

Engineering Ethics and Communications Course Summary

Course Description:

Engineering Ethics and Communication is designed to introduce engineering students to the concepts, theory and practice of engineering ethics and effective written and oral communications and presentations. Students apply classical moral theory and decision making to engineering applications encountered in academic and professional careers.

Course Overview:

Scientists and engineers hold a special place in society as they are in a position of expanding the frontiers of discovery and translating new knowledge to products and services with the burden of society's reliance on and trust in complete and unbiased truth from their efforts. The nature of their efforts can have global impacts and anything short of transparency and truth in their work can have a profound ramification on society's health, safety, technological advancement, and quality of life. Today's scientists and engineers are faced every day with operating in a world where their ethics are challenged by interior and exterior influences that seek to warp their decisions and work product to meet biased objectives or to "take the easy route."

Engineering students are typically well-prepared with technical knowledge and skills that are prerequisite to solving problems, but are ill prepared to recognize and deal with ethical quandaries that they will doubtless face in their academic and professional careers, such as responsible conduct of research, authorship and plagiarism, conflict of interest, standards of professional conduct, etc. Additionally, when faced with these challenges, they typically have minimal training in effectively communicating a coherent, direct and persuasive message to stakeholders.

Engineering Ethics and Communications focuses on ethical conduct and persuasive communications, leaning heavily on real-world simulations and exercises exposing students to ethically challenging situations while requiring them to communicate effectively and persuasively with various internal (e.g. employees, management, colleagues) and external (e.g. customers, vendors, regulatory agencies, investors) stakeholders. The course explores ethics across global borders and dilemmas such as cultural boundaries and mores, crisis management, team dynamics, etc. Guest speakers from technology companies and other entities such as the military, and public service are engaged throughout the semester to add real world context to cases and discussions.

Course grading is based on qualitative as well as quantitative assessments of students' knowledge of the subject matter through tests, presentations, and case studies.

Instructor:

Erik Sander, Director of Industry Programs
University of Florida College of Engineering
311 Weil Hall
Phone (352) 392-6000
esander@eng.ufl.edu

Office Hours:

By appointment

Course Delivery Time and Venue:

The course will typically be delivered weekly through a lecture overview by the instructor and/or a lecture/seminar/workshop administered by the instructor and supported by guest presenters taken from the leadership ranks of engineering companies, academia, public service, non-profit organizations, and other relevant areas.

Credit Hours:

3

Prerequisites:

None

Required Texts:

Fundamentals of Ethics for Scientists and Engineers, E.G. Seebauer and R.L. Barry (Oxford, Oxford University Press, 2000). ISBN: 9780195134889

Students will have additional reading assignments that will be posted in the course schedule.

Web Site:

A specific course website will be available to all students through the UF Sakai system. The website will contain the course schedule and assignments, instructor contact information, and lecture/seminar notes and other presentation and reading materials. Students should check this often throughout the course as information may be updated frequently.

Course Objectives:

Prepare students to understand the foundation of classical moral theory and decision making in the context of science and engineering applications

Help students to recognize and evaluate ethical challenges that they will face in their academic and professional careers through knowledge and exercises that deeply challenge their decision making processes and ethics.

Assist students in improving their effective communications and presentation skills.

Course Outline:

Engineering Ethics and Communications is designed to introduce engineering students to the concepts, theory and practice of ethics in academic, professional, and personal life environments and means to effectively and persuasively communicate through ethical quandaries with various stakeholders. Students will obtain a strong individual and team-based, hands-on, learning experience through a course curriculum consisting of lectures; supporting seminars and workshops; case studies; and team-based activities. The course will be delivered along the following outline:

- I. Classical Moral Theory as Applied to Science and Engineering - The Importance of Ethics in Science and Engineering; Philosophy, Religion, and Ethics; Moral Analysis; The Role of Codes of Ethics, Virtues and the Psyche; Habits and Morals; Distinguishing Exterior and Interior Morality; The Importance of Intention; Hierarchy of Moral Values; Virtuous Imprinting
- II. Evaluating Ethical Judgments - Evaluating Exterior Acts; Factors Limiting Moral Responsibility and Degrees of Responsibility; Truth in Actions and Words; Harm from Deception, Withholding Truth and Spreading Truth; Whistleblowing; Privacy Issues; Recognition from Scientific Publication; Plagiarism; Black and Gray in Scientific Practice and Publication; Responsible Conduct of Research; Conflict of Interest; Credit and Blame in Team Projects; Authorship
- III. Persuasive Communications – Oral and written communications; Persuasive presentation of ideas; Messaging; Communication of ethical breaches with stakeholders
- IV. Ethics in the Global Engineering Profession - Fairness in Supervising; Fairness in Contracting; Intellectual Property and Society; Environmental and Sustainability Issues; Social Aspects of Employment; Resource Allocation by Merit, Social Worth, Need, Ability to Pay, Equal or Random Assignment and Similarity; Differing Anthropologies, Principles, and Methods; Global Cultural Considerations

Assignments and Grading:

Final grades for the course will be determined as follows:

- Code of Conduct Assignments - 20%,
- Case Analyses and Presentations - 60%,
- Final Exam - 20%

The course is offered through distance education (UF EDGE). EDGE students will not be graded on class participation and the weight of grades for other assignments will be increased accordingly.

