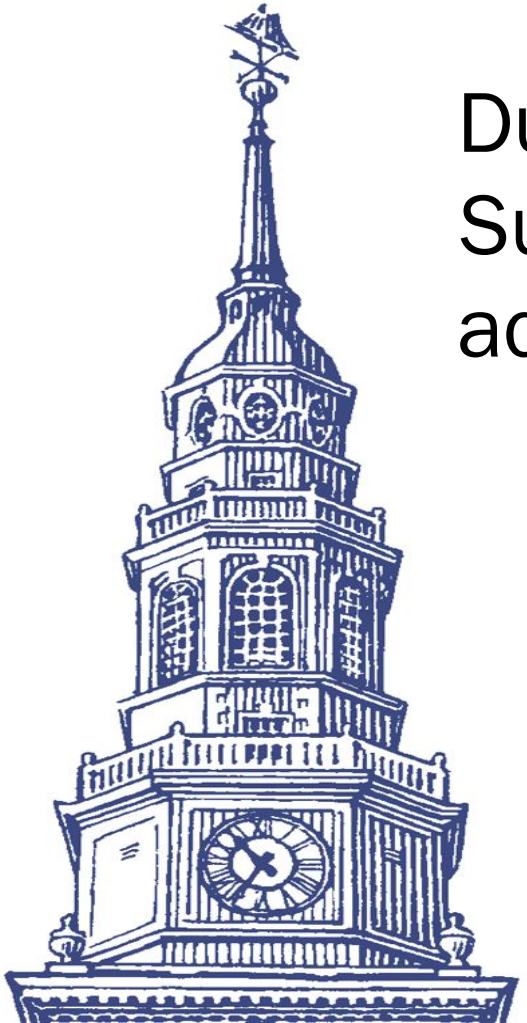

Dual-Degree Engineering at Colby: Summer course registration advice to first year students

Engineering Advisors

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Colby College

Colby

Two Programs

Dartmouth

- 2-1-1-1 Format
- General Engineering
- Core pre-engineering
- Competitive admission
- Apply Spring Sophomore

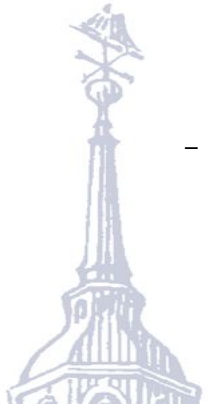
Columbia

- 3/2 or 4/2 Format
- Specific Engineering
- Core pre-engineering+
- Competitive admission
- Apply Junior/Senior Spring

Colby

Admissions Process

- Both programs require
  - Letters of support from faculty
  - An essay explaining commitment to engineering
  - Specific courses to be taken
- How many students are admitted?
  - Dartmouth:
    - Depends on the year, over the past 10 years or so, we have had a 50% acceptance rate
    - In 2024, ~38% accepted (21 applicants)
    - In 2025, ~67% accepted (15 applicants)
  - Columbia:
    - In 2021-2023, ~90% of those who applied were accepted (6 per year)
    - In 2024, ~60% of those who applied were accepted (6 applicants)



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What you need to complete at Colby

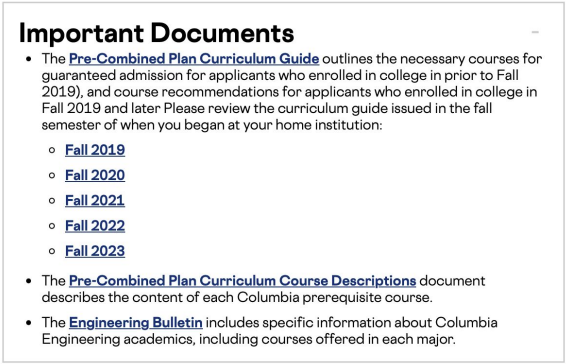
At Colby

- Complete the Distribution Requirements
- Complete a major (any major is acceptable, but some are more related)
- Complete Pre-Engineering Courses
- Complete the required amount of non-technical courses (8 courses for Dartmouth, 27 credits for Columbia)

