

Cover Sheet: Request 14097

ENV 4XXX Environmental Engineering Design 1

Info

Process	Course New Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Elliot Douglas elliott.douglas@essie.ufl.edu
Created	8/5/2019 12:27:31 PM
Updated	10/7/2019 3:50:57 PM
Description of request	New course that is part of major curriculum change, request number 14095.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	ENG - Environmental Engineering Sciences 011910000	Chang-Yu Wu		8/5/2019
No document changes					
College	Approved	ENG - College of Engineering	Heidi Dublin	Approved by HWCOE Curriculum Committee and Faculty Council	9/23/2019
No document changes					
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			9/23/2019
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

Course|New for request 14097

Info

Request: ENV 4XXX Environmental Engineering Design 1

Description of request: New course that is part of major curriculum change, request number 14095.

Submitter: Elliot Douglas elliot.douglas@essie.ufl.edu

Created: 10/7/2019 3:23:45 PM

Form version: 3

Responses

Recommended Prefix ENV

Course Level 4

Number XXX

Category of Instruction Advanced

Lab Code None

Course Title Environmental Engineering Design 1

Transcript Title Env Eng Design 1

Degree Type Baccalaureate

Delivery Method(s) On-Campus

Co-Listing No

Effective Term Earliest Available

Effective Year Earliest Available

Rotating Topic? No

Repeatable Credit? No

Amount of Credit 3

S/U Only? No

Contact Type Regularly Scheduled

Weekly Contact Hours 3

Course Description The first semester of a two-semester capstone design experience where environmental engineering seniors work in teams on an actual project. Students will be encouraged to use their creativity, innovation, curiosity and educational foundation to solve complex real-world problems.

Prerequisites ENV4XXX, Core 3: Processes in Environmental Engineering

Co-requisites None

Rationale and Placement in Curriculum Engineering curricula require a capstone design course. The course sequence this new course is part of replaces the current single semester design course, to provide students with a stronger grounding in design issues. The prereq selected for this course is Core 3. In the new proposed curriculum Core 4 occurs in the same semester as Design 1. Since the registration system checks for prereqs but not coreqs, the most appropriate choice is to list Core 3 as the prereq.

Course Objectives Students are expected to

- Learn how to work effectively on a team to solve problems and produce design deliverables acceptable to a client
- Develop problem solving skills and learn how to apply academic technical knowledge to solve real-world problems
- Develop effective communication and leadership skills
- Gain an understanding of professional practice, construction delivery methods and construction contract documents
- Develop a practical understanding of construction cost estimating and application of engineering economics

Course Textbook(s) and/or Other Assigned Reading None

Weekly Schedule of Topics Week 1: Introduction, Topic Selection, Lecture: Professional Practice
 Week 2: Planning, Project Management, Lecture: Project Team Dynamics
 Week 3: Client Meeting, Site Visit
 Week 4: Team Status Report (Presentations) and Discussion, Lecture: Construction Delivery Methods
 Week 5: Team Meetings – Design team organization and preliminary scheduling
 Week 6: Team Meetings – Project scoping and planning
 Week 7: Team Status Report (Presentations) and Discussion, Lecture: Cost Estimating & Scheduling
 Week 8: Team Meetings – Identification of critical design elements and schedule pathways
 Week 9: Team Meetings – Conceptual design calculations; Regulatory and permitting analysis
 Week 10: Team Meetings – Conceptual design calculations; Regulatory and permitting analysis
 Week 11: Team Status Report (Presentations) and Discussion, Lecture: Life-Cycle Cost Analysis
 Week 12: Team Meetings – Refining needs assessment; Conceptual design tasks
 Week 13: Team Meetings – Needs assessment and conceptual design tasks
 Week 14: Team Meetings – Conceptual design report preparation and presentation practice
 Week 15: Team Presentations of Needs Assessment and Conceptual Design Report

Grading Scheme Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
In-Class Assignments	100 each	15%
Individual Homework	100 each	15%
Team Submittals	100 each	30%
Team Presentations	100 each	30%
Time Sheets/Invoices	100 each	10%
	100%	

Instructor(s) Steven Laux, P.E.

Attendance & Make-up Yes

Accomodations Yes

UF Grading Policies for assigning Grade Points Yes

Course Evaluation Policy Yes

Environmental Engineering Design 1

ENV 4XXX Section XXXX

Class Periods: TBD

Location: TBD

Academic Term: Fall 2023

Instructor:

Steven Laux, P.E.

Sustainable Materials Management Research Laboratory (Building 226)

2320 Surge Area Drive

Steven.laux@essie.ufl.edu

(352)871-7069

Office Hours: By appointment

Teaching Assistant/Peer Mentor/Supervised Teaching Student:

Please contact through the Canvas website

- TBD

Course Description

The first semester of a two-semester capstone design experience where environmental engineering seniors work in teams on an actual project. Students will be encouraged to use their creativity, innovation, curiosity and educational foundation to solve complex real-world problems. Credit hours: 3

Course Pre-Requisites / Co-Requisites

ENV4XXX, Core 3: Processes in Environmental Engineering

Course Objectives

Students are expected to

- Learn how to work effectively on a team to solve problems and produce design deliverables acceptable to a client
- Develop problem solving skills and learn how to apply academic technical knowledge to solve real-world problems
- Develop effective communication and leadership skills
- Gain an understanding of professional practice, construction delivery methods and construction contract documents
- Develop a practical understanding of construction cost estimating and application of engineering economics

Materials and Supply Fees

None

Professional Component (ABET):

This course provides 3 credits of engineering topics and includes a design component.

