PURDUE UNIVERSITY

Science Education- Physics Concentration
College of Science

SCI-SIED-BS
Code-SIED, PHED
127 Credits
Fall 2016

Departmental/Program Major Courses

Required Science Education Core Courses (24-30 Credits)

Required Chemistry Selective Courses (4-5 credits):

(4-5) CHM 11500 General Chemistry or CHM 12300 General Chemistry for Engineers I or CHM 12500 Introduction to Chemistry I ***(satisfies Science Selective for core and CHED, ESSE, PHED Concentration Requirement)***

OR

(5) CHM 12901 General Chemistry With A Biological Focus **(satisfies BIED Concentration Requirement)**

Required Computing Option (3-4 credits):

(3-4) CS 15800 C Programming or CS 17700 Programming With Multimedia Objects **(satisfies CHED Concentration requirement)**

OR

(3-4) CS 15800 C Programming or CS 17700 Programming With Multimedia Objects or CS 18000 Problem Solving and Object-Oriented Programming **(satisfies BIED, PHED Concentration requirement)**

OR

(3-4) CS 17700 Programming With Multimedia Objects **(satisfies ESSE Concentration requirement)**

Required Calculus Selective Courses (6-10 credits):

(3) MA 16010 Applied Calculus I ***(satisfies Quantitative Reasoning for core/satisfies BIED Concentration only)***

(3) MA 16020 Applied Calculus II ***(satisfies Quantitative Reasoning for core/satisfies BIED Concentration only)***

OR

(4-5) MA 16100 Plane Analytic Geometry And Calculus I or MA 16500 Analytic Geometry And Calculus I ***(satisfies Quantitative Reasoning for core and BIED, CHED, ESSE, PHED Concentration requirement)***

(4-5) MA 16200 Plane Analytic Geometry And Calculus II or MA 16600 Analytic Geometry And Calculus II ***(satisfies Quantitative Reasoning for core and (satisfies Quantitative Reasoning for core and BIED, CHED, ESSE, PHED Concentration requirement)***

Required Physics Selective Courses (8 credits):

(4) PHYS 17200 Modern Mechanics ***(satisfies Science Selective for core/BIED,CHED, ESSE, PHED Concentrations)***

(4) PHYS 27200 Electric and Magnetic Interactions or PHYS 24100 Electricity and Optics AND PHYS 25200 Electricity and Optics Laboratory ***(satisfies Science Selective for core//BIED,CHED, ESSE, PHED Concentrations)***

(4) PHYS 23300 Physics For Life Sciences I **(satisfies BIED Concentration)**

(4) PHYS 23400 Physics For Life Sciences II **(satisfies BIED Concentration)**

Required Statistics Selective Courses (3 credits):

(3) STAT 30100 Elementary Statistical Methods **(satisfies CHED, ESSE, PHED Concentrations)**

OR

(3) STAT 50300 Statistical Methods For Biology **(satisfies BIED Concentration)**

Educational Program Course Requirements (36 credits) Professional Education GPA Average ≥ 3.00 – no grade lower than C-

(3) EDCI 27000 Introduction To Educational Technology And Computing

(3) EDCI 20500 Exploring Teaching As A Career

(3) EDCI 28500 Multiculturalism And Education ***(satisfies Behavior/Social Science for University Core) (satisfies Language III/Culture/Diversity Option)***

(3) EDPS 23500 Learning And Motivation ***(satisfies Behavior/Social Science for University Core) (satisfies General Education III Option)***

(3) EDPS 26500 The Inclusive Classroom ***(satisfies Behavior/Social Science for University Core)***

(1) EDST 20010 Educational Policies and Laws

(2) EDPS 32700 Assessment Literacy

(3) EDCI 30900 Reading in Middle and Secondary School

(3) EDCI 42400 Physical Science In The Secondary Schools ***(satisfies Multidisciplinary Experience)*** **– for CHED, ESSE, and PHED Concentrations OR** EDCI 42100 The Teaching of Biology in Secondary School ***(satisfies Multidisciplinary Experience)*** **– for BIED**

