COEN 1500

Introduction to Engineering

Fall 2016

Course Goal

To enhance your success as an engineering student and to assist you in confirming your choice of major.

Prerequisite

Enthusiasm to learn about engineering

Format

This is a 1-credit, compressed, hybrid (mostly online), asynchronous course. Like most things, the more you put into it, the more you will get out of it.

1 Credit, Compressed

Typical 1-credit courses meet one hour per week for the duration of the semester. COEN 1500 is compressed; thus we have 8 weeks of longer, more intensive content, allowing the course to end in early November. COEN 1500 does not release content or assignments during the weeks of the Applied Math (APPM) and Physics (PHYS) midterms.

Hybrid (mostly online)

COEN 1500 is a hybrid course. The majority of your coursework will be delivered online through Desire2Learn (D2L), and we will also have a mix of required and optional in-person activities.

Asynchronous

There is no specific time you must be online. You can engage in our online content whenever during the week is most convenient for you.

Office hours

Dr. Sarah Miller, instructional staff, and TAs will meet for office hours at the following times and location:

- Wednesday 1:30-2:30, ECOT 831
- Thursdays 1:30-2:30, ECOT 832

If you'd like to attend office hours virtually on Mondays or Thursdays, <u>download the free Zoom app</u> and then <u>enter our Zoom room</u> to meet with us. (<u>General Zoom Tips & Tricks</u>)

Email Policy

It is important to the instructional team that we are connected to you and support you in the most effective ways possible. Given the size and scale of this course, email is NOT an effective way to communicate with the instructional team. We cannot respond to emails sent directly to the instructor or staff.

If you have questions:

■ **Ask a peer.** There are 800+ students in this course and many of them likely live near you and attend the same classes as you. They may have already solved your issue and will be happy to help. You can email each other using the <u>Classlist</u> in Desire2Learn.

- Ask your questions in D2L. The Got a Question? discussion forum in D2L is a place for you to ask questions of your peers as well as the instructional staff. All questions will be answered, either by a peer or by the instructional staff, within 48 hours of the original posting.
- Ask your questions in office hours. We host office hours two days a week, during the times listed above. We will have all members of the instructional staff present to answer your questions.

If office hours conflict with your class or work schedule, you can email intro2eng@colorado.edu to set up a one-on-one meeting. Use the subject line "Meeting request". Your message should include at least two times when you are able to meet and a brief (1-2 sentence) description of the reason for the meeting. Respect the time of your instructor and TAs. This email should be send at least two days (48 hours) in advance, we cannot respond to requests that do not give us at least 1 day to respond and schedule a meeting.

Content

This course is organized into 8 thematic content modules, each lasting one week. This is a course *about* engineering, intended to give you an overview of what our field encompasses and where your interests may intersect with the kinds of opportunities engineering enables. This is <u>not</u> a projects course.

Content will be released on Monday mornings by 9am. You are expected to have completed all the week's work by the following Sunday at 11:59PM MST.

Deadlines

Late work is <u>not</u> accepted in this course. You are expected to participate in each week's content and submit all required material by Sunday 11:59PM MST.

You are expected to have submitted your final project to D2L by Sunday, November 6th 11:59PM MST.

Grading & Assessment

We expect you to participate each week in the "attend, view, and read" activities. Each week, after attending an event, viewing content, or reading material, you will be expected to synthesize what you've learned by completing a D2L quiz and a short writing assignment.

	Points for each	Total points	Total Percent
Do	5	40	40%
Write	5	40	40%
Final Project	20	20	20%

Your grade will be calculated out of 100 points.

Α	92-100%	С	72.5-76.4%
A-	89.5-91.9%	C-	69.5-72.4%
B+	87-89.4%	D+	66.5-69.4%
В	82-86.9%	D	62.5-66.4%
B-	79.5-81.9%	D-	59.5-62.4%
C+	76.5-79.4%	F	0-59.4%

Required Readings and Textbooks

There is no required textbook for this course. We will be distributing the weekly readings on D2L.

Many of the weekly readings will come from the following textbook: Studying Engineering: A Road Map to a Rewarding Career, 4th Edition Raymond B. Landis

ISBN: 978-0-9793487-4-7

Please note that we are distributing small sections of this textbook under CU's custom publishing and copyright clearance policies, any redistribution of these materials is strictly prohibited.

Required In-Person Attendance

As stated before, most of this course will be hosted online and accessed through D2L; however, there will be opportunities for you to attend panels throughout the the semester. There are three events this semester you will be required to attend: the <u>Be Involved Fair</u> (Week 1), the <u>Career Fair</u> (Week 7), and the Opportunities Fair (Week 10).

