

Hydraulics

CWR 4202

Meeting Times: Section HYD0 31396: 100% Online Tuesday Periods 6-7 (12:50 PM – 2:45 PM)
Section HYD1 12407: 100% Online

Location: Online

Academic Term: Spring 2022

Instructor:

Dr. Mark A. Newman

Office location: 206 Black Hall

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

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) Fundamental equations for pipe and open conduit flow. Development of design oriented formulas for pipes and open channels. Introduction to hydrology.

Course Pre-Requisites / Co-Requisites

CWR 3201 (Hydrodynamics) or consent of instructor.

Course Objectives

To familiarize the student with the analysis upon which modern hydraulic engineering design is based and with the design process itself. Emphasis is placed on the basic understanding of the potential and unavoidable limitations of today's methods in hydraulic analysis and design. Provide students a suitable applied background in hydraulics through lectures, assignments, and software applications.

Course Material and Assignments

All course material (lectures, reading, assignments, and supplemental information) will be provided through UF e-Learning site <http://elearning.ufl.edu/>.

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

- *Computer Applications in Hydraulic Engineering*, 7th edition, published by Bentley Institute Press. (Available on Amazon)
- *Hydraulics in Civil and Environmental Engineering* by John Chadwick, John C. Morfett, and Martin Borthwick. Spon Press. NY, New York. 2004. (Available on Amazon)

Attendance and Expectations

- There are no attendance requirements.
- All course content is provided online in Canvas.
- Everything you need to do well in the course is provided through the Canvas course site.
- The scheduled meeting time on Tuesday is an optional interactive problem session that allows you the chance to ask questions while working on the weekly assignments.

Course Outline

Module 1:	Course Introduction and Review of Hydrodynamics
Module 2:	Flow Classification
Module 3:	Fundamental Principles of Flow
Module 4:	Unified Approach to Open Conduit and Closed Conduit Flow
Module 5:	Exam 1 Primer
Module 6:	Empirical Power Formulae Relating Mean Velocity (and Flow) to Friction Loss
Module 7:	Characteristic Pipe Loss: Friction and Local Losses
Module 8:	Common Forms of Manning's Equation
Module 9:	Exam 2 Primer
Module 10:	Open Channel Hydraulics
Module 11:	Gradually Varied Flow
Module 12:	Exam 3 Primer

Weekly Assignments: Assignments will be due weekly through the UF e-Learning Canvas site <http://elearning.ufl.edu/>, and will be the basis for class discussion. All assignments will be submitted by completing an online Assessment. Starting the second week of class, **the weekly Assignment will always be due Thursday by 5:00PM.**

Late Assignments: You will have one week after an assignment deadline passes to contact me and request that an assignment be re-opened for late submission or re-submission. **After one week has passed from the assignment deadline no submissions will be allowed.**

Exams: There are three 2-hour in-semester exams and one 2-hour optional final exam. The exams are scheduled as follows.

	Date	Location and Time
Exams:	Tuesday, February 15	Online
	Tuesday, March 29	Online
	Tuesday, April 19	Online
Final Exam:	Thursday, April 27	Online

Important Information Regarding the optional Final Exam:

- The Final Exam is optional as a replacement for one of the prior three exams.
- **In order to take the optional final exam you must take all three of the in-semester exams and submit all of your work to receive credit for the exams. You cannot skip an in-semester exam and take the optional final.**
- The Final Exam can only help you—it will not count against you if you do poorly.
- The Final Exam is cumulative.

Grade Distribution

Assignments	Total Points	Percentage of Final Grade
Weekly Assignments (12)	100 each	25%
Exams (3)	100 each	(25% each) 75%

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

COVID-19

- You are expected to wear approved face coverings at all times during class and within buildings even if you are vaccinated.
- If you are sick, stay home and self-quarantine. Please visit the UF Health Screen, Test & Protect website about next steps, retake the questionnaire and schedule your test for no sooner than 24 hours after your symptoms began. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 (or email covid@shcc.ufl.edu) to be evaluated for testing and to receive further instructions about returning to campus.
- If you are withheld from campus by the Department of Health through Screen, Test & Protect, you are not permitted to use any on campus facilities. Students attempting to attend campus activities when withheld from campus will be referred to the Dean of Students Office.
- UF Health Screen, Test & Protect offers guidance when you are sick, have been exposed to someone who has tested positive or have tested positive yourself. Visit the UF Health Screen, Test & Protect website for more information.
- Please continue to follow healthy habits, including best practices like frequent hand washing. Following these practices is our responsibility as Gators.

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>.