COMPUTER SCIENCE (BS) - SOFTWARE SYSTEMS TRACK

Program Overview

Graduates will be able to design and implement software, devise new ways to use computers, and develop effective ways to solve computing problems.

Career Opportunities

Software Engineers/Architects, Computer Programmers, Web Developers, Network and Security Specialists

Program of Study

Code	Title	Credit Hours
Core IMPACTS Area : Institutional Priorities [1]		**4-5**
COMM 1110	Public Speaking	3
ITDS 1779	Scholarship Across the Disciplines	2
LEAD 1705	Introduction to Servant Leadership	2
PERS 1506	Perspectives 1-hour	1
PERS 1507	Perspectives 2-hour	2
Foreign Language Course Options		
ARAB, CHIN, FREN, GERM, GREK, ITAL, JAPN, KREN, LATIN, PORT, SPAN - 1001, 1002, 2001, 2002		
SWAH 1001	Elementary Swahili I	
SWAH 1002	Elementary Swahili II	
Core IMPACTS Area : Mathematics & Quantitative Skills [1]		**3-7**
DATA 1501	Introduction to Data Science	3
MATH 1001	Quantitative Skills and Reasoning	3
MATH 1101	Introduction to Mathematical Modeling	3
MATH 1111	College Algebra	3
MATH 1113	Pre-Calculus	4
MATH 1125	Applied Calculus	3
MATH 1131	Calculus with Analytic Geometry I	4
MATH 1132	Calculus with Analytic Geometry II	4
MATH 1165	Computer-Assisted Problem Solving	3
MATH 1401	Introduction to Statistics	3
MATH 1501	Calculus I	4
MATH 2125	Introduction to Discrete Mathematics	3
STAT 1401	Elementary Statistics	3
Core IMPACTS Area : Political Science and U.S. History		**6**
HIST 2111	U. S. History to 1865	3
or HIST 2112	U. S. History since 1865	
POLS 1101	American Government	3
Core IMPACTS Area : Arts, Humanities, and Ethics		**6**
Select one Fine Arts course		3
ARTH 1100	Art Appreciation	
ARTH 2125	Introduction to the History of Art I– Prehistoric through Gothic	
ARTH 2126	Introduction to the History of Art II– Renaissance through Modern	
MUSC 1100	Music Appreciation	
THEA 1100	Theatre Appreciation	
ITDS 1145	Comparative Arts [2]	
Select one Humanities course		3
ENGL 2111	World Literature I	
ENGL 2112	World Literature II	
ITDS 1774	Introduction to Digital Humanities	
PHIL 2010	Introduction to Philosophy	
ITDS 1145	Comparative Arts [2]	
Core IMPACTS Area : Communicating in Writing		**6**
ENGL 1101	English Composition I	3
ENGL 1102	English Composition II	3
Core IMPACTS Area : Technology, Mathematics, and Sciences [1]		**7-11**
ANTH 1145	Human Origins	3
ASTR 1105	Descriptive Astronomy: The Solar System	3
ASTR 1106	Descriptive Astronomy: Stars and Galaxies	3
ASTR 1305	Descriptive Astronomy Lab	1
ATSC 1112	Understanding the Weather	3
ATSC 1112L	Understanding the Weather Lab	1
BIOL 1125	Contemporary Issues in Biology Non-Lab	3
BIOL 1215K	Introductory Biology	4
BIOL 1225K	Contemporary Issues in Biology with Lab	4
CHEM 1151 & 1151L	Survey of Chemistry I and Survey of Chemistry I Lab	4
CHEM 1152 & 1152L	Survey of Chemistry II and Survey of Chemistry II Lab	4
CHEM 1211 & 1211L	Principles of Chemistry I and Principles of Chemistry I Lab	4
CHEM 1212 & 1212L	Principles of Chemistry II and Principles of Chemistry II Lab	4
CPSC 1105	Introduction to Computing Principles and Technology	3
CPSC 1301K	Computer Science I	4
ENVS 1105	Environmental Studies	3
ENVS 1105L	Environmental Studies Laboratory	1
ENVS 1205K	Sustainability and the Environment	4
GEOG 2215	Introduction to the Geographic Information Systems	3
GEOL 1110	Natural Disasters: Our Hazardous Environment	3
GEOL 1121	Introductory Geoscience I: Physical Geology	3
GEOL 1121L	Introductory Geoscience I: Physical Geology Lab	1
GEOL 1122	Introductory Geo-sciences II: Historical Geology	3
GEOL 1322	Introductory Geo-sciences II: Historical Geology Lab	1
GEOL 2225	The Fossil Record	4
PHYS 1111 & PHYS 1311	Introductory Physics I and Introductory Physics I Lab	4
PHYS 1112 & PHYS 1312	Introductory Physics II and Introductory Physics II Lab	4
PHYS 1125	Physics of Color and Sound	3
PHYS 1325	Physics of Color and Sound Lab	1
PHYS 2211 & PHYS 2311	Principles of Physics I and Principles of Physics I Lab	4
PHYS 2212 & PHYS 2312	Principles of Physics II and Principles of Physics II Lab	4

Core IMPACTS Area : Social Sciences		**6**
Select one Behavioral Science course		
ECON 2105	Principles of Macroeconomics	
ECON 2106	Principles of Microeconomics	
PHIL 2030	Moral Philosophy	
PSYC 1101	Introduction to General Psychology	
SOCI 1101	Introduction to Sociology	
Select one World Cultures course		3
ANTH 1107	Discovering Archaeology	
ANTH 1105	Cultural Anthropology	
ANTH 2105	Ancient World Civilizations	
ANTH 2136	Language and Culture	
ENGL 2136	Language and Culture	
GEOG 1101	World Regional Geography	
HIST 1111	World History to 1500	
HIST 1112	World History since 1500	
ITDS 1155	The Western Intellectual Tradition	
ITDS 1156	Understanding Non-Western Cultures	
Core IMPACTS Total Hours		**42**
Health and Wellness		**3**
KINS 1106	Lifetime Wellness	2
or PHED 1205	Concepts of Fitness	
Select one PEDS course (https://catalog.columbusstate.edu/course-descriptions/peds/#peds)		

[1] The hours applied in the Institutional Priorities; Mathematics & Quantitative Skills; and Technology, Mathematics, and Sciences areas must add to 18 credit hours.