Panels

COEN 1500 will host a number of informational panels throughout the semester. These will be held on Wednesdays evenings, starting at 6 pm. We will be recording the events and they will be available online for you to watch after the events have ended. If you do not attend in person, you will be expected to watch the recording online. If you do attend in person, you may leave with a token of attendance!

Required Events

There are a total of 3 required events this semester.

Be Involved Fair

CU will be hosting the student society fair on Wednesday, August 24 from 3-7pm. More details in Week 1.

Career Fair

CU Career Services will be hosting a fall career fair on Tuesday, October 4 from 11-4 and Wednesday, October 5 from 11-4 in the UMC Ballrooms. More details in Week 7.

Opportunities Fair

COEN 1500 will host the Opportunities Fair on 10am - 2pm at the Rec Center on October 25th. More details in Week 10.

Writing

This course will require you to product weekly writing assignments. These are intended to help you explore future possibilities and prepare you on your path to becoming a CU Professional Engineer.

Formatting

All assignments must be submitted in <u>docx</u> or <u>pdf</u> formats (no .gdoc, .pages, .txt, etc) and must follow these format guidelines:

- Document
 - o 1 inch margins on top, bottom, left, and right
- Header

- Should be located in the header (not in the body), right aligned, 9-point Times New Roman font, 1.0 line spacing, and 0-point paragraph spacing (0-point spacing after each paragraph)
- Write: your name <return> COEN 1500 <return> date <return> week number and assignment name
- Content and Body
 - All text should be left aligned, 11-point Times New Roman font, 1.5 line spacing, and
 6-point paragraph spacing (6-point spacing after each paragraph)
 - o Do not indent the first line of each paragraph
 - o Do not put extra spaces between paragraphs or between the header and the body

If would like an example document with these formatting guidelines, you may use either of the following examples:

- 1. Example Formatting Document (Microsoft Word)
- 2. Example Formatting Document (Google Docs)

Writing Help

CU has a free Writing Center available to all students. They help with all stages in the writing process and all levels of students. The Writing Center has drop-in hours and appoints available. For more information, visit The Writing Center website.

Final Project

The final project in this course will be a report where you will describe how to "Be a Successful Buff Engineer". Each student's project will be unique to them, and we hope that this project will serve you throughout your time here at CU. This report will be a cumulation of each week's writing assignments. That is, the writing assignments you will complete each week should also be used in your final project. Here is the Final Project Description.

You are expected to have submitted your final project to D2L by Sunday, November 6th 11:59PM MST.

Extra Credit

We encourage you to meet with the Engineering Ambassadors for peer mentoring and advising support. You may visit the Engineering Ambassadors up to two times in person this semester to receive extra credit. Engineering Ambassadors office hours will be held throughout the semester **in-person** in ECAD 100C, Mondays–Fridays from 1:00–4:00 p.m. The Engineering Ambassadors will confirm your attendance and extra credit will be applied in intervals throughout the semester. This opportunity closes Friday, November 18th.

Groups

Since this is a large course, we will be dividing you in groups named by Buff colors: Gold, Silver, and Black. You will see this group on D2L.

Schedule

Week 1, Aug 22-Aug 28 Getting Oriented and Involved Objectives: Students will be able to navigate the engineering center & students will be able to identify at least one extracurricular activity of interest Be Involved Fair Wednesday, August 24 from 3-7 at the Norlin Quad Attend Learn about at least three student societies/clubs • This fair is required for **all** students. This is one of the three required activities of the semester. All videos in the Getting Oriented Playlist: o Introduction [5:21] View Moonshot [3:45] o Lost in ECCR [2:23] Landis, Section 7.1: Participation in Student Organizations [7 pages] ■ Explore Student Organization Resource Guide ■ Explore student clubs in the CSI Student Organization Directory Read • Use "purpose" dropdown on left side of page to narrow down into groups, such as "engineering" COEN 1500 Pre-Course Survey [6 questions, ~3 minutes] D2L Quiz: The Syllabus Do This guiz is required. You MUST take it or you will be dropped from course. Write: Extracurricular opportunities Name two extracurricular opportunities of interest to you. Why do Write they appeal? Describe your plan for joining or becoming involved with at least one of these. o Length: 1 page

