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.

CORE 1: CRITICAL THINKING

CODE	COURSE NAME		HRS	GRADE
FYS 100	First Year Seminar	●	3	_____
MTH 229	Calculus I	●◆	5	_____
_____	Critical Thinking Course	●	3	_____

Additional University Requirements

			HRS	GRADE
_____	Writing Intensive		3	_____
_____	Writing Intensive		3	_____
_____	Multicultural or International		3	_____
CYBR 490	Senior Project		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	_____
BSC 120	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
MTH 220	Discrete Structures	◆	3	_____
MTH 229	Calculus I	●◆	5	_____
STA 225	Introductory Statistics	◆	3	_____
BSC 120	Principles of Biology w/ Lab	●◆	4	_____
CHM 211	Chemistry I	◆	3	_____
CHM 217	Chemistry I Lab	◆	2	_____
PHY 201	General Physics I	◆	3	_____
PHY 202	General Physics I Lab	◆	3	_____
ENG 354	Scientific & Tech Writing	◆	3	_____
CS 105	Explore the World of Computing	◆	3	_____
CS 110	Computer Science I	◆	3	_____
CS 120	Computer Science II	◆	3	_____
CS 210	Data Structures & Algorithms	◆	3	_____
CS 215	Adv Data Structures & Algorithms	◆	3	_____
CS 305	Software Engineering I	◆	3	_____
CS 320	Internetworking	◆	3	_____

CODE	COURSE NAME		HRS	GRADE
CS 330	Operating Systems	◆	3	_____
CS 402	Computer Architecture	◆	3	_____
CS 410	Database Engineering	◆	3	_____
CYBR 210	Computer & Info Security Principle	◆	3	_____
CYBR 240	Information Security Policies	◆	3	_____
CYBR 310	Intro to Cryptography	◆	3	_____
CYBR 330	Cybersecurity	◆	3	_____
CYBR 350	Cyber System Administration	◆	3	_____
CYBR 360	Cyber Infrastructure Security	◆	3	_____
CYBR 400	Computer Security Design	◆	3	_____
CYBR 435	Cyber Risk	◆	3	_____
CYBR 442	Cyber Operation	◆	3	_____
CYBR 475	Internship	◆	3	_____
CYBR 490	Senior Project (C)	◆	3	_____
_____	Free Elective		3	_____
_____	Free Elective		3	_____
_____	Free Elective		2	_____

MAJOR INFORMATION

- Other science with lab courses may replace the courses listed above with the approval of the program chair.
- 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 prerequisities.
- Course offerings and course attributes are subject to change each semester. Please consult each semester's schedule of courses for availability and attributes.

◆ 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.

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	Beginning Composition	●	3	____	ENG 201	Advanced Composition	●	3	____
FYS 100	First Year Seminar	●	3	____	MTH 220	Discrete Structures	◆	3	____
UNI 100	Freshman First Class		1	____	CMM 103	Fund Speech-Communication	●	3	____
TOTAL HOURS			**15**		**TOTAL HOURS**			**15**	

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	Introductory Statistics	◆	3	____	CS 215	Adv Data Structures & Algorithms	◆	3	____
CS 210	Data Structures & Algorithms	◆	3	____	CHM 211	Chemistry I	◆	3	____
BSC 120	Principles of Biology w/ Lab	●◆	4	____	CHM 217	Chemistry I Lab	◆	2	____
					_____	Core II Social Science (MC/I, WI)	●	3	____
TOTAL HOURS			**16**		**TOTAL HOURS**			**17**	

Summer Term (optional):

YEAR THREE

	FALL SEMESTER					SPRING SEMESTER			
CODE	COURSE NAME		HRS	GRADE	CODE	COURSE NAME		HRS	GRADE
ENG 354	Scientific & Tech Writing	◆	3	____	CYBR 310	Intro to Cryptography	◆	3	____
CS 320	Internetworking	◆	3	____	CYBR 330	Cybersecurity	◆	3	____
CS 330	Operating Systems	◆	3	____	CS 410	Database Engineering	◆	3	____
PHY 201	General Physics I	◆	3	____	CYBR 360	Cyber Infrastructure Security	◆	3	____
PHY 202	General Physics I Lab	◆	1	____	_____	Free Elective		3	____
					_____	Free Elective		2	____
TOTAL HOURS			**13**		**TOTAL HOURS**			**17**	

Summer Term (optional):

YEAR FOUR

	FALL SEMESTER					SPRING SEMESTER			
CODE	COURSE NAME		HRS	GRADE	CODE	COURSE NAME		HRS	GRADE
CS 305	Software Engr. I	◆	3	____	CS 402	Computer Architecture	◆	3	____
CYBR 400	Computer Security Design	◆	3	____	CYBR 490	Senior Project (C)	◆	3	____
CYBR 475	Internship	◆	3	____	CYBR 435	Cyber Risk	◆	3	____
CYBR 350	Cyber System Administration	◆	3	____	CYBR 442	Cyber Operation	◆	3	____
_____	Free Elective		3	____					
TOTAL HOURS			**15**		**TOTAL HOURS**			**12**	

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.

