Land and Water Resources Engineering
ABE3212C

Class Periods: T 8:30-10:25 am (periods 2-3), R 9:35-10:25 am (period 3), R 3:00-6:00 pm (periods 8-10)
Location: Frazier Rogers Hall 211
Academic Term: Spring 2020

Instructor:
Dr. Rafael Muñoz-Carpena
carpena@ufl.edu
352-392-1864 x 287
Office hours: immediately after class and by appointment
Office location: 287 Frazier Rogers Hall

Teaching Assistants:
Please contact through the Canvas website

Alvaro Carmona-Cabrero
acarmonacabrero@ufl.edu
Office location: 284 Frazier Rogers Hall
Office hours: W 10:00-12:00 or by appointment

Edwin Mosimanyana
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Office location: 284 Frazier Rogers Hall
Office hours: TBA

Course Description
Credits: 4

Introduction to hydrology, flow through porous media, flood routing, grade control structures and erosion control.

Course Pre-Requisites / Co-Requisites
Prereq: ENV3040C and MAP2302; Coreq: CWR3201 or EGN3353C.

Course Objectives
- Gain the fundamental knowledge of the various components of the hydrologic cycle.
- Use engineering principles to analyze and interpret rainfall-runoff data.
- Apply biological principles to land and water resources engineering data.
- Utilize current computer software to analyze runoff hydrographs and design appropriate outflow devices and retention ponds
- Gain knowledge of the land and water resources field as it relates to societal issues both locally and globally.

Materials and Supply Fees
$30.

Professional Component (ABET):
- This course contributes 4 credit hours toward meeting the minimum 48 credit hours of Engineering.

- Topics in the basic level curriculum for the Bachelor of Science: Degree in Agricultural and Biological Engineering

Relation to Program Outcomes (ABET):
This course addresses the following ABET outcomes.

Outcome	Coverage*
1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	Medium
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	High
3. an ability to communicate effectively with a range of audiences	Medium
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	Medium
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies	

Coverage is given as high, medium, or low. An empty box indicates that this outcome is not part of the course outcomes that are addressed.

Required Textbooks and Software
R.L. Huffman, D.D. Fangmeier, W.J. Elliot, S.R. Workman and G.O. Schwab. 2011. *Soil and Water Conservation Engineering*, Sixth Edition. ISBN: 1892769794. ASABE Publications: St. Joseph. 523 pages.

Recommended Materials
Class notes and materials on Canvas.

Course Schedule
This timeline is an intended guide for both the students and the instructor; however, it is ONLY a tentative guide and is subject to modification.

Week 1:	Topic 1 / Lab 1: Excel training, websites, etc.
Week 2:	Topic 2 / Homework 1
Week 3:	Topic 3 / Lab 2: GIS
Week 4:	Topic 3 / Homework 2
Week 5:	Topic 4 / Homework 3 / Lab 3: Infiltration / Career Showcase
Week 6:	Topic 4 / Lab 4: Infiltration modeling (CHEMFLO)
Week 7:	Topic 4-5 / Lecturer / Corresponding Book Chapters / Quizzes / Exams
Week 8:	Topic 5 / Lecturer / Corresponding Book Chapters / Quizzes / Exams
Week 9:	Spring Break
Week 10:	Topic 6-7 / Midterm Exam
Week 11:	Topic 8-9 / Homework 5 / Lab 7: Vegetative filter strips modeling design (VFSmod)
Week 12:	Topic 10 / Homework 6 / Field Trip
Week 13:	Work on final project
Week 14:	Work on final project
Week 15:	Work on final project
Week 16:	Project due
Week 17:	Project presentations

Attendance Policy, Class Expectations, and Make-Up Policy

No make-up exams will be given except for valid medical reasons or unless prior arrangements have been made. Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx (Links to an external site.)

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Homework & Labs (12)	100 each	42%
Quizzes, Student Topics and Career Fair	100 each	10%
Exams (2)	100	28%
Final Project	100	14%
Portfolio	100	6%
		100%

Quizzes: Quizzes—both announced and unannounced—will be given periodically to test concepts presented in class.

Student Topics: The goal of this assignment is to allow students to explore a specific topic of interest and share their findings with their peers. Each student will choose one topic related to land and water resources engineering to present to the class. Students may present on any topic they wish; however, the presentation must reference a recent (less than 1-year old) source (e.g., a scientific journal article, newspaper article, website, or other media source).

Each week, one student will present his or her topic to the class. Students will have a maximum of 15 minutes (5 min presentation +10 minutes group discussion) to present their topics using any resources they wish (handouts, PowerPoint slides, movie, etc.). Students will summarize the topic, explain how it relates to land and water resources engineering, and describe how the concepts learned in land and water resources engineering can be applied to the topic. In addition to the in-class presentation, students are required to submit a 1-page summary of the news story covering the topics listed in the assignment description. The assignment will be graded based on the choice of an appropriate topic and presentation.

