

**Recommended Course Sequence – Fall 07 entrance**
**FRESHMAN YEAR**

Fall	Credits	Spring	Credits
<b>PHYS 211 GAP I</b>	<b>4</b>	<b>PHYS 212 GAP II</b>	<b>4</b>
CHEM 121 General Chemistry I	5	CHEM 122 General Chemistry II	5
MATH 115 Calculus I	4	MATH 116 Calculus II	4
COSC 160 C++	3	UCOR 1	3
UCOR Information Literacy	1		
	<b>17</b>		<b>16</b>

**SOPHOMORE YEAR**

Fall	Credits	Spring	Credits
<b>PHYS 302 Optics</b>	<b>3</b>	<b>PHYS 374 Modern Physics</b>	<b>4</b>
<b>PHYS 312 Optics Lab</b>	<b>1</b>	<b>PHYS 364 Modern Physics Lab</b>	<b>1</b>
MATH 215 Calculus III	4	MATH 310 Linear Algebra	3
<b>PHYS 332 Analog Electronics</b>	<b>3</b>	MATH 314 Differential Equations	3
UCOR 2	3	UCOR 4	3
UCOR 3	3	<b>BSNES-Core Free Elective 1</b>	3
	<b>3</b>		
	<b>17</b>		<b>16</b>

**JUNIOR (SENIOR) YEAR**

Even Fall	Credits	Odd Spring	Credits
<b>PHYS 474 Quantum Mechanics</b>	<b>3</b>	ENGL 302 Science Writing	3
MATH 308 Numerical Analysis or		UCOR 6	3
MATH 310 Probability & Statistics I	3	UCOR 7 (or <b>PHYS 499 Senior Research +</b>	
HIST 307 History of Science	3	SPRG 105 Career Development Seminar)	3
<b>PHYS 4xx elective 1</b>	<b>3</b>	<b>PHYS 4xx elective 2</b>	<b>3</b>
UCOR 5	3	<b>PHYS 4xx elective 3</b>	3
	<b>15</b>		<b>15</b>

**SENIOR (JUNIOR) YEAR**

Odd Fall	Credits	Even Spring	Credits
<b>PHYS 461 Mechanics</b>	<b>4</b>	( <b>PHYS 499 Senior Research</b>	2
<b>PHYS 401 Thermal Physics</b>	<b>3</b>	(SPRG 105 Career Development Seminar	1
<b>Free elective 1</b>	<b>3</b>	(or UCOR 7)	
UCOR 8	3	<b>PHYS 472 Electromagnetism</b>	<b>4</b>
UCOR 9	3	<b>BSNES-Core free elective 2</b>	3
		<b>PHYS 3xx elective</b>	<b>3</b>
		<b>Free elective 2</b>	3
	<b>16</b>		<b>16</b>

**TOTAL: 128 credits**
**Recommended free electives for a concurrent BA in Mathematics:** MATH 135 Discrete Mathematics (3), MATH 402W Abstract Algebra I (3), MATH 415W Advanced Calculus I (3), additional MATH at 300 level (3)

**Intermediate electives (PHYS 3xx)**
**Spring**

 PHYS 342 Digital Electronics (3)  
 PHYS 350 Theoretical Methods in Science (3)

**Advanced electives (PHYS 4xx)**

**Even fall**

PHYS 482W Elementary Particle Physics (3)  
PHYS 493 Solid State I (3)

**Odd fall**

PHYS 491 Introductory Materials Science I (3)

**Odd Spring**

PHYS 480 Chaos and PHYS 480L Chaos lab (4)  
PHYS 481 Descriptive Cosmology (3)  
PHYS 485 Relativity (3)  
PHYS 494 Solid State II (3)

**Even Spring**

PHYS 480 Chaos and PHYS 480L Chaos lab (4)  
PHYS 492 Introductory Materials Science II (3)

No credit is accepted in the **Broad** track for more than two advanced electives in the same concentration (astronomy or condensed matter).

Other advanced electives are available through cross-registration in PCHE and require departmental approval.

**PCHE cross-registration guidelines: One course per term in addition to at least 12 credits at Duquesne.**