

CURRICULUM GUIDE
Computer Science, B.S. (Artificial Intelligence in Data Science Concentration)
2021-2022

Website: www.csit.eku.edu
 Email Contact: kuangnan.chang@eku.edu

Department of Computer Science and Information Technology
 521 Lancaster Ave.
 417 Wallace Bldg.
 Richmond, KY 40475
 859-622-2398

The schedule below is an **EXAMPLE** of how you can arrange your class schedule.
 Please consult your advisor for specific changes that may need to be made.

	Fall Semester		Spring Semester	
Freshman Year	SCO 100I	1	CSC 191	3
	CSC 185	3	CSC 195	3
	CSC 190	3	MAT 244	4
	STA 270	4	Gen. Ed. 1A (ENG 101)	3
	⁶ MAT 234 (fulfills Gen. Ed. 2)	4	Gen. Ed. 3A (Arts)	3
TOTAL	15	TOTAL	16	
Sophomore Year	CSC 310	3	CSC 340	3
	CSC 313	3	CSC 499	1
	STA 340	3	STA 380	3
	STA 375	3	Gen. Ed. 1C (Oral Comm.)	3
	Gen Ed. 1B (ENG 102)	3	Gen. Ed. 3B (Humanities)	3
			Gen. Ed. 5B (Soc. & Behav. Sci.) (ECO 230 or 231 recommended if ECO sequence is taken)	3
TOTAL	15	TOTAL	16	
Junior Year	CSC 308	3	CSC 320	3
	CSC 311	3	CSC 581	3
	CSC 546	3	Gen. Ed. 4 (Nat. Sci.)	3
	Gen. Ed. 4 (Nat. Sci.) (Bio 111 or 112 recommended if BIO sequence taken)	3-(4)	Gen. Ed. 6 (Diversity)	3
	Gen. Ed. 5A (History)	3	Free Elective (MUST fulfill ACCT)	3
TOTAL	15-16	TOTAL	15	
Senior Year	CSC 494, † 495, or 496	1	CSC 545	3
	CSC 582	3	CSC 583	3
	STA 575	3	STA 580	3
	Supporting Course Sequence (Class 1)	3-4	STA 585	3
	Gen. Ed. 6 (Diversity)	3	Supporting Course Sequence (Class 2)	3
TOTAL	13-14	TOTAL	15	
TOTAL HOURS TO DEGREE COMPLETION		121		

* **Prerequisite:** Consult with your advisor and/or the University catalog regarding prerequisites for upper division CSC courses. AEM 202; AGR 216; BIO 111, 112, and/or 315; CSC 160, 175, 177, 190, 322, 332 and/or 400; ECO 220, 230, 231 and/or 320; GEO 100, 210, and/or 220; GLY 102, 107, and/or 108; RMI 370; MAT 239, 254, and/or 520; STA 215, 270, 320, 340 and/or 520. See University catalog for details.

‡ Supporting Course sequence (class 1), if Biology sequence is selected will be 4 credits.

Upper division courses: All students are required to have a minimum of 42 hrs. upper division (300 level or above) courses distributed throughout Major/Supporting/Gen Ed/Free Electives categories.

Refer to the University Catalog at <http://www.catalogs.eku.edu/> regarding University and General Education Requirements. All baccalaureate degree seeking students who enter the University are required to successfully complete one writing intensive course following completion of the ENG 102, ENG 105, or HON 102/103. Writing intensive courses are designated with the suffix "W" following the course prefix and number (e.g. HUM 300W).

Applied Critical & Creative Thinking (ACCT) Requirement: Computer Science majors will fulfill ACCT with CSC 349, 440, 491, 549, or 495 with a program-approved topic. (Credit hours are incorporated into program requirements.)

Course Number	Course Name
GENERAL EDUCATION & UNIVERSITY REQUIREMENTS (37)	
SCO 100I	Student Success Seminar for Computer Science (1)
CORE COURSE REQUIREMENTS (28)	
CSC 185	Intro to Computer Concepts (3)
CSC 190	Object-Oriented Programming I (3)
CSC 191	Object-Oriented Programming II (3)
CSC 195	Intro to Discrete Structures (3)
CSC 308	Mobile App Dev for iOS (3)
CSC 310	Data Structure (3)
CSC 313	Database Systems (3)
CSC 338	Fundamentals of Cybersecurity (3)
CSC 340	Ethics & Software Engineering (3)
CSC 499	Computer Science Career Preparation (1)
ARTIFICIAL INTELLIGENCE IN DATA SCIENCE CONCENTRATION REQUIREMENTS (22)	
CSC 311	Algorithms I (3)
CSC 320	Intro. To Algorithms (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)
PLUS ONE (1) HOUR selected from the following:	
CSC 494	Innovative Problem Solving (1-3)
† CSC 495	Independent Work (1-3)
CSC 496	Senior Seminar (1)
† CSC 495 recommended in order to fulfill ACCT. Other options will require more credits than degree requires.	
ARTIFICIAL INTELLIGENCE IN DATA SCIENCE CONCENTRATION SUPPORTING COURSE REQUIREMENTS (33-34)	
⁶ MAT 234	Calculus I (4)
MAT 244	Calculus II (4)
STA 270	Applied Statistics (4)
*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)
*STA 585	Experimental Design (3)
§ PLUS ONE (1) SEQUENCE selected from the following:	
*AEM 202 and *AEM 332 or *AEM 336 or *AEM 506	Introduction to Quality (3) Process Control and Auditing (3) Reliability and Sampling (3) Six Sigma Quality (3)
OR (BIO 315 and *BIO 533	Genetics (4) Bioinformatics: Principles and Apps. (3) (spring only)
OR (ECO 230 and ECO 231	Principles of Microeconomics (3) Principles of Macroeconomics (3)
OR (RMI 370 and *RMI 372 or *RMI 374 or RMI 378	Principles of Risk and Insurance (3) Fund. of Property – Liability Insurance (3) Fund. of Life and Health Insurances (3) Risk Management (3)
OR (*STA 520 and *STA 521	Mathematical Statistics I (3) (fall only) Mathematical Statistics II (3)
OR (CSC 332 and *CSC 542 or *CSC 547 or *CSC 548	Digital Storage Device Forensics (3) Internet Forensics (3) Network Forensics (3) Personal Electronic Device Forensics (3)
OR (*GEO 353 and *GEO 453	Geographic Information Systems (3) Advanced GIS (3) (spring only)
OR (2 courses from: HLS 401 or HLS 402 or HLS 403	Intelligence Process (3) Counterintelligence (3) Intelligence Analysis (3)
FREE ELECTIVES (0)	

⁶ Denotes that 3 credit hours from this course are/can be applied to fulfill a Gen. Ed. requirement.