The Grade Scale for the course is:

A = 90 or above	C = 70 - 73
A- = 87 - 89	C- = 67 - 69
B+ = 84 - 86	D+ = 64 - 66
B = 80 - 83	D = 60 - 63
B- = 77 - 79	D- = 57 - 59
C+ = 74 - 76	E = 56 or below

Attendance and Expectations:

Attendance is mandatory at all sessions, and more than one unexcused absence may adversely affect the student's grade, subject to the UF attendance policies (<http://www.registrar.ufl.edu/catalogarchive/03-04-catalog/student-information/academic-regulations/attendance-policies.html>).

Students may be evaluated on their participation in classroom discussions, whether about the case under consideration or about the topic of the lecture.

All assigned readings are to be completed before the session - see the Course Outline for a complete list. Each required reading will be specifically chosen to provide a certain insight or skill; thus, every assignment is mandatory. Though there is no way to verify that students have read the material before class, all lectures, study questions, assignments, and exams assume a fundamental understanding of many concepts provided by the readings. Consequently, failure to keep up with the assignments will have an adverse effect on a student's grade. Also, if the instructor feels that the class in general is not keeping up diligently with the reading assignments, he/she may require an in-class assignment at any time that will test the student's knowledge of reading assignments to that point in time.

Unless stated otherwise, assignments are to be submitted to the instructor electronically by the beginning of the session when the assignment is due. Late submissions will typically not be accepted.

Honesty Policy:

All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligations as a UF student and to be honest in all work submitted and exams taken in this course and all others.

Accommodation for students with disabilities:

Students requesting classroom accommodations must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting the accommodation.

UF Counseling Services:

Resources are available on-campus for students having personal problems or lacking clear career and academic goals. These resources include:

- University Counseling Center, 301 Peabody Hall, 391-1575, personal and career counseling
- SHCC Mental Health, Student Health Care Center, 392-1171, personal counseling
- Center for Sexual Assault/Abuse Recovery and Education (CARE), Student Health Care Center, 392-1161, sexual assault counseling
- Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling

Software Use:

All faculty, staff and students of the University are required and expected to obey the laws and legal agreements regarding 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.

Administrative Information and Student Policies

This will be unlike any engineering class you have ever taken. Students will be constantly challenged in this class to deeply examine their ethics and morals. The instructor also will expect you to challenge him/her throughout this class in deepening your understanding of engineering ethics and communications. There is almost nothing you cannot ask the instructor.

- There is barely the minimum class time necessary to cover the essentials of this topic. More than one unexcused absence can cause a decrease in your course grade at the instructor's discretion. If you expect to miss a class, please let the instructor know at least 24 hours ahead of time. Depending on the circumstances, the instructor has the discretion to consider the absence as excused or unexcused. It will be your responsibility to find out you're your classmates or the instructor what material was covered, what additional assignments were made, and to obtain any handouts you may have missed. Handouts will typically, but may not always, be available online.
- Important assignments, announcements, and information will typically be posted on the course web site, but it is the student's responsibility to make sure to get all assigned materials from classmates or the instructor. Read all course web pages thoroughly and often, and never come to class without reading that day's agenda and assignments.

- You are expected to be prepared for every session. It is our practice to spread participation over the class; you may be called upon in every class.
- Feel free to discuss the course and your learning progress with the instructor at any time.
- Given the pace of this course, the instructor will strive to use class time effectively and ask you to do the same. This includes starting on time and focusing discussions on the topic at hand. Attendance may be taken at the beginning of every class.
- Students will be evaluated based on attendance and contribution to in-class discussions and sections and discussion boards, as well as timely completion of assigned readings and assignments.
- The instructor will endeavor to create a supportive environment, where there is no penalty for taking a definite stance and expressing new ideas.

Class Sessions

Students will be evaluated on their participation in classroom discussions, whether about the case under consideration or about the topic of the lecture. The grading of classroom participation is difficult because of an element of subjectivity not present in grading written assignments. Nevertheless, it is a vital part of the course. Most students feel comfortable in speaking up with thoughtful comments and questions, but some do not, and we wish to be fair to everyone. The instructor will not be grading on "air time", but rather on the quality of the question or comment. Participating in classroom discussions, freely and without fear, is strongly urged. No opinion is held in disregard, and only through active discussion can we arrive at some consensus of reasonable action. Any discussion of individual ethics and morals can be emotionally charged which may lead to lively discussion, but respect for others' opinions and civility will be strictly enforced by the instructor. Any student deemed by the instructor to be disruptive will be asked to leave the classroom.

IMPORTANT NOTE TO STUDENTS ON THIS COURSE SUMMARY:

This document is provided as a general summary of the course and is not meant to be substituted for the course syllabus in any way. The course structure, grading, outline, etc. may be modified from time to time and this document may or may not reflect the latest course information. In case of any conflict between this document and the course syllabus, students should rely on the course syllabus.