CURRICULUM PLAN COLLEGE OF SCIENCE 2023-2024

MY ADVISOR'S NAME IS: ____________

PHYSICS MEDICAL 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

CODE	COURSE NAME		HRS	GRADE
______	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	______
BSC 120	Principles of Biology	● ◆	4	______

MAJOR-SPECIFIC

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

CODE	COURSE NAME		HRS	GRADE
PHY 202	General Physics I Lab	◆	1	______
PHY 211	University Physics	◆	4	______
PHY 204	Gerenal Physics II Lab	◆	1	______
PHY 213	University Physics II	◆	4	______
PHY 300	Electricity and Magnetism	◆	3	______
PHY 304	Optics	◆	3	______
PHY 405	Optics Lab	◆	2	______
PHY 308	Thermal Physics	◆	3	______
PHY 320	Intro Modern Physics	◆	3	______
PHY 330	Mechanics	◆	3	______
PHY 360	Medical Physics	◆	3	______
PHY 421	Modern Physics Lab	◆	2	______
PHY 491/492	Capstone (C)	● ◆	2	______
PHY 442	Quantum Mechanics	◆	3	______
PHY 445	Math Methods of Physics	◆	3	______
PHY 446	Math Methods of Physics II	◆	3	______
CHM 211	Principles of Chemistry 1	◆	3	______
CHM 217	Principles of Chemistry 1 Lab	◆	2	______
CHM 212	Principles of Chemistry II	◆	3	______
CHM 218	Principles of Chemistry II Lab	◆	2	______
CHM 355	Organic Chemistry	◆	3	______
CHM 356	Organic Chemistry II	◆	3	______
CHM 361	Organic Lab	◆	3	______
CHM 365	Intro to Biochemistry	◆	3	______
BSC 120	Principles of Biology	◆	4	______
BSC 121	Principles of Biology II	◆	4	______
______	PHY Elective (PHY 350 Rcmd.)	◆	3	______
MTH 230	Calculus II	◆	4	______
MTH 231	Calculus III	◆	4	______

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.

● 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 MEDICAL 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. Medical Physics is designed for those who are interested in going to the medical school, or working in a biochemical physics field.

YEAR ONE

FALL SEMESTER					SPRING SEMESTER				
CODE	COURSE NAME		HRS	GRADE	CODE	COURSE NAME		HRS	GRADE
PHY 202	General Physics I Lab	◆	1	______	ENG 201	Advanced Composition	●	3	______
PHY 211	University Physics	◆	4	______	PHY 204	General Physics II Lab	◆	1	______
MTH 229	Calculus I (CT)	● ◆	5	______	PHY 213	University Physics II	◆	4	______
ENG 101	Beginning Composition	●	3	______	______	Core II Social Science	●	3	______
FYS 100	First Year Sem Crit Thinking	●	3	______	MTH 230	Calculus/Analytical Geom II	◆	4	______
UNI 100	Freshman First Class		1	______					
TOTAL HOURS			17		TOTAL HOURS			15	

Summer Term (optional):

YEAR TWO

FALL SEMESTER					SPRING SEMESTER				
CODE	COURSE NAME		HRS	GRADE	CODE	COURSE NAME		HRS	GRADE
PHY 320	Intro Modern Physics	◆	3	______	PHY 446	Math Methods of Physics II	◆	3	______
PHY 421	Modern Physics Lab	◆	2	______	CHM 212	Principles of Chemistry II	◆	3	______
PHY 445	Math Methods of Physics	◆	3	______	CHM 218	Principles of Chemistry II Lab	◆	2	______
CHM 211	Principles of Chemistry I	◆	3	______	PHY 304	Optics	◆	3	______
CHM 217	Principles of Chemistry I Lab	◆	2	______	PHY 405	Optics Lab	◆	2	______
MTH 231	Calculus/Analytical Geom III	◆	4	______	______	Multicultural or International (CT)	●	3	______
TOTAL HOURS			17		TOTAL HOURS			16	

Summer Term (optional):

