

FOREST ENGINEERING - CIVIL ENGINEERING UNDERGRADUATE MAJOR (BS, HBS)

The Forest Engineering-Civil Engineering program results in a BS degree in Forest Engineering and a BS degree in Civil Engineering. The BS degree in Forest Engineering and the BS degree in Civil Engineering are both accredited by the Engineering Accreditation Commission of ABET (<http://www.abet.org>), <http://www.abet.org>. The BS in Forest Engineering is also accredited by the Society of American Foresters. This unique five-year, double degree program is offered in cooperation with the School of Civil and Construction Engineering. This program begins with basic science and mathematics and progresses on through engineering science and forest science to arrive at professional-level courses in forest engineering that include surveying, soil and water resources, timber harvesting, operations analysis, road design, and planning. Graduates are eligible to take the Fundamentals of Engineering Examination.

In addition to the listed courses, all students are required to complete a total of six months of satisfactory employment in an area related to their major. This is usually accomplished by two or more summers of work, but it may include work during the academic year.

Pre-Professional Program

Admission to the pre-professional forest engineering program requires that a student is admitted as a degree-seeking undergraduate or post-baccalaureate student at Oregon State University. Courses included in the first and second years comprise a pre-professional program of study that produces a solid foundation for professional program studies at the junior and senior levels. The pre-professional program may be taken at Oregon State University or at any accredited college or university that offers equivalent courses transferable to OSU.

Professional Program

Students must be admitted to the professional forest engineering program following completion of the pre-professional forest engineering course work in order to progress to the junior year in forest engineering. Students should consult the College of Engineering for requirements of the Civil Engineering program.

Enrollment in professional forest engineering program courses is restricted to those students who have clearly demonstrated an ability to achieve the standards required for professional studies. The number of students admitted to the program is based on available resources. Students meeting the minimum pre-forest engineering GPA of 2.25 may or may not be admitted depending on available resources.

Admission to the professional forest engineering program will be granted for students meeting the admission requirements prior to fall term of the junior year. Application for the professional program will be made at the end of winter term for the following fall term. For admission, students must earn:

1. a grade of 'C' or better in all pre-professional courses required for entry into the professional program (marked with 2). Grade repeat (replacement) policy will follow OSU Academic Regulation #20.

2. a minimum GPA of 2.25 based on the pre-professional courses (or transfer equivalents) satisfactorily completed.

Students who have completed their pre-professional studies at a college or university other than Oregon State University must apply both to the OSU Office of Admissions for admission to OSU as a degree-seeking undergraduate or post-baccalaureate student and to the College of Forestry for admission to the professional program. Application forms for the forest engineering professional program and information on policies and programs are available on the College of Forestry website.

Students who have not satisfactorily completed all of the pre-professional courses when they apply may be provisionally accepted to the professional program. Final acceptance is contingent on completion of any remaining pre-professional course work with grade of 'C' or better by the end of the summer term prior to entrance into the professional program. Students who receive provisional acceptance and then fail to attain a grade of 'C' or better in remaining pre-professional course work prior to the beginning of fall term will be re-directed to the pre-professional forest engineering program.

All required courses for admission to the professional program must be completed before entering the professional program. Students may only enter the professional program in the fall term of each academic year.

The professional forest engineering program begins with Forestry Field School prior to fall term of the professional program.

Major Code: 381

Pre-Forest Engineering-Civil Engineering Major Code: 361

Grade standards for the pre-professional program as listed in the program description apply.

All students pursuing the BS in Forest Engineering-Civil Engineering:

1. must earn grades of 'C' or better in all required professional courses, or approved substitutions for majors and options, and
2. must maintain a 2.0 GPA in all major course work, and courses used for substitution of required courses.

College of Engineering specific requirements:

1. Must earn grades of "C" or better in all required civil engineering major courses in the pre-professional and professional core.
2. Must maintain a cumulative 2.25 GPA in all civil engineering major course work and an overall OSU GPA of 2.25.