Week 2, Aug 29-Sept 4 The Disciplines Objective: Students will be able to select a possible major		
Attend	 Faculty Panel Wednesday, Aug 31 at 6pm or 6:45pm in Duane G1B20 6 - 6:30pm Aerospace focus 6:45 - 7:30pm All majors If you attend in person, you will be able to ask questions and may leave with a token of attendance. If you don't attend in person, you should watch the recording afterwards. Though there are two panels, you are only required to attend (or watch the recording of) one panel Though there are two panels, you are only required to attend (or watch the recording of) one panel 	

	Video 1, COEN 1500 Feerly Appeals Appeals (20:04)
	 Video 1: <u>COEN 1500 Faculty Panel: Aerospace</u> [32:04] Video 2: <u>COEN 1500 Faculty Panel: All Majors</u> [48:22]
View	As many of CEAS Major videos as you want! (Minimum of 3). Select from the 11 videos in the CEAS Major Video Playlist: 1. Aerospace Engineering - Jeff Parker [2:34] 2. Applied Mathematics - David Bortz and Mark Hoefer [5:59] 3. Architectural Engineering - Wil Srubar [3:14] 4. Civil Engineering - Amy Javernick-Will [2:46] 5. Chemical and Biological Engineering - Wendy Young [2:56] 6. Computer Science - Elizabeth Boese [2:37] 7. Electrical Engineering - Bob McLeod [2:52] 8. Engineering Physics - Meredith Betterton [2:29] 9. Engineering Plus - Malinda Zarske [2:58] 10. Environmental Engineering - Mark Hernandez [2:32] 11. Mechanical Engineering - Virginia Ferguson [3:14] 12. Technology, Arts and Media (TAM) - ATLAS Institute [2:55]
Read	 Landis, Section 2.1: What is Engineering [3 pages] Landis, Appendix E: Description of Engineering Disciplines [20 pages] Abbreviation cheat sheet Print this out (or open a new tab) to use during your quiz! You may use it.
Do	■ D2L Quiz: Acronyms and Major Videos
Write	 Course Planning Select a major and chart out your courses through graduation. Read "COEN 1500: Charting Out Your Courses" for more details. Use one of the two following file templates when planning your courses: Course Planning Template (Google Docs) Course Planning Template (Microsoft Word) Submit assignment in D2L dropbox folder. (Directions: "Assessment" -> "Dropbox" -> "Week 2 - Course Planning")

Week 3, Sept 5-Sept 11 The College Midterm Objective: Students will be able to identify resources to support engineering success at CU		
Attend	 Math exam preparation activities! Read "Practicing Strategies for Success on Technical Exams" for more details. 	
View	 All videos from the College Midterm Playlist: Why we give exams [2:24] What I wish I had known [3:40] Strategies for Success [3:23] 	
Read	■ Library Resource Guide [1 page] ■ Student Resource Guide [1 page] ■ Engineering Academic Support [2 pages]	

	 Academic Support for Pre-Engineering students [2 pages]
Do	 D2L Survey: Math Exam Preparation This survey will be about the math preparation you did this week. Do not take this quiz until you have completed the "Attend" assignment for this week.
Write	 ■ Write: Resources available to you "Being a good student does not mean being independent." One common theme among successful students in our college is that they seek help. ○ Describe three resources you will use when you are seeking help in your courses. Have you used any of these yet? Set yourself a goal as to when and how often you will use each of these available resources. ○ Details: ■ Length: 400-500 words (1 page), not including the header ■ Make sure to follow the formatting guidelines explained in the syllabus ■ Submit in a standard file type such as docx or pdf ○ Turn in assignment in D2L dropbox folder

Week 4, Sept 12-Sept 18 Preparing for Careers Objective: Students will be able to compose a resume that will prepare them for internships and job opportunities		
Attend	 Alumni Panel Wednesday, August 14 from 6-7 pm in DUANE G1B20 If you attend in person, you will be able to ask questions and may leave with a token of attendance. If you don't attend in person, you should watch the recording afterwards. Video: COEN 1500 Alumni Panel [44:08] 	
View	■ Career Services [8:12]	
Read	 Landis, Section 2.4: Rewards and Opportunities of an Engineering Career [11 pages] Landis, Section 2.7: Engineering Job Functions [4 pages] Resume Checklist [1 page] Sample Resume [1 page] 	
Do	 COEN 1500 Mid-Course Survey [10 questions, ~5 minutes] Create your Engineering Resume Create a resume that adheres to the "Resume Checklist" guidelines. Look at the "Sample Resume" to help with what your resume should look like Details Maximum 1 page. Do not go onto a second page Turn in assignment in a standard file type, docx or pdf 	

