



Physics Programs
Bachelor of Science (128 credits)

Recommended Course Sequence – Fall 07 entrance

		Astronomy track	Condensed Matter track	Education track	Broad track
FRESHMAN	Fall	4 PHYS 211 GAP I 5 CHEM 121 General Chemistry I 4 MATH 115 Calculus I 3 COSC 160 C++ 1 UCOR Information Literacy			
		17			
FRESHMAN	Spring	4 PHYS 212 GAP II 5 CHEM 122 General Chemistry II 4 MATH 116 Calculus II 3 UCOR 1			
		16			
SOPHOMORE	Fall	3 PHYS 302 Optics 1 PHYS 312 Optics Lab 4 MATH 215 Calculus III 3 PHYS 332 Analog Electronics 3 UCOR 2			
		3 X-reg Introduction to Astronomy	3 UCOR 6	3 UCOR 6	3 UCOR 6
		17	17	17	17
	Spring	3 PHYS 374 Modern Physics 1 PHYS 364 Modern Physics Lab 3 MATH 310 Linear Algebra 3 MATH 314 Differential Equations			
	3 UCOR 6	3 UCOR 7	3 UCOR 7	3 UCOR 7	
	3 BSNES-Core Free Elective 1	3 BSNES-Core free elective 1	3 UCOR 8	3 BSNES-Core free elective 1	
	16	16	16	16	
JUNIOR (SENIOR)	Even Fall	3 PHYS 474 Quantum Mechanics 3 MATH 301 Probability & Statistics I or MATH 308 Numerical Analysis 3 HIST 307 History of Science			
		3 X-reg Stars	3 PHYS 491 Materials Science I	3 PHYS 482 Particle Physics	3 PHYS 4xx elective 1
		3 Free elective 1	3 UCOR 8	3 UCOR 9	3 UCOR 8
		15	15	15	15
JUNIOR (SENIOR)	Odd Spring	3 ENGL 302 Science Writing 3 UCOR 3 3 UCOR 4 (or PHYS 499 Senior Research + SPRG 105 Career Development Seminar)			
		3 X-reg Galaxies	3 PHYS 492 Materials Science II	3 PHYS 481 Cosmology	3 PHYS 4xx elective 2
		3 Free elective 2	3 Free elective 1	4 BIOL elective	3 PHYS 4xx elective 3
	15	15	16	15	
SENIOR (JUNIOR)	Odd Fall	4 PHYS 461 Mechanics 3 PHYS 401 Thermal Physics 3 UCOR 5			
		3 UCOR 7	3 PHYS 493 Solid State I	3 BSNES free elective 1	3 Free elective 1
		3 UCOR 8	3 UCOR 9	2 Free elective 1	3 UCOR 9
		16	16	15	16
SENIOR (JUNIOR)	Even Spring	2 PHYS 499 Senior Research 1 SPRG 105 Career Development Seminar 4 PHYS 472 Electromagnetism 3 BSNES-Core free elective 2			
					}(or UCOR 4)
		3 X-reg Techniques in Astronomy	3 PHYS 494 Solid State II	3 UCOR 124 Earth Science	3 PHYS 3xx elective
	3 UCOR 9	3 Free elective 2	3 Free elective 2	3 Free elective 2	
	16	16	16	16	

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.

Acceptable Astronomy Requirements**University of Pittsburgh – Cross-registration****Even fall**

AST 0113 Introduction to Astronomy (3)
 AST 1120 Stars, Stellar structure and Stellar Evolution (3)

Odd fall

AST 0113 Introduction to Astronomy (3)

Other acceptable astronomy courses may be available through cross-registration in PCHE and require departmental approval.

Odd Spring

AST 1121 Galaxies and Cosmology (3)

Even Spring

AST 1263 Techniques in Astronomy (3)

Recommendations for free electives (6 credits in BSNES core, plus 5-6 credits in the BS program)**Additional BA in math**

MATH 135 Discrete Mathematics (3)
 MATH 402W Abstract Algebra I (3)
 MATH 415W Advanced Calculus I (3)
 Additional MATH at 300 level (3)

5-year dual-degree with Education

GSCE 520 Introduction to Teaching (3)
 GRLA 529/521 Reading Course (3)
 GREV 525 Educational Research Literacy (3)
 GSCE 58x Field Experience (1)
 GSCE 570 Gateway 1: Technology (1)

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