



Physics

FROM STUDY TO SKILLS:

All academic programs offered at the UM help students develop valuable transferable skills. The goal of Physics is to understand the behavior of matter and energy on every level: from the origins of the universe in the Big Bang to the interior of atoms in your computer screen. In pursuing a degree in Physics, you will learn theoretical and experimental techniques as you study the laws and properties of motion, heat, light, electricity, radiation, magnetism, particles, and matter.

Students who concentrate in physics develop the ability to solve problems by working with their smaller components. They learn to summarize what is known about physics problems through research, acquire shop and technical laboratory skills necessary to answer questions experimentally, and learn mathematical and computer methods to solve problems in theoretical physics. The following list presents some examples of the abilities associated with physics majors.

Related fields include Astronomy, Chemistry, Mathematics, and Computer Science.

SKILLS AND ABILITIES

Problem-Solving Skills

- Breaking problems into their component parts
- Performing calculations
- Modeling complex systems mathematically
- Data analysis
- Reviewing relevant literature
- Designing equipment to perform a desired measure
- Creating computer simulations

Communication Skills

- Summarizing research findings
- Writing research proposals
- Giving seminars on physics topics
- Teaching basic physics ideas
- Preparing technical reports
- Contributing to project teams
- Radio, television and cellular communication

Technical Skills

- Metal shop abilities
- Equipment design
- Electronics design and repair
- Cryogenic methods
- Computer programming
- Medical imaging techniques

Research/Project Development Skills

- Reviewing literature
- Developing theories
- Testing hypotheses
- Organizing ideas & materials
- Defining/developing/generating ideas
- Integrating theoretical approaches

BUILDING YOUR SKILLS OUTSIDE THE CLASSROOM

Employers seek out individuals who can demonstrate excellent verbal and written communication skills, teamwork and interpersonal skills, initiative, and a strong work ethic. Student organizations and campus employment, including research with Physics Department faculty members, offer valuable opportunities to add to the skills you are developing in your classes. Most

concentrations sponsor specific student groups like an undergraduate organization or an honor society. Other options include study abroad, off-campus employment or volunteering in the community. Finally, a summer internship may be the best way of all to test out a career field and develop marketable skills.

FROM SKILLS TO CAREER

Students graduating with a Bachelor's degree in Physics are prepared for advanced study in physics or professional school. Many graduates work in related technical and

scientific occupations, while others combine their physics expertise with additional skills in such areas as industry, education, medicine and finance.

Problem-Solving Skills

Science advisor
Mathematician 
Flight management analyst
Test engineer
Financial analyst
Attorney/Lawyer 
Physician 

Communication Skills

Science librarian
K-12 teacher
College instructor 
Museum curator
Sales representative
Technical writer

Technical Skills

Cardiac imaging researcher
Technician: laser, accelerator, electronic
Computer specialist
Television engineer
Automotive engineer
Computer systems engineer
Space technician
Satellite data technician
Medical physicist 
Medical device designer
Optometrist 
Meteorologist  

Research/Project Development Skills

Physicist
Research scientist
Laboratory manager
College administrator
National lab researcher
Laboratory technician
Oceanographer  
Astronomer
Hydrologist  

 = Green Jobs

 = Further Study Required

For more career information, see O*NET at online.onetcenter.org

CONCENTRATION REQUIREMENTS

The Physics concentration is normally declared after prerequisite courses have been completed. Due to the sequential nature of course offerings, students should use the LSA Bulletin or talk with concentration advisors to determine the appropriate course of study. Students interested in physics are urged to contact the Physics Department as soon as possible to discuss placement in a research activity and to get advice about course sequencing and research skill training.

Department of Physics

450 Church Street
734-764-5539
lsa.umich.edu/physics

Newnan Advising Center

1255 Angell Hall
734-764-0332
lsa.umich.edu/advising

NEXT STEPS/RESOURCES

To begin connecting to professionals in fields that interest you, create your own LinkedIn account:

careercenter.umich.edu/article/getting-started-linkedin

To identify internships or job opportunities, visit Career Center Connector:

careercenter.umich.edu/article/c3

Maize Pages list hundreds of organizations for students to get involved in: maizepages.umich.edu

On-campus jobs (work-study and non work-study jobs) are listed at:

studentemployment.umich.edu/JobX_Home.aspx

Connect to Community lists volunteer opportunities in local organizations: connect2community.umich.edu

The Career Center

3200 Student Activities Building
734-764-7460
careercenter.umich.edu
facebook.com/careercenter.umich
twitter.com/careercenter
linkedin.com/company/the-career-center-at-the-university-of-michigan

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