Career Fair: Students will attend the UF Career Resource Center's Career Showcase on January 30-31th (technical day) from 9:00 am – 3:00 pm and talk to at least two employers. After attending, students will write a summary of their experience, including listing which companies they spoke with, describing how they were received, and providing a list of steps to follow to prepare themselves for the job market. Maximum length of this assignment is one page and the grade will depend on how well the instructions are followed, grammar, and spelling.

Problem Sets and Lab Reports: These assignments will consist of problem sets from the text and other sources as well as lab reports on experiments performed. Problem sets will be assigned everyone to two weeks. Think of these as mini-design projects. They are designed to be individual work. Consultation with fellow students is allowed, but an individual report must be submitted for every student. THEY COUNT FOR NEARLY HALF YOUR GRADE. Assignments will be penalized 10% for each business day late beyond the due date. Assignments turned in after the answers have been returned will NOT receive credit. You must turn in all assignments to achieve a passing grade in this course. Online and paper submissions of lab and homework assignments are due by 5:00PM on the due date.

Lab Sessions and Field Trips: The class will meet for every lab session unless otherwise directed by the instructor. Lab times will consist of demonstrations, experiments, lectures, exams, and field trips. One to two field trips are being planned to demonstrate some of the concepts discussed in this class. The actual date(s) of the field trip(s) will be announced in class a week or two in advance.

Exams: Exams will be in class. Exam format (i.e. open book, closed book, etc.) will be announced prior to the exam date. A missed exam may not be made up unless arrangements are made PRIOR to the exam. One exam may consist of a project assignment instead of the in-class exam format.

Final Project: The final project is intended to bring together several major concepts presented in the course such that an engineering design problem can be solved. The project will be graded on thoroughness, neatness, as well as applicability of the engineering calculations.

Portfolio: Each student will be required to maintain an electronic portfolio of all work completed. It would be beneficial but not necessary to include electronic notes. At the end of the semester, the portfolio will be submitted and graded on completeness and organization. The portfolio must be submitted binded, in hardcopy, and in any electronic format such as CD, zip disk, or personal website.

FOR ALL ASSIGNMENTS: Presentation of assignments is extremely important! All homework and lab reports should be written in a professional manner with proper grammar, spelling, and punctuation. Lab reports should be written according to the "Lab Report Rules" discussed at the first lab and posted on Canvas. Failure to do so will result in significant grade reduction. It is expected that homework is written up in a manner similar to that described in the "Lab Report Rules".

All deliverables should be submitted both electronically (Canvas) and on paper. Electronic documents must be a SINGLE text document (i.e., Word or PDF file) that clearly answers each question and shows the work done to arrive at the answer. Any relevant graphs, tables, and equations that support your answer must be included (i.e., pasted) in this document and must be numbered, labeled, and captioned appropriately. If you do not sufficiently explain your work, you will only get partial credit—and no credit for a wrong answer. You may, and probably should, attach additional material (i.e., well-organized and labeled spreadsheets or other calculations) IN ADDITION to the required text report.

All assignments must be formatted so that they can be printed on standard 8.5" by 11" paper

Grading Policy

Percent	Grade	Grade Points
95 - 100	A	4.00
90 - 94	A-	3.67
87 - 89	B+	3.33
83 – 86	B	3.00
80 - 82	B-	2.67
77 - 79	C+	2.33
74 - 76	C	2.00
70 - 73	C-	1.67
67 - 69	D+	1.33
64 - 66	D	1.00
60 - 63	D-	0.67
0 - 60	E	0.00

More information on UF grading policy may be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Students Requiring Accommodations
Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, https://www.dso.ufl.edu/drc) by providing appropriate documentation. Once registered, students will

receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation
Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu/evals. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

University Honesty Policy
UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Commitment to a Safe and Inclusive Learning Environment
The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:
• Your academic advisor or Graduate Program Coordinator
• Robin Bielling, Director of Human Resources, 352-392-0903, rbielling@eng.ufl.edu
• Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
• Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use
All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy
There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: https://registrar.ufl.edu/ferpa.html

Campus Resources:
Health and Wellness

U Matter, We Care:

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Discrimination, Harassment, Assault, or Violence
If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Sexual Assault Recovery Services (SARS)
Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or http://www.police.ufl.edu/.

Academic Resources

E-learning technical suppor*t*, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. https://www.crc.ufl.edu/.

Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.

Student Complaints Campus*:* https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints*:* http://www.distance.ufl.edu/student-complaint-process.