(2) EDCI 42800 Teaching Science In The Middle And Junior High School

(10) EDCI 49800 Supervised Teaching (***Meets Teambuilding and Collaboration Experience***

Other Departmental /Program Course Requirements (30-36)

_____	Within Major	Calculus I Option – Select from MA 16100, MA 16500 ***(satisfies Quantitative Reasoning for core)*** [cc]
_____	Within Major	Calculus II Option – Select from MA 16200, MA 16600 ***(satisfies Quantitative Reasoning for core)***
_____	(3-4)	ENGL 10600 or ENGL 10800 - ***(satisfies Written Communication and Information Literacy for core)***
_____	(3-4)	Language I Option* ***(Select courses COULD satisfy Human Cultures Humanities for core)***
_____	(3-4)	Language II Option* ***(Select courses COULD satisfy Human Cultures Humanities for core)***
_____	Within Ed Program	Language III/Culture/Diversity Option* ***(Select courses COULD satisfy Human Cultures Humanities for core)***
_____	(3-6)	Technical Writing Option and Technical Presenting Option ***(Select courses COULD satisfy Oral Communication for core)***
_____	Within Major	Laboratory Science I Option ***(satisfies Science Selective for core)***
_____	Within Major	Laboratory Science II Option ***(satisfies Science Selective for core)***
_____	(3)	General Education I Option ***(Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core)***
_____	(3)	General Education II Option ***(Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core)***
_____	Within Ed Program	General Education II Option ***(Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core)***
_____	Within Major	STAT 30100 Elementary Statistical Methods
_____	Within Major	Computing Option
_____	Within Ed Program	Teambuilding and Collaboration Experience*
_____	(3)	Great Issues Option
_____	(1-3)	Science, Technology and Society requirement for UCC
_____	Within Ed Program	Multidisciplinary Experience* ***(Select courses COULD satisfies Science, Technology, and Society Selective for core)***
_____	(4)	MA 26100 ***(satisfies Quantitative Reasoning Selective for University Core)*** or MA 27101 Several Variable Calculus Honors
_____	(9-10)	PHYS Major Selectives (12-13 credits)
		_____ (3) PHYS/ASTR ≥ 300 level
		_____ (3-4) PHYS 53600 Electronic Techniques for Research or 58000 Computational Physics (fall)
		_____ (0) Science/Engineering ≥ 300 level (***met by Statistics Option)***
		_____ (3) Science/Engineering ≥ 300 level ***(could be met by Great Issues Option)***

*Requirement may be met with a zero credit experiential learning option. See your advisor for more information

Physics Concentration (30-31 credits) Overall GPA for Physics Concentration courses with the Departmental/Program Major Courses must be ≥ 2.5

_____	Within Dept/Program	CHM 11500 General Chemistry or CHM 12500 Intro to Chemistry I or CHM 12300 General Chemistry For Engineers I CHM 11600 General Chemistry or CHM 12600 Intro to Chemistry II or CHM 124 General Chemistry for Engineers II or
_____	(4-5)	CHM 13600 General Chemistry Honors
_____	Within Dept/Program	PHYS 17200 Modern Mechanics or 17200 Honors
_____	Within Dept/Program	PHYS 27200 Electricity and Magnetism ***(also satisfies Science Selective for University Core)*** or 27200 Honors
_____	(3)	PHYS 30600 Mathematical Methods of Physics I (fall)
_____	(3)	PHYS 30700 Mathematical Methods Of Physics II (spring)
_____	(4)	PHYS 31000 Intermediate Mechanics (fall)
_____	(3)	PHYS 33000 Intermediate Electricity and Magnetism (fall)
_____	(1)	PHYS 34000 Modern Physics Laboratory
_____	(4)	PHYS 34400 Modern Physics (fall)
_____	(3)	PHYS 36000 Quantum Mechanics (spring)
_____	(3)	PHYS 42200 Waves and Oscillation (spring)
_____	(2)	PHYS 45000 Optics Laboratory I

University Core Requirements

Human Cultures Humanities	☐		*Science, Technology & Society Selective*	☐	
Human Cultures Behavioral/Social Science	☐		*Written Communication*	☐	
Information Literacy	☐		*Oral Communication*	☐	
Science Selective	☐		*Quantitative Reasoning*	☐	
Science Selective	☐				

Note: This degree is intended to give students many options. Students need to consult with a College of Science Academic Advisor regarding requirements.

