Computer engineering (CpE) is a discipline that embodies the science and technology of design, construction, implementation and maintenance of software and hardware components of computing systems and computer-controlled equipment. Studies in computer engineering integrate fields from both computer science (CS) and electrical engineering (EE).

### About this Program

- **College:** Herbert Wertheim College of Engineering  
- **Degree:** Bachelor of Science in Computer Engineering  
- **Credits for Degree:** 126  
- **Additional Information**  
- **Related Computer Engineering Programs**

To graduate with this major, students must complete all university, college, and major requirements.

Critical Tracking records each student’s progress in courses that are required for entry to each major. Please note the critical-tracking requirements below on a per-semester basis.

Equivalent critical-tracking courses as determined by the State of Florida Common Course Prerequisites may be used for transfer students.

#### Semester 1

- Complete 1 of 8 critical-tracking courses with a minimum grade of C within two attempts: CHM 2045 or CHM 2095, CHM 2046 or CHM 2096 or a 2000-level or higher advisor-approved science course, MAC 2311, MAC 2312, MAC 2313, MAP 2302, PHY 2048, PHY 2049  
- 2.5 GPA required for all critical-tracking courses  
- 2.0 UF GPA required

#### Semester 2

- Complete 1 additional critical-tracking course with a minimum grade of C within two attempts  
- 2.5 GPA required for all critical-tracking courses  
- 2.0 UF GPA required

#### Semester 3

- Complete 2 additional critical-tracking courses with minimum grades of C within two attempts  
- 2.5 GPA required for all critical-tracking courses  
- 2.0 UF GPA required

#### Semester 4

- Complete 2 additional critical-tracking courses with minimum grades of C within two attempts  
- 2.5 GPA required for all critical-tracking courses  
- 2.0 UF GPA required

#### Semester 5

- Complete all 8 critical-tracking courses with minimum grades of C in each course within two attempts

- 2.5 GPA required for all critical-tracking courses  
- 2.0 UF GPA required

Students are expected to complete the general education International (GE-N) and Diversity (GE-D) requirements. This is often done concurrently with another general education requirement, typically GE-C, H, or S.

To remain on track, students must complete the appropriate critical-tracking courses, which appear in bold. These courses must be completed by the terms as listed above in the Critical Tracking criteria.

This semester plan represents an example progression through the major. Actual courses and course order may be different depending on the student’s academic record and scheduling availability of courses. Prerequisites still apply.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 2045 General Chemistry 1 (Critical Tracking; Gen Ed Physical Sciences)</td>
<td>3</td>
</tr>
<tr>
<td>CHM 2095 Chemistry for Engineers 1 (Critical Tracking; Gen Ed Physical Sciences)</td>
<td>3</td>
</tr>
<tr>
<td>CHM 2045L General Chemistry 1 Laboratory (Gen Ed Physical Sciences)</td>
<td>1</td>
</tr>
<tr>
<td>COP 3502 Programming Fundamentals 1</td>
<td>3</td>
</tr>
<tr>
<td>IUF 1000 What is the Good Life (Gen Ed Humanities)</td>
<td>3</td>
</tr>
<tr>
<td>MAC 2311 Analytic Geometry and Calculus 1 (Critical Tracking; State Core Gen Ed Mathematics)</td>
<td>4</td>
</tr>
<tr>
<td>State Core Gen Ed Social and Behavioral Sciences (Writing requirement, 6,000 words)</td>
<td>3</td>
</tr>
<tr>
<td>CHM 2046 General Chemistry 2 (Critical Tracking)</td>
<td>3</td>
</tr>
<tr>
<td>CHM 2096 Chemistry for Engineers 2 (Critical Tracking) Gen Ed Biological Sciences (Critical Tracking; 2000 level or above)</td>
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</tr>
<tr>
<td>COP 3503 Programming Fundamentals 2</td>
<td>3</td>
</tr>
<tr>
<td>MAC 2312 Analytic Geometry and Calculus 2 (Critical Tracking; State Core Gen Ed Mathematics)</td>
<td>4</td>
</tr>
<tr>
<td>PHY 2048 Physics with Calculus 1 (Critical Tracking; Gen Ed Physical Sciences)</td>
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<tr>
<td>PHY 2048L Laboratory for Physics with Calculus 1 (Gen Ed Physical Sciences)</td>
<td>1</td>
</tr>
<tr>
<td>ENC 1101 Expository and Argumentative Writing (Gen Ed Composition; Writing Requirement: 6,000 words)</td>
<td>3</td>
</tr>
<tr>
<td>COT 3100 Applications of Discrete Structures</td>
<td>3</td>
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<tr>
<td>EEL 3701C Digital Logic and Computer Systems</td>
<td>4</td>
</tr>
<tr>
<td>MAC 2313 Analytic Geometry and Calculus 3 (Critical Tracking; Gen Ed Mathematics)</td>
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<tr>
<td>PHY 2049 Physics with Calculus 2 (Critical Tracking; Gen Ed Physical Sciences)</td>
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<tr>
<td>PHY 2049L Laboratory for Physics with Calculus 2</td>
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</tr>
<tr>
<td>ENC 3246 Professional Communication for Engineers (State Core Gen Ed Mathematics)</td>
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</tbody>
</table>
Semester Four
CDA 3101 Introduction to Computer Organization 3
COP 3530 Data Structures and Algorithm 4
EEL 3111C Circuits 1 4
MAP 2302 Elementary Differential Equations (Critical Tracking) 3
Gen Ed Social and Behavioral Sciences with Diversity or International; Writing Requirement: 6,000 words 3
 Credits 17

