

CIVIL ENGINEERING (BS)



This program was approved for students entering the university in the Summer 2025-Spring 2026 catalog year. For more information about catalog year, go to Catalog Year Information (<https://catalog.louisville.edu/undergraduate/university-wide-unit-specific-policies/catalog-year/>).

Bachelor of Science in Civil Engineering

Unit: Speed School of Engineering (SS) (<https://engineering.louisville.edu>)

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

Academic Plan Code(s): CE_ _BCE

Program Information

The Bachelor of Science in Civil Engineering degree program is accredited by the Engineering Accreditation Commission (EAC) of ABET, <https://www.abet.org> (<https://www.abet.org/>), under the Commission's General Criteria and the Program Criteria for Civil and Similarly Named Engineering Programs.

Students who graduate from ABET-accredited programs are authorized to sit for the Fundamentals of Engineering (FE) exam, and are encouraged to do so. Completion of the FE Exam is not required for any of the Engineering School's degree programs. The FE Exam is a multiple-choice test, administered by the National Council of Examiners for Engineering and Surveying (NCEES). Passing the FE exam is the first step to becoming licensed as a Professional Engineer. Engineers who have successfully passed the FE exam are considered "Engineers in Training (EIT)". Once an EIT has accumulated four years of acceptable work experience in their field of engineering, they are then able to sit for the Principles and Practice of Engineering (PE) exam, in order to become a professionally licensed engineer. The PE exams go beyond testing academic knowledge and require knowledge gained in engineering practice. The requirement to accumulate work experience before taking a PE exam means that the program is not designed to prepare students for immediate licensure.

Program Educational Objectives

In accordance with our mission statement, within three to five years of graduation;

- Our graduates will grow from technical competency to professional proficiency.
- Our graduates will engage in professional development and life-long learning.

- Our graduates will exhibit leadership and team-building skills.
- Our graduates will provide service to the profession, and to society.

Student Outcomes

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. an ability to communicate effectively with a range of audiences
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Degree Summary

Code	Title	Hours
General Education Requirements (https://catalog.louisville.edu/undergraduate/general-education-requirements/) ¹		31
(19 hours of General Education requirements may be satisfied through coursework required by the degree program)		
College/School Requirements		35
Program/Major Requirements		54
Supporting Courses		22
Minimum Total Hours		123

¹ 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.

Incoming Student Admission Criteria

High School Curriculum Requirements: All schools require graduation from an accredited high school and completion of the Kentucky Pre-College Curriculum requirements. In addition, Speed School requires successful completion of the following courses in high school:

- Calculus or pre-calculus
- Chemistry

Students with ACT / SAT Scores

- ACT composite and math scores of 25 OR SAT combined CR+M score of 1200 and math score of 590. A 3.0 GPA on a 4.0 scale

OR

- ACT composite and math scores of 24 OR SAT combined CR+M score of 1160 and math score of 570. A 3.5 GPA on a 4.0 scale

Students without ACT / SAT Scores

- HS GPA of 3.0 (or better) on a 4.0 scale
- Comprehensive transcript evaluation
- Review of Student Resume

Transferring to Engineering BS degree programs

Students with 24 hours or more transferable semester hours will have a minimum college grade point average of 2.8 and at least B-minus grades in each of the following courses: ENGR 181 (or equivalent) and Intro to Chemistry (CHEM 101 or equivalent).

It is recommended students successfully complete Physics I (PHYS 298 or equivalent) before transferring to the J.B. Speed School of Engineering.

General Education Requirements

Code	Title	Hours
	General Education Requirements (https://catalog.louisville.edu/undergraduate/general-education-requirements/) ¹	31
The following courses are required by the program and satisfy the respective General Education Requirement(s):		
CHEM 201	General Chemistry I - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
CHEM 207	Introduction to Chemical Analysis I - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
COMM 111	Introduction to Public Speaking - OC (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
or COMM 112	Business and Professional Speaking - OC (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
ENGL 101 & ENGL 102	Introduction to College Writing - WC (https://catalog.louisville.edu/undergraduate/general-education-requirements/) Intermediate College Writing - WC (https://catalog.louisville.edu/undergraduate/general-education-requirements/) ^{2,3}	
ENGR 101	Engineering Analysis I - QR (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
PHYS 298	Introductory Mechanics, Heat and Sound - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	

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
Speed School Core		
CHEM 201	General Chemistry I - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/) ²	3
CHEM 207	Introduction to Chemical Analysis I - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/) ²	1
COMM 111	Introduction to Public Speaking - OC (https://catalog.louisville.edu/undergraduate/general-education-requirements/) ²	3
or COMM 112	Business and Professional Speaking - OC (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	
ENGL 101	Introduction to College Writing - WC (https://catalog.louisville.edu/undergraduate/general-education-requirements/) ^{2,3}	3
ENGL 102	Intermediate College Writing - WC (https://catalog.louisville.edu/undergraduate/general-education-requirements/) ^{2,3}	3
ENGR 101	Engineering Analysis I - QR (https://catalog.louisville.edu/undergraduate/general-education-requirements/) ²	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
ENGR 201	Engineering Analysis III	4
ENGR 205	Differential Equations for Engineering	2
PHYS 298	Introductory Mechanics, Heat and Sound - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/) ²	4
Minimum Total Hours		35

