

# CIVIL ENGINEERING (BS)



This program was approved for students entering the university in the Summer 2019–Spring 2020 catalog year. For more information about catalog year, go to Catalog Year Information (<http://catalog.louisville.edu/undergraduate/university-wide-unit-specific-policies/catalog-year>).

## Bachelor of Science in Civil Engineering

Unit: Speed School of Engineering (SS) (<http://speed.louisville.edu/cms/content.php>)

Department: Civil Engineering (<https://louisville.edu/speed/civil>)

Academic Plan Code(s): CE\_ \_BCE

## Program Information

Students specializing in Civil Engineering will complete a program consisting of two semesters in Engineering Fundamentals and a further period of study in the Department of Civil & Environmental Engineering - nine semesters in Departmental Studies to complete the Bachelor of Science degree, followed by a fifth year in Graduate Studies for the Master of Engineering degree. This curriculum is designed as an integrated five-year program, with a cooperative education component, culminating in the Master of Engineering degree.

The Bachelor of Science in Civil Engineering degree program is accredited by the Engineering Accreditation Commission (EAC) of ABET, [www.abet.org](http://www.abet.org) (<http://www.abet.org>). The Master of Engineering in Civil Engineering degree program is accredited by the Engineering Accreditation Commission (EAC) of ABET, [www.abet.org](http://www.abet.org) (<http://www.abet.org>).

## Degree Summary

Code	Title	Hours
	General Education Requirements ( <a href="http://catalog.louisville.edu/undergraduate/general-education-requirements">http://catalog.louisville.edu/undergraduate/general-education-requirements</a> ) <sup>1</sup>	31
(19 hours of General Education requirements may be satisfied through coursework required by the degree program)		
	College/School Requirements	38
	Program/Major Requirements	73
	Minimum Total Hours	123

<sup>1</sup> Some courses required in this degree program satisfy multiple requirements. To complete the degree in the **minimum number of hours listed**, some hours from the General Education Requirements must be satisfied by courses defined by the unit and/or program. Using other courses to satisfy General Education requirements will require additional hours to complete the degree requirements. See the Degree Requirements and/or Track tabs for specific coursework.

Specific coursework information can be found on the Degree Requirements tab.

## Departmental Admission Requirements

Acceptance into a Department requires that a student have a 2.25 GPA in the prescribed set of courses totaling 27 semester hours in Engineering Fundamentals. In addition, the student must be in good standing (university GPA  $\geq$  2.25).

## General Education Requirements

Code	Title	Hours
	General Education Requirements ( <a href="http://catalog.louisville.edu/undergraduate/general-education-requirements">http://catalog.louisville.edu/undergraduate/general-education-requirements</a> ) <sup>1</sup>	31

The following courses are required by the program and satisfy the respective General Education Requirement(s):

CHEM 201	General Chemistry I - S
CHEM 207	Introduction to Chemical Analysis I - SL
COMM 111	Introduction to Public Speaking - OC or COMM 112 Business and Professional Speaking - OC
ENGL 101 & ENGL 102	Introduction to College Writing - WC Intermediate College Writing - WC <sup>2,3</sup>
ENGR 101	Engineering Analysis I - QR
PHYS 298	Introductory Mechanics, Heat and Sound - S

All degrees require the completion of the University-wide General Education Program (link provided above). To complete the degree in the **minimum number of hours** listed on the Overview tab, some hours from the General Education Requirements must be satisfied by courses defined by the unit and/or program.

## College/School Requirements

Code	Title	Hours
<b>Speed School Core</b>		
CHEM 201	General Chemistry I - S <sup>2</sup>	3
CHEM 207	Introduction to Chemical Analysis I - SL <sup>2</sup>	1
COMM 111	Introduction to Public Speaking - OC <sup>2</sup> or COMM 112 Business and Professional Speaking - OC	3
ENGL 101	Introduction to College Writing - WC <sup>2,3</sup>	3
ENGL 102	Intermediate College Writing - WC <sup>2,3</sup>	3
ENGR 101	Engineering Analysis I - QR <sup>2</sup>	4
ENGR 102	Engineering Analysis II	4
ENGR 110	Engineering Methods, Tools, and Practice I	2
ENGR 111	Engineering Methods, Tools and Practice II	2
PHYS 298	Introductory Mechanics, Heat and Sound - S <sup>2</sup>	4
<b>Engineering Fundamentals<sup>4</sup></b>		
ENGR 151	Engineering Graphics Technology	1
ENGR 201	Engineering Analysis III	4
ENGR 205	Differential Equations for Engineering	2

