

PHYSICS & SECONDARY EDUCATION DUAL MAJOR – (PHYS_BS_02)

BS DEGREE – 32 COURSE UNITS

MAJOR COURSE REQUIREMENTS

Fulfill via completion of course requirements in four categories

Core Courses in Physics (7)	Major Option Courses (10)	Required Courses for Secondary Education ¹ (10)	Correlate Courses (2)
PHY 099 – Orientation Seminar (0 cr.)	5 Physics option courses ^a	CHE 201 – General Chemistry I ¹	MAT 127 – Calculus A
PHY 203 – Physics I for Physicists	5 Specialization options ^b	SED 224 - Adolescent Learning and Development ¹	MAT 128 – Calculus B
PHY 204 – Physics I for Physicists	1 Capstone course ^c	EFN 299 - Schools and Communities ¹	
PHY 306 – Mathematical Physics	PHY 299 – Research Fundamentals Seminar (0.25 CU)	SPE 323 - Secondary Content Literacy in Incl. Classes ¹²	
PHY 321 – Modern Physics		PHY 390 - Methods of Teaching Science ^{1,2}	
PHY 401 – Classical Mechanics		EFN 398 - Historical & Political Contexts in Schools	
PHY 416 – Thermodynamics		SED 399 - Pedagogy in Secondary Schools ^{1,2}	
PHY 421 – Electromagnetic Theory I		PHY 490 - Student Teaching (2 course units) ¹	
a) All 5 options must be 200+ level PHY courses, including PHY 390 and PHY 490 (2 course units). 1 course must include a lab. 1 course may be independent research.		SED 498 – Secondary Education Capstone	
b) 3 courses may be any course from the school of science or engineering (one being CHE 201), 2 courses may be from any pre-set physics specialization list (here SPE 323 and SED 399) or any 200+ level course in the Schools of Science or Engineering		1) Eight of the ten secondary education requirements also count toward liberal learning or physics major requirements. See http://physics.tcnj.edu/academics/programs/ for more detail and course sequences.	
c) PHY 493, PHY451, or SED 498 (may double count within Physics options or Specialization options)		2) These 3 courses are co-requisites and are typically undertaken in the fall of the 3 rd year as the junior practicum experience (JPE)	
<i>Seven-course prescribed major specializations may be chosen from within major option and specialization courses. Prescribed specializations are available in Pre-graduate Physics, Biomedical Physics, Computational Physics, Geophysics, Astrophysics, and Physical science-Secondary Education. These are outlined on the department website, http://physics.tcnj.edu/academics/programs/.</i>			

LIBERAL LEARNING REQUIREMENTS

Fulfill via completing course requirements in one of four options:

Option 1 – Breadth Distribution from Approved List

Arts & Humanities (2 or 3 courses)	Social Science & History (2 or 3 courses, but 2 fulfilled by Secondary Education courses)	Natural Sciences & Quantitative Reasoning (Requirements fulfilled by major course)
Literary, Visual, or Performing Arts course	Behavioral, Social, or Cultural Perspectives course (satisfied by SED 224)	Natural Science course (with lab)
World Views/Ways of Knowing course	Social Changes in Historical Perspective course	Quantitative Reasoning course
Literary, Visual, or Performing Arts course <i>or</i> World Views/Ways of Knowing course	Behavioral, Social, or Cultural Perspectives course (satisfied by EFN 299)	Natural Science course <i>or</i> Quantitative Reasoning course

Option 2 – Designated Interdisciplinary Concentration (see <https://liberallearning.tcnj.edu/courses-information/interdisciplinary-concentrations/>)

Option 3 – Self-designed Interdisciplinary Concentration (see <https://liberallearning.tcnj.edu/courses-information/interdisciplinary-concentrations/>)

Option 4 – Second Major

CIVIC RESPONSIBILITIES, PROFICIENCIES & ELECTIVES

Fulfill via completion of course requirements in three categories

Civic Responsibilities	Intellectual & Scholarly Growth	Electives
IDS 103 – Community Engaged Learning (zero-credit requirement)	IDS 102 – Information Literacy online tutorial (zero-credit requirement) (WRI 101 or 102 may be required freshmen year)	Elective course
Concepts – (fulfilled through liberal learning, other courses, or sustained experience)	Writing Intensive Courses	Elective course
Gender	FSP First Seminar course (satisfies one liberal learning requirement)	
Global Perspective	Mid-level course (usually fulfilled by option or specialization course)	
Race & Ethnicity	Capstone course (usually fulfilled by option or specialization course)	
	Second Language (0-2 courses)	