Colby

How to Prepare

- Read the websites:
  - Our website: Engineering Dual-Degree Programs | Colby College
  - Dartmouth's website: Partner School Dual-Degree Program | Dartmouth Engineering
  - Columbia's website: Combined Plan Applicants | Columbia Undergraduate Admissions
- Determine which program you are interested in
  - If it is Columbia, then determine which major you will pursue at Columbia and which additional courses you need to take (go to the Curriculum Guide under Important Documents)
- Determine what your Colby major is likely to be
- Make multiple versions of a course plan that will enable you to complete all the requirements on time. We recommend planning out all the way to graduation



Important Documents

- The **Pre-Combined Plan Curriculum Guide** outlines the necessary courses for guaranteed admission for applicants who enrolled in college in prior to Fall 2019), and course recommendations for applicants who enrolled in college in Fall 2019 and later Please review the curriculum guide issued in the fall semester of when you began at your home institution:
  - **Fall 2019**
  - **Fall 2020**
  - **Fall 2021**
  - **Fall 2022**
  - **Fall 2023**
- The **Pre-Combined Plan Curriculum Course Descriptions** document describes the content of each Columbia prerequisite course.
- The **Engineering Bulletin** includes specific information about Columbia Engineering academics, including courses offered in each major.

Dartmouth's Pre-Engieneering Course Requirements

Calc I: MA119 with MA120, MA125, MA130, or MA135
Calc II: MA135 or MA160
Vector Calc: MA262

Preparing for Your First Year at Dartmouth

Admission to the Dual-Degree Program is limited and competitive, and we encourage students interested in pursuing engineering studies at Dartmouth to plan ahead. Talk to your academic advisor about the courses you need to best position yourself for admission to the program, including math and science coursework.

Dual-Degree students, upon arrival, should be prepared to take the core courses in Dartmouth's undergraduate engineering sciences major. During their first two years, they must demonstrate their ability to learn mathematics, natural science, and computer science, including:

- Calculus (3 courses, through vector-valued functions)
- Physics (2 courses through mechanics and electromagnetism)
- Chemistry (1 course in general chemistry)
- Computer science (1 course, introduction to computer science and programming)

PH141/3 and PH145

CH141 or CH147

CS151 or CS152

The courses must all be at a level appropriate to majors in those subjects. They must be taken for letter grades unless Pass/Fail or Credit/No credit is the only option. We honor credits awarded for advanced placement, A-level, and international baccalaureate courses, but we strongly recommend, and consider in our admissions decision, additional STEM courses that students have pursued beyond the required minimum.

In addition, Dartmouth's BE degree requires a full year's-worth of courses in the liberal arts (eg. arts, languages, humanities, and social sciences), which may be drawn from courses taken here or at your home college.

Colby

Columbia's Pre-Engineering Course Requirements

Calc I: MA119 with MA120, MA125, MA130, or MA135
Calc II: MA135 or MA160

Foundational Courses Required of All Majors

Note that some majors may require additional specific courses replacing or adding to the following requirements, detailed in the major-specific course lists.

Mathematics
Calculus I, II and Multivariable Calculus for Engineers and Applied Scientists (Math UN1101, MATH UN1102, and APMA E2000)

MA262

Physics
Introduction to Mechanics and Thermodynamics (PHYS UN1401)
Introduction to Electricity, Magnetism and Optics (PHYS UN1402)

PH141/3

PH145

Chemistry
General Chemistry I Lecture (CHEM UN1403)

CH141 or CH147

Lab Requirement (choose one of the following two)
Introduction to Experimental Physics Lab (PHYS UN1493/4) *or* General Chemistry Lab (CHEM UN1500)
Note that some majors require a specific lab in either chemistry or physics, or both.

Use the lab with your physics or chem course

Computer Science
Introduction to Computer Science and Programming in C/C++, Java (COMS W1004) or Python (ENGI E1006)
Note that some majors require a specific programming language.

