

Relationship of course to program outcomes: This course addresses the following EES Program outcomes (note: numbers refer to the list of EES Program outcomes):

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
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
3. An ability to communicate effectively with a range of audiences
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

Reading Material and Software: *Engineering Economy – Applying theory to Practice* (3rd Edition), Ted G. Eschenbach. This text is available to free for students at <https://app.knovel.com/web/>. **You must be logged into the UF network or using the UF VPN to access the book.** Additional readings will come from scientific literature, case studies, and agency reports and will be made available as PDFs.

This course will utilize Canvas as an electronic course management system. The course website has a detailed course schedule and will list your grades on assignments as they become available. All students are required to access the course site regularly. The site can be accessed from <http://lss.at.ufl.edu/>.

Grading Scheme and Assignments:

In-class quizzes (~weekly, drop lowest 2):	25%
Homework (6):	25%
Exams (2):	50% (25% each)

Grading Scale: A (≥ 93), A⁻ (≥ 90 & < 93), B⁺ (≥ 87 & < 90), B (≥ 83 & < 87), B⁻ (≥ 80 & < 83), C⁺ (≥ 77 & < 80), C (≥ 73 & < 77), C⁻ (≥ 70 & < 73), D⁺ (≥ 67 & < 70), D (≥ 63 & < 67), D⁻ (≥ 60 & < 63), E (< 60). GPA information can be found: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

Attendance Policy, Class Expectations, and Make-Up Policy: Although attendance will not be taken, attendance in class is expected, as class time may include discussion or group work. Late and homework and makeup exams will only be allowed with prior approval of the instructor in the case of non-emergencies. For emergencies or illness prior approval is not needed, but appropriate documentation is required. 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. Other expectations:

- **Attend class and arrive on time.** Attending class is expected, and in-class participation is strongly encouraged; *it will make class a lot more interesting!*
- **Complete assigned readings PRIOR** to the week for which they are assigned.
- **Participate in class discussions**, including your thoughts on the assigned readings and lecture subjects. Learning is more than passive accumulation of information.

In-class quizzes: There will be *approximately* 12 quizzes covering material from the lectures and readings. **You may drop your two lowest quiz grades.** Quizzes will be given in the beginning of class on Tuesdays or Thursdays; *students entering late will not receive credit.* **Quizzes are CLOSED BOOK.**

Homework: Six homework assignments will be assigned on Thursdays and turned in via Canvas two weeks later. Homework may include individual and/or group assignments. Homework should be submitted individually unless otherwise indicated, however working together with your classmates on homework sets is allowed & encouraged. Late assignments will be penalized one letter grade per day.

Exams: Two exams will be given in class (see course schedule). The only resource you may use is a calculator. Exams will focus mostly on recent course material but may cover all previous topics. There is no “final” exam during finals week. Strict adherence to exam instructions is expected. Any deviations from the instructions will be construed as a willful breach of the student honor code and will be reported to the Dean of Students Office for consideration of disciplinary action.

Course Topics and Schedule: This schedule is tentative and subject to change.

Week of	Tuesday	Thursday	Readings/videos*	HW
1/2	No class	Course overview; syllabus review	---	HW 1 Assigned
1/9	Engineering vs. environmental vs. ecological economics	Making economic and ethical decisions: the basics	Eschenbach Ch. 1, Fleddermann	---
1/16	Economics of environmental quality – who pays for a clean environment? <i>How</i> clean? <i>Who</i> pays?		Harris 1996, Video 1	HW 1 Due (1/20) HW 2 Assigned
1/23	Time value of money: understanding interest	Cash flow diagrams and equivalence	Eschenbach Ch. 2	---
1/30	Valuation of “natural capital” and ecosystem services (ES) – what is the environment worth? How can it be measured?		Guerry et al. 2015, Video 2	HW 2 Due (2/3) HW 3 Assigned
2/6	Engineering economy factors I	Engineering economy factors II	Eschenbach Ch. 3	---
2/13	Engineering economy factors III	Catch-up and exam review	---	HW 3 Due (2/17)
2/20	Exam 1	Digging deeper: can markets protect the environment?	Stavins 1989, Grist 2011	HW 4 Assigned
2/27	Present worth I	Present worth II	Eschenbach Ch. 5.1-5.6	---
3/6	SPRING BREAK			
3/13	Equivalent Annual Cost I	Equivalent Annual Cost II	Eschenbach Ch. 6.1-6.7	HW 4 Due (3/17) HW 5 Assigned
3/20	Internal rate of return I	Catch-up or Recharge Day!	Eschenbach Ch. 7.1-7.6	---
3/27	Internal rate of return II	Benefit-cost ratios (BCRs)	Eschenbach Ch. 8	HW 5 Due (4/2) HW 6 Assigned
4/3	PW indices, payback period	Choosing alternatives	Eschenbach Ch. 9.1-9.8; EPA 2001 (Exec. Summary)	---
4/10	Economics of US air and water pollution control policies	Catch-up and exam review	EPA 1997 (Abs. & Exec. Summary)	HW 6 Due (4/14) (solution posted)
4/17	Exam 2	Reading Days - No Class	*** THERE IS NO “FINAL” ***	

*Read/watch ***before attending class on Tuesday*** of the week they are assigned.

In-Class Recording: Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Students Requiring Accommodations: Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, 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 Conduct Code (<https://sccr.dso.ufl.edu/process/student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. 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: <https://counseling.ufl.edu>, 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/>.

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.

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://career.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://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>; <https://care.dso.ufl.edu>.

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