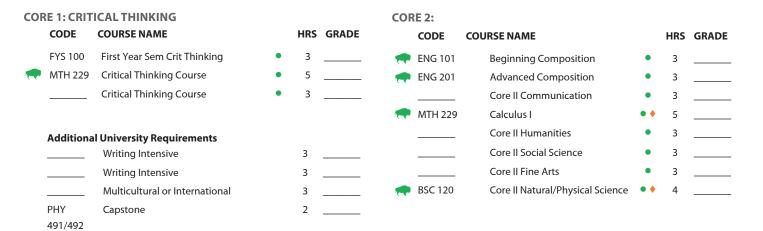
# CURRICULUM PLAN COLLEGE OF SCIENCE 2020-2021 PHYSICS **MEDICAL PHYSICS** REQUIREMENTS

MY ADVISOR'S NAME IS:

of study.

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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.



#### MAJOR-SPECIFIC

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

CODE	COURSE NAME		HRS	GRADE		CODE	COURSE NAME		HRS	GRADE
PHY 202	General Physics I Lab	•	1			CHM 211	Principles of Chemistry 1	٠	3	
PHY 211	University Physics	•	4			CHM 217	Principles of Chemistry 1 Lab	٠	2	
PHY 204	Gerenal Physics II Lab	•	1			CHM 212	Principles of Chemistry II	٠	3	
PHY 213	University Physics II	•	4			CHM 218	Principles of Chemistry II Lab	•	2	
PHY 300	Electricity and Magnetism	•	3			CHM 355	Organic Chemistry	٠	3	
PHY 304	Optics	•	3			CHM 356	Organic Chemistry II	•	3	
PHY 405	Optics Lab	•	2			CHM 361	Organic Lab	•	3	
PHY 308	Thermal Physics	•	3			CHM 365	Intro to Biochemistry	•	3	
PHY 320	Intro Modern Physics	•	3			BSC 120	Principles of Biology	•	4	
PHY 330	Mechanics	•	3			BSC 121	Principles of Biology II	•	4 .	
PHY 360	Medical Physics	•	3				PHY Elective (PHY 350 Rcmd.)	٠	3.	
PHY 421	Modern Physics Lab	•	2		-	MTH 230	Calculus II	٠	1 .	
PHY 491/492	Capstone (C)	• •	2			MTH 231	Calculus III	•	3	
PHY 442	Quantum Mechanics	•	3							
PHY 445	Math Methods of Physics	•	3							
PHY 446	Math Methods of 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, 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.

