COMPUTER INFORMATION SYSTEMS, B.S.

Accreditation

Learning Outcomes
1. Students will demonstrate an ability to analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
2. Students will demonstrate an ability to design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
3. Communicate effectively in a variety of professional contexts.
4. Students will demonstrate an ability to recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Students will demonstrate an ability to function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
6. Students will demonstrate an ability to support the delivery, use, and management of information systems within an information systems environment.

Academic Standards

Program GPA
Program GPA requirement policies are described in the College of Engineering and Computing section of this bulletin. For the purpose of these policies, the following courses are used to determine the Program GPA for the Computer Information Systems B.S. program: all Lower Division Computing courses, Computer Information Systems Major courses, Computer Information Systems Electives, CSCE 145, CSCE 390, and MGSC 290.

Admissions

Entrance Requirements
Admission requirements and processes for freshman, transfer students, and former students seeking readmission are managed by the Office of Undergraduate Admissions (http://sc.edu/about/offices_and_divisions/undergraduate/admissions/).

Transfer applicants from regionally accredited colleges and universities must have a cumulative 2.75 GPA on a 4.00 scale to enter the College of Engineering and Computing. In addition, transfer applicants for the Aerospace Engineering, Biomedical Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, or Mechanical Engineering majors must also have completed a four semester-hour calculus course equivalent to MATH 141 with a grade of “C” or better.

Current University of South Carolina students who wish to enter the College of Engineering and Computing, and former students seeking readmission, must have an institutional GPA of 2.50 or better on at least 15 hours earned at USC. In addition, such applicants for the Aerospace Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, or Mechanical Engineering majors must also have completed a four semester-hour calculus course equivalent to MATH 141 with a grade of “C” or better.

Degree Requirements (120 hours)
See College of Engineering and Computing (https://academicbulletins.sc.edu/undergraduate/engineering-computing/) for progression requirements and special academic opportunities.

Program of Study

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Carolina Core</td>
<td>34.41</td>
</tr>
<tr>
<td>2. College Requirements</td>
<td>0</td>
</tr>
<tr>
<td>3. Program Requirements</td>
<td>48.59</td>
</tr>
<tr>
<td>4. Major Requirements</td>
<td>27.36</td>
</tr>
</tbody>
</table>

Founding Documents Requirement
All undergraduate students must take a 3-credit course or its equivalent with a passing grade in the subject areas of History, Political Science, or African American Studies that covers the founding documents including the United States Constitution, the Declaration of Independence, the Emancipation Proclamation and one or more documents that are foundational to the African American Freedom struggle, and a minimum of five essays from the Federalist papers. This course may count as a requirement in any part of the program of study including the Carolina Core, the major, minor or cognate, or as a general elective. Courses that meet this requirement are listed here (https://academicbulletins.sc.edu/undergraduate/founding-document-courses/).

1. Carolina Core Requirements (34-41 hours)
CMW – Effective, Engaged, and Persuasive Communication: Written (6 hours)
Must be passed with a grade of C or higher.
• ENGL 101
• ENGL 102

ARP – Analytical Reasoning and Problem Solving (7-8 hours)
Must be passed with a grade of C or higher.
• CSCE 145
• MATH 122 or MATH 141

SCI – Scientific Literacy (8 hours)
• Two 4-credit hour CC-SCI (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/) laboratory science courses

GFL – Global Citizenship and Multicultural Understanding: Foreign Language (0-6 hours)
Score two or better on foreign language placement test; or complete the 109 and 110 courses in FREN, GERM, LATN or SPAN; or complete the 121 course in another foreign language.
• CC-GFL courses (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)
GHS – Global Citizenship and Multicultural Understanding: Historical Thinking (3 hours)
  • any CC-GHS course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

GSS – Global Citizenship and Multicultural Understanding: Social Sciences (3 hours)
  • any CC-GSS course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

AIU – Aesthetic and Interpretive Understanding (3 hours)
  • any CC-AIU course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

CMS – Effective, Engaged, and Persuasive Communication: Spoken Component ¹ (3 hours)
  • any CC-CMS course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

INF – Information Literacy ¹ (0 hours)
  • ENGL 102

VSR – Values, Ethics, and Social Responsibility ¹ (1 hour)
  • CSCE 390 - must be passed with a grade of C or higher

¹ Carolina Core Stand Alone or Overlay Eligible Requirements — Overlay-approved courses offer students the option of meeting two Carolina Core components in a single course. A maximum of two overlays is allowed. The total Carolina Core credit hours for this program must add up to a minimum of 34 hours.