[2] ITDS 1145 Comparative Arts, though listed under both Fine Arts and Humanities, may be taken only once.

Major Requirements

Code	Title	Credit Hours
Core Requirements		
Complete the core requirements for this program		45
Core Total		45
Field of Study Requirements		
Minimum grade of C is required in each course		
CPSC 1301K	Computer Science I	4
CPSC 1302K	Computer Science II (1 Credit Hour to Area G)	4
CPSC 2105	Computer Organization	3
CYBR 2159	Fundamentals of Computer Networks	3
CYBR 2160	Intro to Information Security	3
MATH 2125	Introduction to Discrete Mathematics (1 Credit Hour to Area G)	3
Field of Study Requirements Total		18
Required for the Major		
Minimum grade of C is required in each CPSC course		
CPSC 2108	Data Structures	3
CPSC 3125	Operating Systems	3
CPSC 3131	Database Systems I	3
CPSC 3165	Professionalism in Computing	2
CPSC 3175	Object-Oriented Design	3
CPSC 4000	Baccalaureate Survey	0
MATH 5125U	Discrete Mathematics	3
1 Credit Hour from Area F CPSC 1302K		1
1 Credit Hour from Area F MATH 2125		1
1 Credit Hour Math from Area A		1
Required for the Major Total		20
Major Electives		
Minimum grade of C is required in each course		
CPSC 4115	Algorithms	3
CPSC 4148	Theory of Computation	3
CPSC 4155	Computer Architecture	3
CPSC 4157	Computer Networks	3
CPSC 4175	Software Engineering	3
CPSC 4176	Senior Software Engineering Project	3
Select 12 credits from CPSC/CYBR 3000 level or above		12
Major Electives Total		30
General Electives		
Select 10 credits of General Electives		10
General Electives Total		10
Total Credit Hours		**123**

Program Map

Course	Title	Credit Hours
First Year		
Fall		
ENGL 1101	English Composition I (minimum grade of C)	3
MATH 1113	Pre-Calculus (minimum grade of C)	4
Area B1	COMM 1110 Public Speaking or foreign language 1001, 1002, 2001, 2002	3
CPSC 1301K	Computer Science I (minimum grade of C)	4
KINS 1106 or PHED 1205	Lifetime Wellness or Concepts of Fitness	2
	Credit Hours	**16**
Spring		
ENGL 1102	English Composition II (minimum grade of C)	3
MATH 2125	Introduction to Discrete Mathematics (minimum grade of C)	3
CPSC 1302K	Computer Science II (minimum grade of C)	4
CPSC 2105	Computer Organization (minimum grade of C)	3
AREA C	Fine Arts	3
Area B2	ITDS 1779 (2), LEAD 1705 (2), PERS 1506 (1; may be repeated with different topic), PERS 1507 (2)	1
	Credit Hours	**17**
Second Year		
Fall		
MATH 5125U	Discrete Mathematics	3
CPSC 2108	Data Structures (minimum grade of C)	3

CYBR 2159	Fundamentals of Computer Networks (minimum grade of C)	3
AREA C	Humanities Elective	3
AREA D	Science Elective with Lab	4
	Credit Hours	**16**
Spring		
CPSC 3175	Object-Oriented Design (minimum grade of C)	3
CYBR 2160	Intro to Information Security (minimum grade of C)	3
STAT 1401	Elementary Statistics	3
HIST 2111 or HIST 2112	U. S. History to 1865 or U. S. History since 1865	3
AREA D	Science Elective with Lab	4
	Credit Hours	**16**
Third Year		
Fall		
CPSC 3125	Operating Systems (minimum grade of C)	3
CPSC 3131	Database Systems I (minimum grade of C)	3
POLS 1101	American Government	3
AREA E	Social Sciences Elective (Behavioral Science)	3
AREA H	CPSC Upper-Division Elective (minimum grade of C)	3
Area W	PEDS Elective	1
	Credit Hours	**16**
Spring		
CPSC 4175	Software Engineering (minimum grade of C)	3
CPSC 3165	Professionalism in Computing (minimum grade of C)	2
AREA H	CPSC Upper-Division Elective (minimum grade of C)	3
AREA E	Social Science Elective (World Culture)	3
AREA I	General Elective	3
	Credit Hours	**14**
Fourth Year		
Fall		
CPSC 4115	Algorithms (minimum grade of C)	3
CPSC 4157	Computer Networks (minimum grade of C)	3
CPSC 4155	Computer Architecture (minimum grade of C)	3
AREA H	CPSC Upper-Division (minimum grade of C)	3
AREA I	General Electives	2
	Credit Hours	**14**
Spring		
CPSC 4176	Senior Software Engineering Project (minimum grade of C)	3
CPSC 4148	Theory of Computation (minimum grade of C)	3
CPSC 4000	Baccalaureate Survey	0
AREA H	CPSC Upper-Division Elective (minimum grade of C)	3
AREA I	General Electives	5
	Credit Hours	**14**
	Total Credit Hours	**123**

Admission Requirements

There are no program specific admission requirements.

Additional Program Requirements

Students must earn a C or better in all CPSC courses in Areas F, G, and H.