CURRICULUM PLAN | COLLEGE OF ENGINEERING AND COMPUTER SCIENCES | 2021-2022 | MY ADVISOR'S NAME IS: _____

CIVIL 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 Seminar	●	3	
MTH 229	Critical Thinking Course	●	5	
_____	Critical Thinking Course	●	3	

Additional University Requirements

_____	Writing Intensive	3	
_____	Writing Intensive	3	
_____	Multicultural or International	3	
CE 453	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	
CHM 211/217	Core II Physical/Natural Science	●	5	
_____	Core II Humanities	●	3	
_____	Core II Social Science	●	3	
_____	Core II Fine Arts	●	3	

MAJOR-SPECIFIC

All Civil 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	
STA 345	Applied Prob. & Statistics	◆	3	
CHM 211	Chemistry I	◆	3	
CHM 217	Chemistry I Lab	◆	2	
CHM 212	Chemistry II	◆	3	
CHM 218	Chemistry II Lab	◆	2	
PHY 211	University Physics I	◆	4	
PHY 202	General Physics I Lab	◆	1	
ENGR 103	Freshman Engineering Seminar	◆	1	
ENGR 104	Engineering Profession	◆	1	
ENGR 111	Engineering Computations	◆	3	
ENGR 213	Statics	◆	3	
ENGR 214	Dynamics	◆	3	
ENGR 216	Mech. of Deformable Bod	◆	3	
ENGR 217	Co-Op Prep	◆	1	
ENGR 222	Engineering Cost Analysis	◆	3	

CODE	COURSE NAME		HRS	GRADE
ENGR 318	Fluid Mechanics	◆	3	
ENGR 451	Project Management	◆	3	
CE 102	Introduction to CAD	◆	2	
CE 241	Geomatics	◆	3	
CE 312	Structural Analysis	◆	3	
CE 319	Civil Engr. Fluid Mech Lab	◆	1	
CE 321	Civil Engineering Materials	◆	4	
CE 322	Geotechnical Engineering	◆	4	
CE 331	Hydraulic Engineering	◆	3	
CE 342	Transportation Engineering	◆	3	
CE 351	Environmental Engineering	◆	3	
CE 452	Senior Seminar for CE	◆	1	
CE 453	Capstone Senior Design	◆	3	
_____	CE Design Elective	◆	3	
_____	CE Design Elective	◆	3	
_____	CE Elective	◆	3	
_____	CE Elective	◆	3	
_____	Technical Elective	◆	3	

MAJOR INFORMATION

- To be eligible to take Senior Seminar for Civil Engineers (CE 452), students must have completed either CE 312 (Structural Analysis) or CE 331 (Hydraulic Engineering).
- To be eligible to take Senior Capstone Design (CE 453), students must have completed Introduction to Project Management (ENGR 451) and at least one CE Design Elective.
- CE Design Electives: At least two CE design electives must be taken from the following courses: CE 413 or CE 414, CE 425, CE 426, CE 434, CE 438 or CE 443.
- CE Electives: At least two CE electives must be taken from the following list of courses, excluding courses that are taken to satisfy the CE Design Electives: CE 341, CE 413, CE 414, CE 425, CE 433, CE 434, CE 443, or any 300-level or higher CE course not taken to satisfy a CE Design Elective.
- Technical Elective: One technical elective that satisfies one of these criteria must be taken: Any 300-level or higher CE course not taken to satisfy a CE Design Elective or CE Elective, or any 200-level or higher ENGR, ME or EE course, with advance approval from the student's advisor and 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.
- The Civil Engineering degree program requires a minimum of 124 credit hours of coursework for graduation.

◆ 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.

FOUR YEAR PLAN | COLLEGE OF ENGINEERING AND COMPUTER SCIENCES | 2021-2022 | MY ADVISOR'S NAME IS: _____

CIVIL ENGINEERING

Civil engineers apply fundamental mathematics and physics to develop solutions to problems that affect the daily lives of citizens. They are multi-skilled and are able to design and conduct experiments, as well as to analyze and interpret complex data. Engineers can design a system, component, or process to meet desired needs within realistic constraints. They can function on multidisciplinary teams and have a solid understanding of professional and ethical responsibility.

YEAR ONE

FALL SEMESTER

CODE	COURSE NAME		HRS	GRADE
ENGR 103	Freshman Engineering Semin	◆	1	
ENGR 104	Engineering Profession	◆	1	
MTH 229	Calculus I (CT)	● ◆	5	
ENG 101	Beginning Composition	●	3	
CMM 103	Fund Speech-Communication	●	3	
FYS 100	First Year Sem Crit Thinking	●	3	
UNI 100	Freshman First Class		1	
TOTAL HOURS			**17**	

SPRING SEMESTER

CODE	COURSE NAME		HRS	GRADE
CE 102	Introduction to CAD	◆	2	
ENGR 111	Engineering Computations	◆	3	
MTH 230	Calculus II	◆	4	
PHY 211	University Physics I	◆	4	
PHY 202	General Physics I Lab	◆	1	
ENG 201	Advanced Composition	●	3	
TOTAL HOURS			**17**	

