Yeshiva University
Career Center

GUIDE TO MAJORS AT YESHIVA: PHYSICS

Choosing a major can be stressful, but it is important to understand that you can pursue almost any career regardless of which major you choose. While there are some exceptions, most entry-level positions simply require general transferable skills—those that can be learned in one setting and applied in another. Relevant experience through internships and activities is generally more important to employers than a major. It is best to choose an area that you find interesting and where you have the ability to do well.

What is the Physics Major?

According to the YU course catalogue, "Physics is the basic science that explains many of the everyday phenomena we experience. It encompasses the study of the physical universe from the largest galaxies to the structure of matter. Its concepts—from relativity to quantum mechanics—challenge the imagination. Physics and the technologies it develops shape chemistry, biology, medicine, electronics, and geology, as well as the applied fields of optics, nanotechnology, computer science, and engineering."

What can I do with a Major in Physics?

For many students majoring in physics, a B. A. degree is the first step towards their career in science and research. Professional physicists are likely to join ranks of academia as professors at colleges or universities, join scientific staff of National Laboratories, or become researchers at industrial companies. Those professions require advanced degrees (M. Sc. and Ph.D.) that are obtained in graduate schools. Common career paths in Physics with a B.A. degree include such jobs as research group members in science and technology fields, as well as science teachers in schools. These professions also require additional post-graduate training.

The following areas are just a few examples physics graduates choose from, when they decide on their future specialty in physics: **Nuclear Physics,** whose graduates may end up working in careers involving nuclear energy, archeological dating, smoke detectors, and nuclear medicine; **Geophysics,** whose graduates may focus on seismology, geothermometry, hydrology, and gravity and geodesy, with applications in building highways and bridges, studying earthquakes, urban planning, and archaeology; **Atomic, Molecular, and Optical Physics,** whose graduates study matter and light interactions at the atomic level; **Astronomy,** whose graduates might study the relationships between the stars and planets and other universe phenomena, or might be called in to solve problems connected to space fight navigation or satellite communications; **Astrophysics,** whose graduates deal with the physics of the stars, systems, and interstellar material, including how to get to other planets, how to build things in new/safer ways, or how human body adapts to new environments; **Space Physics**, whose graduates may study satellites for communication, broadcast, weather monitoring, remote sensing, positional information, or military; **Physics Education**, whose graduates go on to teach in schools and colleges; **Engineering Physics,** whose graduates go onto building bridges, skyscrapers, airplanes, electrical systems, and may work in construction, chemical, food, aerospace, energy, fuel, metallurgy, textiles, clothing, computers and transportations; and **Computer Science,** who graduates may enter graphics, software, artificial intelligence, data processing, and computer games. Most of these positions will require graduate work, at least a Masters and often a PhD.

However, the problem solving and analytical reasoning skills gained through a major in physics can also be applied to a wide variety of career areas including the physical sciences, research, law, medicine, and government. Some occupations to consider as physics major include:

Business
- Computer Programmer
- Consultant
- Equity Research Analyst
- Information Systems Specialist
- Investment Banker
- Market Researcher
- Network Administrator
- Operations Manager
- Operations Research Analyst
- Paralegal
- Product Developer
- Real Estate Developer
- Risk and Insurance Specialist

Graduate Study Required
- Architect
- Astronomer
- Engineer
- Lawyer
- Software Engineer
- Systems Analyst
- Technical Recruiter
- Technical Writer
- Telecommunications Manager

Social Service
- Environmental Advocate
- Legislative Assistant
- Nonprofit Administrator
- Teacher
- Urban Planner

- Meteorologist
- Oceanographer
- Physician
- Professor
- Radiologist
- Researcher

Skills and Abilities

Through the study of physics students strive to understand how things work. Physics students learn to think quantitatively and to develop strong analytical skills that are widely valued in many professions. The following list provides a sample of the potential skills acquired through the study of physics.

Analysis
- Interpreting information
- Evaluating ideas and theories
- Reasoning logically
- Thinking creatively
- Using quantitative analysis
- Assessing and solving problems

Communication
- Articulating and defending positions
- Describing and evaluating issues
- Presenting thoughts, ideas, and information
- Writing in a clear concise manner

Research
- Conducting experiments
- Compiling research
- Making and assessing observations
- Organizing and interpreting scientific data

Additional Information

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For those students interested in a career in teaching Physics there is a joint B.A./M.A. program in Teaching Math & Science with NYU Steinhardt School of Education. Students must be majoring in Biology, Chemistry, Physics, or Math in order to apply.

Students interested in health related careers may also wish to explore the joint programs offered between Yeshiva College and several external graduate programs in the fields of Optometry, Physical Therapy, Physician Assistant, and Podiatry. Visit https://yu.edu/yeshiva-college/combined-joint-programs/ for details.