COMPUTER SCIENCE, BACHELOR OF SCIENCE (B.S.)

Program Objectives

1. The mission of the Bachelor of Science in Computer Science program is to provide students with an education that will prepare them to develop a career in the fields of computer science or computer forensics.

Program Requirements

CIP Code: 11.0101

Major

Code	Title	Hours
University Graduation Requirements		
General Education (http://catalogs.eku.edu/undergraduate/general-academic-information/general-education-requirements/)		36
Foundations of Learning		
GSD 101	Foundations of Learning	3
Upper division courses (42 hrs. distributed throughout Major/Supporting/Gen Ed/Free Electives categories)		
Major Requirements		
Core Courses		
CSC 185	Discrete Structures I [1]	3
CSC 190	Object- Oriented Programming I [1]	3
CSC 191	Object-Oriented Programming II	3
CSC 195	Discrete Structures II	3
CSC 308	Mobile App Development for Apple iOS	3
CSC 310	Data Structures	3
CSC 313	Database Systems	3
CSC 338	Fundamentals of Cybersecurity	3
CSC 340	Ethics & Software Engineering	3
CSC 499	CS Career Preparation	1
EET 252	Digital Electronics	3
MAT 239	Linear Algebra and Matrices	3
MAT 244	Calculus II	4
STA 270	Applied Statistics	4
Concentrations		
Students must select one of the following Concentrations:		27-37
Artificial Intelligence in Data Science		
Computer Science (General)		
Interactive Multimedia		
Free Electives		
Choose from 1-12 hour of free electives		1-12
Total Hours		**120-122**

[1] Students without a 25 ACT or 590 SAT will be advised to take CSC 170 Intro to Game Programming as preparation for CSC 185 Discrete Structures I and CSC 190 Object- Oriented Programming I.

Artificial Intelligence in Data Science Concentration

Code	Title	Hours
Concentration Courses		
CSC 311	Algorithms I	3
CSC 320	Algorithms II	3
CSC 545	Theory of Database Systems	3
CSC 546	Artificial Intelligence	3
CSC 581	Machine Learning	3
CSC 582	Big Data	3
CSC 583	Data Visualization	3
Choose from one hour of the following:		1
CSC 494	Innovative Problem Solving	
CSC 495	Independent Work	
CSC 496	Senior Seminar	
Supporting Course Requirements		
MAT 234	Calculus I (Element 2) [G]	
STA 340	Applied Regression Analysis	3
STA 375	Sampling Methods	3
STA 380	Nonparametric Statistics	3
STA 575	Statistical Methods Using SAS	3
STA 580	R and Introductory Data Mining	3
Total Hours		**37**

Computer Science (General) Concentration

Code	Title	Hours
Concentration Courses		
CSC 311	Algorithms I	3
CSC 320	Algorithms II	3
CSC 360	Computer Org & Architecture	3
CSC 400	Operating Systems	3
CSC 440	Applied Software Engineering	3
CSC 460	Computer Network & System Administration	3
CSC 541	Software Testing	3
CSC 545	Theory of Database Systems	3
Choose from one hour of the following:		1
CSC 494	Innovative Problem Solving	
CSC 495	Independent Work	
CSC 496	Senior Seminar	
Supporting Course Requirements		
MAT 234	Calculus I (Element 2) [G]	1
Choose two courses with different prefixes of the following:		**1-3**
BIO 111 & 111L	Cell and Molecular Biology and Cell and Molecular Biology Lab (Element 4) [G]	
BIO 112 & 112L	Ecology and Evolution and Ecology and Evolution Lab (Element 4) [G]	
CHE 111 & 111L	General Chemistry and General Chemistry Lab I (Element 4) [G]	
GLY 108	Earthquakes and Volcanoes (Element 4) [G]	
GLY 109	Great Moments in Earth History (Element 4) [G]	
PHY 201	University Physics I (Element 4) [G]	
Total Hours		**27-29**

Interactive Multimedia Concentration

Code	Title	Hours
Concentration Courses		
CSC 140	Introduction to Computer Game Design	3
CSC 315	3D Modeling	3
CSC 316	3D Game Engine Design	3
CSC 550	Graphics Programming	3
CSC 520	Multimedia System and Forensics	3
or CSC 555	Topics in Multimedia:___	
CSC 491	Game Design Capstone	3
One CSC course at 300-level or above [1]		3
Choose from one hour of the following:		1
CSC 494	Innovative Problem Solving	
CSC 495	Independent Work	
CSC 496	Senior Seminar	
Supporting Course Requirements		
BEM 200	Mass Media and Society (Element 5B) [G]	
INF 123	Exploring Virtual Worlds	3
MAT 234	Calculus I (Element 2) [G]	
MUS 290	Music for Visual Media	2
PHY 201	University Physics I (Element 4) [G]	
ART 100	Drawing I (Element 3A) [G]	
or ART 200	Art Appreciation: Orientation	
Total Hours		**27**

[1] Except CSC 349 Applied Learning in Computer Science

G Course also satisfies a General Education element. Hours are included within the 36 hr. General Education requirement above.