Summer Term (optional):

YEAR TWO

FALL SEMESTER

CODE	COURSE NAME		HRS	GRADE
ENGR 213	Statics	◆	3	
CE 241	Geomatics	◆	3	
MTH 231	Calculus III	◆	4	
CHM 211	Chemistry I	◆	3	
CHM 217	Chemistry I Lab	◆	2	
ENGR 217	Co-Op Prep	◆	1	
TOTAL HOURS			**16**	

SPRING SEMESTER

CODE	COURSE NAME		HRS	GRADE
ENGR 214	Dynamics	◆	3	
ENGR 216	Mech. of Deformable Bod	◆	3	
ENGR 222	Engineering Cost Analysis	◆	3	
CHM 212	Chemistry II	◆	3	
CHM 218	Chemistry II Lab	◆	2	
MTH 335	Differential Equations	◆	3	
TOTAL HOURS			**17**	

Summer Term (optional):

YEAR THREE

FALL SEMESTER

CODE	COURSE NAME		HRS	GRADE
ENGR 318	Fluid Mechanics	◆	3	
CE 319	Civil Engr. Fluid Mech Lab	◆	1	
CE 312	Structural Analysis	◆	3	
CE 321	Civil Engr. Materials	◆	4	
STA 345	Applied Prob. & Statistics	◆	3	
TOTAL HOURS			**14**	

SPRING SEMESTER

CODE	COURSE NAME		HRS	GRADE
CE 322	Geotechnical Engineering	◆	4	
CE 331	Hydraulic Engineering	◆	3	
CE 342	Transportation Engineering	◆	3	
CE 351	Environmental Engineering	◆	3	
_____	CE Design Elective	◆	3	
TOTAL HOURS			**16**	

Summer Term (optional):

YEAR FOUR

FALL SEMESTER

CODE	COURSE NAME		HRS	GRADE
_____	CE Design Elective	◆	3	
_____	CE Elective	◆	3	
ENGR 451	Project Management	◆	3	
CE 452	Senior Seminar for CE	◆	1	
_____	Core II Social Science (MC/I, WI)	●	3	
_____	Core II Humanities (WI, CT)	●	3	
TOTAL HOURS			**16**	

SPRING SEMESTER

CODE	COURSE NAME		HRS	GRADE
_____	CE Elective	◆	3	
CE 453	Capstone Senior Design	◆	3	
_____	Technical Elective	◆	3	
_____	Core II Fine Arts	●	3	
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.

Civil Engineering Prerequisite Flow Chart

(Math/Science/Engr. Courses Only, Core Curriculum not shown)

Legend:
Prerequisite (PR) →
Concurrent PR ⇢
(Stacked courses are corequisites)

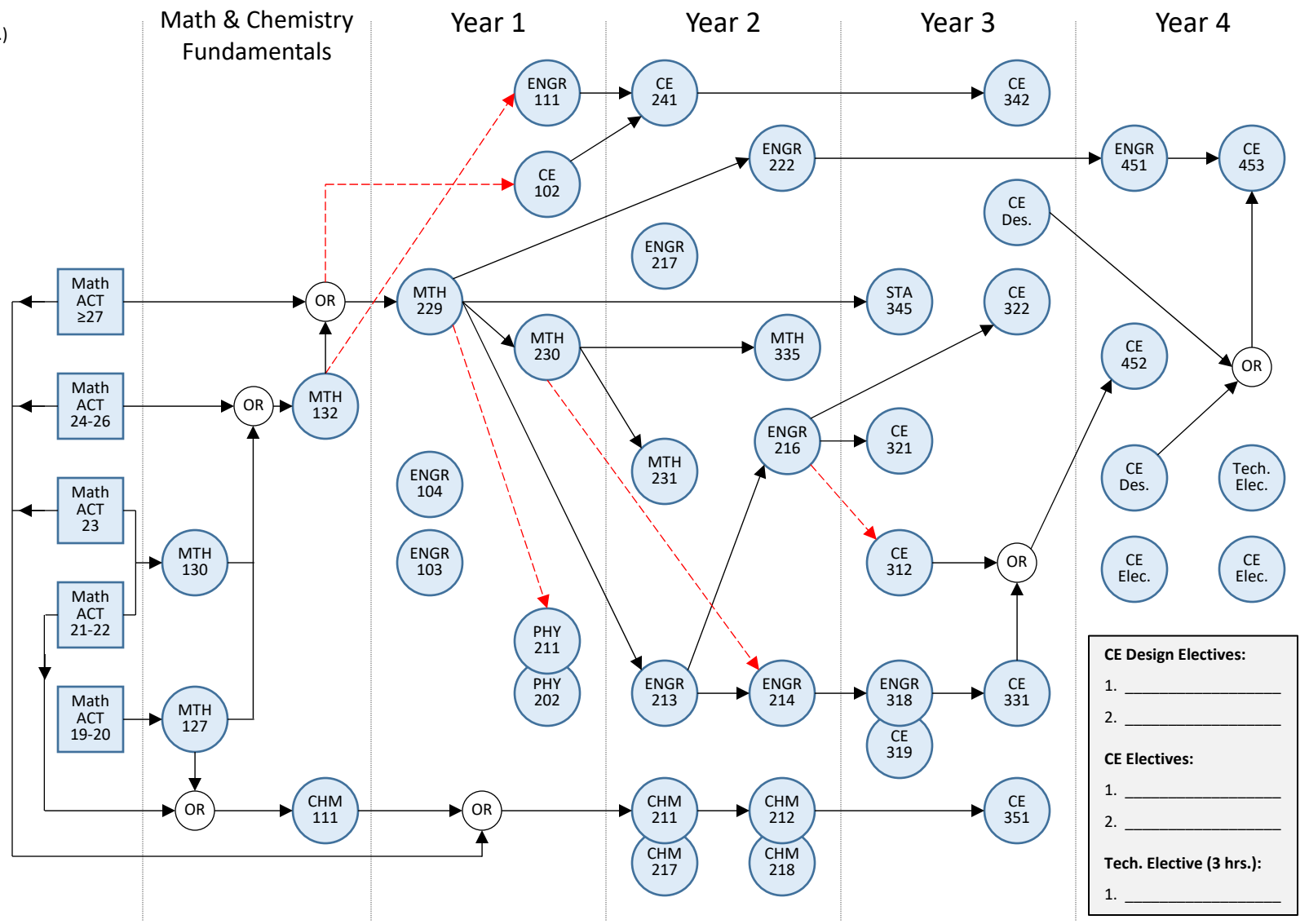
ENGR Courses (24 hrs. total):
ENGR 103: Freshman Engr. Seminar (1 hr.)
ENGR 104: Engr. Profession (1 hr.)
ENGR 111: Engr. Computations (3 hrs.)
ENGR 213: Statics (3 hrs.)
ENGR 214: Dynamics (3 hrs.)
ENGR 216: Mech. of Deformable Bod. (3 hrs.)
ENGR 217: Co-Op Prep. (1 hr.)
ENGR 222: Engineering Cost Analysis (3 hrs.)
ENGR 318: Fluid Mechanics (3 hrs.)
ENGR 451: Intro. to Project Management (3 hrs.)

