COMPUTER SCIENCE AND ENGINEERING (BS)

This program was approved for students entering the university in the Summer 2023–Spring 2024 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 Computer Science and Engineering
Unit: Speed School of Engineering (https://engineering.louisville.edu) (SS)
Department: Computer Science and Engineering (http://engineering.louisville.edu/computer/)
Academic Plan Code(s): CECSBC

Program Information

Degree Summary

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General Education Requirements (<a href="http://catalog.louisville.edu/undergraduate/general-education-requirements/)%C2%B9">http://catalog.louisville.edu/undergraduate/general-education-requirements/)¹</a></td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>(19 hours of General Education requirements may be satisfied through coursework required by the degree program)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>College/School Requirements ¹</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Program/Major Requirements</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>Supporting Courses</td>
<td>17</td>
</tr>
<tr>
<td><em>Minimum Total Hours</em></td>
<td></td>
<td>123</td>
</tr>
</tbody>
</table>

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 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 3.5 GPA on a 4.0 scale
- 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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General Education Requirements (<a href="http://catalog.louisville.edu/undergraduate/general-education-requirements/)%C2%B9">http://catalog.louisville.edu/undergraduate/general-education-requirements/)¹</a></td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>The following courses are required by the program and satisfy the respective General Education Requirement(s):</td>
<td></td>
</tr>
<tr>
<td>CHEM 201</td>
<td>General Chemistry I</td>
<td></td>
</tr>
<tr>
<td>CHEM 207</td>
<td>Introduction to Chemical Analysis I</td>
<td></td>
</tr>
<tr>
<td>COMM 111</td>
<td>Introduction to Public Speaking</td>
<td></td>
</tr>
<tr>
<td>or COMM 112</td>
<td>Business and Professional Speaking</td>
<td></td>
</tr>
<tr>
<td>ENGL 101</td>
<td>Introduction to College Writing ³</td>
<td></td>
</tr>
<tr>
<td>ENGL 102</td>
<td>Intermediate College Writing</td>
<td></td>
</tr>
<tr>
<td>ENGR 101</td>
<td>Engineering Analysis I</td>
<td></td>
</tr>
<tr>
<td>PHYS 298</td>
<td>Introductory Mechanics, Heat and Sound</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Speed School Core</td>
<td></td>
</tr>
<tr>
<td>CHEM 201</td>
<td>General Chemistry I ²</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 207</td>
<td>Introduction to Chemical Analysis I ²</td>
<td>1</td>
</tr>
<tr>
<td>COMM 111</td>
<td>Introduction to Public Speaking ²</td>
<td>3</td>
</tr>
<tr>
<td>or COMM 112</td>
<td>Business and Professional Speaking</td>
<td></td>
</tr>
<tr>
<td>ENGL 101</td>
<td>Introduction to College Writing ²,³</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 102</td>
<td>Intermediate College Writing ²,³</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 101</td>
<td>Engineering Analysis I ²</td>
<td>4</td>
</tr>
</tbody>
</table>
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.

### Flight Plan

#### Year 1

**Fall**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 201</td>
<td>General Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 207</td>
<td>Introduction to Chemical Analysis I</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 101</td>
<td>Introduction to College Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 101</td>
<td>Engineering Analysis I</td>
<td>4</td>
</tr>
<tr>
<td>ENGR 110</td>
<td>Engineering Methods, Tools, and Practice I</td>
<td>2</td>
</tr>
</tbody>
</table>

**Spring**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 111</td>
<td>Engineering Methods, Tools and Practice II</td>
<td>2</td>
</tr>
<tr>
<td>ENGR 201</td>
<td>Engineering Analysis III</td>
<td>4</td>
</tr>
<tr>
<td>ENGR 205</td>
<td>Differential Equations for Engineering</td>
<td>2</td>
</tr>
<tr>
<td>ENGR 330</td>
<td>Linear Algebra for Engineering</td>
<td>2</td>
</tr>
</tbody>
</table>

Minimum Total Hours: **17**
## University of Louisville

### Computer Science and Engineering (BS)

#### Spring
- **CSE 130** Introduction to C and C++ Programming Languages 3
- **ENGL 102** Intermediate College Writing 3
- **ENGR 102** Engineering Analysis II 4
- **ENGR 111** Engineering Methods, Tools and Practice II 2
- **PHYS 295** Introductory Laboratories I 1
- **PHYS 298** Introductory Mechanics, Heat and Sound 4

**Hours**: 17

#### Summer
- **CSE 220** Object Oriented Program Design with Java 3
- **ENGR 201** Engineering Analysis III 4
- **PHYS 296** Introductory Laboratories II 1
- **PHYS 299** Introductory Electricity, Magnetism and Light 4

**Hours**: 12

#### Year 2

#### Fall
- **CSE 288** Computer Science and Engineering Cooperative Education Seminar 0
- **CSE 302** Data Structures 3
- **ECE 210** Logic Design 3
- **ECE 211** Logic Design Laboratory 1
- **CSE 335** Introduction to Database 3
- **ENGR 205** Differential Equations for Engineering 2
- **General Education: Cardinal Core Arts & Humanities, Social & Behavioral Sciences, or Social & Behavioral Sciences Historical Persepective** 3
- **Diversity - AHD1, SB1D1, or SBHD1** 3

**Hours**: 15

#### Summer
- **CSE 310** Discrete Structures 3
- **COMM 111** Introduction to Public Speaking 3
- **or COMM 112** or Business and Professional Speaking 3
- **CSE 350** Introduction to Software Engineering 3
- **General Education: Cardinal Core Arts & Humanities, Social & Behavioral Sciences, or Social & Behavioral Sciences Historical Persepective** 3
- **Diversity - AHD1, SB1D1, or SBHD1** 3

**Hours**: 12

#### Year 3

#### Fall
- **CSE 389** Computer Science and Engineering Cooperative Education II 1

**Hours**: 1

#### Spring
- **CSE 311** Ethics, Social, and Legal Aspects on the Electronic Frontier 3
- **CSE 412** or ECE 412 Introduction to Embedded Systems or Introduction to Embedded Systems 3
- **CSE 419** Introduction to Algorithms 3
- **ENGR 330** Linear Algebra for Engineering 2
- **IE 360** Probability and Statistics for Engineers 3
- **ECE 252** Introduction to Electrical Engineering 3

**Hours**: 17

#### Summer
- **CSE 489** Computer Science and Engineering Cooperative Education III 1

**Hours**: 1

#### Year 4

#### Fall
- **CSE 420** Design of Operating Systems 3
- **CSE 504** Automata Theory 3

### 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.

### 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:**

a. Log into your ULink account.
b. Click on the Academic Progress tile.
c. Select the appropriate report.
   i. To run a Degree Audit report, click on "View my Degree Audit."
   ii. To create a What-if report, click on "Create a What-if Advisement Report."
   iii. 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](https://ulink.louisville.edu))

The Bachelor of Science in Computer Science and Engineering (CECSBCC) program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: [louisville.edu/oapa/licensure-information](http://louisville.edu/oapa/licensure-information/) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: [louisville.edu/online/About-Us](http://louisville.edu/online/About-Us/) (please scroll down near the bottom of the page and click on the licensing disclosures tab).