

# COMPUTER SCIENCE

## REQUIREMENTS

### CORE CURRICULUM

The Core Curriculum is designed to foster critical thinking skills and introduce students to basic domains of thinking that transcend disciplines. The Core applies to all majors. Information on specific classes in the Core can be found at [marshall.edu/gened](http://marshall.edu/gened).

#### CORE 1: CRITICAL THINKING

CODE	COURSE NAME	HRS	GRADE
FYS 100	First Year Seminar	3	_____
MTH 229	Critical Thinking Course	5	_____
_____	Critical Thinking Course	3	_____
<b>Additional University Requirements</b>			
_____	Writing Intensive	3	_____
_____	Writing Intensive	3	_____
_____	Multicultural or International	3	_____
CS 490	Capstone	3	_____

#### CORE 2:

CODE	COURSE NAME	HRS	GRADE
ENG 101	Beginning Composition	3	_____
ENG 201	Advanced Composition	3	_____
CMM 103	Fund Speech-Communication	3	_____
MTH 229	Calculus I (CT)	5	_____
_____	Core II Physical/Natural Science	4	_____
_____	Core II Humanities	3	_____
_____	Core II Social Science	3	_____
_____	Core II Fine Arts	3	_____

### MAJOR-SPECIFIC

All Computer Science majors are required to take the following courses:

CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
MTH 220	Discrete Structures	3	_____	CS 410	Database Engineering	3	_____
MTH 229	Calculus I	5	_____	CS 430	Cyber Security	3	_____
MTH 230	Calculus II	4	_____	CS 490	Senior Project (C)	3	_____
MTH 329	Elementary Linear Algebra	3	_____	ENGR 222	Engineering Cost Analysis	3	_____
STA 345	Applied Probability & Stats	3	_____	ENG 354	Scientific & Technical Writing	3	_____
CS 110	Computer Science I	3	_____	MGT 320	Principles of Management	3	_____
CS 120	Computer Science II	3	_____	_____	CS Elective	3	_____
CS 210	Data Structures & Algorithms	3	_____	_____	CS Elective	3	_____
CS 215	Adv Data Structures & Algorithms	3	_____	_____	Science w/ Lab	4	_____
CS 300	Programming Languages	3	_____	_____	Science w/ Lab	4	_____
CS 305	Software Engineering I	3	_____	_____	Science w/ Lab	4	_____
CS 310	Software Engineering II	3	_____	_____	Free Elective	3	_____
CS 320	Internetworking	3	_____	_____	Free Elective	3	_____
CS 330	Operating Systems	3	_____	_____	Free Elective	2	_____
CS 360	Automata & Formal Languages	3	_____				
CS 402	Computer Architecture	3	_____				

## MAJOR INFORMATION












- Students are required to know and track their degree requirements for graduation or for entrance to a professional school.
- Coursework listed as "free elective" may vary for each student. Students are encouraged to use elective hours toward a minor or toward prerequisites.
- Science w/ Lab may be met by completing any three courses with labs from the following science areas: BSC 120 or above, CHM 211 and CHM 217 or above, GLY 200 and GLY 210L or above, PHY 201 or PHY 211 and PHY 202 or above.
- CS elective may be met by completing any two of the following courses: CS 315, 370, 404, 405, 425, 435, 440, 455, or a special topics course CS 480-483.
- Course offerings and course attributes are subject to change each semester. Please consult each semester's schedule of courses for availability and attributes.

 General Education Requirement  
 College Requirement  
 Major Requirement  
 Area of Emphasis

Milestone Course: This is a key success marker for your major. See your advisor to discuss the importance of this course in your plan of study.

# COMPUTER SCIENCE

The Bachelor of Science in Computer Science program prepares students for careers in computer science through learning based on practice and grounded in theory. Students learn how to analyze, design, build, test, and deploy computer based systems by making technical trade offs between performance, scalability, availability, reliability, security, maintainability, cost and societal impact. Marshall's computing facilities are state-of-the-art and readily available to students.

FALL SEMESTER					SPRING SEMESTER				
CODE	COURSE NAME	HRS	GRADE		CODE	COURSE NAME	HRS	GRADE	
 CS 110	Computer Science I	3	◆	_____	 CS 120	Computer Science II	3	◆	_____
 MTH 229	Calculus I (CT)	5	◆	_____	ENG 201	Advanced Composition	3	●	_____
ENG 101	Beginning Composition	3	●	_____	FYS 100	First Year Sem Crit Thinking	3	●	_____
 CMM 103	Fund Speech Communication	3	●	_____	 MTH 220	Discrete Structures	3	◆	_____
UNI 100	Freshman First Class	1		_____	MTH 230	Calculus II	4	◆	_____
<b>TOTAL HOURS</b> 15					<b>TOTAL HOURS</b> 16				
Summer Term (optional):									
FALL SEMESTER					SPRING SEMESTER				
CODE	COURSE NAME	HRS	GRADE		CODE	COURSE NAME	HRS	GRADE	
 CS 210	Data Structures & Algorithms	3	◆	_____	CS 215	Advanced Data Struct & Algorithms	3	◆	_____
 ENG 354	Scientific & Technical Writing	3	◆	_____	 CS 300	Programming Languages	3	◆	_____
MTH 329	Elementary Linear Algebra	3	◆	_____	STA 345	Applied Probability & Stats	3	◆	_____
_____	Core II Physical/Natural Science (Science w/ Lab)	4	◆	_____	_____	Science w/ Lab	4	◆	_____
_____	Core II Social Science (CT, M/I)	3	●	_____	_____	Core II Fine Arts	3	●	_____
<b>TOTAL HOURS</b> 16					<b>TOTAL HOURS</b> 16				
Summer Term (optional):									
FALL SEMESTER					SPRING SEMESTER				
CODE	COURSE NAME	HRS	GRADE		CODE	COURSE NAME	HRS	GRADE	
CS 305	Software Engineering I	3	◆	_____	CS 310	Software Engineering II	3	◆	_____
 CS 320	Internetworking	3	◆	_____	CS 402	Computer Architecture	3	◆	_____
CS 330	Operating Systems	3	◆	_____	 CS 430	Cyber Security	3	◆	_____
 MGT 320	Principles of Management	3	◆	_____	CS 410	Database Engineering	3	◆	_____
_____	Core II Humanities (WI)	3	●	_____	ENGR 222	Engineering Cost Analysis	3	◆	_____
<b>TOTAL HOURS</b> 15					<b>TOTAL HOURS</b> 15				
Summer Term (optional):									
FALL SEMESTER					SPRING SEMESTER				
CODE	COURSE NAME	HRS	GRADE		CODE	COURSE NAME	HRS	GRADE	
_____	CS Elective	3	◆	_____	CS 490	Senior Project (C)	3	◆	_____
_____	Science w/ Lab	4	◆	_____	_____	CS Elective	3	◆	_____
CS 360	Automata & Formal Languages	3	◆	_____	_____	Free Elective	3		_____
_____	Writing Intensive	3	●	_____	_____	Free Elective	3		_____
<b>TOTAL HOURS</b> 13					<b>TOTAL HOURS</b> 14				
Summer Term (optional):									

◆ Area of Emphasis

◆ Major Requirement

■ College Requirement

● General Education Requirement

◆ Milestone Course: This is a key success marker for your major. See your advisor to discuss the importance of this course in your plan of study.