



**FLORIDA  
ATLANTIC  
UNIVERSITY**

**COURSE CHANGE REQUEST  
Graduate Programs**

**Department** Civil, Environmental & Geomatics Engineering  
**College** College of Engineering & Computer Science

UGPC Approval \_\_\_\_\_  
UFS Approval \_\_\_\_\_  
SCNS Submittal \_\_\_\_\_  
Confirmed \_\_\_\_\_  
Banner Posted \_\_\_\_\_  
Catalog \_\_\_\_\_

**Current Course Prefix and Number** ENV6418

**Current Course Title**  
Water Supply Treatment

*Syllabus must be attached for ANY changes to current course details. See Guidelines. Please consult and list departments that may be affected by the changes; attach documentation.*

**Change title to:**

**Change description to:**

**Change prefix**

**From:** \_\_\_\_\_ **To:** \_\_\_\_\_

**Change prerequisites/minimum grades to:**

None

**Change course number**

**From:** \_\_\_\_\_ **To:** \_\_\_\_\_

**Change corequisites to:**

None

**Change credits\***

**From:** \_\_\_\_\_ **To:** \_\_\_\_\_

**Change registration controls to:**

**Change grading**

**From:** \_\_\_\_\_ **To:** \_\_\_\_\_

Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade.

\*Review Provost Memorandum

**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

3/22/2019

3/27/19

3/27/2019

Email this form and syllabus to [UGPC@fau.edu](mailto:UGPC@fau.edu) one week before the UGPC meeting.

**GRADUATE COLLEGE**


**MAR 12 2019**

Received \_\_\_\_\_



COLLEGE OF ENGINEERING & COMPUTER SCIENCE  
Department of Civil, Environmental and Geomatics Engineering  
777 Glades Road, Bldg. #96, 403E  
Boca Raton, FL 33431  
tel: 561.297.3444

Memorandum

DATE: March 22, 2019  
TO: UGPC, Graduate College   
FROM: Dr. Ramesh Teegavarapu, Professor and Graduate Program Director, Civil Environmental and Geomatics Engineering (CEGE)  
SUBJECT: Requesting for changes in pre-requisites for multiple courses.

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CEGE department is request the following changes in the catalog.

**Advanced Foundation Engineering (CEG 6105) 3 credits**

Existing: Prerequisites: CEG 4012.