ENGR 307	Numerical Methods for Engineering	2
Minimum Total Hours		38

CEE 480	Civil & Environmental Engineering Capstone Design - CUE
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## Program/Major Requirements

Code	Title	Hours
<b>Civil Engineering Department Requirements</b>		
CEE 205	Mechanics I: Statics	3
CEE 254	Mechanics of Solids	3
CEE 255	Mechanics of Materials Laboratory	1
CEE 260	Civil Engineering Field Measurements	2
CEE 261	Civil Engineering Field Measurements Laboratory	1
CEE 288	Civil and Environmental Engineering Cooperative Education Seminar	0
CEE 289	Civil and Environmental Engineering Cooperative Education I	1
CEE 309	Introduction to Environmental Engineering	3
CEE 322	Structural Analysis	3
CEE 370	Engineering Hydraulics	3
CEE 371	Engineering Hydraulics Lab	1
CEE 389	Civil and Environmental Engineering Cooperative Education II	1
CEE 401	Civil Engineering Professional Practice	2
CEE 421	Fundamentals of Concrete Design	3
CEE 422	Fundamentals of Steel Design	3
CEE 450	Geomechanics	3
CEE 451	Geomechanics Laboratory	1
CEE 452	Foundation Engineering	3
CEE 460	Transportation Systems Engineering	3
CEE 470	Surface Water Hydrology	3
CEE 471	Water Supply and Sewerage	3
CEE 480	Civil & Environmental Engineering Capstone Design - CUE (CUE)	3
CEE 489	Civil Engineering Cooperative Education III	1
CEE 530	Construction Materials	3
<b>Civil Engineering Core</b>		
PHYS 295	Introductory Laboratories I - SL	1
<b>Supporting Courses</b>		
GEOS 301	Geology for Scientists and Engineers	3
IE 360	Probability and Statistics for Engineers	3
IE 370	Engineering Economic Analysis	3
ME 206	Mechanics II: Dynamics	3
ME 251	Thermodynamics I	3
PHYS 299	Introductory Electricity, Magnetism and Light	4
Minimum Total Hours		73

Candidates for the Bachelor of Science degree must be in good standing (university GPA  $\geq 2.25$ ) and must attain a grade point average of at least 2.25 for all courses used to satisfy degree requirements.

Code	Title	Hours
<b>Culminating Undergraduate Experience (Graduation requirement)</b>		
Requirement fulfilled by completing:		

- To complete the degree in the minimum number of hours listed, some hours from the General Education Requirements must be satisfied by courses defined by the unit and/or program. Using other courses to satisfy General Education requirements will require additional hours to complete the degree requirements.
- This course is a General Education requirement for the program; see louisville.edu/provost/ger/ for the listing, by academic year, of AH/D1/D2/SB/SBH Electives which satisfy the University-wide General Education requirements.
- Students completing ENGL 105 in lieu of ENGL 101 or ENGL 102 satisfy the General Education and Engineering Fundamentals requirements for Written Communication. However, an additional 3-hr Writing (WR) course or honors Written Communication (WC) course is needed to satisfy program credit hour requirements. A current list of acceptable WC courses is at louisville.edu/speed/academics/policies/english-105.
- Acceptance into a Department requires that a student have a 2.25 GPA in the prescribed set of courses totaling 27 semester hours in Engineering Fundamentals. In addition, the student must be in good standing with (university GPA  $\geq 2.25$ ).

