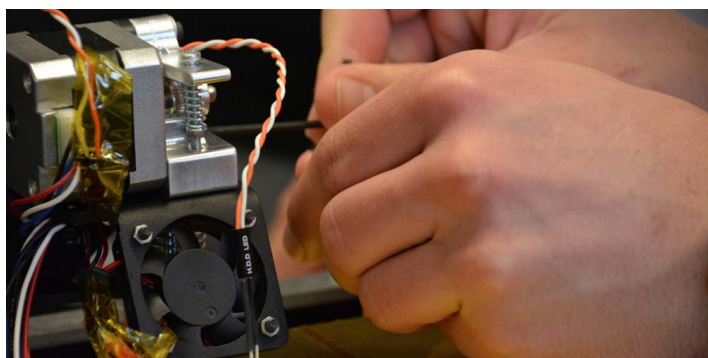


MECHANICAL ENGINEERING (BS)



This program was approved for students entering the university in the Summer 2024–Spring 2025 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 Mechanical Engineering

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

Department: Mechanical Engineering (<http://engineering.louisville.edu/mechanical/>)

Academic Plan Code(s): ME_ _BMC

Program Information

The Bachelor of Science in Mechanical 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 Mechanical 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.

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 ¹	35
Program/Major Requirements	56
Supporting Courses	22
Minimum Total Hours	125

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	Introduction to College Writing - WC (https://catalog.louisville.edu/undergraduate/general-education-requirements/)
ENGL 102	Intermediate College Writing - WC (https://catalog.louisville.edu/undergraduate/general-education-requirements/)
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. Using other courses to satisfy General Education requirements will require additional hours to complete the degree requirements.

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/)	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
Mechanical Engineering Department		
ME 206	Mechanics II: Dynamics	3
ME 251	Thermodynamics I	3
ME 288	Mechanical Engineering Cooperative Education Seminar	0
ME 289	Mechanical Engineering Cooperative Education I	1
ME 310	Thermodynamics II	3
ME 311	Fluid Mechanics I	3
ME 312	Fluid Mechanics Laboratory	1
ME 323	Mechanics of Materials	3
ME 324	Mechanics of Materials Laboratory	1
ME 380	Computer Aided Design	2
ME 381	Introduction to Manufacturing	2
ME 389	Mechanical Engineering Cooperative Education II	1
ME 414	Mechanical Measurements	3
ME 415	Senior Mechanical Engineering Laboratory	1
ME 422	Machine Design I	3
ME 435	System Dynamics	3
ME 440	Heat Transfer	3
ME 442	Machine Design II	3
ME 489	Mechanical Engineering Cooperative Education III	1
ME 497	Mechanical Engineering Capstone Design Project - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
ME 4xx/5XX Electives		9
Mechanical Engineering Core		
CHEM 202	General Chemistry II - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
PHYS 295	Introductory Laboratories I - SL (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	1

Minimum Total Hours 56

Code	Title	Hours
Supporting Courses		
CSE 120	Introduction to Programming with Python	3
CEE 205	Mechanics I: Statics	3
CHE 253	Materials Science	3
ECE 252	Introduction to Electrical Engineering	3
IE 370	Engineering Economic Analysis	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

A student is allowed to accumulate no more than two D+ or lower grades in ME prefixed courses (including ME approved elective courses) to graduate with a baccalaureate degree.

If a student accumulates a third D+ or lower grade, in an ME prefixed course, the student is required to repeat at least one of those courses until a C- or better grade is earned.

Students are allowed to pursue the MEng degree with one grade of D-, D, or D+ in an ME prefixed course. Students who accumulated more than one such grade in an ME prefixed course are required to repeat those courses until all but one of those courses have grades of C- or better.

Candidates for the Bachelor of Science degree must be in good standing (GPA \geq 2.25) and must attain a GPA 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:		
ME 497	Mechanical Engineering Capstone Design Project - 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.
- ² This course is a General Education requirement for the program; see [louisville.edu/provost/ger/](http://www.louisville.edu/provost/ger/) (<http://www.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.
- 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		
Fall		Hours
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 - AH, SB, or SBH		3
Hours		16
Spring		Hours
CHEM 202	General Chemistry II - S (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3

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		17
Summer		
CEE 205	Mechanics I: Statics	3
ENGR 201	Engineering Analysis III	4
PHYS 299	Introductory Electricity, Magnetism and Light	4
Hours		11
Year 2		
Fall		
CHE 253	Materials Science	3
ENGR 151	Engineering Graphics Technology	1
ME 206	Mechanics II: Dynamics	3
ME 251	Thermodynamics I	3
ME 288	Mechanical Engineering Cooperative Education Seminar	0
ME 323	Mechanics of Materials	3
ME 324	Mechanics of Materials Laboratory	1
General Education: Cardinal Core Arts & Humanities, Social & Behavioral Sciences, or Social & Behavioral Sciences Historical Perspective US Diversity - AHD1, SBD1, or SBHD1		3
Hours		17
Spring		
ME 289	Mechanical Engineering Cooperative Education I	1
Hours		1
Summer		
CSE 120	Introduction to Programming with Python	3
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
IE 370	Engineering Economic Analysis	3
ME 310	Thermodynamics II	3
Hours		12
Year 3		
Fall		
ME 389	Mechanical Engineering Cooperative Education II	1
Hours		1
Spring		
ECE 252	Introduction to Electrical Engineering	3
ENGR 205	Differential Equations for Engineering	2
ME 311	Fluid Mechanics I	3
ME 312	Fluid Mechanics Laboratory	1
ME 380	Computer Aided Design	2
ME 381	Introduction to Manufacturing	2
ME 422	Machine Design I	3
Hours		16
Summer		
ME 489	Mechanical Engineering Cooperative Education III	1
Hours		1
Year 4		
Fall		
ENGR 307	Numerical Methods for Engineering	2
ME 414	Mechanical Measurements	3

ME 415	Senior Mechanical Engineering Laboratory	1
ME 442	Machine Design II	3
Mechanical Engineering Elective I (4xx/5xx)		3
Mechanical Engineering Elective II (4xx/5xx)		3
General Education: Cardinal Core Arts & Humanities, Social & Behavioral Sciences, or Social & Behavioral Sciences Historical Perspective - AH, SB, or SBH		3
Hours		18
Spring		
ME 435	System Dynamics	3
ME 440	Heat Transfer	3
ME 497	Mechanical Engineering Capstone Design Project - CUE (https://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
Mechanical Engineering Elective III (4xx/5xx)		3
General Education: Cardinal Core Arts & Humanities, Social & Behavioral Sciences, or Social & Behavioral Sciences Historical Perspective - AH, SB, or SBH		3
Hours		15
Minimum Total Hours		125

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 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 "Create a 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>)