

## Sample Dual-Degree Programs

The following are only *examples* of what can be done in the dual-degree program. The first year programs shown contain the usual six engineering science (ENGS) courses.

The following courses are required in all programs: Engs 21, 22, 23; two from Engs 24-27; two from Engs 31-37; one of Engs 91, 92, 103; and Engs 190-290. The remaining courses are elected to fulfill total course count and tailor the program to the student's professional interests. A junior-level physics course in electromagnetism from the home institution can frequently replace the core course ENGS 23, permitting another ENGS elective to be taken in its place. Equivalence for the applied math course (ENGS 91, 92, or 103) is also possible at some colleges.

For advice on particular options, contact the Thayer School of Engineering at 603-646-3677, or via [ugengg@dartmouth.edu](mailto:ugengg@dartmouth.edu).

### Concentration in Electrical Engineering

The summer start is preferred because the courses ENGS 22 and ENGS 31 are prerequisite to all other EE courses.

EE-1	First year (exchange at Dartmouth) *varying fall or spring leave term			
	Summer	Fall *	Winter	Spring *
	ENGS 22	ENGS 21	ENGS 24 or 27	ENGS 21
	ENGS 31	ENGS 23, 26, or 61	ENGS 32	ENGS 23 or 26
	Elective	Elective	Elective	Elective
	Second year (Bachelor of Engineering program)			
	Summer	Fall	Winter	Spring
		ENGS 61, 63, or 129	ENGS 24 or 122	ENGS 125 or 126
	Leave term	ENGS 92	ENGS 62 or 120	ENGS 110
		ENGS 190	ENGG 290	ENGS 26 or 145
EE-2	First year (exchange at Dartmouth)			
	Summer	Fall	Winter	Spring
		ENGS 21	ENGS 22	ENGS 23
	Leave term	ENGS 33	ENGS 32	ENGS 31
		Elective	Elective	Elective
	Second year (Bachelor of Engineering Program)			
	Summer	Fall	Winter	Spring
		ENGS 26, 61 or 63	ENGS 24 or 27	ENGS 125 or 126
	Leave term	ENGS 92	ENGS 62 or 120	ENGS 110
		ENGS 190	ENGG 290	ENGS 26 or 145

## Concentration in Computer Engineering

Complete introductory courses in programming and data structures (trees, lists, stacks, queues) in C++ or Java at the home institution prior to coming to Dartmouth. It is assumed the student will take courses in discrete math, computer architecture, and algorithms at the home institution.

### COMP-1 First year (exchange at Dartmouth)

Summer	Fall	Winter	Spring
	ENGS 21	ENGS 22	ENGS 23
Leave term	ENGS 91	ENGS 27 or COSC 23	ENGS 31
	Elective	Elective	Elective

### Second year (Bachelor of Engineering program)

Summer	Fall	Winter	Spring
	ENGS 63	ENGS 32	ENGS 24 or 26
Leave term	ENGS 116	ENGG 62 or COSC 54	ENGS 112
	ENGS 190	ENGG 290	COSC 78

### COMP-2 First year (exchange at Dartmouth)

Summer	Fall	Winter	Spring
ENGS 22	ENGS 21	COSC 23	
ENGS 31	ENGS 23	ENGS 27	Leave term
Elective	Elective	Elective	

### Second year (Bachelor of Engineering program)

Summer	Fall	Winter	Spring
	ENGS 91	ENGS 32	ENGS 24 or 26
Leave term	ENGS 63 or 116	ENGG 62 or COSC 54	ENGS 112
	ENGS 190	ENGG 290	COSC 78

## Concentration in Mechanical Engineering (Mechanics)

### ME-1a First year (exchange at Dartmouth)

Summer	Fall	Winter	Spring
	ENGS 21	ENGS 22	ENGS 23
Leave term	ENGS 33	ENGS 24	ENGS 25
	Elective	Elective	Elective

### ME-1b First year (exchange at Dartmouth)

Summer	Fall	Winter	Spring
ENGS 22	ENGS 21		ENGS 23
ENGS 25	ENGS 33	Leave term	ENGS 24
Elective	Elective		Elective

### Second year (Bachelor of Engineering program)

Summer	Fall	Winter	Spring
	ENGS 76	ENGS 140 or 142	ENGS 103
Leave term	ENGS 130	ENGS 32 or 34	ENGS 26 or 145
	ENGS 190	ENGG 290	ENGS 71 or 146

## Concentration in Mechanical Engineering (Thermofluids)

### ME-2a First year (exchange at Dartmouth)

Summer	Fall	Winter	Spring
	ENGS 21	ENGS 22	ENGS 23 or 26
Leave term	ENGS 33	ENGS 24	ENGS 25
	Elective	Elective	Elective

### Second year (Bachelor of Engineering program)

Summer	Fall	Winter	Spring
	ENGS 23 or 26	ENGS 34	ENGS 156
Leave term	ENGS 91	ENGS 32	ENGS 103 or 151
	ENGS 190	ENGG 290	ENGS 42

### ME-2b First year (exchange at Dartmouth)

Summer	Fall	Winter	Spring
ENGS 25	ENGS 23	ENGS 34	
ENGS 22	ENGS 21	ENGS 32	Leave term
Elective	Elective	Elective	

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Second year (Bachelor of Engineering program)

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Summer	Fall	Winter	Spring
	ENGS 33	ENGS 150	ENGS 42
Leave term	ENGS 91	ENGS 105	ENGS 26 or 151
	ENGS 190	ENGG 290	ENGS 156

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**Concentration in Environmental Engineering**

Endeavor to take environmental science courses at the home institution. Examples include: ecology, “outdoor” chemistry (e.g., aquatic or geochemistry), and hydrogeology.

