatment and Disposal of Wastewater Sludges, Revised Edition, Ann Arbor Science, 1979.

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17. Course topical outline, including dates for exams/quizzes, papers, completion of reading	
Date	Topic
Week 1	Introduction; Overview; Wastewater Regulations Constituents; Flows and Loadings
Week 2	Process Analysis; Reactor Design
Week 3	Physical Unit Operations; Pretreatment
Week 4	Primary Wastewater Treatment; Chemical Treatment Fundamentals of Biological Treatment
Week 5	MIDTERM EXAM
Week 6	Suspended Growth Treatment
Week 7	Attached Growth Treatment
Week 8	Disinfection
Week 9	Effluent Disposal
Week 10	Advanced Wastewater Treatment & Reuse
Week 11	Biosolids Management (Thickening, Digestion) Biosolids Management (Dewatering, Drying)
Week 12	Performance Issues & Process Control
Week 13	Design of Sewers; Lift Station Design
Week 14	Reuse and Disposal of Residuals; Constructed Wetlands Treatment Plant
Week 15	FINAL EXAM
Week 16	FINAL PRESENTATIONS