	 Submit assignment in the D2L dropbox folder named "Week 4 - Do: Create your Engineering Resume" This Resume assignment will replace the Do quiz for this week
Write	 Write: Additional items on your resume What is one item you wish you could list on your resume? What is your plan for seeking and securing that opportunity? That is, when do you hope to participate in this opportunity? How and when will you apply or prepare to do so? Details Length: 1 page, about 500-600 words Turn in assignment in a standard file type, docx or pdf Follow the formatting guidelines listed in the syllabus Submit assignment in the D2L dropbox folder named "Week 4 - Write: Additional items on your resume"

	Week 5, Sept 19-Sept 25 Midterm Week No Assignments. Good Luck!
Optional Review of your Resume	 Resume Critique Thursday, Sept 22 from 10:30am - 2:30 pm in the Discovery Learning Center Drop in Career Center Hours Tuesdays and Thursdays from 1:30-4:00 in the Engineering Center Mondays through Thursdays from 1:30 - 4:00 in the Career Center in the C4C

Objective: Stud	Week 6, Sept 26-Oct 2 Applying the Disciplines dents will be able to choose at least one supercurricular opportunity of interest in engineering
Attend	 Opportunity Panel (study abroad, research, active learning, internship) Wednesday, September 28 from 6-7 pm in DUANE G1B20 If you attend in person, you will be able to ask questions and may leave with a token of attendance. If you don't attend in person, you should watch the recording afterwards. Video: COEN 1500 Opportunity Panel [45:07]
View	 As many of CEAS Minor videos as you want! (Minimum of 2). Select the videos from the CEAS Minor Playlist: 1. Global Engineering Minor - Andrew Wingfield [3:56] 2. Business Minor - Marie Pecoraro [5:37] 3. Energy Minor - Julie Steinbrenner [3:04]
Read	■ Guide to Active Learning Opportunities [4 Pages]

Do	 Study Abroad 101 Quiz or Career Buffs portfolio For more details about the assignment, read the assignment page: Study Abroad 101 or Career Buffs Submit assignment in D2L dropbox folder. (NOTE: There are two separate dropbox folders for your two assignments this week, make sure you are submitting to the correct one.)
Write	Just a reminder, you get out of this course what you put into it. These assignments are not meant to be busy work, but to introduce you to different opportunities and areas that can benefit you at CU. Take advantage of these assignments to explore these areas and create a plan for your time at CU! All assignments are building towards your plan to become a Successful Buff Engineer. • Write: Opportunities in Engineering • What is (at least) one opportunity in engineering, whether a minor, study abroad, research experience, or internship, that you plan to pursue? Why? When will you pursue this? • Details • Length: 1 page, about 500-600 words • Turn in assignment in a standard file type, docx or pdf • Follow the formatting guidelines listed in the syllabus • Submit assignment in the D2L dropbox folder. (NOTE: There are two separate dropbox folders for your two assignments this week, make sure you are submitting to the correct one.)

Objective: Studer	Week 7, Oct 3-Oct 9 Considering Careers Its will be able to associate overcoming challenge with the path toward professional success
Attend	 CU Career Services Career Fair Tuesday, October 4 and Wednesday OR October 5 from 10-4 in UMC ballrooms Bring your resume, and introduce yourself to at least three organizations Attendance at one of these fairs is required for all students If you can attend either fair, you should attend on Tuesday, October 4th, as this is the Technical Career Fair, and companies will be looking specifically for engineers. You do not have to stay the entire time. Stay long enough to talk to at least 3 employers. Review the Career Fair Tips Page for more information about appropriate dress code and introduction scripts
View	 As many of CEAS Career videos as you want! (Minimum of 2). Select from the 8 videos in the Careers as Engineers Video Playlist: Meet Nan Joesten - Chemical Engineering Graduate working in Law and Management Consulting [17:38] Meet Ben Ploeger - Mechanical Engineering graduate working in Education [16:42]

	 Meet Torey Ploeger - Systems Verification Engineer [18:54] Meet Katie Allen - Broomfield City and County Engineer (and Chem/Bio and Aerospace graduate) [14:50] Meet Avery Bang - Civil Engineer and CEO of Bridges to Prosperity, a Civil Engineering Non-Profit Organization [20:19] Meet Wesley Chun - Developer Advocate at Google (and computer science engineer) [16:14] Meet Mike Rothberg - Civil and Environmental Engineer, Executive VP at Tetra Tech [10:42] Meet Carl Himpsel - Mechanical engineering graduate working in Mechanical and Aerospace Engineering [17:43]
Do	 Interview an engineer! Read about the assignment here: Interviewing an Engineer Record and reflect on the interview in the D2L Survey: What did you learn from the interview?
Write	 Write: Your unique strengths The path toward an engineering degree may have bumps. As you heard from the professionals interviewed, it behooves you to be prepared to deal with inevitable adversity. What unique strengths do you bring to engineering?