Relation to Program Outcomes (ABET):

Outcome	Coverage*
1. An ability to identify, formulate, and solve engineering problems by applying principles of engineering, science, and mathematics.	Medium
2. An ability to apply both analysis and synthesis in the engineering design process, resulting in designs that meet desired needs.	High
3. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.	
4. An ability to communicate effectively with a range of audiences	Medium
5. 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.	Medium
6. An ability to recognize the ongoing need for additional knowledge and locate, evaluate, integrate, and apply this knowledge appropriately.	Medium
7. An ability to function effectively on teams that establish goals, plan tasks, meet deadlines, and analyze risk and uncertainty	High

*Coverage is given as high, medium, or low. An empty box indicates that this outcome is not covered or assessed in the course.

Required Textbooks and Software

Readings and other resources will be provided by the instructor throughout the semester.

Recommended Materials

1. Construction cost estimating database, *RSMeans Data Online Student Edition* (\$45 for 1-year subscription)

Course Schedule

Week 1:	Introduction, Topic Selection, Lecture: <i>Professional Practice</i>
Week 2:	Planning, Project Management, Lecture: <i>Project Team Dynamics</i> ; In-Class Assignment 1
Week 3:	Client Meeting, Site Visit; Team Submittal 1 Due; HW 1 Due
Week 4:	Lecture: <i>Construction Delivery Methods</i> ; Team Presentations
Week 5:	Team Meetings – Design team organization and preliminary scheduling; HW 2 Due
Week 6:	Team Meetings – Project scoping and planning; Team Submittal 2 Due
Week 7:	Lecture: <i>Cost Estimating & Scheduling</i> ; Team Presentations; HW 3 Due
Week 8:	Team Meetings – Identification of critical design elements and schedule pathways; In-Class Assignment 2
Week 9:	Team Meetings – Conceptual design calculations; Regulatory and permitting analysis; Team Submittal 3 Due; HW 4 Due
Week 10:	Team Meetings – Conceptual design calculations; Regulatory and permitting analysis; In-Class Assignment 3
Week 11:	Team Status Report and Discussion, Lecture: <i>Life-Cycle Cost Analysis</i> ; In-Class Assignment 4; HW 5 Due
Week 12:	Team Meetings – Refining needs assessment; Conceptual design tasks; Team Submittal 4 Due
Week 13:	Team Meetings – Needs assessment and conceptual design tasks; HW 6 Due
Week 14:	Team Meetings – Conceptual design report preparation and presentation practice

Attendance Policy, Class Expectations, and Make-Up Policy

The purpose of this class is to provide students an opportunity to experience and participate in a real-world design process that would be similar to what occurs in professional practice. Students will be mentored by a professional engineering and will be provided resources throughout the semester to accomplish the needed tasks. Class time will be used for client and team meetings, lectures, and discussion. Successful teams require responsible and engaged team members, and attendance is therefore mandatory. Attendance will be documented through in-class assignments, which will be assigned and graded. Excused absences must be consistent with university policies in the undergraduate catalog (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) and require appropriate documentation.

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
In-Class Assignments (4)	100 each	15%
Individual Homework (6)	100 each	15%
Team Submittals (5)	100 each	40%
Team Presentations (3)	100 each	30%
		100%

In-Class Assignments: Each design team will given problems to solve that are elements of the design project. Grades will be based on completeness of the solution.

Individual Homework: You will be assigned individual problems that are designed to guide you on how to do the calculations for the project. Grades will be based on technical accuracy. 6 per semester

Team Submittals: Throughout the semester teams will submit progress reports on the design project. These submittals will be in the form of an engineering report that shows the status of the project. Grades will be based on technical accuracy, presentation style, and the extent to which it provides a complete and thorough description of progress to date. 5 per semester

Team Presentations: Each team will give presentations on the status of their project. Presentation will be graded on presentation style, participation by all team members, and technical accuracy.

Grading Policy

Percent	Grade	Grade Points
93.4 - 100	A	4.00
90.0 - 93.3	A-	3.67
86.7 - 89.9	B+	3.33
83.4 - 86.6	B	3.00
80.0 - 83.3	B-	2.67
76.7 - 79.9	C+	2.33
73.4 - 76.6	C	2.00
70.0 - 73.3	C-	1.67
66.7 - 69.9	D+	1.33
63.4 - 66.6	D	1.00
60.0 - 63.3	D-	0.67
0 - 59.9	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 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/>.

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, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
- Toshiyazu 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 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://care.dso.ufl.edu>.

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