Semester Five
State Core Gen Ed Humanities with Diversity or International 3
EEL 3744C Microprocessor Applications 4
MAS 3114 Computational Linear Algebra 3
CEN 3031 Introduction to Software Engineering 3
College breadth elective 2-3
 Credits 15-16

Semester Six
EEL 4712C Digital Design 4
College breadth elective 3
Engineering ethics course 1-2
Technical electives 6
 Credits 14-15

Semester Seven
Select one CpE Design 1 course:
CEN 3913 Computer and Information Science and Engineering Design 1 3
EEL 3923C Electrical Engineering Design 1 3
CIS 4912C Integrated Product and Process Design 1 3
COP 4600 Operating Systems 3
EEL 3135 Introduction to Signals and Systems 4
STA 3032 Engineering Statistics 3
Technical elective 3
 Credits 16

Semester Eight
Select one CpE Design 2 course:
CEN 4914 Computer and Information Science and Engineering Design 2 3
EEL 4912C Electrical Engineering Design 2 3
EEL 4913C Integrated Product and Process Design 2 3
Technical elective 9
 Credits 12
Total Credits 126

18 Credits of CpE Technical Electives
- At least 12 credits must be from the CISE and/or ECE department(s). These courses must be 3000-level or higher.
- Courses not permitted as technical electives: EEL 3003 Elements of Electrical Engineering
- A CpE student will have credit for two programming courses (Java and C++). One additional programming language course (not Java or C++) can count as a technical elective.
- A maximum of 6 credits can come from the following categories:
  - 4000-level courses in the mathematics department
  - 3000-level courses in the physics department
  - 4000-level courses in the statistics courses
- 3000-level courses in any Herbert Wertheim College of Engineering department
- Any advisor-approved course

The Bachelor of Science in Computer Engineering is concerned with the theory, design, development and application of computer systems and information processing techniques. Students will be equally proficient working with computer systems, hardware and software, as with computer theory and applications.

Accredited by the Engineering Accreditation Commission of ABET.

Before Graduating Students Must
- Pass assessment according to department rubric of student performance on a major design experience.
- Pass assessment in one or more core courses of individual assignments targeted to each SLO.
- Complete requirements for the baccalaureate degree, as determined by faculty.

Students in the Major Will Learn to

Student Learning Outcomes (SLOs)

Content
1. Apply knowledge of mathematics and science to computer engineering problems.
2. Design and conduct computer-engineering experiments, analyzing and interpreting the data.

Critical Thinking
3. Design a computer engineering system, component or process to meet desired needs within realistic economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability constraints.

Communication
4. Communicate technical data and design information effectively in writing and in speech to other computer scientists and engineers.

Curriculum Map
I = Introduced; R = Reinforced; A = Assessed

<table>
<thead>
<tr>
<th>Courses</th>
<th>SLO 1</th>
<th>SLO 2</th>
<th>SLO 3</th>
<th>SLO 4</th>
</tr>
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<tbody>
<tr>
<td>CEN 3031</td>
<td>I, A</td>
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<tr>
<td>CEN 4914 or EEL 4924C</td>
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<td>A</td>
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<tr>
<td>COP 3504</td>
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<tr>
<td>COT 4501 or EEL 3135</td>
<td>I, A</td>
<td>I, A</td>
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<td></td>
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</tbody>
</table>

Assessment Types
- Assignments
- Exams
- Reports
- Exit survey