CURRICULUM PLAN COLLEGE OF ENGINEERING AND COMPUTER SCIENCES 2020-2021 MY ADVISOR'S NAME IS:

MECHANICAL 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	
ENGR 452	Senior Capstone Design I	2	
ENGR 453	Senior Capstone Design II	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 211/202	Core II Natural/Physical Science	4	
	Core II Humanities	3	
	Core II Social Science	3	
	Core II Fine Arts	3	

MAJOR-SPECIFIC

All Mechanical Engineering majors are required to take the following courses:

CODE	COURSE NAME	HRS	GRADE
MTH 229	Calculus I	5	
MTH 230	Calculus II	4	
MTH 231	Calculus III	4	
MTH 335	Differential Equations	3	
CHM 211	Chemistry I	3	
PHY 211	University I Physics	4	
PHY 202	General Physics Lab	1	
PHY 213	University Physics II	4	
PHY 204	General Physics II Lab	2	
ENGR 102	Intro to CAD	3	
ENGR 103	Freshman Engineering Seminar	1	
ENGR 104	Engineering Profession	1	
ENGR 213	Statics	3	
ENGR 214	Dynamics	3	
ENGR 215	Engineering Materials	3	
ENGR 216	Mech of Deformable Bodies	3	
ENGR 217	Co-Op Prep	2	
ENGR 219	Engineering Thermodynamics	3	
ENGR 222	Engineering Cost Analysis & Economy	3	
ENGR 240	Manufacturing Processes	3	
ENGR 245	Intro to Circuits & Instrumentation	3	
ENGR 318	Fluid Mechanics	3	
ENGR 451	Intro to Project Mgmt	3	
ENGR 452	Senior Capstone Design I	2	
ENGR 453	Senior Capstone Design II	3	
ME 111	ME Computations	3	
ME 310	Thermodynamics II	3	
ME 455	Metallurgy	3	
ME 325	DoE &Thermal Fluids lab	2	
ENGR 335	Engineering Analysis	3	
ME 340	Machine Element Design	3	
ME 350	Heat Transfer	3	
ME 360	Fluid Dynamics	3	
ME 410	Kinematics & Design of Machine	3	
ME 420	Control Systems	3	
ME 425	Mech. Engr. Lab II	1	
	ME Design Elective	3	
	ME Technical Elective	3	
	ME Technical Elective	3	
	ME Technical Elective	3	

MAJOR INFORMATION

- Senior Capstone Design I: To be eligible to take the Senior Engineering Seminar course (ENGR 452), students must have senior standing in mechanical engineering. Senior standing is defined for the B.S.M.E. as having completed these three courses: ME 325, ME 350, and ME 410
- Senior Capstone Design II: To be eligible to take the capstone design course, students must have completed ENGR 451, ENGR 452 and at least one of the design electives (ME 430 or ME 435).
- ME Design Elective: At least one design elective must be taken from the following courses: ME 430, or ME 435.
- Technical Electives: At least three technical electives must be taken from the following approved list of courses: Any 300-level or higher ME course not taken to satisfy other B.S.M.E. degree requirements, any 300-level or higher ENGR course not taken to satisfy other B.S.M.E. degree requirements. Other courses may be taken to satisfy this requirement with the approval of the student's advisor and the division's chair.
- 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.

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.

Area of Emphasis
Major Requirement
College Requirement
General Education Requirement

FOUR YEAR PLAN COLLEGE OF ENGINEERING AND COMPUTER SCIENCES 2020-2021 MY ADVISOR'S NAME IS:

MECHANICAL ENGINEERING

Mechanical Engineers apply fundamental math and physics laws to design, fabricate and innovate mechanical devices. They are multi-skilled and have working knowledge of computers, electricity, structures and mechanisms, materials, and manufacturing processes. The Bachelors of Science in Mechanical Engineering (B.M.S.E.) at Marshall University is designed to emphasize service, systems-based knowledge, and sustainability combining a traditional engineering approach with new and emerging fields.

YEAR ONE

FALL SEMESTER				SPRING SEMESTER			
CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
CHM 211	Principles of Chemistry I	3		MTH 230	Calculus II	4	
MTH 229	Calculus I (CT)	5		ENG 101	Beginning Composition	3	
ENGR 103	Freshman Engineering Semin	1		ENGR 102	Intro to CAD	2	
ENGR 104	Engineering Profession	1		PHY 211	University I Physics	4	
CMM 103	Fund Speech Communication	3		PHY 202	General Physics Lab	1	
FYS 100	First Year Sem Crit Thinking	3		ME 111	ME Computations	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
ENGR 213	Statics	3		ENGR 214	Dynamics	3	
ENGR 215	Engineering Materials	3		ENGR 216	Mech of Deformable Bodies	3	
ENGR 245	Intro to Circuits & Instrumentation	3		ENGR 217	Engr. Co-Op Preparation	1	
MTH 231	Calculus III	4		ENGR 219	Engr. Thermodynamics	3	
PHY 213	Univesity Physics II	4		ENGR 240	Manufacturing Processes	3	
PHY 204	General Physics II Lab	1		MTH 335	Differential Equations	3	
TOTAL HOURS		**18**		**TOTAL HOURS**		**16**	

Summer Term (optional):

YEAR THREE

FALL SEMESTER				SPRING SEMESTER			
CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
ENGR 318	Fluid Mechanics	3		ME 420	Control Systems	3	
	Core II Social Science (MC/I, WI)	3					
ME 310	Thermodynamics II	3		ME 325	DoE & Thermal Fluids lab	2	
ENGR 335	Engineering Analysis	3		ME 350	Heat Transfer	3	
ME 340	Machine Element Design	3		ME 410	Kinematics & Design of Machine	3	
NGR 222	Engr. Cost Analysis &Economy	3		ME 360	Fluid Dynamics	3	
				ENG 201	Advanced Composition	3	
TOTAL HOURS		**18**		**TOTAL HOURS**		**17**	

Summer Term (optional):

YEAR FOUR

FALL SEMESTER				SPRING SEMESTER			
CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
ENGR 451	Intro to Project Mgmt	3		ENGR 453	Senior Capstone Design II	3	
ENGR 452	Senior Capstone Design I	2		ME 455	Metallurgy	3	
	ME Technical Elective	3			ME Technical Elective	3	
ME 425	Mech. Engr. Lab II	1			ME Technical Elective	3	
	Core II Fine Art	3			Core II Humanities (WI, CT)	3	
	ME Design Elective	3					
TOTAL HOURS		**15**		**TOTAL HOURS**		**15**	

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.

MECHANICAL 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.

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

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 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 longterm difference on Marshall's campus.

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

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

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 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 longterm 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 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 you 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 longterm 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

- Machine Design
- Systems Design
- Manufacturing and Production
- Energy Resources/Conservation
- Transportation and Environmental Impact

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