Getting Started in Pre-Engineering

New Student Welcome Day
July 2017

University of Colorado Boulder
Program Benefits

• Pre-Engineering Program Faculty Director
  • Prof. Mahmoud Hussein, Aerospace Engineering Sciences

• Dual Academic Advising Support
  • Pre-Engineering Advisor
  • Campus Advising Specialist

• Direct enrollment access to engineering courses such as
  • COEN 1400: Project Design
  • CSCI 1320: Computer Science 1: Engineering Applications
  • CHEN 1310: Introduction to Engineering Computing

• Eligible to apply and live in engineering affiliated residential communities
How to transfer from pre-engineering to engineering

1. Enroll and successfully complete the required courses
2. Maintain forward and satisfactory progress while in the program
3. Participate in engagement activities
   - Majors Fair
   - Opportunities with Pre-Engineering Faculty Director
4. Meet admission requirements for engineering
Step 1: Enroll in required courses

- **Four** required courses
  - Two appropriate math (Calculus 1 & 2 at minimum)
  - Two appropriate science (college chemistry with lab and/or calculus-based physics)
- Courses apply towards Engineering and/or Arts & Sciences degree requirements
- Must be completed through the CU Boulder campus
What if I have completed some or all the course requirements through AP/IB/other college credit?

• College credit earned elsewhere cannot be utilized to meet program requirements

• Options for students in this situation
  • Repeat course(s) on CU Boulder campus
  • Move up to next level

• AP/IB/college credit earned for non-technical courses can be applied to potential degree requirements
Step 2: Forward and satisfactory progress

• For every semester active in program, student must
  • Enroll in at least one appropriate math or science course
  • Maintain good academic standing in Arts & Sciences (Cumulative GPA = 2.000 or better)
  • Earn C- or better grades in math, science and engineering courses
  • One grade below C- is permitted if GPA is 2.7 or higher

*Failure to maintain forward and satisfactory progress will result in discontinuation from the Pre-Engineering Program.*
Step 3: Admission requirements for engineering

- Student’s academic progress is reviewed automatically after each semester (up to 4 semesters)
- Majority of students are eligible for admission after 2 semesters in program

To be admitted to engineering:
- Earn CU Boulder Cumulative GPA of at least 2.700/4.000
- Earn CU Boulder Technical GPA of at least 2.700/4.000
  - GPA comprised of select math, science, and engineering courses
- All grades for technical courses must be “C-” or greater
- Semester GPA during admission review of at least 2.250/4.000 while completing 12 credit hours
Getting into engineering

- Any student who meets all of the admission requirements is guaranteed admission to the engineering major of their choice.
- Any student who fails to meet one or more of the admission requirements will be refused admission to the college.
- Students active in Pre-Engineering (continuing to make forward and satisfactory progress) are reviewed for admission upon completing the Four Required Courses listed earlier.
- If not immediately admissible, student re-reviewed the next semester.
  - Student may need to repeat courses with low grades, and/or
  - May need to improve overall grades to make GPA requirements
- Pre-Engineering students (making forward and satisfactory progress) may stay active in the program up to four semesters with three outcomes:
  - Meet Pre-Engineering admission criteria and be admitted to Engineering major
  - Discontinued from Pre-Engineering and pursue Arts & Science major
  - Discontinued from Pre-Engineering and pursue Regular IUT (Intra-University Transfer) Admission Criteria pathway to Engineering  [NOT REALISTIC]
Accelerated Transfer Option

• For highly motivated students during their first semester in program

• Requires full-time enrollment that includes:
  • Math – Calculus 1 (APPM 1350 or MATH 1300) or higher level
  • Science – general college chemistry with lab or calculus-based physics

• Guaranteed admission to engineering major of choice if:
  • Earn CU Boulder Cumulative GPA of 3.300 or better
  • Earn CU Boulder Technical GPA of 3.300 or better
  • Meet all other admission requirement (grades, term GPA, FT enrollment)

• No penalty for not meeting these requirements
Pre-Engineering Success Rate

• About 25% of a Pre-Engineering cohort is admitted to engineering

• Of the Pre-Engineering students who complete the Four Required Courses, almost 70% meet all admission requirements and are admitted to their engineering major

• Middle 50% of successful pre-engineering students who transferred to engineering
  • 3.6-4.0 High School GPA (unweighted)
  • 75%-94% High School Rank
  • 28-32 ACT Math, 27-31 ACT Comp
  • 640-710 SAT Math, 1220-1380 SAT Total (prior to March 2016)
University Exploration & Advising Center
First semester schedule for Pre-Engineers

1. Math course
2. Science course
3. Humanities/Social Science Elective
4. Engineering course and/or Free Elective
MATH

• Specific level based on placement, on-site assessment, or earned college credit (AP/transfer coursework)
• Starting at the right level for you is critical
  • Not required to start in Calculus!!
  • Credit for Calculus 1 or more? Use APPM exam archive
• Enrolling in APPM calculus course?
  • Consider adding Calculus workgroup

Refer to “Math Course Options” for more information
SCIENCE

- Any combination of approved chemistry and physics courses can satisfy program requirements
- Recommendations for specific engineering majors
- Science is math dependent
  - PHYS 1110 = corequisite, Calculus 1
  - CHEM 1113 = prerequisites, HS math through pre-calc, one year HS chemistry plus CHEM 1114 (accompanying lab)
    - CHEM 1021 Introduction to Chemistry is a great primer for students without HS chemistry, but is not an approved science course for meeting admission requirements.

Refer to “Science Course Options” for more information.
ELECTIVES

• Humanities & Social Science Electives
  • Mostly Arts & Sciences Core courses
  • Official list available at Pre-Engineering web site
  • AP/IB/college credit earned for non-technical courses may apply.

• Free Electives
  • Usually only 3-6 credits for each major
ENGINEERING

• COEN 1400: Project Design
  • Great option if you are not in calculus or are undecided about major

• Programming/Computing
  • Required course differs by major
  • Hold off to second semester if possible

• Major specific engineering courses
  • Most are restricted and require department permission to enroll (via online request form)
Recipe for Success

- Check your CU email account daily
- For every one hour in class, dedicate three hours outside of class
- Study on a continuum
- Deal with problems/issues when they are small
- You are expected to ask for help
  - Tutoring/Academic support resources
  - Student Well-being support resources
Resources

• Pre-Engineering website
  • www.colorado.edu/pre-engineering
• Pre-Engineering Content
  • Advising module in NSW Online Experience
• Helpful documents for enrolling classes
  1. Recommended First-year Schedules by Engineering Major
  2. Math Course Options
  3. Science Course Options
What’s Next

• Pre-Engineers move in to residence halls on August 22.

• Continue to check your CU email this summer for more information on Engineering Launch, August 23 & 24.

• Advisors will be available for questions at the Academic Fair from 12:20 – 2:30 in the UMC Glenn Miller Ballroom

• Engineering Center tours today at 1:00pm and 3:00pm
  • Meet in the lobby of the Engineering Center. Tours are approximately 45 minutes