First Year		Credits
Pre-Forest Engineering and Civil Engineering		
CCE 101	CIVIL AND CONSTRUCTION ENGINEERING ORIENTATION 2,4	2
CH 201	CHEMISTRY FOR ENGINEERING MAJORS ^{2,3}	3
CH 202	CHEMISTRY FOR ENGINEERING MAJORS ^{2,4}	3
CH 205	LABORATORY FOR CH 202 ^{2,4}	1
COMM 111 or COMM 114	*PUBLIC SPEAKING ^{1,2,3} or *ARGUMENT AND CRITICAL DISCOURSE	3
ECON 201	*INTRODUCTION TO MICROECONOMICS ^{1,2}	4
FE 101	INTRODUCTION TO FOREST ENGINEERING ²	2
FE 102	FOREST ENGINEERING PROBLEM SOLVING AND TECHNOLOGY ^{2,3}	3
FES 240	*FOREST BIOLOGY ^{1,2,4}	4
HHS 231	*LIFETIME FITNESS FOR HEALTH ¹	2
HHS 241	*LIFETIME FITNESS (or any PAC course) ¹	1-2

2 Forest Engineering - Civil Engineering Undergraduate Major (BS, HBS)

MTH 251	*DIFFERENTIAL CALCULUS ^{1,2,3}	4
MTH 252	INTEGRAL CALCULUS ^{2,3}	4
MTH 254	VECTOR CALCULUS I ^{2,3}	4
PH 211	*GENERAL PHYSICS WITH CALCULUS ^{1,2,3}	4
WR 121	*ENGLISH COMPOSITION ^{1,2,3}	3

Credits 47-48

Second Year

CCE 201	CIVIL AND CONSTRUCTION ENGINEERING GRAPHICS AND DESIGN ²	3
ENGR 211	STATICS ^{2,3}	3
ENGR 212	DYNAMICS ^{2,4}	3
ENGR 213	STRENGTH OF MATERIALS ^{2,3}	3
FE 208	FOREST SURVEYING ²	4
FE 257	GIS AND FOREST ENGINEERING APPLICATIONS ^{2,4}	3
FES 241	DENDROLOGY ²	3
MTH 256	APPLIED DIFFERENTIAL EQUATIONS ^{2,3}	4
MTH 306	MATRIX AND POWER SERIES METHODS ^{2,3}	4
or MTH 264 and MTH 265	or INTRODUCTION TO MATRIX ALGEBRA and INTRODUCTION TO SERIES	
PH 212	*GENERAL PHYSICS WITH CALCULUS ^{1,2,3}	4
PH 213	*GENERAL PHYSICS WITH CALCULUS ^{1,2,3}	4
SOIL 205 & FOR 206	SOIL SCIENCE and *FOREST SOILS LABORATORY FOR SOIL 205 ^{+,1,2}	4
ST 314	INTRODUCTION TO STATISTICS FOR ENGINEERS ^{2,4}	3
WR 327	*TECHNICAL WRITING ^{1,2}	3

Credits 48

Third Year

Professional Forest Engineering Junior Year

FE 310	FOREST ROUTE SURVEYING	4
FE 312/FOR 312	FORESTRY FIELD SCHOOL	2
FE 315	SOIL ENGINEERING	4
FE 316	SOIL MECHANICS	4
FE 371	HARVESTING PROCESS ENGINEERING	4
FE 434	FOREST WATERSHED MANAGEMENT	4
FE 440	FOREST OPERATIONS ANALYSIS	4
FE 470	LOGGING MECHANICS	4
FOR 321	FOREST MENSURATION	5
FOR 329	FOREST RESOURCE ECONOMICS I	4
FOR 441	SILVICULTURE PRINCIPLES	4
GEOG 300 or FW 350	*SUSTAINABILITY FOR THE COMMON GOOD or *ENDANGERED SPECIES, SOCIETY AND SUSTAINABILITY	3

