

## **COURSES:**

### **PHYSICS MAJOR:**

12.75 course units, including:

PHYS 2115	University Physics I
PHYS 2125	University Physics II
PHYS 2154	Special Relativity
PHYS 2164	Modern Physics
PHYS 2404	Optics
PHYS 3014	Classical Mechanics
PHYS 3054	Electricity and Magnetism
PHYS 3101	Research in Physics
PHYS 4064	Quantum Mechanics
PHYS 4102	Senior Research in Physics

Plus 4 allied courses:

MATH 1304	Calculus I
MATH 1324	Calculus II
MATH 2084	Differential Equations
MATH 2144	Calculus III

To become certified to teach physics, students must complete the following:

Physics Major  
Education Minor

### **PHYSICS MINOR:**

8 course units, including:

PHYS 2115	University Physics I
PHYS 2125	University Physics II
PHYS 2154	Special Relativity

2 electives

Plus 3 allied courses:

MATH 1304	Calculus I
MATH 1324	Calculus II
MATH 2144	Calculus III

# PHYSICS

**TRANSYLVANIA**  
UNIVERSITY

**Office of Admissions**

300 North Broadway  
Lexington, KY 40508  
(800) 872-6798  
[transy.edu](http://transy.edu)



### ABOUT THE MAJOR:

Transylvania's physics program teaches students to describe nature mathematically by solving problems related to the physical world.

Studying physics at Transylvania offers decided advantages. Our students get one-on-one attention from professors, who set up and teach the student labs. The program also offers on-site research opportunities for all of our majors.

As a physics major, you will conduct a research project as part of a senior capstone experience. Preparation for this begins in your sophomore or junior year, when you will be paired with a senior in one of our labs. You will also be encouraged to participate in a summer research project at an outside lab.

### PRE-ENGINEERING:

If your goal is to work in an engineering field, Transylvania offers two tracks to prepare for a career:

Transylvania has a unique partnership with the University of Kentucky College of Engineering that lets you take foundational engineering courses at UK while at Transy. You can start those courses as early as your sophomore year, and they will count toward your degree at Transylvania. The classes provide you with the necessary prerequisites for graduate study in engineering, and they won't cost you any extra—they're included in our tuition and fees.

Students must have a 3.0 cumulative GPA and sophomore standing to participate in the pre-engineering program, no matter your major. Our pre-engineering advisor will help you select your courses and prerequisites.

### 3+2 DUAL-DEGREE ENGINEERING PROGRAM

You can receive both a B.A. degree from Transylvania and a B.S. degree in engineering from the University of Kentucky College of Engineering. This program requires three years of study at Transylvania and two additional years at UK.

### OPPORTUNITIES IN THE MAJOR:

Society of Physics Students  
Sigma Pi Sigma (national honor society)

### COURSES OF SPECIAL INTEREST:

Quantum Mechanics  
Conceptual Physics  
Electricity and Magnetism  
Measuring the Universe  
Optics  
Special Relativity

### POSSIBLE CAREER OPTIONS:

Astronomer  
Engineer  
Professor  
Research Scientist  
Data Analyst

### WHERE OUR GRADUATES HAVE STUDIED:

Duke University  
Old Dominion University  
Tufts University  
University of Kentucky  
University of Pennsylvania  
Vanderbilt University  
University of Colorado Boulder  
Ohio State University

### POSITIONS OUR GRADUATES HAVE HELD:

President and CEO, Westinghouse Electric Company  
Manager, Western Electric Company  
Physicist, NASA/Marshall Space Flight Center  
Professor, Wright State University  
Medical Physicist, Saint Joseph Health System

### FACULTY:

**Jamie Day**, Professor of Physics;  
Program Director  
jday@transy.edu

**Mostafa Tanhayi Ahari**  
Associate Professor of Physics  
mtanhayi@transy.edu

"A lot of our students have the upper hand once they get to graduate school because they've already been in the lab. At larger schools, most students wouldn't have had a chance to do this type of research."

Jamie Day, professor of physics