COMPUTER AND INFORMATION SECURITY — 2020-2021

INVOLVEMENT OPPORTUNITIES

- Student Government Association
- Campus Activity Board
- JMELI
- Commuter Student Advisory Board
- Club Sports
- Religious Organizations
- Political Organizations
- Residence Hall Association
- Cultural Organizations
- National Society of Leadership and Success

RELATED MAJORS

- Computer and Information Technology
- Computer Science
- Business
- Education

GRADUATION REQUIREMENTS

- Have a minimum of 120 credit hours (some colleges or majors require more);
- Have an overall and Marshall Grade Point Average of 2.00 or higher;
- Have an overall Grade Point Average of 2.00 or higher in the major area of study;
- Have earned a grade of C or better in English 201 or 201 H;
- Have met all major(s) and college requirements;
- Have met the requirements of the Core Curriculum;
- Have met the residence requirements of Marshall University, including 12 hours of 300/400 level coursework in the student's college (see section entitled "Residence Requirements" in the undergraduate catalogue);
- Be enrolled at Marshall at least one semester of the senior year;
- Have transferred no more than 72 credit hours from an accredited West Virginia two-year institution of higher education.

Colleges and specific programs may have unique requirements that are more stringent than those noted above. Students are responsible for staying informed about and ensuring that they meet the requirements for graduation.

This academic map is to be used as a guide in planning your coursework toward a degree. Due to the complexities of degree programs, it is unfortunate but inevitable that an error may occur in the creation of this document. The official source of degree requirements at Marshall University is DegreeWorks available in your myMU portal. Always consult regularly with your advisor.

YEAR ONE

Have questions? Need to talk? You already have a Friend-At-Marshall ready to help you succeed. Find your FAM Peer Mentor here: www.marshall.edu/fam

Stay on the Herd Path and come to class! Class attendance is more important to your success than your high school GPA, your class standing, or your ACT/SAT scores.

In order to graduate on time, you need to take an average of 15 credits per semester. Are you on track? Take 15 to Finish.

Join professional associations in your field like IEEE, ACM, etc.

Take a pulse check. Know what you need to do every year to keep your grants, scholarships, or federal financial aid.

Join the Computer Club and reach out for community activities.

Attend an intercultural festival or event on campus or in town.

YEAR TWO

Are you completing enough credits to graduate on time? Dropping or failing a class can put you behind. Use summer terms to quickly get back on track.

Apply to be a New Student Orientation Leader or a Campus Tour Guide.

Did you do really well in a hard course? Become a Tutor or a Supplemental Instructor.

Join the Marshall Mentor Network and connect with professionals in your field to discuss your major, career path, and more.

No need to wait until graduate school. Discuss undergraduate research opportunities with faculty in your major right now.

Have you considered adding a minor? Think about personal areas of interest you'd like to explore or how you might enhance your major with a related skill set.

Want to continue your education and increase your opportunities? Talk to a faculty member about whether graduate school fits you career goals.

YEAR THREE

Develop relationships with professors who can serve as future references by attending their office hours.

in order to work in your field, you need to take a certification exam. Develop a study strategy now. Check with your advisor.

Are you on track to graduate? Meet with your advisor for your Junior Eval to make sure you know what requirements you have left.

Run for Student Government and represent your fellow students while making a long-term difference on Marshall's campus.

Networking is key! Attend a Career Expo to seek employment opportunities and network with employers in your field.

Your degree requires an internship. Start planning now! Meet with your advisor to discuss your internship opportunities

Strengthen your resume and enhance your presentation skills. Present what you've learned at an academic conference off campus.

YEAR FOUR

This is it! Are you on track to graduate? Meet with your advisor for your Senior Eval to see what requirements you have left.

Prepare to present at the URDC Undergraduate Research and CS Syposium in April.

Take a senior project class with Community Based Learning that connects course content to the community. Stay engaged and make a difference.

Think about who can help you grow as a student and a professional (professors, advisors, alumni, etc) and ask at least one to be your mentor.

Explore peer leadership opportunities through the FAM program, or apply to be a UNI Peer Mentor.

Talk to faculty about pursuing optional professional certifications.

Be at the top of your professional game! Prepare a final resume and practice your interview skills with a career coach in Career Education.

TRANSFERABLE SKILLS ASSOCIATED WITH THIS MAJOR

- Analytical Skills
- Design Skills
- Oral and Written Communication Skills
- Critical Thinking Skills
- Leadership Skills
- The Ability to Work as Part of a Team

ASSOCIATED CAREERS

- Security Specialist
- Cryptographer
- Security Administrator/Manager
- Incident Responder
- Penetration Tester
- Security Architect
- Security Consultant

MARSHALL™

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