Requested Change: Prerequisites: None

**Pavement Analysis and Design (CEG 6129) 3 credits**

Existing Prerequisites: CEG 3011C, CGN 3501C

Requested Change: Prerequisites: None

**Finite Element Methods in Civil Engineering (CES 6119) 3 credits**

Existing: Prerequisites: CEG 4012

Requested Change: Prerequisites: None

**Airport Planning and Design (TTE 6526) 3 credits**

Existing Prerequisites: Permission of instructor

Requested Change: Prerequisites: None

**Soli-Stabilization and Geosynthetics (CEG 6124) 3 credits**

Existing Prerequisites: CEG 3011C, CGN 3501C

Requested Change: Prerequisites: None

**Water Supply Treatment (ENV 6418) 3 credits**

Prerequisite: ENV 3001C

Requested Change: Prerequisites: None

**WasteWater Engineering (ENV6507) 3 credits**

Prerequisites: ENV 3001C

Requested Change: Prerequisites: None

**Highway Engineering (TTE6815) 3 credits**

Prerequisites: CEG 3011C, CWR 4202 and EGN 3331 or equivalent

Requested Change: Prerequisites: None

GRADUATE COLLEGE

MAR 25 2019

Received

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

<b>1. Course title/number, number of credit hours</b>	
Water Supply and Treatment – ENV 6418	3 credit hours
<b>2. Course prerequisites, corequisites, and where the course fits in the program of study</b>	
Prerequisites: None	
<b>3. Course logistics</b>	
<p><i>Term:</i> Spring 2018  This is a classroom lecture course also available in distance learning format  <i>Class location and time:</i> T 1:00 -3:50 PM (Lecture) FL 424</p> <p>Homework assignments are given weekly, typically. Field trip(s) will be scheduled.  A major design report and oral presentation is required. Examinations consist of a midterm and a final.</p>	
<b>4. Instructor contact information</b>	
<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 Engineering West (EG-36) Bldg., Room 206 T and Th 11:00 -1:00 PM 561-297-3099 dmeeroff@fau.edu
<b>5. TA contact information</b>	
<i>TA's name</i> <i>Office address</i> <i>Office Hours</i> <i>Contact telephone number</i> <i>Email address</i>	TBA
<b>6. Course description</b>	
Bacteriological, chemical, and physical water quality standards; distribution systems; water treatment theory and design; aeration; coagulation and flocculation; sedimentation; filtration; disinfection; softening; membranes.	
<b>7. Course objectives/student learning outcomes/program outcomes</b>	
<i>Course objectives</i>	A. Present the fundamental principles applied in the analysis, design, modeling, and operation of engineered solutions for potable water. B. Present the issues and constraints involved with potable water engineering applications. C. Relate theory to real life problems with the design of engineered systems for potable water management. D. Expose students to the complex interaction between potable water supply and treatment issues and the needs of society.

GRADUATE COLLEGE

MAR 25 2019

Received

ENV6418 – Water Supply and Treatment  
Spring 2018  
Meeroff



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<i>Student learning outcomes &amp; relationship to ABET a-k objectives</i>	<p>A. Ability to understand the chemistry, biological, ecological, and physical concepts necessary to analyze basic potable water engineering problems. (a, b, c, e, f, h, k)</p> <p>B. 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)</p> <p>C. Ability to understand the important local, regional, and global problems as they relate to potable water engineering solutions (b, e, f, h, j)</p> <p>D. Ability to understand the process of potable water engineering management, including pertinent laws and regulations (e, f, h, j, k)</p> <p>E. Ability to perform advanced-level design in water supply engineering (a, b, e, f, h, k)</p> <p>F. Ability to communicate effectively about issues in water supply engineering (d, e, f, g, i)</p>											
<b>8. Course evaluation method</b>												
<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"> <li>• <i>Academic Service-Learning assessments count toward the Design report/presentation component of the grade.</i></li> <li>• <i>Reflection assignment counts toward the Class Assignments component of the grade.</i></li> </ul>	
Class assignments	18%											
Midterm	17%											
Final exam	33%											
Design report/presentation	27%											
Class participation	5%											
<b>9. Course grading scale</b>												
<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>												
<b>10. Policy on makeup tests, late work, and incompletes</b>												
<p><i>Exams</i> will be given only at the scheduled times and places, unless previous arrangements have been made no less than one (1) full week in advance. No one is exempt from exams. <i>Makeups</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 exams will be administered and proctored by department personnel unless there are other pre-approved arrangements.</p> <p><i>Late work</i> is not acceptable. <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. Note: Incomplete grades are only reserved for those students who were passing but could not complete the required work due to exceptional circumstances.</p>												
<b>11. Special course requirements</b>												
<b>ACADEMIC SERVICE-LEARNING STATEMENT</b>												
<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 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 &amp; Service-Learning website, <a href="http://www.fau.edu/leadandserve">www.fau.edu/leadandserve</a> , for the survey link and more information on FAU's Academic Service-Learning program. Minimum hours: 10</p>												

**Department of Civil Environmental and Geomatics Engineering  
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**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 face-to-face class sessions. Please review the university Netiquette policy guidelines at <http://www.fau.edu/irm/about/netiquette.php>. Remember you are an adult—your communication with the professor and your classmates should be appropriate. You are responsible for reading all announcements posted by the instructor. Check the announcements each time you login to be sure you have read all of them since your last login session. Except for Saturdays, Sundays, and holidays, I will respond to messages generally within 48 hours.

**13. Attendance Policy Statement**

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance.

Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

**14. 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) and follow all SAS procedures. SAS has offices across three of FAU's campuses – Boca Raton, Davie and Jupiter – however disability services are available for students on all campuses. For more information, please visit the SAS website at [www.fau.edu/sas/](http://www.fau.edu/sas/).

**15. Counseling and Psychological Services (CAPS) Center**

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to <http://www.fau.edu/counseling/>

**16. Code of Academic Integrity Policy Statement**

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 an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation



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4.001. If your college has particular policies relating to cheating and plagiarism, state so here or provide a link to the full policy—but be sure the college policy does not conflict with the University Regulation.

