

ELECTRICAL AND COMPUTER ENGINEERING

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 Sem Crit Thinking	3	
MTH 229	Calculus I	5	
	Critical Thinking Course	3	
Additional University Requirements			
	Writing Intensive	3	
	Writing Intensive	3	
	Multicultural or International	3	
EE 420	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	
PHY 211	Core II Physical/Natural Science	4	
	Core II Humanities	3	
	Core II Social Science	3	
	Core II Fine Arts	3	

MAJOR-SPECIFIC

All Electrical and Computer Engineering majors are required to take the following courses:

CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
MTH 229	Calculus I	5		EE 211	Intro to Comp. Engr. Conc & Desig	3	
MTH 230	Calculus II	4		EE 310	Electromagnetic Fields	3	
MTH 231	Calculus III	4		EE 320	Signals & Systems	3	
MTH 335	Differential Equations	3		EE 330	Random Signals & Systems	3	
MTH 220	Discrete Structures	3		EE 340	Computer Architec & Design	4	
CHM 211	Chemistry I	3		EE 350	Elec Properties of Materials	3	
PHY 211	University Physics I	4		EE 360	Control Systems	3	
PHY 213	University Physics II	4		EE 370	Electric Machinery	3	
PHY 204	General Physics II Lab	2		EE 375	Communication Systems I	3	
ENGR 103	Freshman Engineering Seminar	1		EE 380	Microprocessors	3	
ENGR 104	Engineering Profession	1		EE 401	Communication Systems II	3	
ENGR 201	Circuits I	4		EE 415	Intro to VHDL Design	3	
ENGR 217	Co-Op Prep	2		EE 425	Electric Power Systems	3	
ENGR 222	Engr. Cost Analysis & Economy	3		EE 440	Digital Control	3	
ENGR 335	Advance Engr. Analysis	3		EE 410 or	Electrical Engineering Design or	3	
CS 110	Computer Science I	3		EE 412	Computer Engineering Design	3	
EE 202	Circuits II	3		EE 420	Capstone	3	
EE 204	Intro to Digital Systems	3			Technical Elective	3	
EE 210	Programming Lab	3			Technical Elective	3	

MAJOR INFORMATION

- EE 410 or EE 412: To be eligible for EE 410 or EE 412 students must have senior standing in BSEE and have completed the following courses: EE 370, 375, and 380.
- Capstone EE 420: To be eligible to take the capstone design course (EE 420), students must have completed EE 410 or EE 412.
- Technical Electives: At least 2 technical elective courses related to the area of emphasis must be taken. The courses must be approved by the student's advisor and the division chair. The following is a suggested list: EE 445, 447, 448, ME 465, 475, CS 412, 430, or 440.
- Course offerings and course attributes are subject to change each semester. Please consult each semester's schedule of courses for availability and attributes.
- Students are required to know and track their degree requirements for graduation or for entrance to a professional school.
- The B.S.E.E. degree program requires a minimum of 132 credit hours of coursework to graduate.

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.

ELECTRICAL AND COMPUTER ENGINEERING

Electrical and Computer Engineers design and maintain electrical control systems and components. They are multi-skilled and are able to work in projects from the design phase, through development, implementation, testing, up to client follow-up. The impact of their work is seen all over the building industry, services, transportation, manufacturing, and production and distribution of power.

YEAR ONE	FALL SEMESTER				SPRING SEMESTER			
	CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
	CHM 211	Chemistry I	3		CS 110	Computer Science I	3	
	MTH 229	Calculus I (CT)	5		MTH 230	Calculus II	4	
	ENGR 103	Freshman Engineering Seminar	1		PHY 211	University Physics I	4	
	ENGR 104	Engineering Profession	1		CMM 103	Fund Speech Comm	3	
	ENG 101	Beginning Composition	3		MTH 220	Discrete Structures	3	
	FYS 100	First Year Sem Crit Thinking	3					
	UNI 100	Freshman First Class	1					
	TOTAL HOURS		17		TOTAL HOURS		17	
	Summer Term (optional):							

YEAR TWO	FALL SEMESTER				SPRING SEMESTER			
	CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
	EE 210	Programming Lab	3		EE 202	Circuits II	3	
	ENGR 201	Circuits I	4		ENGR 222	Engr. Cost Analysis & Economy	3	
	MTH 231	Calculus III	4		EE 204	Intro to Digital Systems	3	
	PHY 213	University Physics II	2		EE 211	Intro to Comp Engr. Concept & Des	3	
	PHY 204	Physics II Lab	3		MTH 335	Differential Equations	3	
	ENGR 217	Co-Op Prep	1			Core II Social Science (MC/I, WI)	3	
	TOTAL HOURS		17		TOTAL HOURS		18	
	Summer Term (optional):							

YEAR THREE	FALL SEMESTER				SPRING SEMESTER			
	CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
	ENGR 335	Advance Engr. Analysis	3		ENG 201	Advanced Composition	3	
	EE 310	Electromagnetic Fields	3		EE 360	Control Systems	3	
	EE 340	Computer Architecture & Design	4		EE 330	Random Signals & Systems	3	
	EE 350	Elec Properties of Materials	3		EE 375	Communication Systems I	3	
	EE 320	Signals & Systems	3		EE 370	Electric Machinery	3	
					EE 380	Microprocessors	3	
	TOTAL HOURS		16		TOTAL HOURS		18	
	Summer Term (optional):							

YEAR FOUR	FALL SEMESTER				SPRING SEMESTER			
	CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
	EE 401	Communication Systems II	3		EE 420	Capstone	3	
	EE 410 or	Electrical Engineering Design or	3		EE 415	Intro to VHDL Design	3	
	EE 412	Computer Engineering Design				Technical Elective	3	
	EE 425	Electric Power Systems	3			Technical Elective	3	
	EE 440	Digital Control	3			Core II Fine Arts	3	
		Core II Humanities (WI, CT)	3					
	TOTAL HOURS		15		TOTAL HOURS		15	
	Summer Term (optional):							

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.

General Education Requirement
College Requirement
Major Requirement
Area of Emphasis

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ELECTRICAL AND COMPUTER ENGINEERING – 2019-2020

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

- Business
- Mathematics
- Statistics
- Education

GRADUATION REQUIREMENTS

- Have a minimum of 132 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.



Take a career self-assessment to help determine what majors fit your talents and interests and consider job shadowing opportunities.



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.



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



Declare a major before your 30th hour. Participate in a Career Exploration Experience (job shadow) to help decide on your major and career goals.



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

YEAR THREE



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



Talk to faculty about pursuing optional professional certifications.



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.



Prepare for and pass the FE exam.



Don't enter your field with zero experience! Secure an internship related to your field of study.

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.



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



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



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



Don't enter your field with zero experience! Secure an internship related to your field of study.



Join or create a club or organization on campus about a particular issue you care about. Marshall has more than 200 student organizations.



Meet with a career education specialist to conduct a "gap analysis." Figure out the skills you'll need for the career you want while you still have time to build them.

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.



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



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



Prepare for and pass the FE exam.



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



Don't enter your field with zero experience! Secure an internship related to your field of study.



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

- Information Protection
- Operating Systems
- Computer Networks
- Circuit Design
- Robotics
- Bioelectronics
- Energy Systems
- Digital Systems



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