## Flight Plan

Course	Title	Hours
<b>Year 1</b>		
<b>Fall</b>		
CHEM 201	General Chemistry I - S	3
CHEM 207	Introduction to Chemical Analysis I - SL	1
ENGL 101	Introduction to College Writing - WC	3
ENGR 101	Engineering Analysis I - QR	4
ENGR 110	Engineering Methods, Tools, and Practice I	2
General Education: Cardinal Core Arts & Humanities, Social & Behavioral Sciences, or Social & Behavioral Sciences Historical Perspective US Diversity - AHD1, SBD1, or SBHD1		3
Hours		16
<b>Spring</b>		
ENGL 102	Intermediate College Writing - WC	3
ENGR 102	Engineering Analysis II	4
ENGR 111	Engineering Methods, Tools and Practice II	2
PHYS 295	Introductory Laboratories I - SL	1
PHYS 298	Introductory Mechanics, Heat and Sound - S	4
Hours		14
<b>Summer</b>		
CEE 205	Mechanics I: Statics	3
ENGR 151	Engineering Graphics Technology	1
ENGR 201	Engineering Analysis III	4
PHYS 299	Introductory Electricity, Magnetism and Light	4
Hours		12
<b>Year 2</b>		
<b>Fall</b>		
CEE 254	Mechanics of Solids	3
CEE 255	Mechanics of Materials Laboratory	1
CEE 260	Civil Engineering Field Measurements	2
CEE 261	Civil Engineering Field Measurements Laboratory	1
CEE 288	Civil and Environmental Engineering Cooperative Education Seminar	0
COMM 111 or COMM 112	Introduction to Public Speaking - OC or Business and Professional Speaking - OC	3
ENGR 205	Differential Equations for Engineering	2

ME 206	Mechanics II: Dynamics	3
ME 251	Thermodynamics I	3
Hours		18
<b>Spring</b>		
CEE 289	Civil and Environmental Engineering Cooperative Education I	1
Hours		1
<b>Summer</b>		
CEE 309	Introduction to Environmental Engineering	3
CEE 322	Structural Analysis	3
IE 360	Probability and Statistics for Engineers	3
General Education: Cardinal Core Arts & Humanities, Social & Behavioral Sciences, or Social & Behavioral Sciences Historical Perspective - AH, SB, or SBH		3
Hours		12
<b>Year 3</b>		
<b>Fall</b>		
CEE 389	Civil and Environmental Engineering Cooperative Education II	1
Hours		1
<b>Spring</b>		
CEE 370	Engineering Hydraulics	3
CEE 371	Engineering Hydraulics Lab	1
CEE 460	Transportation Systems Engineering	3
ENGR 307	Numerical Methods for Engineering	2
GEOS 301	Geology for Scientists and Engineers	3
General Education: Cardinal Core Arts & Humanities, Social & Behavioral Sciences, or Social & Behavioral Sciences Historical Perspective Global Diversity - AHD2, SBD2, or SBHD2		3
Hours		15
<b>Summer</b>		
CEE 489	Civil Engineering Cooperative Education III	1
Hours		1
<b>Year 4</b>		
<b>Fall</b>		
CEE 401	Civil Engineering Professional Practice	2
CEE 422	Fundamentals of Steel Design	3
CEE 450	Geomechanics	3
CEE 451	Geomechanics Laboratory	1
CEE 470	Surface Water Hydrology	3
IE 370	Engineering Economic Analysis	3
General Education: Cardinal Core Arts & Humanities, Social & Behavioral Sciences, or Social & Behavioral Sciences Historical Perspective - AH, SB, or SBH		3
Hours		18
<b>Spring</b>		
CEE 421	Fundamentals of Concrete Design	3
CEE 452	Foundation Engineering	3
CEE 471	Water Supply and Sewerage	3
CEE 480	Civil & Environmental Engineering Capstone Design - CUE	3
CEE 530	Construction Materials	3
Hours		15
Minimum Total Hours		123

1. Log into your ULink account.
2. Click on the Student Services tab.
3. Next, click on "View my Academic Advisement Report" to run a Degree Audit report in the Undergraduate Advising area.
4. To create a What-if report, click on "Create a What-if Advisement Report."

Click here to run a Degree Audit report, or create a What-if report. (<https://ulink.louisville.edu>)

### Flight Planner

Based on your major, the Flight Planner tool may be available for you to create a personalized Flight Plan. The Flight Planner can be found in the ULink Student Center. Consult with your advisor for assistance with the Flight Planner.

### Degree Audit Report

Degree Audit reports illustrate how your completed courses fulfill the requirements of your academic plan. What-if reports allow you to compare the courses you have completed in your current academic plan to the courses required in another academic plan. Should you have questions about either report, please consult with your academic advisor.

To create either report: