

Managing Engineering with Integrity

EGN 6933 Section 25004

Class Periods: Thursdays, 4:05PM – 7:05PM, Periods 9, 10, 11

Location: <https://ufl.zoom.us/j/4394996031>

Academic Term: Spring '25

Instructor: Rachel M. Frazier, Ph. D.

Email: rmfrazier@eng.ufl.edu

Office Hours: Mondays 1PM – 2:30PM, Zoom: <https://ufl.zoom.us/j/4394996031>

Need to meet with the instructor outside of office hours or class? Find a time convenient for you here:

https://calendly.com/rmfrazier_gator

Course Description

Designed for graduate students, *Managing Engineering with Integrity* explores research & development (R&D) management principles, ethical practices, and integrity in engineering. Whether you will run a lab or run an R&D department, understanding the fundamental requirements of responsible research conduct is a must. This is a synchronous online course designed to better prepare you for life after your graduate degree by providing you with experience:

- Building and maintaining collaborative working relationships
- Exercising what to do in the face of ethical issues
- Defining research & development missions with integrity

Course Pre-Requisites / Co-Requisites

No course pre/co-requisites, open to all graduate students with an interest in what it takes to adhere to professional ethics, values and practices when conducting, communicating, and managing research.

Course Objectives

You will learn concepts related to managing research activities, both on an individual level and a team level. You will develop skills that will be valuable in established companies, academia, and government labs. Key objectives include:

- Understanding the ins and outs of what (and who) secures research integrity, the rights & responsibilities of researchers, the process of inventing and approaches to managing innovation.
- Practicing the skills of monitoring trends, building relationships, brainstorming, & setting goals.
- Learning approaches to fostering a culture of innovation and collaborating with cross-functional teams.
- Refining how to effectively communicate complex ideas and get buy-in.

Why is this important?

Research & development integrity relies on the **trust** and **confidence** that **people** have in the methods and outcomes of R&D. These people can include the public, peers, students, employees, shareholders, regulatory agencies, competing organizations, collaborating organizations, etc. Because **people** are at the foundation of integrity, this course covers many aspects of research and development integrity that have to do with interpersonal relationships and the ethical and professional behaviors that are expected in performing and managing research.

Materials and Supply Fees

None

Required Textbooks and Software

ORI Introduction to the Responsible Conduct of Research, by Nicholas H. Steneck, PhD. Illustrations by David Zinn
Accessible at: <https://ori.hhs.gov/ori-introduction-responsible-conduct-research>

On Being a Scientist A Guide to Responsible Conduct in Research, Committee on Science, Engineering, and Public Policy, National Academy of Science, National Academy of Engineering, and Institute of Medicine of the National Academies. — 3rd ed. (2009)

Accessible at (download free pdf): <https://nap.nationalacademies.org/catalog/12192/on-being-a-scientist-a-guide-to-responsible-conduct-in>

Responsible Conduct of Research for Engineers, CITI Program, accessible at (login using Gatorlink credentials):
https://www.citiprogram.org/index.cfm?pageID=14®ion=1&_ga=2.251700041.1121741917.1617461696-1120059145.1617461696

Recommended Materials

- Professional Ethics: A Competency-Based Approach to Understanding and Applying Professional Ethics (workbook), Wesley Donahue (2021)
- Intentional Integrity: How Smart Companies Can Lead an Ethical Revolution, Robert Chesnut (2020)
- The Little Book of Design Research Ethics, IDEO (2016)
- The Tech Executive Operating System: Creating an R&D Organization That Moves the Needle. By Aviv Ben-Yosef. ISBN: 9781484268940. (2021) Apress
- Multipliers, Revised and Updated: How the Best Leaders Make Everyone Smarter, Liz Weisman (2017)
Crucial Influence, Third Edition: Leadership Skills to Create Lasting Behavior Change, Joseph Grenny, Kerry Patterson, David Maxfield, Ron McMillan and Al Switzler, 3rd Edition, ISBN10: 1265049653 | ISBN13: 9781265049652 © 2023
- Blue Ocean Shift Beyond Competing, Kim & Mauborgne (2017)

Course Expectations

Managing Engineering with Integrity mimics an inverted classroom, where students read course content each week **before** class and participate in activities related to those concepts in class. Class time is devoted to active learning methods that deepen your understanding of concepts and advance your mastery of skills. Read weekly concepts before class. All course content is located on the Canvas course site. **Attendance is mandatory** and absences will be handled at the discretion of the instructor (see Attendance Policies). There will be significant in class participation and students must be prepared to have their **cameras on** during Zoom sessions, with appropriate attire and backgrounds. (Let the instructor know ahead of time if you have a technical issue).

You will use your computers during class time, please be prepared to contribute to online fillable forms during regularly scheduled class meeting times. During team presentations, you will use your computers to provide feedback and contribute to an online discussion.

Course Schedule

Course content includes topics related to business ethics; rules, practices and roles of individuals and groups in the responsible conduct of research; innovation management; R&D leadership. See Canvas for up-to-date content and schedule.