YEAR THREE

FALL SEMESTER					SPRING SEMESTER				
CODE	COURSE NAME		HRS	GRADE	CODE	COURSE NAME		HRS	GRADE
CHM 355	Organic Chemistry I	◆	3	______	PHY 442	Quantum Mechanics	◆	3	______
PHY 300	Electricity & Magnetism	◆	3	______	______	PHY Elective (PHY 350 Rcmd.)	◆	3	______
PHY 330	Mechanics	◆	3	______	CHM 356	Organic Chemistry II	◆	3	______
PHY 308	Thermal Physics	◆	3	______	CHM 361	Intro Organic CHM Lab	◆	3	______
					______	Core II Communication	●	3	______
TOTAL HOURS			12		TOTAL HOURS			15	

Summer Term (optional):

YEAR FOUR

FALL SEMESTER					SPRING SEMESTER				
CODE	COURSE NAME		HRS	GRADE	CODE	COURSE NAME		HRS	GRADE
PHY 491	Capstone	● ◆	1	______	PHY 492	Capstone	● ◆	1	______
______	Core II Humanities	●	3	______	PHY 360	Medical Physics	◆	3	______
BSC 120	Principles of Biology	● ◆	4	______	BSC 121	Principles of Biology II	◆	4	______
CHM 365	Intro to Biochemistry	◆	3	______	______	Core II Fine Arts	●	3	______
______	Writing Intensive	●	3	______	______	Writing Intensive	●	3	______
TOTAL HOURS			14		TOTAL HOURS			14	

Summer Term (optional):

● 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.

INVOLVEMENT OPPORTUNITIES

- SGA
- Campus Activity Board
- JMELI
- Commuter Student Advisory Board
- Community Engagement Ambassadors
- Club Sports
- Religious Organizations
- Political Organizations
- Residence Hall Association
- Cultural Organizations
- National Society of Leadership and Success
- Greek Life

RELATED MAJORS

- Mechanical Engineering
- Civil Engineering
- Safety Technology
- Computer Science
- Chemistry
- Biology

GRADUATION REQUIREMENTS

- Have a minimum of 120 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.

MEDICAL PHYSICS — 2023-2024

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!

Participate in a Career Exploration Experience (job shadow) to help identify your career goals.

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

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

College is a great time to experience the world! Consider studying abroad in the summer, during Spring Break, or for an entire semester.

YEAR TWO

Develop relationships with professors who can serve as future references by attending their office hours.

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.

Begin your Math Methods sequence, physics sequence to meet your prerequisites for upper division classes.

Did you do really well in a hard course? Become a Tutor or a Supplemental Instructor.

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

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

Think about who can help you grow as a student and a professional—professors, advisors, alumni, etc.—and ask at least one to be your mentor.

YEAR THREE

Submit your work for annual competitions and awards.

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.

Complete graduate admissions exams (GRE, MCAT, LSAT) the summer before your senior year.

Are you on track to graduate? Meet with your advisor for your Junior Eval to make sure you know what requirements you have left.

Apply to be a New Student Orientation Leader or a Campus Tour Guide.

Take an elective course that links diversity to your field of study.

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

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.

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

Networking is key! Attend a Career Expo to seek employment opportunities and network with employers in your field.

Did you do really well in a hard course? Become a Tutor or a Supplemental Instructor.

Participate in Department of Physics outreach events with local high school students. Stay engaged and make a difference.

Be at the top of your professional game! Prepare a final resume and practice your interview skills with a career coach in Career Education.

Prepare to present at Physics Department Research Day and CoS Research EXPO in April

TRANSFERABLE SKILLS ASSOCIATED WITH THIS MAJOR

- Mathematical Ability
- Scientific Ability
- Attention to Detail
- Strong Oral and Written Communication Skills
- Organizational Skillsi

ASSOCIATED CAREERS

- Accoustical Physics
- Astronomy
- Astrophysics
- Biophysics
- Chemical Physics
- Research and Development
- Nuclear Physics
- High Energy Physics
- Science Education

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