Credits 46

Fourth Year

Civil Engineering Junior Year

CCE 321	CIVIL AND CONSTRUCTION ENGINEERING MATERIALS	4
CE 311	FLUID MECHANICS	4
CE 313	HYDRAULIC ENGINEERING	4
CE 361	SURVEYING THEORY	4
CE 381	STRUCTURAL THEORY I	4
CE 382	STRUCTURAL THEORY II	4
CE 392	INTRODUCTION TO HIGHWAY ENGINEERING	4
CE 481	REINFORCED CONCRETE I	4
CE 491	TRANSPORTATION ENGINEERING	3
ENGR 201	ELECTRICAL FUNDAMENTALS I ⁴	3
ENVE 321	ENVIRONMENTAL ENGINEERING FUNDAMENTALS	4
Bacc Core Courses		9

Credits 51

Fifth Year

CE Design Elective		3
CE 383	DESIGN OF STEEL STRUCTURES	4
CE 418	^CIVIL ENGINEERING PROFESSIONAL PRACTICE	3
CE 419	^CIVIL INFRASTRUCTURE DESIGN	3

FE 415	FOREST ROAD ENGINEERING	3
FE 416	FOREST ROAD SYSTEM MANAGEMENT	4
FE 444	FOREST REMOTE SENSING AND PHOTOGRAMMETRY	4
FE 457/FOR 457	TECHNIQUES FOR FOREST RESOURCE ANALYSIS	4
FE 459/FOR 459	FOREST MANAGEMENT PLANNING AND DESIGN I	4
FE 460 or FOR 460	^FOREST OPERATIONS REGULATIONS AND POLICY ISSUES or ^FOREST POLICY	3-4
FE 469/FOR 469	FOREST MANAGEMENT PLANNING AND DESIGN II	4
FE 480	FOREST ENGINEERING PRACTICE AND PROFESSIONALISM	1
FOR 330	FOREST RESOURCE ECONOMICS II	4
Bacc Core Course		6

Credits 50-51

Total Credits 242-244

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Baccalaureate Core Course (BCC)

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Writing Intensive Course (WIC)

+

[SOIL 205 and SOIL 206 and FOR 208] may be taken in place of [SOIL 205 and FOR 206]

1

Must be selected to satisfy baccalaureate core requirements

2

Required for entry into the Forest Engineering Professional Program

3

Required courses for Civil Engineering Program

4

Additional recommended courses for the Civil Engineering Program

Major Code: 381

Pre-Forest Engineering-Civil Engineering Major Code: 361

First Year

Fall		Credits
CCE 101	CIVIL AND CONSTRUCTION ENGINEERING ORIENTATION	2
CH 201	CHEMISTRY FOR ENGINEERING MAJORS	3
FE 101	INTRODUCTION TO FOREST ENGINEERING	2
MTH 251	*DIFFERENTIAL CALCULUS	4
WR 121	*ENGLISH COMPOSITION	3
Credits		14

Winter

CH 202	CHEMISTRY FOR ENGINEERING MAJORS	3
ECON 201	*INTRODUCTION TO MICROECONOMICS	4
FE 102	FOREST ENGINEERING PROBLEM SOLVING AND TECHNOLOGY	3
HHS 231	*LIFETIME FITNESS FOR HEALTH	2
HHS 241	*LIFETIME FITNESS (or any PAC course)	1-2
MTH 252	INTEGRAL CALCULUS	4
Credits		17-18

Spring

CH 205	LABORATORY FOR CH 202	1
COMM 111 or COMM 114	*PUBLIC SPEAKING or *ARGUMENT AND CRITICAL DISCOURSE	3
FES 240	*FOREST BIOLOGY	4
MTH 254	VECTOR CALCULUS I	4