Managing Engineering with Integrity Schedule			
Week	Date	Topic	Class Activities
1	1/16	Intro - Let's get on the same page about research & development	Welcome and Introductions
2	1/23	Ethical Norms of Research	Team Formation
3	1/30	Rights & Responsibilities of Researchers & Managers	Team Presentations
4	2/6	What's our role?	Team Presentations
5	2/13	Identifying R&D Opportunity & Brainstorming	Team Presentations
6	2/20	Building Relationships	Team Presentations
7	2/27	Authorship & Publishing Rights	Team Presentations
8	3/6	Consulting	Team Presentations
9	3/13	Inventing & IP Portfolios	Team Presentations
		Rights & Responsibilities of Inventors	
	3/20	Spring Break	
10	3/27	Strategies to manage innovation	Team Presentations
11	4/3	Setting goals, defining priorities, allocating resources, and getting buy-in	Team Presentations
12	4/10	Leading with Principle	Team Presentations
13	4/17	FINAL PRESENTATIONS – Class Close Out COURSE EVALUATIONS Please check for the course evaluations and provide candid and open feedback. Your feedback will be used to guide future Managing Engineering with Integrity courses.	

Mastery of Content

In lieu of traditional exams and quizzes, evaluation is based on team presentations and participation in weekly team meetings. Rubrics are provided on the Canvas course site for reference to foundational, skilled and mastery requirements. Students are strongly encouraged to attend office hours and schedule 1:1 meetings with the instructor to improve and refine in order to master communication, collaboration and management skills.

Attendance Policy, Class Expectations, and Make-Up Policy

Regular class attendance and participation in class discussions is required. If a student needs to miss a class for any reason, you should contact the instructor ahead of time. Students are responsible for completing all missed class assignments. Consequences and policies regarding late submissions are at the discretion of the instructor and are consistent with university policies in the Graduate Catalog (<https://catalog.ufl.edu/graduate/regulations>) and require appropriate documentation.

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Weekly Team Meetings (Individual grade: 5 points each – you will get a grade if you show up and participate)	50	10%
Team Presentations (Team grade: 10 points each – you will get a grade if you show up and if your presentation includes your weekly learnings/contributions)	100	20%
Final Lessons Learned Videos	100	20%
Final Presentations	250	50%
Total	500	100%

Your grade is predicated on your ability to **apply concepts** learned in the course. You will receive grades on presentation assignments and on participation in meetings. Each assignment serves to assess your demonstration of understanding and applying key concepts. Your individual grade will be determined by adding up the points you accumulate from being present and engaged in meetings and presentations, in addition to the points that your team earns on team assignments.

Team Meetings

Each student will participate in MANDATORY in-class meetings. The goal is to provide team-specific feedback and to familiarize students with concepts outside of the scope of the classroom.

Team Presentations

Each team will give weekly presentations which update their group's research & development project status and demonstrate your ability to apply concepts learned in the course. At the end of the semester, each team will present your final R&D presentation that includes all relevant information your team has collected over the semester.

Grading Policy

Percent	Grade	Grade Points		Percent	Grade	Grade Points
93.4 - 100	A	4.00		73.4 - 76.6	C	2.00
90.0 - 93.3	A-	3.67		70.0 - 73.3	C-	1.67
86.7 - 89.9	B+	3.33		66.7 - 69.9	D+	1.33
83.4 - 86.6	B	3.00		63.4 - 66.6	D	1.00
80.0 - 83.3	B-	2.67		60.0 - 63.3	D-	0.67
76.7 - 79.9	C+	2.33		0 - 59.9	E	0.00

More information on UF grading policy may be found at: [UF Graduate Catalog Grades and Grading Policies](#)

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.bluer.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/process/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 varied perspectives and lived experiences within our community and is committed to supporting the University's core values, including the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information, and veteran status.

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
- HWCoe Human Resources, 352-392-0904, student-support-hr@eng.ufl.edu
- Dr. Pam Dickrell, Associate Dean of Student Affairs, 352-392-2177, pld@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.

Use of AI: If you choose to use AI (e.g., Dall-E, ChatGPT or BingAI, etc.) in completing any of your work in this class, please note the following guidelines must be followed:

- Be aware of the limits of the AI tools. The results you get are very dependent on the prompts you use and how well you define those prompts. The info you receive may not be credited properly; it may omit sources of original content, so you are responsible for citing the source of the original content. The numbers and facts you may get could be completely wrong so unless you can independently confirm the results through another source, do not trust that they are correct. You will be responsible for any incorrect numbers or facts you get from using the tool.
- AI is a tool and, as such, you must acknowledge that you used it in completing any work for the class. For any assignment in which you use AI, you must give credit to the original content authors. You must also include a citation with a reference at the end of any assignment in which you used AI explaining how you used it and what prompts you used to get the results. Failure to do so may be considered a violation of academic honesty policy.

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/>.

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 Connections 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: <https://distance.ufl.edu/state-authorization-status/#student-complaint>.