



Program Coordinators: K. Kothapalli for Physics and R. Gilmore for Education

Teacher Education - PHYSICS

The B.S. in Physics with Tennessee teaching licensure (Grades 6-12) is available with modifications to the BA in Physics and the King Core Curriculum, as well as successful completion of the Secondary Education minor. Licensed teachers in secondary education are in great demand in all fifty states, and the areas of science and mathematics are considered critical need areas in K-12 public education by all states.

Declaration of the Education minor and early and frequent advisement is essential to timely completion of degree and licensure requirements. Students seeking secondary teacher licensure will be assigned a secondary education advisor in the Department of Teacher Education, in addition to their major advisor. See the “Admission to the Teacher Education Program” section of this catalog or contact the Administrative Assistant in School of Education for eligibility criteria, admissions procedures, and timelines.

Student Learning Outcomes for Teacher Education

In addition to the discipline specific student learning outcomes for Physics, teacher candidates will demonstrate mastery of the following Student Learning Outcomes, which are aligned with the both Tennessee Teacher Licensure Standards: Professional Education and InTASC Standards: Interstate Teacher Assessment and Support Consortium.

1. The pre-service teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and creates learning experiences that make the discipline(s) accessible and meaningful for learners to assure mastery of the content.
2. The pre-service teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.
3. The pre-service teacher understands and uses a variety of instructional strategies to encourage learners to develop deep understanding of content areas and their connections and to build skills to apply knowledge in meaningful ways.

Core Curriculum Requirements

Physics majors seeking teaching licensure should fulfill specified categories of the King Core Curriculum by taking the courses indicated below. See the “The Core Curriculum” section of the catalog for additional details on fulfilling other categories in the Core.

Science

CHEM 1110

General Chemistry I..... 4 s.h.

Quantitative Literacy

MATH 2350

Calculus I 4 s.h.

BA in Physics Major Requirements for Teaching Licensure

PHYS 2210 and 2220	
General Physics I	4 s.h.
PHYS 2220	
General Physics II.....	4 s.h.
PHYS 3010 (Co-Requisite MATH 3430 Differential Equations)	
Theoretical Mechanics	4 s.h.
PHYS 3030 (Co-Requisite MATH 2370 Vector Calculus)	
Electricity and Magnetism.....	4 s.h.
PHYS 3060	
Introduction to Modern Physics.....	4 s.h.
PHYS 3502	
Experimental Methods.....	2 s.h.
PHYS 4201	
Advanced Topics	2 s.h.
<i>Choose from the following courses</i>	4 s.h.
BIOL 2110	
General Biology I (4 s.h.)	
BIOL 2120	
General Biology II (4 s.h.)	
<i>Choose from the following courses</i>	4 s.h.
ITEC 2010	
Introduction to Programming (4 s.h.)	
MATH 1500	
Cryptography: The Science of Secret Writing (4 s.h.)	
MATH 2100	
Programming with Graphics, Symbols, & Text (2 s.h.)	
MATH 2480	
History of Mathematics (2 s.h.)	
MATH 3120	
Number Theory (2 s.h.)	
MATH 2360	
Calculus II	4 s.h.
MATH 2370	
Vector Calculus	4 s.h.
MATH 3430	
Differential Equations.....	4 s.h.
IDST 4500	
Interdepartmental Science and Math seminar.....	<u>2</u> s.h.
Total Science Credits Required	46 s.h.

Secondary Education Minor

EDUC 2030	
Introduction to Teaching, Grades K-12	2 s.h.
EDUC 2031	
Introduction to Teaching Practicum, Grades PreK-12	1 s.h.
EDUC 2100	
Survey of Exceptional Children	4 s.h.

EDUC 2370	
Reflective Teaching: Planning for Classroom Instruction.....	3 s.h.
EDUC 2900	
Foundations of Education.....	3 s.h.
EDUC 2950	
Technology for Teachers	2 s.h.
EDUC 3390*	
Secondary Curriculum and Methods	3 s.h.
EDUC 3590*	
Content Area Reading	3 s.h.
EDUC 3600*	
Assessment and Evaluation	3 s.h.
EDUC 4490*	
Student Teaching, Grades 6-10.....	5 s.h.
EDUC 4500*	
Student Teaching, Grades 9-12.....	5 s.h.
EDUC 4940	
Introduction to edTPA.....	1 s.h.
EDUC 4950*	
Capstone Seminar, Grades K-12.....	2 s.h.
PSCI 2120	
Cultural Diversity in America	0-4 s.h.
PSYC 3320	
Adolescent Development.....	4 s.h.
EDUC 4990*	
Comprehensive Assessment (passing state-required Praxis II exams, successful portfolio completion, successful portfolio defense).....	0 s.h.

*Requires admittance to the Teacher Education Program

Summary of Total Credits for BA in Physics with Licensure

Core Curriculum	42 s.h.
Major Requirements.....	46 s.h.
Secondary Education Minor.....	45 s.h.
Minimum to Complete 6-12 Licensure Program in Physics	133 s.h.