Program/Major Requirements

Code	Title	Hours
Civil Engineering Department Requirements		
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 (https://catalog.louisville.edu/undergraduate/general-education-requirements/) (CUE)	3
CEE 489	Civil Engineering Cooperative Education III	1
CEE 530	Construction Materials	3
Civil Engineering Core		
PHYS 295	Introductory Laboratories I - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	1
Minimum Total Hours		54

Code	Title	Hours
Supporting Courses		
CHE 253	Materials Science	3
ENVS 301	Geology for Scientists and Engineers	3
ISE 360	Probability and Statistics for Engineers	3
ISE 370	Engineering Economic Analysis	3
ME 206	Mechanics II: Dynamics	3
PHYS 299	Introductory Electricity, Magnetism and Light	4
ENGR 151	Engineering Graphics Technology	1
ENGR 307	Numerical Methods for Engineering	2
Minimum Total Hours		22

Candidates for the Bachelor of Science degree must be in good standing (university GPA ≥ 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
Culminating Undergraduate Experience (Graduation requirement)		
Requirement fulfilled by completing:		
CEE 480	Civil & Environmental Engineering Capstone Design - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	

¹ 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.

² This course is a General Education requirement for the program; see louisville.edu/provost/ger/ (<https://louisville.edu/provost/ger/>) for the listing, by academic year, of AH/P1/P2/SB/SBH Electives which satisfy the University-wide General Education requirements.

³ 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 may be needed to satisfy program credit hour requirements.

Flight Plan

Year 1		Hours
Fall		
CHEM 201	General Chemistry I - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
CHEM 207	Introduction to Chemical Analysis I - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	1
ENGL 101	Introduction to College Writing - WC (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
ENGR 101	Engineering Analysis I - QR (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	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 Perspectives - AHP1, SBP1, or SBHP1		3
Hours		16
Spring		
ENGL 102	Intermediate College Writing - WC (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
ENGR 102	Engineering Analysis II	4
ENGR 111	Engineering Methods, Tools and Practice II	2
PHYS 295	Introductory Laboratories I - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	1
PHYS 298	Introductory Mechanics, Heat and Sound - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	4
Hours		14
Summer		
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
Year 2		
Fall		
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 (https://catalog.louisville.edu/undergraduate/general-education-requirements/) or Business and Professional Speaking - OC (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
ENGR 205	Differential Equations for Engineering	2
ME 206	Mechanics II: Dynamics	3
CHE 253	Materials Science	3
Hours		18
Spring		
CEE 289	Civil and Environmental Engineering Cooperative Education I	1
Hours		1

Summer		
CEE 309	Introduction to Environmental Engineering	3
CEE 322	Structural Analysis	3
ISE 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
Year 3		
Fall		
CEE 389	Civil and Environmental Engineering Cooperative Education II	1
Hours		1
Spring		
CEE 370	Engineering Hydraulics	3
CEE 371	Engineering Hydraulics Lab	1
CEE 460	Transportation Systems Engineering	3
ENGR 307	Numerical Methods for Engineering	2
ENVS 301	Geology for Scientists and Engineers	3
General Education: Cardinal Core Arts & Humanities, Social & Behavioral Sciences, or Social & Behavioral Sciences Historical Perspective Global Perspectives - AHP2, SBP2, or SBHP2		3
Hours		15
Summer		
CEE 489	Civil Engineering Cooperative Education III	1
Hours		1
Year 4		
Fall		
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
ISE 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
Spring		
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 (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
CEE 530	Construction Materials	3
Hours		15
Minimum Total Hours		123

another academic plan. Should you have questions about either report, please consult with your academic advisor.

Flight Planner

The Flight Planner tool is available for you to create a personalized Flight Plan to graduation. Advisors have access to review your Flight Planner and can help you adjust it to ensure you remain on track to graduate in a timely manner.

To create these reports:

1. Log into your ULink account.
2. Click on the Academic Progress tile.
3. Select the appropriate report.
 - a. To run a Degree Audit report, click on "View my Degree Audit."
 - b. To create a What-if report, click on "What-if Advisement Report."
 - c. To run a Flight Planner report, click on "Use My Flight Planner."

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

The Flight Plan outlined above is intended to demonstrate one possible path to completing the degree within four years. Course selection and placement within the program may vary depending on course offerings and schedule, elective preferences, and other factors (study abroad, internship availability, etc.). Please consult your advisor for additional information about building a flight plan that works for you.

Degree Audit Report

Degree Audit reports illustrate how your completed courses fulfill the requirements of your academic plan, and which requirements are still outstanding. Degree audits also take transfer credits and test credits into account. "What-if" reports allow you to compare the courses you have completed in your current academic plan to the courses required in