Science Education - Physics Concentration
License: Physics

Grade Levels 5-12
REPA 3

Purdue University Course Catalog 2023-2024

			Credit Hours
CONTENT			**58-64**

Overall GPA for Physics Concentration courses with the Departmental/Program Major Courses must be at least 2.50/4.00

Required Science Education Core Courses			
Required Chemisty Course (Select One)			
CHM	11500	General Chemisty **OR**	4
CHM	12500	Introduction to Chemisty	5
Required Computing Option (Select one)			
CS	15900	C Programming **OR**	3
CS	17600	Data Engineering in Python **OR**	3
CS	17700	Programming with Multimedia Objects **OR**	4
CS	18000	Problem Solving and Object-Oriented Progrmming	4
Required Calculus Courses (Select One Pair)			
MA	16100	Plane Analytic Geometry and Calculus I	5
MA	16200	Plane Analytic Geometry and Calculus II	5
		OR	
MA	16500	Analytic Geometry and Calculus I	4
MA	16600	Analytic Geometry and Calculus II	4
Required Physics Course (Select One)			
PHYS	17200	Modern Mechanics (HONORS version required) **OR**	4
PHYS	27200	Electric and Magnetic Interactions (HONORS version required)	4
Required Statistics Course			
STAT	30100	Elementary Statistical Methods	3
Physics Concentration			
PHYS	30600	Mathematical Methods of Physics I	3
PHYS	30700	Mathematical Methods of Physics II	3
PHYS	31000	Intermediate Mechanics	4
PHYS	33000	Intermediate Electricity and Magnetism	3
PHYS	34000	Modern Physics Laboratory	1
PHYS	34400	Modern Physics	4

PHYS	36000	Quantum Mechanics	3
PHYS	42200	Waves and Oscillations	3
PHYS	45000	Intermediate Laboratory	2
Select One			
CHM	11600	General Chemistry **OR**	4
CHM	12600	Introduction to Chemistry II **OR**	5
CHM	13600	General Chemistry Honors	4
Selectives (6-7 credits)			
PHYS	53600	Electronic Techniques for Research **OR**	4
PHYS	58000	Computational Physics	3
	AND		

PHYS/ASTR higher than 300-level **OR**
Science/Engineering higher than 300-level (met with STAT 30100) **OR**
Science/Engineering higher than 300-level (met with Great Issues Option)

			Crredit Hours
PROFESSIONAL EDUCATION			**43-54**

All Professional Education courses, including University Concentration courses, are calculated into the Professional Education GPA ("B" average with no grade lower than a "C")

Required for TEP Admission

EDCI	20500	Exploring Teaching as a Career	2
EDCI	28500	Multiculturalism and Teaching	2
EDST	20010	Educational Policies and Laws	1

Core Courses

EDCI/EDPS	20001	Special Populations Seminar: Focus On Students with Disabilities and Differentiation Approaches	1
EDCI/EDPS	20002	Special Populations Seminar: English Language Learners and Students with Gifts and Talents	1
EDCI	27000	Introduction to Educational Technology and Computing	1
EDCI	30900	Reading in the Middle and Secondary Schools: Methods and Problems	1-3
EDCI	35000	Community Issues & Applications for Educators	1-3
EDCI	37001	Teaching and Learning English as a New Language	2-3
EDPS	23500	Learning and Motivation	2-3
EDPS	24000	Children with Gifts, Creativity, and Talents	1
EDPS	24800	Differentiating Curriculum and Instruction	1
EDPS	26501	The Inclusive Classroom	2
EDPS	32700	Classroom Assessment	1-3
EDPS	36201	Positive Behavioral Supports	2-3
EDPS	43010	Secondary Creating and Managing Learning Environments	2-3

Methods Courses

EDCI	42400	The Teaching of Earth and Physical Science in Secondary Schools	3
Select One			
EDCI	42800	Teaching Science in the Middle and Junior High School **OR**	2
EDCI	55800	Integrated Science, Technology, Engineering, and Mathematics (STEM) Educations Methods-Secondary	3

Student Teaching

Completion of education methods courses and other Milestone requirements for the major area and admittance to teacher education required prior to this course.

EDCI	49800	Supervised Teaching	12

University Concentrations

Choose one course from the concentrations below that was not already taken as a required course. Students can elect to take additional coursework to complete a full concentration if they choose, but it is not required.

English Language Learners (Licensure Eligible)			*12-13*
EDCI	37001	Teaching and Learning English as a New Language	2-3
EDCI	51900	Teaching Enlish Language Learners	3
EDCI	52600	Language Study for Educators	3
EDCI	55900	Academic Langague and Content Area Learning	3
EDCI/ EDPS	20002	Special Pop Sem: English Lang Learners and Students with Gifts **OR** Special Pop Sem: English Lang Learners and Students with Gifts	1

High Ability (Licensure Eligible)			*13-15*
All courses must be completed with a B- or better average			
EDCI/ EDPS	20001	Special Pop Sem: Focus on Students with Disabilities and Differentiation **OR** Special Pop Sem: Focus on Students with Disabilities and	1
EDCI/ EDPS	20002	Special Pop Sem: English Lang Learners and Students with Gifts **OR** Special Pop Sem: English Lang Learners and Students with Gifts	1
EDPS	24800	Differentiating Corriculum and Instruction	1
EDPS	49500	Practicum in Gifted, Creative, and Talented Education	3
EDPS	54200	Curriculum and Program Development in Gifted Education	3
EDPS	54500	Social and Affective Development of Gifted Students	3
Select one			
EDPS	24000	Children with Gifts, Creativity, and Talents **OR**	1
EDPS	54000	Gifted, Creative, and Talented Children	3

Special Education (Non-Licensure)			*12-13*
EDCI/ EDPS	20001	Special Pop Sem: Focus on Students with Disabilities and Differentiation **OR** Special Pop Sem: Focus on Students with Disabilities and	1
EDCI/ EDPS	20002	Special Pop Sem: English Lang Learners and Students with Gifts **OR** Special Pop Sem: English Lang Learners and Students with Gifts	1
EDPS	21100	Special Edcation Law, Policy, and Ethical Guidelines	3
EDPS	26501	The Inclusive Classroom	2
EDPS	36201	Positive Behavioral Supports	2-3
EDPS	41700	Special Education Knowledge and Skills for General Educators	3

Applied Behavioral Analysis (Non-Licensure)			*12*
EDPS	34100	Introduction to Philosophical Underpinningd and Concepts of Behavior	3
EDPS	34200	Applied Behavior Analysis - Assessment and Intervention	3

EDPS	44100	Introduction to Ethics and Practice of Applied Behavior Analysis	3
EDPS	44200	Advanced Intervention in Applied Behavior Analysis	3

Licensure Information

All Purdue University Program and Indiana Department of Education requirements must be met for recommendation for Indiana licensure.

After all requirements are met, Purdue graduates will be considered eligible to apply to the Indiana Department of Education for licensure under REPA 3 in:

Physics (5-12)
Addition in Blended and Online Teaching (5-12)
Optional: Addition in High AbilityEducation (P-12) or Teachers of English Learners (P-12) if chosen university concentration requirements are complete

Visit the Indiana Department of Education website for more information about what courses can be taught once licensed in this area.

Please reference the 2023-2024 Physics Education Guidelines and Requirements and the 2023-2024 Science:Physics Education Checklist for more information.