CE Courses (30 hrs. total):
CE 102: Intro. to CAD (2 hrs.)
CE 241: Geomatics (3 hrs.)
CE 319: Civil Engr. Fluid Mech. Lab (1 hr.)
CE 321: Civil Engr. Materials (4 hrs.)
CE 312: Structural Analysis (3 hrs.)
CE 322: Geotechnical Engr. (4 hrs.)
CE 331: Hydraulic Engr. (3 hrs.)
CE 342: Transportation Engr. (3 hrs.)
CE 351: Environmental Engr. (3 hrs.)
CE 452: Senior Seminar for Civil Engr. (1 hr.)
CE 453: Senior Capstone Design (3 hrs.)

Math/Science Courses (34-47 hrs.):
CHM 111: Foundations of Chem. (3 hrs.)
CHM 211: Chemistry I (3 hrs.)
CHM 212: Chemistry II (3 hrs.)
CHM 217: Chemistry I Lab (2 hrs.)
CHM 218: Chemistry II Lab (2 hrs.)
MTH 127: College Algebra - Expanded (5 hrs.)
MTH 130: College Algebra (3 hrs.)
MTH 132: Precalculus w/ Sci. Apps. (5 hrs.)
MTH 229: Calculus I (CT) (5 hrs.)
MTH 230: Calculus II (4 hrs.)
MTH 231: Calculus III (4 hrs.)
MTH 335: Differential Equations (3 hrs.)
PHY 202: Physics I Lab (1 hr.)
PHY 211: University Physics I (4 hrs.)
STA 345: Applied Prob. and Statistics (3 hrs.)

Additional CE Elective Options:
CE 341: Advanced Geomatics (3 hrs.)
CE 426: Retaining Structures (3 hrs.)
CE 433: Hydrologic Engineering (3 hrs.)

Additional Tech. Elective Options:
ENGR 219: Thermodynamics (3 hrs.)
ENGR 201: Circuits I (4 hrs.)
ENGR 330: Engr. Research (3 hrs.)
ME 245: Circuits and Instrumentation (3 hrs.)
ME 340: Machine Element Design (3 hrs.)
ME 410: Kinematics & Design of Machine (3 hrs.)



CE Design Electives:
1. _____
2. _____

CE Electives:
1. _____
2. _____

Tech. Elective (3 hrs.):
1. _____

Catalog Year
2021-2022

CE Design Electives (any two of the following):
CE 413/414: Reinf. Conc. Design / Str. Steel Design (3 hrs.)
CE 425: Foundation Engineering (3 hrs.)
CE 434: Water & Wastewater Treatment Design (3 hrs.)
CE 438/443: Pavement Design / Trans. Sys. Design (3 hrs.)

CE Electives (two required):
Any 300-level or higher CE course not previously taken to satisfy a CE Design Elective.

Tech. Elective (3 hrs.):
- Any 300-level or higher CE course not taken to satisfy a CE Design Elective or CE Elective.
- Any 200-level or higher engineering course (with advisor/chair approval).

Rev: 25-Jan-2022