What is Engineering Communications and Societal Integration?

Engineering is not the art of building devices; it's the art of fixing problems. Devices are a means, not an end. Fixing problems means first of all understanding them—and since the whole purpose of the things we do is to fix problems in the outside world, problems involving people, that means that understanding people, and the ways in which they will interact with your system, is fundamental to every step of building a system.

Essentially, engineering is all about cooperation, collaboration, and empathy for both your colleagues and your customers. If someone told you that engineering was a field where you could get away with not dealing with people or feelings, then I’m very sorry to tell you that you have been lied to. Solitary work is something that only happens at the most junior levels, and even then it's only possible because someone senior to you—most likely your manager—has been putting in long hours to build up the social structures in your group.

Yonatan Zunger
All lab sessions are face-to-face
Friday lectures are hybrid
- Use website’s Calendar to help
- Required attendance
  - Sept. 1, Sept. 8, Sept. 29, and Dec. 1
  - For Monday lab sessions, Sept. 15 is required
- Coaching sessions
- Video learning (watch and study; use for review)

Lab Sessions

Grading Criteria [pg. 5]
- 200.0 point system
- Do not convert into percentages
  - Due to the large pass or fail quantity, a conversion is not an accurate representation of grade requirements.

Grade Expectations: F [pg. 6]
- Does not meet minimum requirements; engages in unprofessional, disrespectful, or unethical behavior; does not improve or progress; does not demonstrate learning or achievement of course objectives; does not engage in critical thinking; approaches assignments with lackadaisical effort; if entering a room anywhere in the world, student will perform well below average and show poor proficiency as a speaker and writer.

Grade Expectations: D
- Completes the assignment by only fulfilling minimum requirements; has poor quality assignments; neglects to adhere to instructions; rarely engages in critical thinking; shows lackadaisical efforts; if entering a room anywhere in the world, student will perform below average or show poor proficiency as a speaker or writer.

Grade Expectations: C
- Uses examples as templates; does not attempt to achieve anything greater than accomplishing the defined task; develops bland or fluffy content; neglects details; learns the course content sufficiently enough to regurgitate; sometimes engages in critical thinking; sometimes shows lackadaisical efforts; if entering a room anywhere in the world, student will perform as an average speaker and writer.

Grade Expectations: B
- Exceeds minimum requirements in some areas but not all; effectively uses creativity to create engaging content while being concise; learns the course content sufficiently enough to develop examples; usually engages in critical thinking; if entering a room anywhere in the world, student will be either one of the best speakers or writers and show proficiency in the other form.

Grade Expectations: A
- Significantly exceeds minimum requirements in all assignments; demonstrates innovative, creative, and effective content to engage and inspire audiences while being concise and adhering to all requirements; displays advanced understanding of all concepts; masters course content and is able to instruct others on the material; engages in critical thinking; if entering a room anywhere in the world, student will be one of the best speakers and writers in the room.
Student Learning Objectives (SLOs) [pg. 2 & 8]

SLOs

4. Students will have the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context. [integrates CO11]
   a. Students will employ cogent reasoning methods in their own examinations of problems and issues.
   b. Students will describe how scientific and technological developments affect society and the environment.
   c. Students will integrate, synthesize, and apply knowledge of the relationship between science and technology and societal issues in both focused and broad interdisciplinary contexts.

5. Students will be able to function in a multi-disciplinary team. [integrates CO1]

SLOs

7. Students will be able to communicate effectively. [integrates CO1]

8. Students will have a recognition of the need for, and an ability to engage in life-long learning.

ENGR 301

Five Strategies for Success

1. Time Management
   • Watch videos when assigned
   • Re-watch as necessary
   • Finish assignments early
   • Write, walk away, edit
   • Everyone here has sacrificed something

2. Use Resources
   • While watching videos, take notes.
   • Learn the material.
   • Especially take notes on final exam topics (we have already provided with a study guide)
   • Attend coaching sessions

3. Review grade regularly
   • Provide a lot of feedback
     – Avoid propagation of error
   • Understand and improve
   • Do not convert to percentages to estimate grade (subtract from 200 pts.)
   • Seek improvement not just getting by
4. Self-Reflection
- No secrets – we have provided rubrics, helpful hints, coaching sessions
- Avoid the rumor mill
- Be confident but avoid allowing arrogance to hinder learning
- Learn how to do it; you are brilliant; you are able to learn

5. Be an Engineer not a Student
- Examples – as soon as it is done; it is now average
- Innovation – engineers must be better than what now exists
- Counterexamples – yes, they exist, we provide research based, statistically significant advice
- Highest standards – we teach at level 10 standards and formality

Unwritten Laws of Engineering [pg. 16]
(aka Change from Thinking Like a Student to Thinking Like a Professional)
- Why should I? Who makes up these rules?
  - Social contract
- The Law of Humility: One must accept something in order to change it.
- Benefits & Consequences
- W.J. King, 1944
  - Professional
  - Respectful
  - Ethical
- Cold, hard truth
- High standards
- Applied equally

Folders & FERPA Statement [pg. 18]
- Please place section and team number on everything
- Folders rules
- Cabinet in SEM 131
- FERPA Statement
  - Select only one option

Impromptu Improvements [pg. 19]
- Instruction
- Due Date
- Imbedded in videos
- Submit either in class or to box in SEM 131

Professional Development [pg. 19]
- Life-long learning
› Maximum of ten points
› Record activity on worksheet
› Not extra credit; require class component
› No extra credit in class

32 Grammar Basics [pg. 20]
› Please review by Sept. 8
› Please always consult author’s kit for standards

33 Formatting Requirements [pg. 27]
› Style notes
› References
   - References in Reference section must match to in-text citations
› Figures
› Tables
› Equations
› Appendix

34 Technical Briefing [pg. 37]
› Due: in lab Sept. 5, 6, 7, or 11
› Topic: Anything engineering or technical
› Time: Maximum of two minutes (no questions)
› Requirements: visual aids, professional attire, and handout copy of slides
› Grading & Assessment Rubrics

35 K-12 Project [pg. 37]
› Design a K-12 project
   - Have fun
   - Learn an engineering or scientific principle
   - Become aware of engineering
› Visit Classroom
   - Service learning agreement and waiver
› Team assignments are week of Sept. 11

36 K-12 Project Evaluation Criteria
› Proposal
   - Presentation
   - Written report
   - Completes problem statement, design concept, literature search, and project management
› Final Review
   - Presentation
   - Written report
   - Edits proposal
   - Completes all components

37 White Paper [pg. 45]
› Identify a contemporary issue in your field.
› Due: week of Oct. 20
Evaluation Criteria

Core Capstone Defense [pg. 46]
- Illustrate fulfillment of all SLOs
  - Previous coursework
  - Current coursework
  - Extracurricular activities (related to curriculum)
  - Work experience (related to curriculum)
  - ENGR 301
- Written report and presentation
- Pass or fail

Please submit today
- Photo ID
- FERPA statement
- Received Service Learning Agreement form
- Service Learning waiver