PH 211	*GENERAL PHYSICS WITH CALCULUS	4
Credits		16
Second Year		
Fall		
CCE 201	CIVIL AND CONSTRUCTION ENGINEERING GRAPHICS AND DESIGN	3
FE 208	FOREST SURVEYING	4
ENGR 211	STATICS	3
MTH 264	INTRODUCTION TO MATRIX ALGEBRA	2
MTH 265	INTRODUCTION TO SERIES	2
PH 212	*GENERAL PHYSICS WITH CALCULUS	4
Credits		18
Winter		
ENGR 213	STRENGTH OF MATERIALS	3
FE 257	GIS AND FOREST ENGINEERING APPLICATIONS	3
PH 213	*GENERAL PHYSICS WITH CALCULUS	4
ST 314	INTRODUCTION TO STATISTICS FOR ENGINEERS	3
WR 327	*TECHNICAL WRITING	3
Credits		16
Spring		
ENGR 212	DYNAMICS	3
FES 241	DENDROLOGY	3
MTH 256	APPLIED DIFFERENTIAL EQUATIONS	4
SOIL 205 & FOR 206	SOIL SCIENCE and *FOREST SOILS LABORATORY FOR SOIL 205	4
Credits		14
Third Year		
Fall		
FE 312/FOR 312	FORESTRY FIELD SCHOOL	2
FE 371	HARVESTING PROCESS ENGINEERING	4
FE 434	FOREST WATERSHED MANAGEMENT	4
FOR 321	FOREST MENSURATION	5
Credits		15
Winter		
FE 315	SOIL ENGINEERING	4
FE 440	FOREST OPERATIONS ANALYSIS	4
FE 470	LOGGING MECHANICS	4
FOR 329	FOREST RESOURCE ECONOMICS I	4
Credits		16
Spring		
FE 310	FOREST ROUTE SURVEYING	4
FE 316	SOIL MECHANICS	4
FOR 441	SILVICULTURE PRINCIPLES	4
GEOG 300 or FW 350	*SUSTAINABILITY FOR THE COMMON GOOD or *ENDANGERED SPECIES, SOCIETY AND SUSTAINABILITY	3
Credits		15
Fourth Year		
Fall		
CCE 321	CIVIL AND CONSTRUCTION ENGINEERING MATERIALS	4
CE 361	SURVEYING THEORY	4
CE 311	FLUID MECHANICS	4
CE 381	STRUCTURAL THEORY I	4
Credits		16
Winter		
CE 313	HYDRAULIC ENGINEERING	4
CE 382	STRUCTURAL THEORY II	4
CE 392	INTRODUCTION TO HIGHWAY ENGINEERING	4
Bacc Core Courses		6
Credits		18
Spring		
CE 481	REINFORCED CONCRETE I	4

CE 491	TRANSPORTATION ENGINEERING	3
ENGR 201	ELECTRICAL FUNDAMENTALS I	3
ENVE 321	ENVIRONMENTAL ENGINEERING FUNDAMENTALS	4
Bacc Core Course		3
Credits		17
Fifth Year		
Fall		
CE 383	DESIGN OF STEEL STRUCTURES	4
FE 444	FOREST REMOTE SENSING AND PHOTOGRAMMETRY	4
FE 457/FOR 457	TECHNIQUES FOR FOREST RESOURCE ANALYSIS	4
FE 460/FOR 460	*FOREST OPERATIONS REGULATIONS AND POLICY ISSUES	3
FOR 330	FOREST RESOURCE ECONOMICS II	4
Credits		19
Winter		
CE Design Elective		3
CE 418	*CIVIL ENGINEERING PROFESSIONAL PRACTICE	3
FE 415	FOREST ROAD ENGINEERING	3
FE 459/FOR 459	FOREST MANAGEMENT PLANNING AND DESIGN I	4
FE 480	FOREST ENGINEERING PRACTICE AND PROFESSIONALISM	1
Credits		14
Spring		
CE 419	*CIVIL INFRASTRUCTURE DESIGN	3
FE 416	FOREST ROAD SYSTEM MANAGEMENT	4
FE 469/FOR 469	FOREST MANAGEMENT PLANNING AND DESIGN II	4
Bacc Core Course		6
Credits		17
Total Credits		242-243