

**Engineering Economy**  
EIN 3354  
*Academic Term:* Spring 2024

**Class Periods:** There are 2 methods for this course. Make sure you tune into the first day of class to get the specifics of how you can interact with the course!

- In Person:
  - Tuesday: 9:35 – 11:30 WEIM 1070– Lecture Day
  - Thursday: 9:35-10:25 WEIM 1070 – Practice Session
- Online:
  - Live - Using Zoom Conferencs Tab
  - Canvas: Posted around noon on day of recording

**EXAMS are Online (see schedule for exam dates)**

***Instructors:***

Dr. Katie Basinger-Ellis, Ph.D. (AKA Dr. BE) (Please contact through CANVAS!)

Email: [katie.basinger@ise.ufl.edu](mailto:katie.basinger@ise.ufl.edu) (Please contact through CANVAS!)

Office Phone: (352) 294-7730 (Please contact through CANVAS!)

Office Hours: **TBD**

***Teaching Assistants:***

The TA's are responsible for **grading** ONLY. TA's will hold one office a week to help you work out quiz or homework problems. TA office hours (OH) will be through the zoom conferences link in the Canvas menu). If you have a question about the grade you received you should contact Dr. B.E.

- Rodolfo Remin - ISE Senior
  - OH: **TBD**
    - Zoom Link in Canvas
- Madusib Cannady - ISE Senior
  - OH: **TBD**
    - Zoom Link in Canvas
- Ayumi Nunes – ISE Junior
  - OH: **TBD**
    - Zoom Link in Canvas

***Course Description***

3 credits. Basic principles and applications of economic decision-making between alternatives encountered in engineering projects. Analysis includes methodologies of economics and finance in addition to engineering fundamentals.

This course is part of the Engineering Project Management Certificate offered by the HWCOE. The certificate requires you to make a B or higher in 2 required courses and one course from an elective list.

- Required: EGS 4625 Fundamentals of Engineering Project Management
- Required: EIN 3354 Engineering Economy or choice of two others
- Plus one course from a list of approved courses

*More information can be found in the file titled Project Management Certificate in course materials or at <https://www.eng.ufl.edu/leadership/academic-programs/certificates/undergraduate/> .*

***Course Pre-Requisites***

Pre-Requisites: MAC 2312 (Analytic Geometry and Calculus II), with a minimum grade of C.

### **Course Co-Requisites**

None

### **Course Objectives**

- Evaluate alternatives from a variety of engineering disciplines based on economic equivalence
- Apply both manual and computerized methods for determining analytical justifications of decisions
- Develop customized and interactive project planning tools in Excel

### **Materials and Supply Fees**

Not applicable.

### **Professional Component (ABET):**

<b>Outcome</b>	<b>Coverage*</b>
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	High
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	High
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	
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.	

- (1) The Engineering Economy course provides the student with the basic mathematical, modeling, and conceptual skills to compare competing design proposals from the point of view of economic efficiency as well as engineering efficiency. Technical proposals must ultimately be expressed and measured in terms of material and manufacturing costs to provide a given product and service and those costs then measured against the likely cash flows to be generated in the market, allowing the overall profitability and financial feasibility of such projects to be assessed.
- (4) The units on federal tax policy, depreciation, and inflation touch upon social and political considerations. Thus tax policy may implicitly favor and encourage corporations to make greater investments in R & D through an orchestrated series of directed tax credits and deductions. The project management portion touches on making informed ethical decisions in both the private and public sector. These topics give information to students to become active leaders in their profession and/or community.

### ***Required Textbooks and Software***

- Access to Microsoft Excel is required. See Module 2 in Canvas for instructions about getting access.
- Strongly suggest to download Excel onto your laptop. You have access to the office suite as a UF student. There are more instructions for access in Module 2 on Canvas.
- This course will use a digital version of the text within McGraw-Hill's Connect coursework platform. You will need to use this platform to be able to complete Connect weekly assignments. The text and related assignments will be accessed through McGraw-Hill Connect. EIN 3354 will be participating in the UF All Access program. Students will have two options to gain access to the required McGraw Hill Connect materials:
  1. Choose the "opt-in" to Connect access option (paid through their student account) via UF All Access
  2. Purchase directly from the McGraw-Hill website
- A dedicated service line is available if you have any questions regarding MH Connect. The number is 1-800-331-5094. You may also access the Customer Experience Group online at <http://mpss.mhhe.com/>. They are available via email as well as interactive chat. PLEASE DIRECT ALL TECHNICAL CONCERNS TO THE CUSTOMER EXPERIENCE GROUP. You will receive a case number for all inquiries in the event that you need to follow up further.
- See – the Connect Resources link on the home Canvas page for more information and help!

### ***Recommended Materials***

#### ***Course Format***

This course is offered as a hybrid option. Lecture notes, assignments, practice exercises, and extra information are all going to be available to you on the class website in CANVAS.

