

# COMPUTER AND INFORMATION SECURITY

## 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	_____
CYBR 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	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 and Information Security majors are required to take the following courses:

CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
MTH 220	Discrete Structures	3	_____	CYBR 210	Computer & Info Security Principle	3	_____
MTH 229	Calculus I	5	_____	CYBR 240	Information Security Policies	3	_____
STA 225	Introductory Statistics or STA 345	3	_____	CYBR 310	Intro to Cryptography	3	_____
ENG 354	Scientific & Tech Writing	3	_____	CYBR 330	Cybersecurity	3	_____
CS 105	Explore the World of Computing	3	_____	CYBR 350	Cyber System Administration	3	_____
CS 110	Computer Science I	3	_____	CYBR 360	Cyber Infrastructure Security	3	_____
CS 120	Computer Science II	3	_____	CYBR 400	Computer Security Design	3	_____
CS 210	Data Structures & Algorithms	3	_____	CYBR 435	Cyber Risk	3	_____
CS 215	Adv Data Structures & Algorithms	3	_____	CYBR 442	Cyber Operation	3	_____
CS 305	Software Engineering I	3	_____	CYBR 475	Internship	3	_____
CS 320	Internetworking	3	_____	CYBR 490	Senior Project (C)	3	_____
CS 330	Operating Systems	3	_____	_____	CIS Elective	3	_____
CS 402	Computer Architecture	3	_____	_____	Science w/ Lab	4	_____
CS 410	Database Engineering	3	_____	_____	Science w/ Lab	4	_____
				_____	Free Elective	3	_____
				_____	Free Elective	3	_____
				_____	Free Elective	2	_____

### MAJOR INFORMATION

- CS Elective may be met by completing any of the following courses: CYBR 480-485 (Special Topics), CYBR 486-489 (Independent Study), any 400 level CS course except CS 430 and CS 435, any 300-400 level CFS course.
- 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.
- 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 AND INFORMATION SECURITY

The Bachelor of Science in Computer and Information Security program prepares students for careers in computer and information security fields through a strong foundation in the theory and practice and the broad education gained by core curriculum. Computer and information security is an evolving discipline that involves the study of technology, strategy, policy, and standards regarding the security of and operations in cyberspace. The program introduces students to a variety of topics in computer and information security such as computer and network protection, penetration testing and prevention, security in mobile devices and Internet of Things (IoT), and more by using state-of-the-art security tools and technologies.

YEAR ONE	FALL SEMESTER				SPRING SEMESTER				
	CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE	
	CS 110	Computer Science I	◆	3		CS 105	Explore the World of Computing	◆	3
	MTH 229	Calculus I (CT)	● ◆	5		CS 120	Computer Science II	◆	3
		ENG 101	●	3		ENG 201	Advanced Composition	●	3
		FYS 100	●	3		MTH 220	Discrete Structures	◆	3
		UNI 100		1		CMM 103	Fund Speech-Communication	●	3
		<b>TOTAL HOURS</b>		<b>15</b>		<b>TOTAL HOURS</b>		<b>15</b>	
	Summer Term (optional):								

YEAR TWO	FALL SEMESTER				SPRING SEMESTER				
	CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE	
		Core II Fine Arts	●	3		Core II Humanities (CT, WI)	●	3	
	CYBR 210	Computer & Info Security Principles	◆	3		CYBR 240	Information Security Policies	◆	3
		STA 225	◆	3		CS 215	Adv Data Structures & Algorithms	◆	3
	CS 210	Data Structures & Algorithms	◆	3			Core II Social Science (MC/I, WI)	●	3
		Core II Physical/Natural Science	●	4					
		<b>TOTAL HOURS</b>		<b>16</b>		<b>TOTAL HOURS</b>		<b>12</b>	
	Summer Term (optional):								

YEAR THREE	FALL SEMESTER				SPRING SEMESTER				
	CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE	
		ENG 354	◆	3		CYBR 310	Intro to Cryptography	◆	3
	CS 320	Internetworking	◆	3		CYBR 330	Cybersecurity	◆	3
		CS 330	◆	3		CS 410	Database Engineering	◆	3
		Science w/ Lab	◆	4		CYBR 360	Cyber Infrastructure Security	◆	3
							CIS Elective	◆	3
							Free Elective		2
		<b>TOTAL HOURS</b>		<b>13</b>		<b>TOTAL HOURS</b>		<b>17</b>	
	Summer Term (optional):								

YEAR FOUR	FALL SEMESTER				SPRING SEMESTER				
	CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE	
		CS 305	◆	3		CS 402	Computer Architecture	◆	3
		CYBR 400	◆	3		CYBR 490	Senior Project (C)	◆	3
		CYBR 475	◆	3		CYBR 435	Cyber Risk	◆	3
		CYBR 350	◆	3		CYBR 442	Cyber Operation	◆	3
		Free Elective		3		Free Elective			3
		<b>TOTAL HOURS</b>		<b>15</b>		<b>TOTAL HOURS</b>		<b>15</b>	
	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.