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The student is ultimately responsible for knowing and completing all degree requirements.

(Degree Works) MyPurduePlan is knowledge source for specific requirements and completion

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Revised 2/2016 (effective Fall 2016)

Science Education – Physics Concentration

Suggested Arrangement of Courses:

Credits	**Fall 1st Year**	**Prerequisite**	Credits	**Spring 1st Year**	**Prerequisite**
4	PHYS 17200*^ (HONORS)	ALEKS 85	4	PHYS 27200*^ (HONORS)	PHYS 17200, MA 16200 coreq
4	CHM 11500*^	ALEKS 75	4	CHM 11600*^	CHM 11500
5	MA 16100*	ALEKS 85	5	MA 16200*	MA 16100
4	ENGL 10600*		3-4	Language I Option*	
17			**16-17**		

Credits	**Fall 2nd Year**	**Prerequisite**	Credits	**Spring 2nd Year**	**Prerequisite**
3	PHYS 30600^ Fall only	PHYS 27200, MA 26100 coreq	3	PHYS 30700^ Spring only	PHYS 27200, MA 26100 coreq
1	PHYS 34000^	Phys 34400 coreq	3	PHYS 42200^ Spring only	PHYS 27200
4	PHYS 34400^ Fall only	PHYS 27200, MA 26100 coreq	3	STAT 30100* (Sci,Engr Selective)	
4	MA 26100*	MA 16200	3	EDCI 20500	
3-4	Language II Option	Language I Option	3	EDCI 28500* (Language III/Culture/Diversity Option)	
			3	EDCI 27000	
15-16			**18**		

Credits	**Fall 3rd Year**	**Prerequisite**	Credits	**Spring 3rd Year**	**Prerequisite**
4	PHYS 31000^ Fall only	PHYS 27200, MA 26100	3	PHYS 36000^ Spring only	(PHYS 31000 or33000), PHYS 34400
3	PHYS 33000^ Fall only	PHYS 27200, MA 26100	4 -3	PHYS 53600 (or PHYS 58000) Spring only	PHYS 27200 (or PHYS 34400, 31000)
2	PHYS 45000^	PHYS 42200	3	COM 21700*	
3	EDPS 23500* (General Education I Option)	EDCI 20500,28500 (C- or better)	3	General Education III Option	
3	EDPS 26500	EDCI 20500,28500 (C- or better)	1-3	Science, Technology, and Society	
3	General Education II Option				
18			**13-16**		

Credits	**Fall 4th Year**	**Prerequisite**	Credits	**Spring 4th Year**	**Prerequisite**
3	PHYS,ASTR ≥ 300 level	Varies	2	EDCI 42800 Spring only	EDCI 20500,28500 AND EDPS 23500, 26500 (C- or better) AND EDCI 42400
3	EDCI 42400 (Multidisciplinary Experience)	EDCI 20500,28500 AND EDPS 23500, 26500 (C- or better)	3	EDCI 30900	
3	Great Issues Option (Sci, Engr selective)	Varies	10	EDCI 49800 (Teambuilding and Collaboration Experience)	EDCI 20500,28500 AND EDPS 23500, 26500 (C- or better)
3-4	CS Option				
1	EDST 20010 Educ Policies & Law				
2	EDPS 32700 Assessment Literacy	EDPS 23500			
15-16			**15**		

*Satisfies a University Core Requirement

127 semester credits required for Bachelor of Science degree.
2.0 average in PHYS/ ASTR courses required to graduate.
2.5 average in Physics Concentration ^ courses required to graduate
3.0 average in Professional Education courses required to graduate (No grade below a C-)

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The student is ultimately responsible for knowing and completing all degree requirements.
Degree Works is knowledge source for specific requirements and completion

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