


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	_____
PHY 211/202	University Physics I / lab	5	_____



MAJOR-SPECIFIC


All Physics majors are required to take the following courses:

CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE
PHY 211	University Physics I	4	_____	PHY 491/492	Capstone	2	_____
 PHY 202	General Physics I Lab	1	_____	 MTH 230	Calculus/Analytical Geom II	4	_____
PHY 213	University Physics II	4	_____	MTH 231	Calculus/Analytical Geom III	4	_____
PHY 204	College Physics II Lab	1	_____	MTH 335	Ordinary Diff Equations	3	_____
 PHY 304	Optics	3	_____	CHM 211	Principles of Chemistry I (Rcmd.)	3	_____
 PHY 405	Optics Lab	2	_____	CHM 217	Principles of Chemistry I Lab (Rcmd.)	2	_____
PHY 308	Thermal Physics	3	_____	CHM 212	Principles of Chemistry II (Rcmd.)	3	_____
 PHY 300	Electricity & Magnetism	3	_____	CHM 218	Principles of Chemistry II Lab (Rcmd.)	2	_____
 PHY 330	Mechanics	3	_____	_____	PHY Elective (PHY 425/444 Rcmd.)	5	_____
 PHY 320	Intro Modern Physics	3	_____	_____	Free Elective	4	_____
 PHY 421	Modern Physics Lab	2	_____	_____	Free Elective	3	_____
 PHY 442	Quantum Mechanics	3	_____	_____	Free Elective	3	_____
PHY 445	Math Methods of Physics	3	_____				
PHY 446	Math Methods of Physics II	3	_____				
PHY 302	Electricity & Magnetism II	3	_____				
PHY 443	Quantum Physics II	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, coursework listed as "elective" may vary for each student. Students are encouraged to use elective hours toward a 2nd minor or toward prerequisites.
- 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.
- Marshall offers a Bachelor of Science in Physics with Areas of Emphasis available in Applied, Biological, and Medical Physics. Please speak with your advisor if you are interested in a specific Area of Emphasis.

 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.

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. Physics is designed for those who are interested in future study or work in a pure physics or physics-related field.

		FALL SEMESTER				SPRING SEMESTER				
		CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE	
YEAR ONE		PHY 202	General Physics I Lab	1	_____		MTH 230	Calculus/Analytical Geom II	4	_____
		PHY 211	University Physics I	4	_____		PHY 204	General Physics II Lab	1	_____
		MTH 229	Calculus I (CT)	5	_____		PHY 213	University Physics II	4	_____
		FYS 100	First Year Sem Crit Thinking	3	_____		ENG 201	Advanced Composition	3	_____
		ENG 101	Beginning Composition	3	_____		_____	Core I Critical Thinking	3	_____
		UNI 100	Freshman First Class	1	_____					
		TOTAL HOURS		17		TOTAL HOURS		15		
Summer Term (optional):										
		FALL SEMESTER				SPRING SEMESTER				
		CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE	
YEAR TWO		MTH 231	Calculus/Analytical Geom III	4	_____		PHY 446	Math Methods of Physics II	3	_____
		PHY 320	Intro Modern Physics	3	_____		PHY 304	Optics	3	_____
		PHY 421	Modern Physics Lab	2	_____		PHY 405	Optics Lab	2	_____
		PHY 445	Math Methods of Physics	3	_____		MTH 335	Ordinary Diff Equations	3	_____
		_____	Core II Communication	3	_____		_____	Core II Social Science	3	_____
							_____	Writing Intensive Elective	3	_____
		TOTAL HOURS		15		TOTAL HOURS		17		
Summer Term (optional):										
		FALL SEMESTER				SPRING SEMESTER				
		CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE	
YEAR THREE		PHY 308	Thermal Physics	3	_____		PHY 302	Electricity & Magnetism II	3	_____
		PHY 330	Mechanics	3	_____		PHY 442	Quantum Mechanics	3	_____
		PHY 300	Electricity & Magnetism	3	_____		_____	Core II Humanities	3	_____
		_____	Writing Intensive Elective	3	_____		_____	Multicultural or International	3	_____
		_____	Free Elective	3	_____		_____	Core II Fine Arts	3	_____
		TOTAL HOURS		15		TOTAL HOURS		15		
Summer Term (optional):										
		FALL SEMESTER				SPRING SEMESTER				
		CODE	COURSE NAME	HRS	GRADE	CODE	COURSE NAME	HRS	GRADE	
YEAR FOUR		PHY 443	Quantum Mechanics II	3	_____		CHM 212	Principles of Chemistry II (Rcmd.)	3	_____
		PHY 491	Capstone	1	_____		CHM 218	Principles of Chemistry II Lab (Rcmd.)	2	_____
		CHM 211	Principles of Chemistry I (Rcmd.)	3	_____		PHY 492	Capstone	1	_____
		CHM 217	Principles of Chemistry I Lab (Rcmd.)	2	_____		_____	Free Elective	4	_____
		_____	PHY Elective (PHY 425/444 Rcmd.)	5	_____		_____	Free Elective	3	_____
		TOTAL HOURS		14		TOTAL HOURS		13		
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.