

# BS Degree in Physics

## Medical Physics Emphasis

The following is a sample schedule to help students plan their coursework. These are suggestions and the schedule is flexible. In addition to fulfilling the courses specifically required for this Physics degree, it is important that students also fulfill Liberal Arts and Sciences Curriculum requirements, Writing Intensive, and all other normal graduation requirements.

FIRST YEAR			
FALL	PHYS 200	General Physics I with Lab <sup>4</sup>	4
	MATH 261	Calculus I <sup>2</sup>	4
	FYE 101	First Year Experience	1
		LASC Electives <sup>3</sup>	6
		<b>TOTAL CREDITS</b>	<b>15</b>

FIRST YEAR			
SPRING	PHYS 201	General Physics II with Lab	4
	MATH 262	Calculus II	4
		LASC Electives	6
		<b>TOTAL CREDITS</b>	<b>14</b>

SOPHOMORE YEAR			
FALL	PHYS 202	20th Century Physics	3
	PHYS 305	Experimental Physics I	3
	PHYS 315	Physics Seminar	1
	MATH 323	Multi-Variable & Vector Calc	4
	MATH 260	Computer Calculus	1
	CHEM 150	General Chemistry I with Lab	4
		<b>TOTAL CREDITS</b>	<b>16</b>

SOPHOMORE YEAR			
SPRING	PHYS 322	Elem Modern Physics	3
	PHYS 350	Computational Methods for Physical Science	3
	MATH 366	Differential Equations	3
	CHEM 210	General Chemistry II with Lab	4
		Recommended Elective	3
		<b>TOTAL CREDITS</b>	<b>16</b>

JUNIOR YEAR			
FALL	PHYS 330	Intermediate Mechanics	4
	MATH 327	Intro to Linear Algebra <sup>1</sup>	3
	PHYS 312	Analog Electronics <sup>6</sup>	3
		LASC Electives	6
		<b>TOTAL CREDITS</b>	<b>16</b>

JUNIOR YEAR			
SPRING	PHYS 370	Electromagnetic Theory <sup>6</sup>	4
	PHYS 318	Biophysics & Medical Imaging <sup>6</sup>	3
	PHYS 306	Experimental Physics II	3
	PHYS 342	Intro to Research	1
		LASC Electives	3
		<b>TOTAL CREDITS</b>	<b>14</b>

SENIOR YEAR			
FALL	PHYS 492	Senior Project	2
	PHYS 399	Thermodynamics <sup>5</sup>	3
		LASC Electives	3
		Recommended Electives	6
		<b>TOTAL CREDITS</b>	<b>14</b>

SENIOR YEAR			
SPRING	PHYS 430	Quantum Mechanics <sup>1,5</sup>	3
	ENGL 387	Technical Report Writing	4
	PHYS 325	Optics <sup>1,5</sup>	3
		LASC Electives	6
		<b>TOTAL CREDITS</b>	<b>16</b>

<sup>1</sup> Recommended but not required.

<sup>2</sup> ACT math scores or a mathematics placement exam is needed to decide whether a student should begin directly in calculus or a different math class.

<sup>3</sup> In considering electives, keep in mind that all of the LASC requirements as well as Writing Intensive requirements must be fulfilled.

<sup>4</sup> If a student cannot take Calculus in the fall of freshman year, please consult the Department Chair about appropriate course(s) to take.

<sup>5</sup> Phys 399, Ast 360, and 361 are offered on alternating year basis (Phys 399 and Ast 366 in even years, Ast 361 in odd years)

<sup>6</sup> Phys 370, Phys 430, Ast 362, and Ast 365 are offered on alternating year basis (Phys 370 and Ast 362 in even years, Phys 430 and Ast 365 in odd years)

## Core Requirements (31 credits)

Students may substitute PHYS 160 & 161 for PHYS 200 & 201.

COURSE	CREDITS	✓	COURSE	CREDITS	✓
PHYS 200: General Physics I and Lab	4	<input type="checkbox"/>	PHYS 330: Intermediate Mechanics	4	<input type="checkbox"/>
PHYS 201: General Physics II and Lab	4	<input type="checkbox"/>	PHYS 315: Physics Seminar	1	<input type="checkbox"/>
PHYS 202: Intro to 20th Century Physics	3	<input type="checkbox"/>	PHYS 306: Experimental Physics II (WI)	3	<input type="checkbox"/>
PHYS 305: Experimental Physics I (WI)	3	<input type="checkbox"/>	PHYS 342: Intro to Research	1	<input type="checkbox"/>
PHYS 322: Elementary Modern Physics	3	<input type="checkbox"/>	PHYS 492: Senior Project	2	<input type="checkbox"/>
PHYS 350: Computational Methods for Physical Science	3	<input type="checkbox"/>			

## Related Requirements (19 credits)

Students are encouraged to take MATH 260 with MATH 261. Students are also encouraged to take Math 327 Linear Algebra (3 credits) and MATH 466 Differential Equations II (3 credits).

COURSE	CREDITS	✓	COURSE	CREDITS	✓
ENGL 387: Technical Report Writing (WI)	4	<input type="checkbox"/>	MATH 323: Multi-Variable & Vector Calculus	4	<input type="checkbox"/>
MATH 261: Calculus I	4	<input type="checkbox"/>	MATH 366: Differential Equations	3	<input type="checkbox"/>
MATH 262: Calculus II	4	<input type="checkbox"/>			

## Program Requirements Electives (21 Credits)

COURSE	CREDITS	✓	COURSE	CREDITS	✓
CHEM 150/150L: General Chemistry I	4	<input type="checkbox"/>	PHYS 318: Biophysics & Medical Imaging	3	<input type="checkbox"/>
CHEM 210/210L: General Chemistry II	4	<input type="checkbox"/>	PHYS 370: Electromagnetic Theory	4	<input type="checkbox"/>
PHYS 312: Analog Electronics	3	<input type="checkbox"/>	PHYS 399: Thermodynamics	3	<input type="checkbox"/>

## Recommended Electives

COURSE	CREDITS	✓	COURSE	CREDITS	✓
PHYS 325: Optics	3	<input type="checkbox"/>	CHEM 350: Organic Chem I	3	<input type="checkbox"/>
BIOL 115: Organismal Biology	4	<input type="checkbox"/>	CHEM 360: Organic Chem II	3	<input type="checkbox"/>
BIOL 111: Cell Biology	4	<input type="checkbox"/>	PHYS 430: Quantum Mechanics	3	<input type="checkbox"/>
BIOL 323: Human Anatomy	4	<input type="checkbox"/>	MATH 327: Linear Algebra	3	<input type="checkbox"/>
BIOL 349: Human Physiology	4	<input type="checkbox"/>			