CS151, CS152

Humanities and Social Sciences
27 non-technical credit hours including Principles of Economics (ECON UN1105) and University Writing (ENGL CC1010)
Non-technical credit hours should help a student to learn perspectives and principles of the humanities and social sciences through discussion, debate and writing. Please note that non-technical electives are subject to the review of Undergraduate Admissions. Examples of these courses can be found on our website (https://bulletin.engineering.columbia.edu/b-elective-nontechnical-courses).

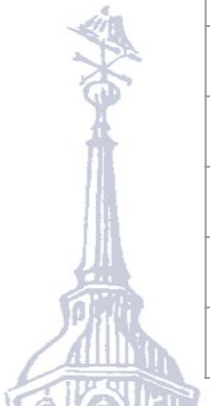
EC 133 (micro)

a W1 course

Colby

Columbia Course Equivalents

Columbia Course	Colby Course
APMA E2000 (Multivar Calc)	MA262 (Vector Calc)
APMA E2101 (Lin Alg + ODE's)	MA253 and MA311
COMS W3203 (Discrete Math)	MA274 (Mathematical Reasoning)
BIOL UN2005	BI163
BIOL UN2006	BI164
CHEM UN1403 (Gen Chem I)	CH141 or CH147 (Gen Chem I or Comp Gen Chem)
CHEM UN1404 (Gen Chem II)	CH142 (Gen Chem II)
PHYS UNI1401	PH141 or PH143
PHYS UNI1402	PH145
PHYS UNI1403 (Classical/Quantum Waves)	PH241 (Modern Physics)
ORCA E2500 (Found. Data Sci)	SC212 (Stats)



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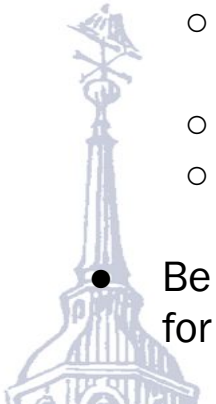
Registering for your first semester

- Which courses:
  - Register for a math course.
    - Fill out the Calculus Questionnaire before registration time: https://www.colby.edu/academics/departments-and-programs/mathematics/calculus-placement/
  - Choose one lab science (depending on what AP credits you have)
    - Note that introductory courses in chemistry, biology, and physics are offered in the fall only (with the exception of the accelerated chem CH147)
  - Choose a course related to your intended major, e.g. CS151 if you are interested in CS at Colby.
  - If you have space, register for a W1
  - But it may be wiser to register for a language course (if you need to fulfill that requirement)
- Be flexible: Registration is on a first come, first served basis. You can join a waitlist for a full course, but professors cannot change the order of their waitlists



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AP Credit

https://www.colby.edu/people/offices-directory/registrar/courses-exams-honors/advanced-placement-exam-policy/

AP Exam	"Credits" *	Course Equivalent	Requirement(s) Satisfied	Notes
Calculus AB	3	MA125	Quantitative	
Calculus AB Subscore	3	MA125	Quantitative	Especially if Calculus BC < 4
Calculus BC	6	MA125,MATH#	Quantitative	If score=3 and pass MA160 at Colby, then MA125
Chemistry	6	CH141, CH142	Nat Sci (2) & Lab	3 credits each
Computer Science A	3	COMP# (generic)	Quantitative	
Computer Science AB	6	COMP# (generic)	Quantitative	
Economics: Macro	3	EC134	Social Science	
Economics: Micro	3	EC133	Social Science	
Physics 1	3	none	Nat Sci (1) & Lab	
Physics 2	3	none	Nat Sci (1) & Lab	
Physics B	6	none	Nat Sci (2) & Lab	
Physics C: Electricity & Magnetism	3	PH145	Nat Sci (1) & Lab	
Physics C: Mechanics	3	PH141	Nat Sci (1) & Lab	

The course equivalent must have a specific number in order to count as a pre-engineering requirement.
And it must appear on your Colby transcript.
If you are placed in a more advanced course than Dartmouth or Columbia require, you can count the more advanced course as the requirement.

Colby

Questions?

https://www.colby.edu/academics/departments-and-programs/engineering-dual-degree-programs/

Colby