- **ALL assignments for the week are due on Sunday nights at midnight.**
- EXAMS are online. There are 2 parts. Part I will use honor lock and you will have 1 hour to complete. You will need a web cam and quite space to take this part of the exam. Part II is take-home and will be posted at 8am the day of the exam and is due at 8pm.
- Exam Dates:
  1. **Exam 1: Thursday 2/29**
  2. **Exam 2: Monday 4/29**

#### ***Attendance Policy, Class Expectations, and Make-Up Policy***

- **Attendance is required for exams online. See the calendar below. There are no make-ups provided since it is online. Getting the date wrong is not an excused absence.**
  - 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.
- Class Expectation: Stay a head of the game! There are few weeks which have a lot of material to cover.
- Make-Up Policy: **NO LATE ASSIGNMENTS will be accepted.**
  - Solutions are posted at 12 pm the following day and therefore no late assignments are accepted.
  - For exams only University excused absences will be allowed make-ups. Note, internships, trips, and, interviews are NOT excused.

### Evaluation of Grades

\*Notice how much HW counts toward the final grade. HW will take some time, so give yourself time to do these assignments.

Assignment	Percentage of Final Grade
Homework* (5)	% 35
Quizzes	% 25
Midterm Exam	% 20
Final Exam	% 20

### Course Schedule

\*\* This is subject to change during the semester. If a change is necessary, I will send out an announcement on Canvas. Please read the announcements!

Week	Module	Topic	Assignments	Due Date	Notes
1/8-1/14	1	Course Introduction	Syllabus Quiz	Sun. 1/14	Welcome to EIN 3354!
			Quiz 1 - Connect Intro		Connect Intro - Introduction to Connect
1/15-1/21	2	Excel	Quiz 1.2 - Connect	Sun. 1/21	Fri. 1/13 Last day of Drop/Add
			Quiz 2.1 - Canvas		
1/22-1/28	3	TVM (PV & FV)	Quiz 2.2 - Canvas	Sun 1/28	Mon. 1/16 MLK Holiday
1/29-2/4		TVM (Annuity & Gradients)	Quiz 3.1 - Connect	Sun. 2/4	Start HW 1
2/5-2/11		TVM (Normal vs. Compound Interest)	Quiz 3.2 - Connect	Sun. 2/11	
			HW 1 - Canvas		
2/12-2/18	4	NPV	Quiz 4.1 - Connect	Sun. 2/18	Start HW 2
2/19-2/25		Equiv. Ann Worth	Quiz 4.2 - Connect	Sun. 2/25	
			HW 2 - Canvas		
2/26-3/3		Exam Week	Exam 1 - Thur. 2/29	Thur. 2/29	Tues. 2/28 Exam Review
3/4-3/10	5	Inflation	Quiz 5 - Connect	Sun. 3/10	Start HW3 Sat. 3/11 Spring Break starts!!!
3/11-3/17		NA	NOPE!		Spring BREAK
3/18-3/24	6	Rate of Return	Quiz 6.1 - Connect	Sun. 3/24	BIG WEEK!
			Quiz 6.2 - Connect		Consider starting this over spring break!
			HW3 - Canvas		
3/25-3/31	7	Depreciation	Quiz 7 - Connect	Sun. 3/31	Start HW4
4/1-4/7	8	Income Taxes	Quiz 8 - Connect	Sun. 4/7	
			HW 4 - Canvas		
4/8-4/14	9	Project Planning 1			Start HW 5
4/15-4/21		Project Planning 2	HW5 - Canvas	Sun. 4/21	
4/22-4/26		Exam Prep			Tues. 4/23 Exam Review, 4/25 & 4/26 Reading Days, Sat. 4/27 Exam wk starts
4/27 - 5/5		Exam Week	Final Exam Monday 4/29	Mon. 4/29	Exam Week, Friday 5/5 Graduation

### ***Grading Policy***

<b>Percent</b>	<b>Grade</b>	<b>Grade Points</b>
93 - 100	A	4.00
90.0 – 92.9	A-	3.67
86 - 89.9	B+	3.33
83 – 85.9	B	3.00
80.0 – 82.9	B-	2.67
76 - 79.9	C+	2.33
73 – 75.9	C	2.00
70.0 – 72.9	C-	1.67
66 - 69.9	D+	1.33
63 – 66.9	D	1.00
60.0 – 62.9	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/>.

### ***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.

### ***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 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
- Jennifer Nappo, Director of Human Resources, 352-392-0904, [jpennacc@ufl.edu](mailto:jpennacc@ufl.edu)
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, [taylor@eng.ufl.edu](mailto:taylor@eng.ufl.edu)
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, [nishida@eng.ufl.edu](mailto: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.

### ***Online Course Recording***

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.

### ***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>

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/office hours 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.

### Campus Resources

#### **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](mailto: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](mailto: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](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf).

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