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.

Exclusions
No Lower Division Computing, Computer Engineering Major, or Computer Engineering Elective course may be counted toward a minor. All other required courses and electives may be used for a minor as appropriate. CSCE 101 and CSCE 102 are not major courses and may not be used for degree credit.

Minimum Course Grades
The Computer Information Systems B.S. program requires that a grade of "C" or better be earned in each of the following courses: ENGL 101, ENGL 102, MATH 122 or MATH 141, MATH 174 or MATH 374, and all CSCE courses applied to the degree.

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, 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.

Degree Requirements (120-137 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>34-44</td>
</tr>
<tr>
<td>2. College Requirements</td>
<td>0</td>
</tr>
<tr>
<td>3. Program Requirements</td>
<td>57-59</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 (34-44 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 (0-3 hours)
• any overlay or stand-alone CC-INF course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

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 (57-59 hours)
Supporting Courses (39 hours)

Foundational Courses
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 462</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>or ENGL 463</td>
<td>Business Writing</td>
<td></td>
</tr>
<tr>
<td>MATH 174</td>
<td>Discrete Mathematics for Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 374</td>
<td>Discrete Structures</td>
<td></td>
</tr>
<tr>
<td>STAT 509</td>
<td>Statistics for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 515</td>
<td>Statistical Methods I</td>
<td></td>
</tr>
<tr>
<td>STAT 516</td>
<td>Statistical Methods II</td>
<td>3</td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

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

Liberal Arts Electives (9 hours)
Select from the following:
• AERO 401, AERO 402
• AFAM 201-AFAM 580
• ANTH 101-ANTH 499
• ARMY 401, ARMY 402
• ARTE 101, ARTE 260
• ARTH 105-ARTH 366
• ARTS 103-ARTS 261
• CHIN 103-CHIN 550
• CLAS 220-CLAS 598
• CPTL 150-CPTL 597
• CRJU 101-CRJU 494
• DANC 101-DANC 381
• ECON 123-ECON 499
• ENGL 270-ENGL 499
• FAMS 180-FAMS 597
• FREN 109-FREN 615
• GEOG 103-GEOG 595
• GERM 109-GERM 615
• HIST 101-HIST 692
• ITAL 101-ITAL 615
• JAPA 121-JAPA 500
• LASC 201-LASC 451
• LATN 109-LATN 615
• LING 101-LING 600, but only one of the LING 300, LING 301, and LING 600 can be used
• MART 110-MART 341
• MUSC 110-MUSC 140
• NAVY 401, NAVY 402
• PHIL 101-PHIL 109, PHIL 112-PHIL 598
• POLI 101-POLI 499
• PORT 121-PORT 615
• PSYC 101-PSYC 499
• RELG 101-RELG 552
• RUSS 121-RUSS 616
• SOCY 101-SOCY 499
Lower Division Computing (18 hours)
Must be passed with a grade of C or higher.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCE 146</td>
<td>Algorithmic Design II</td>
<td>4</td>
</tr>
<tr>
<td>CSCE 190</td>
<td>Computing in the Modern World</td>
<td>1</td>
</tr>
<tr>
<td>CSCE 201</td>
<td>Introduction to Computer Security</td>
<td>3</td>
</tr>
<tr>
<td>CSCE 210</td>
<td>Computer Hardware Foundations</td>
<td>3</td>
</tr>
<tr>
<td>CSCE 215</td>
<td>UNIX/Linux Fundamentals</td>
<td>1</td>
</tr>
<tr>
<td>CSCE 240</td>
<td>Advanced Programming Techniques</td>
<td>3</td>
</tr>
<tr>
<td>CSCE 247</td>
<td>Software Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours 18

Minor in Business Information Management (18 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 224</td>
<td>Introduction to Economics</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 222</td>
<td>Survey of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 371</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGSC 290</td>
<td>Computer Information Systems in Business</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives
Select two of the following:
- ACCT 324 Survey of Commercial Law
- ECON 311 Issues in Economics
- ECON 379 Government Policy Toward Business
- FINA 333 Finance and Markets
- IBUS 301 Introduction to International Business
- MKTG 350 Principles of Marketing
- MGMT 373 Entrepreneurship and New Venture Opportunities
- MKTG 351 Consumer Behavior
- MGSC 395 Operations Management

Total Credit Hours 18

Elective (0-2 hours)
The CIS curriculum includes 0-2 hours of electives depending on how students fulfill the Carolina Core requirements. Any course in the university can be used to satisfy the elective requirement (including additional electives in the major).

4. Major Requirements (27-36 hours)
Must be passed with a grade of C or higher.

Major Courses (24 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCE 205</td>
<td>Business Applications Programming</td>
<td>3</td>
</tr>
<tr>
<td>or CSCE 242</td>
<td>Web Applications</td>
<td></td>
</tr>
<tr>
<td>CSCE 350</td>
<td>Data Structures and Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CSCE 416</td>
<td>Introduction to Computer Networks</td>
<td>3</td>
</tr>
<tr>
<td>CSCE 490</td>
<td>Capstone Computing Project I</td>
<td>3</td>
</tr>
<tr>
<td>CSCE 492</td>
<td>Capstone Computing Project II</td>
<td>3</td>
</tr>
<tr>
<td>CSCE 520</td>
<td>Database System Design</td>
<td>3</td>
</tr>
<tr>
<td>CSCE 522</td>
<td>Information System Design</td>
<td>3</td>
</tr>
<tr>
<td>CSCE 594</td>
<td>Strategic Management of Information Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

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>ITEC 447</td>
<td>Management of Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>ITEC 560</td>
<td>Project Management Methods</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following:
- Select an approved CSCE course, 510 and higher

Total Credit Hours 3

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>
</tbody>
</table>

Select any three courses from the following:
- CSCE 555 Algorithms in Bioinformatics
- CSCE 567 Visualization Tools
- CSCE 574 Robotics
- CSCE 578 Text Processing
- CSCE 582 Bayesian Networks and Decision Graphs
- CSCE 585 Machine Learning Systems
- CSCE 587 Big Data Analytics

Total Credit Hours 12

Cybersecurity Concentration (6 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCE 311</td>
<td>Operating Systems</td>
<td>3</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>3</td>
</tr>
</tbody>
</table>

Select any two courses from the following:

Total Credit Hours 6

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.