

Urban Stormwater Systems Design

CWR 4306/CGN6905

Meeting Times: Monday and Wednesday 5th Period (11:45 AM – 12:35 PM)

Location: Online

Academic Term: Fall 2020

Instructor:

Dr. Mark A. Newman

Office location: 206 Black Hall

E-mail address: mark.newman@essie.ufl.edu

Web site: <http://www.essie.ufl.edu/~markn/>

Office hours will be held **online by appointment**:

To schedule an appointment please use: <https://my.timetrade.com/book/64QHG>.

Email communication is highly encouraged as it allows information to be shared more readily with the entire class. The class email list is automatically generated based upon the class roll maintained by the Registrar's Office.

Course Description

(3 credits) Stormwater system design including: time of concentration, peak runoff rate, open-channel flow, gravity storm sewer, culvert, stormwater pumping, filtration systems, hydrograph generation, flood routing, site layout, site grading and permitting.

Course Pre-Requisites / Co-Requisites

CWR 4202 Hydraulics (Hydraulics can be a co-requisite with this class).

Course Objectives

Students will gain an in-depth understanding of the design, modeling, and permitting of urban stormwater systems.

Course Material and Assignments

All course material including lectures packets, reading, assignments, and supplemental information are provided on the UF e-Learning site <http://elearning.ufl.edu/>.

Referenced Textbooks: No textbooks are required—all reading assignments will be posted on the course site.

- Durrans. 2003. *Stormwater Conveyance Modeling and Design*. 1st Edition. Bentley Institute Press. Exton, PA.
<http://www.bentley.com/en-US/Training/Products/Resources/Books/SCMD.htm>
(Also available on Amazon)
- Walski, Barnard, Durrans, Meadows, Lowry, and Whitman. 2007. *Computer Applications in Hydraulic Engineering*. 7th Edition. Bentley Institute Press. Exton, PA.
<https://store.bentley.com/en/products/9781934493168--Computer-Applications-in-Hydraulic-Engineering> (Also available on Amazon)

Required permitting documents and technical publications (available online)

Environmental Resource Permit Applicant's Handbook, Volume I (General and Environmental) from St. Johns River Water Management District (SJRWMD)

<https://www.sjrwmd.com/documents/permitting/#erp>

Permit Information Manual (includes ERP Volume II) from St. Johns River Water Management District (SJRWMD)

<https://www.sjrwmd.com/documents/permitting/#erp>

Urban Hydrology for Small Watersheds, Technical Release 55 (TR-55):

Available from United States Department of Agriculture, Natural Resources Conservation Service (NRCS)

http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044171.pdf

Additional textbooks referenced in course notes include the following

- Gribbin. 2002. Introduction to hydraulics and hydrology with applications for stormwater management. Delmar. New York.
- Wanielista and Yousef. 1993. Stormwater Management. Wiley. New York.
- Wanielista, Kersten, and Eaglin. 1997. Hydrology Water Quantity and Quality Control. Wiley. New York.

Attendance and Expectations

There is no specific penalty for missing a class; however, attendance is strongly recommended. Students are responsible for the content of each session, which may or may not be contained in the online lectures and course notes.

Course Outline

- Week 1 Course introduction / Precipitation
- Week 2 Precipitation and design storms
- Week 3 Site and basin delineation
- Week 4 Rainfall and runoff—estimating peak runoff/unit hydrographs
- Week 5 Stormwater conveyance and detention/retention
- Week 6 Stormwater routing
- Week 7 Regulations and Environmental Resource Permits (ERPs)
- Week 8 **Midterm Design Project**
- Week 9 Final Project Problem Statement / Sustainability and Low Impact Development (LID)
- Week 10 Design project
- Week 11 Design project
- Week 12 Design project
- Week 13 Design project
- Week 14 Design project
- Week 15 Design project
- Week 16 **Final Design Project Due**

Assignments: Assignments (including midterm and final projects) will be submitted using the UF e-Learning Canvas site <http://elearning.ufl.edu/>.

Late Assignments: You will have one week after an assignment deadline passes to contact me and discuss/request the possibility of the assignment being opened for resubmission. **After one week has passed from the assignment deadline no submissions will be allowed.**

Grade Distribution

Assignments	Percentage of Final Grade
Assignments	30%
Midterm Project	30%
Final Project	40%

Note: Undergraduate Students (CWR 4306) will complete **team design projects**.
Graduate students (CGN 6905) will complete **individual design projects**.

Grading Scale

Percent	Grade	Grade Points
94 - 100	A	4.00
90 - 93	A-	3.67
87 - 89	B+	3.33
84 - 86	B	3.00
80 - 83	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 - 59	E	0.00

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 professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

Online Course Privacy Policy

Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

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://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-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, Assoc. Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
- Toshikazu Nishida, Assoc. 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 support, 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>.