

Oregon Institute of Technology
ENGR 101 – Introduction to Engineering I
Course Syllabus

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Office hours will be announced and posted outside of instructor office doors.

Class: Tuesdays at 12 pm in Owens 224

Laboratory: Tuesdays or Thursdays from 3pm to 5:50pm in CO149 (CE) or TBD (EE/REE)

Prerequisites: Enthusiasm to study engineering and a desire to achieve at a high level

Required Text: Landis, Raymond B. *Studying Engineering, 4th Ed.* Discovery Press, 2012.

Required Equipment: Engineer and Architect scales (CE), breadboard (EERE parts kit), engineering paper, FE-approved calculator (visit www.ncees.org), mechanical pencil

Course Description: Introduces the student to engineering with a focus on academic success, professional development, ethics, communication, creative problem solving techniques, engineering tools (CAD/CAE), and design concepts. A discipline-specific team-based laboratory experience encourages consideration of a chosen engineering discipline.

Course Objectives: Upon completion of this course, students will be able to

1. work collaboratively within a team to solve problems
2. communicate engineering concepts orally or in written form
3. explain engineering problem solving methods and common tools
4. explain the various engineering disciplines and their opportunities
5. explain the skills needed to succeed in an engineering program
6. outline the requirements for engineering licensure

Evaluation:

20% - Project (submitted week 10)

30% - Homework (no late submissions accepted)

50% - Laboratory activities (see laboratory syllabus for more detail)

90-100% = A

80-89% = B

70-79% = C

60-70% = D

< 60% = F

Schedule:

Week	Lecture	Reading due	Assignment due	Final Report Draft
1	Course, faculty, and student introductions			
2	Student Chapters and Clubs	Ch. 1, 7.1, 7.2	Download Project Template	1 & 2
3	Engineering Disciplines & Careers	2	2.25, 2.27	10 & 14
4	Teaching and Learning	3	3.3 Felder Learning Styles Survey (on Blackboard by Friday) 3.12-3.14 Academic Success Skills Survey	6 & 7
5	Engineering Careers (Career Fair is Wednesday!)	5	2.41 Prepare a resume	8 & 13
6	Professionalism, Ethics, and Licensure	Review 2.11, Read 4 OSBEELS website	Weekly Schedule (on Blackboard)	3 & 5
7	Engineering Programs, Minors and Other Options	Review 4.4, Read 8, Review Catalog		4 & 12
8	Internships and Cooperative Programs	6	DegreeWorks Plan, Academic Plan, 4.15	9 & 11
9	Professional Success	7	6.17-6.19 MBTI Survey	15, 16, 17 goals
10	ENGR102 Design Project	7.5	Final Project Paper	
Finals	ENGR102 Conceptual Design and Lab Project Presentations		Course evaluations in class	

Comments:

- This course will consist of individual and group work. Individual submissions may include consultation with your peers, but the work submitted should be your own. You should understand the material you submit. Do not submit the work of others as your own! Group work must indicate the names of all involved.
- Academic honesty – the university policy on this (effectively a two-strike policy) is very serious. Understand the university policy and do not make the mistake of violating it.
- This class is an exercise in integrated learning. Enjoy the opportunity of working side by side with your peers in different disciplines. You will do this often once you graduate from Oregon Tech and we are excited to have you do it now. There will be many occasions in the coming years of college when you will do it much less. Just remember how beneficial it can be and seek out the wisdom of others as often as you can!
- Students with disabilities are encouraged to speak with a faculty member early with regard to any accommodations you might require.
- Cell phones – turn them off and do not use them in class (unless requested).

Design Your Process for Becoming a ‘World-Class’ Engineering Student

Engineers “design products or processes to meet desired needs.” Through this project you will “Design Your Process for Becoming a ‘World-Class’ Engineering Student.” The text *Studying Engineering* will be a valuable resource in this design project.

Task:

For each of the following items, develop a plan that will indicate:

- a. Where you are currently on each item
 - b. Where a “world-class” engineering student would want to be on each item
 - c. What you need to do to move from where you are to where you would need to be to become a “world-class” engineering student
1. Set goal(s) for what you want to achieve through your engineering education (major, time to graduation, GPA, etc.) and beyond.
 2. Develop a strong commitment to the goal of graduating in engineering by:
 - a. Clarifying what success in engineering study will do to enhance the quality of your life (rewards, benefits, opportunities, payoffs, etc)
 - b. Understanding the essence of engineering (be able to articulate an answer to the question “What is engineering?”) and being aware of past achievements, current opportunities (academic disciplines, job functions, industry sectors) and future directions.
 - c. Preparing a “road map,” a term-by-term plan to guide you to graduation
 - d. Other strategies identified by you.
 3. Be prepared to deal with inevitable adversity.
 4. Do a good job of managing various aspects of your personal life including interactions with family and friends, personal finances, outside work, and commuting.
 5. Change your attitudes to those appropriate to success in math/science/engineering coursework. Among those that are candidates for change are:
 - a. Low self-confidence or overconfidence
 - b. Reluctance to seek help
 - c. Resistance to change, grow, develop, improve
 - d. Tendency to procrastinate
 - e. Avoidance behavior (avoid difficult or unpleasant tasks)
 - f. Reluctance to study with other students
 - g. Negative view toward authority figures
 - h. Other negative attitudes identified by you
 6. Understand teaching styles and learning styles and how to make the teaching/learning process work for you.
 7. Change your behaviors to those appropriate to success in math/science/engineering coursework to include at least:
 - a. Devoting adequate time to studying

- b. Adopting the principle that you master the material presented in one class before the next class comes
 - c. Make effective use of your peers through sharing information and group study; build productive relationships for college and beyond
 - d. Make effective use of your professor both inside and outside of the classroom
 - e. Prepare for lectures by reading ahead, attempting a few problems, formulating a few questions
 - f. Other behaviors identified by you
8. Manage your time and tasks effectively.
9. Understand the principles of teamwork and leadership and develop skills to be both effective team members and also effective team leaders.
10. Participate in co-curricular activities to good benefit.
11. Understand and respect differences in learning styles and personality types and in ethnicity and gender.
12. Engage in good health and wellness practices including management of stress.
13. Develop a high sense of personal and professional integrity and ethical behavior.
14. Become effective at getting what you want and need from the educational system by utilizing campus resources (such as advising, tutoring, job placement services, health center, etc) and adopting other strategies.
15. Add three additional objectives that you perceive are important for your success in engineering study.

Deliverable:

Describe your plan in a minimum 17-page report using the template provided on Blackboard.