ENV-1a First year (exchange at Dartmouth)

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Summer	Fall	Winter	Spring
ENGS 22	ENGS 21	ENGS 24 or 27	
ENGS 25	ENGS 23	ENGS 34	Leave term
Elective	Elective	Elective	

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ENV-1b First year (exchange at Dartmouth)

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Summer	Fall	Winter	Spring
	ENGS 21	ENGS 22	ENGS 23
Leave term	ENGS 37	ENGS 24 or 27	ENGS 25
	Elective	Elective	Elective

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Second year (Bachelor of Engineering program)

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Summer	Fall	Winter	Spring
	ENGS 36	ENGS 34, 43 or 44	ENGS 41
Leave term	ENGS 91 or 37	ENGS 103	ENGS 42 or 151
	ENGS 190	ENGG 290	ENGG 171

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## Concentration in Chemical and Biochemical Engineering

Complete the equivalent of Dartmouth's CHEM 6 at the home institution before coming to Dartmouth. Plan to take organic and physical chemistry, cell biology or genetics at the home institution before graduation.

### CHE-1a First year (exchange at Dartmouth)

Summer	Fall	Winter	Spring
ENGS 22	ENGS 21	ENGS 34	
ENGS 25	ENGS 23	ENGS 24	Leave term
Elective	Elective	Elective	

### CHE-1b First year (exchange at Dartmouth)

Summer	Fall	Winter	Spring
	ENGS 21	ENGS 22	ENGS 23
Leave term	ENGS 35	ENGS 24	ENGS 25
	Elective	Elective	Elective

### Second year (Bachelor of Engineering program)

Summer	Fall	Winter	Spring
	ENGS 35 or 36	ENGS 157	ENGS 161 or 162
Leave term	ENGS 91 or 158	ENGS 34 or 150	ENGS 103 or 156
	ENGS 190	ENGG 290	ENGS 151,165 or 171

## Concentration in Materials Science (Mechanics)

### MAT-1 First year (exchange at Dartmouth)

Summer	Fall	Winter	Spring
	ENGS 21	ENGS 22	ENGS 24
Leave term	ENGS 33	ENGS 27 or 32	ENGS 25
	Elective	Elective	Elective

### Second year (Bachelor of Engineering program)

Summer	Fall	Winter	Spring
	ENGS 91	ENGS 132	ENGS 137
Leave term	ENGS 130	ENGS 74 or 142	ENGS 73
	ENGS 190	ENGG 290	ENGS 103

## Concentration in Materials Science (Solid State)

### MAT-2 First year (exchange at Dartmouth)

Summer	Fall	Winter	Spring
	ENGS 21	ENGS 22	ENGS 23 or 24
Leave term	ENGS 33	ENGS 24 or 32	ENGS 25
	Elective	Elective	Elective

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**Second year (Bachelor of Engineering program)**

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Summer	Fall	Winter	Spring
	ENGS 130	ENGS 122 or 132	ENGS 103
Leave term	ENGS 131	ENGS 134 or 135	ENGS 137
	ENGS 190	ENGG 290	ENGS 26 or 31

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**Concentration in Biomedical Engineering (Mechanics, Biomaterials)****BME-1** First year (exchange at Dartmouth)

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Summer	Fall	Winter	Spring
	ENGS 21	ENGS 22	ENGS 23
Leave term	ENGS 33	ENGS 32	ENGS 24
	Elective	Elective	Elective

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**Second year (Bachelor of Engineering program)**

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Summer	Fall	Winter	Spring
	ENGS 26 or 91	ENGS 103 or 105	ENGS 25 or 26
Leave term	ENGS 130	ENGS 140 or 142	ENGS 145 or 166
	ENGS 190	ENGG 290	ENGS 165

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**Concentration in Biomedical Engineering (Instrumentation, Imaging)****BME-2** First year (exchange at Dartmouth) (also see EE-1, EE-2)

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Summer	Fall	Winter	Spring
	ENGS 21	ENGS 22	ENGS 23
Leave term	ENGS 33	ENGS 32	ENGS 26 or 56
	Elective	Elective	Elective

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**Second year (Bachelor of Engineering program)**

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Summer	Fall	Winter	Spring
	ENGS 92	ENGS 120	ENGS 26 or 31
Leave term	ENGS 129, 167 or 168	ENGS 27	ENGS 123 or 166
	ENGS 190	ENGG 290	ENGS 110 or 145

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