

# COMPUTER SCIENCE, B.S.C.S.

## Accreditation

The Computer Science Program is accredited by the Computing Accreditation Commission of ABET, <http://www.abet.org>.

## Learning Outcomes

1. At the time of graduation students should satisfy the following Learning Outcomes.
2. Students will demonstrate an ability to analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
3. 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.
4. Students will demonstrate an ability to communicate effectively in a variety of professional contexts.
5. Students will recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
6. Students will demonstrate the ability to function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
7. Students will demonstrate the ability to apply computer science theory and software development fundamentals to produce computing-based solutions.

## 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 Science B.S.C.S. program: all Lower Division Computing, Computer Science Major, and Computer Science Elective courses, and CSCE 390.

### 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 Science B.S.C.S. program requires that a grade of "C" or better be earned in each of the following courses: ENGL 101, ENGL 102, MATH 141, MATH 142, MATH 374, CHEM 111, CHEM 111L, or PHYS 211, 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/](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 UofSC. 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 (125 hours)

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

### Program of Study

Requirements	Credit Hours
1. Carolina Core	35-44
2. College Requirements	0
3. Program Requirements	60
4. Major Requirements	30

### 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 State 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 (35-44 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 (8 hours)

*Must be passed with a grade of C or higher.*

- MATH 141
- MATH 142

### SCI – Scientific Literacy (8 hours)

Select all of one of the following:

#### Either

- CHEM 111 & CHEM 111L - *both must be passed with a grade of C or higher*
- CHEM 112 & CHEM 112L (both not approved for CC-SCI)

#### or

- PHYS 211 & PHYS 211L - *both must be passed with a grade of C or higher*
- PHYS 212 & PHYS 212L

### 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 <sup>1</sup> (3 hours)

- SPCH 140, SPCH 145, or SPCH 230

### INF – Information Literacy <sup>1</sup> (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 <sup>1</sup> (1 hour)

- CSCE 390 - *must be passed with a grade of C or higher*

<sup>1</sup> 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 35 hours.

## 2. College Requirements (0 hours)

No college-required courses for this program.

## 3. Program Requirements (60 hours)

### Supporting Courses (60 hours)

#### Foundational Courses (16 hours)

Course	Title	Credits
MATH 241	Vector Calculus	3
MATH 344	Applied Linear Algebra	3
MATH 344L	Applied Linear Algebra Lab	1
MATH 374	Discrete Structures (must be passed with a grade of C or higher)	3
STAT 509	Statistics for Engineers	3
ENGL 462	Technical Writing	3
or ENGL 463	Business Writing	
<b>Total Credit Hours</b>		<b>16</b>

#### Laboratory Science Elective (4 hours)

Course	Title	Credits
Select one of the following: 4		
ANTH 161	Human Origins: An Introduction to Biological Anthropology	
ASTR 101	Introduction to Astronomy	
BIOL 101 & 101L	Biological Principles I and Biological Principles I Laboratory	
BIOL 110	General Biology	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Lab	
CHEM 141	Principles of Chemistry I	
ENVR 101 & 101L	Introduction to the Environment and Introduction to the Environment Lab	
ENVR 200	Natural History of South Carolina	
GEOG 201	Landform Geography	
GEOG 202	Weather and Climate	
GEOL 101	Introduction to the Earth	
GEOL 103	Environment of the Earth	
GEOL 201	Observing the Earth	
GEOL 215 & 215L	Coastal Environments of the Southeastern U.S. and Coastal Environments of the Southeastern U.S. (Laboratory)	
GEOL 302	Rocks and Minerals	
MSCI 101	The Ocean Environment	
MSCI 102	The Living Ocean	
MSCI 210 & 210L	Oceans and Society and Oceans and Society Laboratory	
MSCI 215 & 215L	Coastal Environments of the Southeastern US and Coastal Environments of the Southeastern U.S. (Laboratory)	
PHYS 211 & 211L	Essentials of Physics I and Essentials of Physics I Lab	
<b>Total Credit Hours</b>		<b>4</b>

#### Liberal Arts Electives (9 hours)

Select 9 hours of 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  
 CPLT 150-CPLT 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  
 LASP 201-LASP 451  
 LATN 109-LATN 615  
 LING 101- LING 600, but only one of 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  
 SOST 101-SOST 500  
 SPAN 109-SPAN 615  
 THEA 170-THEA 565  
 WGST 112-WGST 555

#### Lower Division Computing (22 hours)

*Must be passed with a grade of C or higher:*

Course	Title	Credits
CSCE 145	Algorithmic Design I	4
CSCE 146	Algorithmic Design II	4
CSCE 190	Computing in the Modern World	1
CSCE 211	Digital Logic Design	3
CSCE 212	Introduction to Computer Architecture	3
CSCE 215	UNIX/Linux Fundamentals	1
CSCE 240	Advanced Programming Techniques	3
CSCE 247	Software Engineering	3
<b>Total Credit Hours</b>		<b>22</b>

#### Application Area (9 hours)

An application area consists of three courses (9 hours) that display a distinct curricular pattern that is different from computer science. Any three non-CSCE courses that are from one department or are a subset of a defined minor, and that are each 3 credit hours or more, may satisfy this

requirement. Students may petition the department for approval of other sets of application area courses.

## 4. Major Requirements (30 hours)

*Must be passed with a grade of C or higher.*

### Major Courses (21 hours)

Course	Title	Credits
CSCE 311	Operating Systems	3
CSCE 330	Programming Language Structures	3
CSCE 350	Data Structures and Algorithms	3
CSCE 355	Foundations of Computation	3
CSCE 416	Introduction to Computer Networks	3
CSCE 490	Capstone Computing Project I	3
CSCE 492	Capstone Computing Project II	3
<b>Total Credit Hours</b>		<b>21</b>

### Major Electives (9 hours)

Course	Title	Credits
Select from the following:		9
CSCE 317 or any CSCE course 500 or higher		
Select any approved CSCE courses, 500 and higher		
<b>Total Credit Hours</b>		<b>9</b>

## 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.

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