Bachelor of Arts – Physics Education (PHSE)

103 credits (45 Upper-Level credits)

Physics (34 credits)	Pre-requisites	Credits	Semesters Offered	Semester Taken	Grade
PHYS 105 – Ideas in Astronomy *or* PHYS 106 – Introduction to Astrobiology		3	F		
PHYS 121 - Introductory Physics I: Mechanics *	MATH 151 (pre/co-req)	4	FSZ		
PHYS 122 - Introductory Physics II: Electricity and Magnetism *	MATH 152 (pre/co-req) and PHYS 121/121H	4	FSZ		
PHYS 133L - Experimental Physics I for Physicists *	PHYS 122/122H (pre/co-req)	3	FSZ		
PHYS 190 - Becoming a Physicist		1	F		
PHYS 211 - Introductory Physics III: Waves and Relativity *	PHYS 122/122H	3	FS		
PHYS 212 - Introductory Physics IV: Thermal and Quantum Physics *	PHYS 211 (or 224)	3	FS		
PHYS 233L - Computational Physics I *	MATH 152, PHYS 122, CMSC 104 or 201	4	FS		
PHYS 311 - Statistical Mechanics	MATH 251, PHYS 212 (or 324)	3	F		
PHYS 333L - Experimental Physics II (WI)*	ENGL 100, PHYS 133L (or 122L), PHYS 211 (or PHYS 224), PHYS 233L	3	FS		
PHYS 411 - Classical Mechanics	MATH 221, MATH 225, MATH 251, PHYS 211 (or PHYS 224)	3	S (to S 28) F (start F 29)		
Mathematics (18 credits)					
MATH 151 – Calculus and Analytical Geometry I *	MATH 150	4	FSZ		
MATH 152 – Calculus and Analytical Geometry II *	MATH 151	4	FSZ		
MATH 221 – Introduction to Linear Algebra *	MATH 151	3	FSZ		
MATH 225 – Introduction to Differential Equations *	MATH 152	3	FSZ		
MATH 251 – Multivariable Calculus *	MATH 152	4	FSZ		
Additional STEM Courses (11-12 credits)					
BIOL 141 – Foundations in Biology: Cell, Energy, & Organisms	MATH 150 or higher	4	FSZ		
CHEM 101 – Principles of Chemistry I	MATH 106 or higher	4	FSZ		
CMSC 104 or CMSC 201	CMSC 104 – no pre-reqs; CMSC 201 – MATH 150	3-4	FS		
Other Courses (7 credits)					
PSYC 100 – Introduction to Psychology		4	FSZ		
HIST 445 – History of Science to 1700 *or* HIST 446 – History of Science Since 1700	ENGL 100	3	varies		
Education (33 credits)					
EDUC 310 – Inquiry into Education	Recommended Prep: PSYC 100 or 1 Social Science course	3	FS		
EDUC 311 – Psychological Foundations of Education	Department Consent Required	3	FS		
EDUC 388 – Inclusion and Instruction	Department Consent Required	3	FS		
EDUC 410 – Teaching Literacy in the Content Areas: Part I	EDUC 412 with a grade of "B" or higher	3	FS		
EDUC 411 - Teaching Literacy in the Content Areas: Part II (WI)	EDUC 410 with a grade of "B" or higher and ENGL 100	3	F		
EDUC 412 – Analysis of Teaching and Learning	EDUC 310 & EDUC 311	3	FS		
EDUC 427 – Methods of Teaching Science in the Secondary School	EDUC 412 with a grade of "B" or higher	3	F		
EDUC 456 – Student Teaching in the Secondary Schools	Department Consent Required	10	FS		
EDUC 457 – Secondary Internship Seminar	Department Consent Required	2	FS		

Notes:

F = Fall, S = Spring, Z = Summer. Courses marked with a “Z” have traditionally been taught in the summer.
* Minimum grade of “C” required in PHYS and other courses that serve as prerequisites to required courses

- Minimum GPA of 2.0 required in 300 level PHYS courses required for the major.
- The PHSE major includes:
    - Four social science GEP courses (PSYC 100, HIST 445/445, EDUC 310, and EDUC 311)
    - Two writing intensive courses (EDUC 411 and HIST 445/446)
- Courses equivalent of EDUC 310, EDUC 311, and EDUC 388 may be taken elsewhere but EDUC 412 must be taken at UMBC.