**17. Required texts/reading**

1. Qasim, S.R., Motely, E.M., and Zhu, Guang, *Water Works Engineering: Planning, Design, and Operation*, Prentice Hall, 2000.
2. Handouts provided by instructor.
3. Canvas registration.

**18. Supplementary/recommended readings**

1. AWWA, *Water Quality and Treatment*, Sixth Edition. McGraw-Hill, 2011.
2. Hammer, M.J. and Hammer, M.J., Jr., *Water and Wastewater Technology* 4th Edition, Prentice Hall, 2001.
3. "Recommended Standards for Water Works" (Ten-State Standards), Health Education Services, Albany, NY, 2003.
4. HDR Engineering, *Handbook of Public Water Systems* 2nd Edition, Wiley, 2001.
5. Hwang, N.D.H. and Houghtalen, R.J. *Fundamentals of Hydraulic Engineering Systems* 3rd Edition. Prentice Hall, 1996.
6. Viessman, W., Jr. and Hammer M.J., *Water Supply and Pollution Control* 6th Edition, Addison Wesley Longman, 1998.
7. Reynolds and Richards (1996). *Unit Operations and Processes in Environmental Engineering*. PWS Publishing.

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Course Syllabus**

<b>19. Course topical outline</b>		
Date	Topic	HW Assignment
Week 1	<ul style="list-style-type: none"> <li>• Introduction; Overview; Drinking Water Regulations</li> <li>• Water Chemistry/Aquatic Microbiology</li> </ul>	
Week 2	<ul style="list-style-type: none"> <li>• Source Water Quality</li> <li>• Water Processing</li> </ul>	<ul style="list-style-type: none"> <li>• Consumer confidence report discussion board</li> </ul>
Week 3	<ul style="list-style-type: none"> <li>• Considerations, Water Demands</li> <li>• Water Constituents</li> </ul>	<ul style="list-style-type: none"> <li>• Type of water discussion board</li> </ul>
Week 4	<ul style="list-style-type: none"> <li>• Raw Water Intake, Screening</li> <li>• Aeration</li> </ul>	<ul style="list-style-type: none"> <li>• Demand discussion board</li> </ul>
Week 5	<ul style="list-style-type: none"> <li>• Disinfection Theory</li> <li>• Disinfection Processes, Fluoridation</li> </ul>	<ul style="list-style-type: none"> <li>• HW#1</li> </ul>
Week 6	<ul style="list-style-type: none"> <li>• Filtration Theory</li> <li>• Filter Design</li> </ul>	<ul style="list-style-type: none"> <li>• HW#2</li> </ul>
Week 7	<ul style="list-style-type: none"> <li>• Membrane Processes/Ion Exchange</li> <li>• Adsorption</li> </ul>	<ul style="list-style-type: none"> <li>• Design deliverable #1</li> </ul>
Week 8	<ul style="list-style-type: none"> <li>• <b>Midterm Exam</b></li> </ul>	
Week 9	<ul style="list-style-type: none"> <li>• Rapid-Mixing</li> <li>• Flocculation/Coagulation</li> </ul>	<ul style="list-style-type: none"> <li>• HW#3</li> </ul>
Week 10	<ul style="list-style-type: none"> <li>• Precipitation Reactions</li> <li>• Lime Softening</li> </ul>	<ul style="list-style-type: none"> <li>• Design deliverable #2</li> </ul>
Week 11	<ul style="list-style-type: none"> <li>• Sedimentation</li> </ul>	<ul style="list-style-type: none"> <li>• HW#4</li> </ul>
Week 12	<ul style="list-style-type: none"> <li>• Water Distribution Systems</li> <li>• Hardy Cross Analysis</li> </ul>	
Week 13	<ul style="list-style-type: none"> <li>• Pumping/Distribution</li> <li>• Water Storage</li> </ul>	<ul style="list-style-type: none"> <li>• HW#5</li> </ul>
Week 14	<ul style="list-style-type: none"> <li>• Treatment Plant Performance Issues</li> <li>• Residuals Management</li> </ul>	
Week 15	<ul style="list-style-type: none"> <li>• Design Project Presentations</li> </ul>	<ul style="list-style-type: none"> <li>• Design deliverable #3</li> </ul>
Week 16	<ul style="list-style-type: none"> <li>• <b>Final Exam</b></li> </ul>	<ul style="list-style-type: none"> <li>• Design deliverable #4</li> </ul>