

PHYSICS—ENGINEERING EMPHASIS

Physics with an engineering emphasis is a unique field that uses the principles of physics to develop new technologies and innovations and find solutions to common engineering problems. It offers you a multitude of possibilities, making it an especially good degree program if you are interested in physics but are unsure of your specialization.

WHAT IS PHYSICS WITH AN ENGINEERING EMPHASIS?

It is a cross-disciplinary science that ...

- Draws from physics, mathematics and engineering.
- Bridges the gap between physics and math theories and the practical aspects of engineering.
- Researches, develops and designs new technologies.
- Leads to better engineering solutions.



This degree program differs from a traditional engineering program because it offers:

- More flexible career options.
- A stronger scientific background.
- Better preparation for specialized graduate programs in engineering or physics.
- Classes that others don't take until their graduate studies.

WHY MAJOR IN PHYSICS (ENGINEERING EMPHASIS)

- Pursue a graduate degree in physics, engineering, astronomy or related disciplines.
- Work in a high-tech sector such as energy, aerospace or health care.
- Teach STEM classes for middle or high schoolers.
- Develop and research new technologies and products.
- Become an entrepreneur.

SEEK CAREERS IN:

- Aerospace
- Biophysics
- Electronic materials
- Lasers
- Mechatronics
- Medical imaging
- Plasmas
- Renewable energy
- Robotics
- Superconductivity
- Transportation

PHYSICISTS ARE:

- Analytical
- Logical
- Critical thinkers
- Problem-solvers
- Skilled at math and science
- Good with computers
- Team players



WHAT TO EXPECT IN A PROGRAM OFFERING PHYSICS, ENGINEERING EMPHASIS

As a physics student, pursuing an engineering emphasis, you'll learn to apply theoretical physics and math concepts to the more practical field of engineering. Your classes will provide you with the foundation for creating better, more innovative solutions to some of today's biggest problems. Plus, engineering physics offers the ideal preparation for those wanting to pursue a graduate degree in physics or engineering or careers in scientific research or education.

THIS PROGRAM MAY BE A GOOD FIT IF YOU...

- Are interested in pursuing a master's degree in engineering or physics.
- Have a strong aptitude in science and math and want to apply them to technical problems.
- Enjoy designing and conducting experiments.
- Have a knack for scientific writing and presentation.
- Can analyze and interpret data.
- Work well with others.

CLASSES MAY INCLUDE:

- Calculus
- Chemistry
- Electricity and magnetism
- Electronics
- Laboratory physics
- Mathematical methods
- Mechanics
- Nuclear and particle physics
- Optics
- Quantum mechanics
- Research methodologies
- Structured programming
- Thermodynamics

LOOK FOR A PROGRAM THAT OFFERS:

- State-of-the-science labs for research and independent study.
- Hands-on experience with high-tech equipment in optics, robotics, imaging, audio, nanoscience and astronomy.
- Internship opportunities with organizations in your career field.
- Advisers to help you develop a degree plan based on your interests and skills.

To learn about Physics Engineering emphasis at the University of Northern Colorado, visit us at [UNCO.EDU/PROGRAMS/PHYSICS-ASTRONOMY](https://unco.edu/programs/physics-astronomy)

Before you declare your major:

- Take a career assessment test to match your skills with potential jobs.
- Find a mentor who can give you insider insights on their career.
- Shadow an engineer to determine if you enjoy the work and if it interests and inspires you.

“There is no science in this world like physics. Nothing comes close to the precision with which physics enables you to understand the world around you.”

—Neil deGrasse Tyson, astrophysicist and author



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