Week 8, 10/10 Integrity in Engineering Objectives: Students will be able to apply ethics to the field of engineering as a student and will understand the importance of ethics in professional engineering.		
Attend	 Honor Code Panel Wednesday, October 12th from 6-7pm in Duane G1B20 If you attend in person, you will be able to ask questions and may leave with a token of attendance. If you don't attend in person, you should watch the recording afterwards. We recognize this may be a religious holiday for some students. If you're unable to attend in person, please watch the recording. 	
View	 As many of Ethics videos as you want! (Minimum of 1). Select from the 4 videos in the Ethics in the Real World Playlist: Space Shuttle Challenger Disaster Ethics Case Study [20:29] Piper Alpha Ethics Case Study [15:17] 	

	3. Spiro Agnew: Ethics Case Study [14:48]4. Hyatt Regency Walkway Collapse: Ethics Case Study [14:32]
Read	 Meet the Professor who helped uncover the Flint lead water crisis [3 pages] Honor Code Guidelines Read Section "A. About the Honor Code", pg2-4 [3 pages] Explore Sections "B. Honor Code Bodies" [4 pages] and "C. Procedures for Case Resolution" [7 pages] Landis, Section 8.6: Student Conduct and Ethics [3 pages]
Do	■ D2L Quiz: Honor Code
Write	 Write: Ethics and Careers What values are personally important to you? Identify one career that interests you, and describe how these values might influence you in that chosen career. Length: 1 page Submit assignment in D2L dropbox folder

Week 9, 10/17

Midterm Week
No Assignments. Good Luck!

Week 10, 10/24 Implementing your Engineering Plan Objective: Students will be able to construct a professional goal and an educational goal		
Attend	 Opportunities Fair Thursday, October 25th from 10am-2pm in the Rec Center, Lower Gym This is required for all students Introduce yourself to at least three organizations. You do not have to stay for the entire time, but long enough for you to visit with the exhibitors and complete with assignment. 	
Do	 D2L Survey: What did you learn from the Opportunities Fair? COEN 1500 Post-Course Survey [10 questions, ~6 minutes] 	
Write	■ Write: Your goals □ What is your goal for after graduating from CU? What do you think you want to do and why? To get there, what is your goal for your educational path at CU? In how many years do you want to graduate? What GPA do you aspire to have? □ Length: 1-2 pages □ Submit assignment in D2L dropbox folder	

Weeks 11, 10/31 Complete your Final Project		
Do	 Final Project Assignment Description Due Sunday, November 6th at 11:59pm Submit assignment in D2L dropbox folder Template for the final project Final Project Template (Microsoft Word) Final Project Template (Google Docs) 	

Policies

Religious Observances

Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Please contact me before class regarding any absences or conflicts due to religious observances. See full details at http://www.colorado.edu/policies/fac relig.html

Disability Services

If you qualify for accommodations because of a disability, please submit to your professor a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at dsinfo@colorado.edu. If you have a temporary medical condition or injury, see Temporary Injuries under Quick Links at Disability Services website (http://disabilityservices.colorado.edu/) and discuss your needs with your professor.

Honor Code

All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-735-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Other information on the Honor Code can be found at http://www.colorado.edu/policies/honor.html and at http://honorcode.colorado.edu

Discrimination and Harassment

The University of Colorado Boulder (CU-Boulder) is committed to maintaining a positive learning, working, and living environment. The University of Colorado does not discriminate on the basis of race, color, national origin, sex, age, disability, creed, religion, sexual orientation, or veteran status in admission and access to, and treatment and employment in, its educational programs and activities. (Regent Law, Article 10, amended 11/8/2001). CU-Boulder will not tolerate acts of discrimination or harassment based upon Protected Classes or related retaliation against or by any employee or student. For purposes of this CU-Boulder policy, "Protected Classes" refers to race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, or veteran status. Individuals who believe they have been discriminated against should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Student Conduct (OSC) at 303-492-5550. Information about the ODH, the above referenced policies, and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at http://hr.colorado.edu/dh/

Behavioral Standards

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. See policies at

http://www.colorado.edu/policies/classbehavior.html and at http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student code