2. College Requirements (0 hours)
No college-required courses for this program.

3. Program Requirements (48-59 hours)
   Supporting Courses (30 hours)

   Foundational Courses (12 hours)
   Course  Title                      Credits
   ENGL 462  Technical Writing        3
   or ENGL 463  Business Writing      3
   MATH 174  Discrete Mathematics for Computer Science ¹ 3
   or MATH 374  Discrete Structures   3
   STAT 509  Statistics for Engineers 3
   or STAT 515  Statistical Methods I 3
   STAT 516  Statistical Methods II   3

   Total Credit Hours 12

   ¹ MATH 174 and MATH 374 must be passed with a grade of C or higher

   Lower Division Computing (18 hours)
   Must be passed with a grade of C or higher.

   Course  Title                      Credits
   CSCE 205  Business Applications Programming 3
   or CSCE 242  Web Applications 3
   CSCE 350  Data Structures and Algorithms 3
   CSCE 416  Introduction to Computer Networks 3
   CSCE 490  Capstone Computing Project I 3
   CSCE 492  Capstone Computing Project II 3
   CSCE 520  Database System Design 3
   CSCE 522  Information Security Principles 3
   CSCE 594  Strategic Management of Information Systems 3

   Total Credit Hours 24
Major Elective (3 hours)
Students must complete 3 hours of Major Electives below. Students may choose to complete a concentration in Artificial Intelligence or Cybersecurity in place of the Major Electives.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ITEC 447</td>
<td>Management of Information Technology</td>
<td></td>
</tr>
<tr>
<td>ITEC 560</td>
<td>Project Management Methods</td>
<td></td>
</tr>
<tr>
<td>Select an approved CSCE course, 510 and higher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Concentrations
Students may choose to complete a concentration below in place of the 3 hours of Major Electives.

Artificial Intelligence Concentration (12 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCE 580</td>
<td>Artificial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>Select any three courses from the following:</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>CSCE 555</td>
<td>Algorithms in Bioinformatics</td>
<td></td>
</tr>
<tr>
<td>CSCE 567</td>
<td>Visualization Tools</td>
<td></td>
</tr>
<tr>
<td>CSCE 574</td>
<td>Robotics</td>
<td></td>
</tr>
<tr>
<td>CSCE 578</td>
<td>Text Processing</td>
<td></td>
</tr>
<tr>
<td>CSCE 582</td>
<td>Bayesian Networks and Decision Graphs</td>
<td></td>
</tr>
<tr>
<td>CSCE 585</td>
<td>Machine Learning Systems</td>
<td></td>
</tr>
<tr>
<td>CSCE 587</td>
<td>Big Data Analytics</td>
<td></td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Cybersecurity Concentration (6 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select any two courses from the following:</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>CSCE 311</td>
<td>Operating Systems</td>
<td></td>
</tr>
<tr>
<td>CSCE 548</td>
<td>Building Secure Software</td>
<td></td>
</tr>
<tr>
<td>CSCE 557</td>
<td>Introduction to Cryptography</td>
<td></td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Major Map
A major map is a layout of required courses in a given program of study, including critical courses and suggested course sequences to ensure a clear path to graduation.

Major maps are only a suggested or recommended sequence of courses required in a program of study. Please contact your academic advisor for assistance in the application of specific coursework to a program of study and course selection and planning for upcoming semesters.

Computer Information Systems, B.S.