# FOUR YEAR PLAN COLLEGE OF SCIENCE 2020-2021 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.

		605-	FALL SEMESTER		1100	60 L D F		60.B.T	SPRING SEMESTER		1126	
		CODE	COURSENAME			GRADE		CODE	COURSE NAME	_		GRA
		PHY 202	General Physics I Lab	•	1			ENG 201	Advanced Composition	•	3	
		PHY 211	University Physics	•	4			PHY 204	General Physics II Lab	•	1	
ONE		MTH 229	Calculus I (CT)	• •	5			PHY 213	University Physics II	•	4	
0		ENG 101	Beginning Composition	•	3				Core II Social Science	•	3	
$\operatorname{AR}$		FYS 100	First Year Sem Crit Thinking	•	3			MTH 230	Calculus/Analytical Geom II	•	4	
YEAR		UNI 100	Freshman First Class		1							
		TOTAL HO	DURS		17			TOTAL HO	DURS		15	
	Sumi	mer Term (op	otional):									
			FALL SEMESTER						SPRING SEMESTER			
		CODE	COURSE NAME		HRS	GRADE		CODE	COURSE NAME		HRS	GRA
	<b>.</b>	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	
TWO		PHY 445	Math Methods of Physics	•	3			CHM 218	Principles of Chemistry II Lab	•	2	
ΔT		CHM 211	Principles of Chemistry I	•	3			PHY 304	Optics	•	3	
R		CHM 217	Principles of Chemistry I Lab	•	2		-	PHY 405	Optics Lab	•	2	
YEAR		MTH 231	Calculus/Analytical Geom III	•	4				Multicultural or International (CT)	•	3	
		TOTAL HO	DURS		17			TOTAL HO	DURS		16	
	Sumi	mer Term (op	otional):									
			FALL SEMESTER						SPRING SEMESTER			
		CODE	COURSE NAME		HRS	GRADE		CODE	COURSE NAME		HRS	GRA
		CHM 355	Organic Chemistry I	•	3		-	PHY 442	Quantum Mechanics	٠	3	
		PHY 300	Electricity & Magnetism	•	3				PHY Elective (PHY 350 Rcmd.)	•	3	
r+1		FIII 300	Electricity & Mughetishi						THE Elective (THE 550 ficture.)			
EE.		PHY 330	Mechanics	٠	3			CHM 356	Organic Chemistry II	•	3	
HREE				•	3 3			CHM 356 CHM 361			3 3	
R THREE		PHY 330	Mechanics						Organic Chemistry II	•		
IAR		PHY 330	Mechanics						Organic Chemistry II Intro Organic CHM Lab	•	3	
		PHY 330	Mechanics Thermal Physics						Organic Chemistry II Intro Organic CHM Lab Core II Communication	•	3	
IAR	Sumi	PHY 330 PHY 308	Mechanics Thermal Physics		3			CHM 361	Organic Chemistry II Intro Organic CHM Lab Core II Communication	•	3	
IAR	Sumi	PHY 330 PHY 308 <b>TOTAL HC</b> mer Term (op	Mechanics Thermal Physics DURS potional): FALL SEMESTER	•	3 12			CHM 361	Organic Chemistry II Intro Organic CHM Lab Core II Communication	•	3 3 15	
IAR	Sumi	PHY 330 PHY 308 TOTAL HC mer Term (op CODE	Mechanics Thermal Physics DURS DURS DURS DURSENAME	•	3 12	GRADE		CHM 361	Organic Chemistry II Intro Organic CHM Lab Core II Communication	•	3	GRA
IAR	Sumi	PHY 330 PHY 308 <b>TOTAL HC</b> mer Term (op	Mechanics Thermal Physics DURS DURS Ditional): FALL SEMESTER COURSE NAME Capstone	•	3 12	GRADE		CHM 361	Organic Chemistry II Intro Organic CHM Lab Core II Communication URS SPRING SEMESTER COURSE NAME Capstone	•	3 3 15	GRA
YEAR	Sum	PHY 330 PHY 308 TOTAL HC mer Term (op CODE PHY 491	Mechanics Thermal Physics DURS DURS DURS DURS EXAMPLE SEMESTER COURSE NAME Capstone Core II Humanities	•	3 12 HRS	GRADE		CHM 361	Corganic Chemistry II Intro Organic CHM Lab Core II Communication COURS SPRING SEMESTER COURSE NAME Capstone Medical Physics	•	3 3 15 HRS	 GR/
YEAR	Sumi	PHY 330 PHY 308 TOTAL HC mer Term (op CODE PHY 491 BSC 120	Mechanics Thermal Physics DURS DURS DURS EXEMPTION EXEMP	•	3 12 HRS 1	GRADE		CHM 361	Organic Chemistry II Intro Organic CHM Lab Core II Communication URS SPRING SEMESTER COURSE NAME Capstone	•	3 3 <b>15</b> HRS 1	GRA
YEAR	Sumi	PHY 330 PHY 308 TOTAL HC mer Term (op CODE PHY 491	Mechanics Thermal Physics DURS DURS DURS DURS EXAMPLE SEMESTER COURSE NAME Capstone Core II Humanities	•	3 12 HRS 1 3	GRADE		CHM 361	Corganic Chemistry II Intro Organic CHM Lab Core II Communication COURS SPRING SEMESTER COURSE NAME Capstone Medical Physics	•	3 3 <b>15</b> HRS 1 3	 GR/ 
YEAR	Sumi	PHY 330 PHY 308 TOTAL HC mer Term (op CODE PHY 491 BSC 120	Mechanics Thermal Physics DURS DURS DURS EXEMPTION EXEMP	•	3 12 HRS 1 3 4	GRADE		CHM 361	Core II Communication  SPRING SEMESTER  COURSE NAME  Capstone  Medical Physics  Principles Cell Biology	•	3 3 <b>15</b> HRS 1 3 4	GR/
IAR	Sum	PHY 330 PHY 308 TOTAL HC mer Term (op CODE PHY 491 BSC 120	Mechanics Thermal Physics DURS DURS DURS DITIONALL SEMESTER COURSE NAME Capstone Core II Humanities Principles of Biology Intro to Biochemistry Writing Intensive	•	3 12 HRS 1 3 4 3	GRADE		CHM 361	Organic Chemistry II Intro Organic CHM Lab Core II Communication SPRING SEMESTER COURSE NAME Capstone Medical Physics Principles Cell Biology Core II Fine Arts Writing Intensive	•	3 3 <b>15</b> HRS 1 3 4 3	GR/

## 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 REOUIREMENTS**

- 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 twoyear 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 – 2020-2021 **YEAR ONE**

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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.

# **YEAR THREE**



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.





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

# **YEAR FOUR**



Strengthen your resume and enhance your presentation skills. graduate? Meet with your advisor Present what you've learned at an for your Senior Eval to see what academic conference off campus.





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

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

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



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

Develop relationships with professors

who can serve as future references by

attending their office hours.

Did you do really well in a hard

course? Become a Tutor or a

Supplemental Instructor.

No need to wait until graduate

school. Discuss undergraduate

research opportunities with faculty

in your major right now.



College is a great time to experience the

world! Consider studying abroad in the

summer, during Spring Break, or for an

entire semester.

Stay on the Herd Path and come

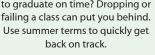
to class! Class attendance is more

important to your success than

your high school GPA, your class

standing, or your ACT/SAT scores.

 $\bigcirc$ Are you completing enough credits to graduate on time? Dropping or failing a class can put you behind.







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.





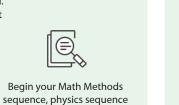
to meet your prerequisites for upper division classes. \_\_\_\_\_\_

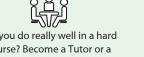
your grants, scholarships, or federal financial aid.

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



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





This is it! Are you on track to

requirements you have left.

Submit your work for annual

competitions and awards.

Complete graduate admissions

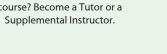
exams (GRE, MCAT, LSAT) the

summer before your senior year.

Apply to be a New Student

Orientation Leader or a Campus

Tour Guide.











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



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

## 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



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



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



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