CURRICULUM PLAN COLLEGE OF SCIENCE 2023-2024

MY ADVISOR'S NAME IS: _____

PHYSICS
APPLIED PHYSICS

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	
PHY 491/492	Capstone	2	

CORE 2:

CODE	COURSE NAME		HRS	GRADE
ENG 101	Beginning Composition	●	3	
ENG 201	Advanced Composition	●	3	
_____	Core II Communication	●	3	
MTH 229	Calculus I	● ♦	5	
_____	Core II Humanities	●	3	
_____	Core II Social Science	●	3	
_____	Core II Fine Arts	●	3	
CHM 211/17	Principles of Chemistry I / Lab	●	5	

MAJOR-SPECIFIC

All Applied Physics majors are required to take the following courses:

CODE	COURSE NAME		HRS	GRADE
CHM 211	Principles of Chemistry I	♦	3	
CHM 217	Principles of Chemistry I Lab	♦	2	
CHM 212	Principles of Chemistry II	♦	3	
CHM 218	Principles of Chemistry II Lab	♦	2	
ENGR 111	Engineering Computations	♦	3	
CIT 163	Intro to Programming: C++	♦	3	
CIT 236	Data Structures	♦	3	
CIT 238	Algorithms	♦	3	
MTH 230	Calculus/Analytical Geom II	♦	4	
MTH 231	Calculus/Analytical Geom III	♦	4	
MTH 335	Ordinary Diff Equations	♦	3	
PHY 211	University Physics	♦	4	
PHY 202	General Physics I Lab	♦	1	
PHY 213	University Physics II	♦	4	
PHY 204	General Physics II Lab	♦	1	
PHY 308	Thermal Physics	♦	3	

CODE	COURSE NAME		HRS	GRADE
PHY 304	Optics	♦	3	
PHY 405	Optics Lab	♦	2	
PHY 300	Electricity & Magnetism	♦	3	
PHY 330	Mechanics	♦	3	
PHY 320	Intro Modern Physics	♦	3	
PHY 421	Modern Physics Lab	♦	2	
PHY 425	Solid State Physics	♦	3	
PHY 442	Quantum Mechanics	♦	3	
PHY 444	Advanced Laboratory	♦	2	
PHY 445	Math Methods of Physics	♦	3	
PHY 446	Math Methods of Physics II	♦	3	
PHY 491/492	Capstone	● ♦	2	
_____	PHY Elective (PHY 314/415 Rec.)	♦	5	
_____	Free Elective (CIT Rec.)		3	
_____	Free Elective (CIT Rec.)		3	

MAJOR INFORMATION

- Students are required to know and track their degree requirements for graduation or for entrance to a professional school.
- In addition to the Core General Education requirements, the College of Science requires 3 hours of Calculus, and 40 hours of upper level credit.
- Coursework listed as "elective" may vary for each student. Students are encouraged to use elective hours toward a 2nd minor or toward prerequisities.
- Students are strongly encouraged to select courses that meet two or more Core or College requirements. For example, a writing intensive literature course could satisfy the Core II Humanities requirement as well as the university writing intensive requirement.
- Course offerings and course attributes are subject to change each semester. Please consult each semester's schedule of courses for availability and attributes.
- Math is based on an ACT Mathematics score of 27 or higher. Students with an ACT Mathematics score less than 27 will be placed in the appropriate prerequisite mathematics and science courses.
- In order to graduate, students must maintain a 2.00 Overall GPA and receive a grade of C or better in each course required for the major.
- Advanced physics courses are offered every two to three semesters; check with the Physics Department for availability.
- Let the Department Chair know if you have an interest in a particular elective course as soon as possible.

● 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.

FOUR YEAR PLAN COLLEGE OF SCIENCE 2023-2024

MY ADVISOR'S NAME IS: _____

PHYSICS
APPLIED PHYSICS

A course of study in physics, resulting in a B.S. degree in physics, prepares students for a wide variety of opportunities, such as engineering careers in the private sector, careers in the health professions, employment in industry and government laboratories, advanced technology jobs in science and technology related fields, and careers as science teachers. The B.S. degree program is also excellent preparation for advanced degrees in physics, astronomy, engineering, medicine, or law. The Applied Physics major is designed for those who are interested in future study or work in an applied physics or engineering field.

YEAR ONE

FALL SEMESTER

CODE	COURSE NAME	HRS	GRADE
PHY 211	University Physics	4	
PHY 202	General Physics I Lab	1	
MTH 229	Calculus I (CT)	5	
FYS 100	First Year Sem Crit Thinking	3	
ENG 101	Beginning Composition	3	
UNI 100	Freshman First Class	1	
TOTAL HOURS		**17**	

SPRING SEMESTER

CODE	COURSE NAME	HRS	GRADE
MTH 230	Calculus/Analytical Geom II	4	
PHY 204	General Physics II Lab	1	
PHY 213	University Physics II	4	
ENG 201	Advanced Composition	3	
_____	Core I Critical Thinking (MC/I)	3	
TOTAL HOURS		**15**	

Summer Term (optional):

YEAR TWO

FALL SEMESTER

CODE	COURSE NAME	HRS	GRADE
MTH 231	Calculus/Analytical Geom III	4	
PHY 320	Intro Modern Physics	3	
PHY 421	Modern Physics Lab	2	
PHY 445	Math Methods of Physics	3	
_____	Core II Social Science (WI)	3	
TOTAL HOURS		**15**	

SPRING SEMESTER

CODE	COURSE NAME	HRS	GRADE
PHY 446	Math Methods of Physics II	3	
PHY 304	Optics	3	
PHY 405	Optics Lab	2	
MTH 335	Ordinary Diff Equations	3	
CIT 163	Intro to Programming: C++	3	
TOTAL HOURS		**14**	

Summer Term (optional):

YEAR THREE

FALL SEMESTER

CODE	COURSE NAME	HRS	GRADE
PHY 330	Mechanics	3	
PHY 300	Electricity & Magnetism	3	
PHY 308	Thermal Physics	3	
CIT 236	Data Structures	3	
_____	Core II Communication	3	
TOTAL HOURS		**15**	

SPRING SEMESTER

CODE	COURSE NAME	HRS	GRADE
_____	PHY Elective (PHY 314/415 Rec.)	5	
PHY 442	Quantum Mechanics	3	
ENGR 111	Engineering Computations	3	
CIT 238	Algorithms	3	
TOTAL HOURS		**14**	

Summer Term (optional):

YEAR FOUR

FALL SEMESTER

CODE	COURSE NAME	HRS	GRADE
PHY 491	Capstone	1	
PHY 425	Solid State Physics	3	
PHY 444	Advanced Laboratory	2	
CHM 211	Principles of Chemistry I	3	
CHM 217	Principles of Chemistry I Lab	2	
_____	Free Elective (CIT Rec.)	3	
_____	Writing Intensive	3	
TOTAL HOURS		**17**	

SPRING SEMESTER

CODE	COURSE NAME	HRS	GRADE
PHY 492	Capstone	1	
CHM 212	Principles of Chemistry II	3	
CHM 218	Principles of Chemistry II Lab	2	
_____	Core II Humanities (WI)	3	
_____	Free Elective (CIT Rec.)	3	
_____	Core II Fine Arts	3	
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.