

# AUBURN UNIVERSITY AT MONTGOMERY

## COMPUTER SCIENCE MAJOR

NAME:	Student ID:	Phone:
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Bachelor of Science – Computer Science (3 AUM, 42 State Core, 10 CSCI Foundation Required, 44 Core, 21 Major Electives, Total: minimum 120 hours)							
COURSE	SEM. HRS.	GRD.	PRE-REQU.	COURSE	SE M.	GRD.	PRE-REQU.
<b>AUM GENERAL CORE</b> (minimum 45 hours)				<b>CORE</b> (45 hours)			
UNIV 1000	3			MATH1620 <i>Calculus II</i> <sup>1</sup>	4		MATH 1610
CORE CURRICULUM (minimum 41 hours)				STAT 2670/ MATH 3000 / MATH 3660	3		various
AREA I (minimum 6 hours)				MATH 4050 <i>Theory of Computation &amp; Formal Languages</i> <sup>2</sup>	3		MATH 1620
ENGL 1010 <i>English Composition I</i> <sup>1</sup>	3			CSCI 2000/2001 <i>Functional Programming with C++ / lab</i> <sup>1</sup>	4		CSCI 1110/01
ENGL 1020 <i>English Composition II</i> <sup>1</sup>	3			CSCI 2200 <i>Discrete Structures</i> <sup>1</sup> (or substitute MATH 2210)	3		CSCI 1050 or 1110
AREA II (minimum 12 hours)				CSCI 3000/3001 <i>Object-Oriented Prog. with lab</i> <sup>1</sup>	4		CSCI 2000
Literature	3			CSCI 3300 <i>Intro. Computer Architecture</i> <sup>1</sup>	3		CSCI 2000
Area II <sup>(i)</sup>	3			CSCI 3400 <i>Data Structures</i> <sup>1</sup>	3		CSCI 3000
Fine Arts	3			CSCI 3600 <i>Fundamental Algorithm Design and Analysis</i> <sup>1</sup>	3		CSCI 3400
Humanities	3			CSCI 3700/3701 <i>Database Systems / lab</i> <sup>1</sup>	4		CSCI 2000
AREA III (12 hours)				CSCI 4200 <i>Software Engineering.</i> <sup>1</sup>	3		CSCI 3000
Natural Sciences	4			CSCI 4300 <i>Intro. Operating Systems</i> <sup>1</sup>	3		CSCI 3300
Natural Sciences	4			CSCI 4350 <i>Network Systems</i> <sup>1</sup>	3		CSCI 3000
Mathematics <i>MATH 1610 Calculus I</i> <sup>1</sup>	4			CSCI 4950 <sup>(iii)</sup> <i>Senior Project</i> <sup>2</sup>	3		CSCI 3400
AREA IV (minimum 12 hours)							
History	3						
Area IV <sup>(ii)</sup>	3			<b>ELECTIVES</b> (Minimum 20 hours if no transfer electives are used) <sup>(iv)</sup>			
Social Science	3						
Social Science	3						
<b>COMPUTER SCIENCE FOUNDATION REQUIRED</b> (10 hours)				<b>TRANSFER ELECTIVES</b> (Maximum 9 hours) <sup>v</sup>			
CSCI 1000 <i>Survey of Computer Applications</i> <sup>1</sup>	3		No pre-req.				
CSCI 1050 <i>Fundamentals of Computing</i> <sup>1</sup>	3		No pre-req.				
CSCI 1110/1111 <i>Intro. Programming / lab</i> <sup>1</sup>	4		CSCI 1050				

- i. One mandatory Literature course. Students must complete a 6 semester hour sequence in either Literature or in History. If two Literature courses are taken in a sequence, then only one History course is required.
- ii. One mandatory History course. Students must complete a 6 semester hour sequence in either Literature or in History. If two History courses are taken in a sequence, then only one Literature course is required.
- iii. Typically taken in the semester before graduation.
- iv. Applicable transfer electives must be negotiated with a faculty advisor at Junior or Senior level.

OFFERED <sup>(1)</sup> Classes offered every semester; <sup>(2)</sup> Classes offered every two semesters; <sup>(3)</sup> Classes offered every three semesters    **120** semester hours needed to graduate.

## **Current Available Electives**

### **Track I: Web App & Mobile Computing**

CSCI 3030 *Front-end Web App Development*

CSCI 3040 *Back-end Web App Development*

CSCI 4400 *Distributed Cloud Computing*

CSCI 4450 *Data Intensive C# Programming*

CSCI 4500 *iOS Mobile Computing*<sup>2</sup>

CSCI 4100 *Software Components*

### **Track II: Information Systems Cyber Security**

MATH 4040 *Cryptography*

CSCI 3020 *Computer and Software Security*

CSCI 3100 *Linux/Unix for Cybersecurity*

CSCI 4970 *Ethical Hacking & Network Defense*

CSCI 4080 *Intro. Digital Forensics*

### **Track III: Robotics AI & Computer Engineering**

ENGR 1110 *Introduction to Engineering*<sup>2</sup>

ENGR 1210 *Computing for Engineers & Scientists*<sup>2</sup>

CSCI 4970 *3D Object Modeling*

CSCI 3200 *Parallel Programming*

CSCI 4970 *High Performance GPU Computing*

### **Track IV: Animation & Interactive Virtual Reality (Game Dev.)**

CSCI 4970 *3D Object Modeling*

CSCI 4450 *Data Intensive C# Programming*

CSCI 4550 *Computer Graphics*

### **Track V: Geographic Information System**

GEOG 3853: *Introduction to GIS / lab*

GEOG 4203 *Open-Source GIS and Web Mapping / lab*

GEOG 4913: *Advanced GIS / lab*

GEOG 4923: *Python Scripting for GIS / lab*

GEOG 4983: *Advanced GIS Database Design / lab*

### **Non-Concentration**

CSCI 4924 *Computer Science Internship*

ENGL3030 *Technical Writing*<sup>1</sup>