Educating big thinkers, change-makers, and leaders since 1854.

AWARDS AND SCHOLARSHIPS
We offer more than ten merit-based awards and scholarships for students studying physics, ranging from first-years to seniors, some covering full tuition. More information can be found at: hamline.edu/clas/physics.awards-honors/

KAY MALMSTROM LECTURE IN PHYSICS
Every year Hamline hosts an annual symposium on contemporary issues and research in physics given by a distinguished scholar in the field. These symposiums are open to the public, and Hamline Physics students have extra opportunities throughout the lecturer’s visit to connect with and learn from them.

COMMUNITY ENGAGEMENT
Students will have the opportunity to participate in community education projects with Hamline Elementary and our yearly Innovation and Renewable Energy camps for high school students.

OUR VISION
To educate a community of leaders, researchers, and problem solvers in physics and related fields, so that they will be recognized for their competence, success, and creative solutions that positively impact both local and broader communities.

OUR MISSION
We are committed to aiding students in the understanding of the laws of nature, so that they are able to develop and apply innovative solutions to solve a broad range of practical problems. Our goal is to provide students with an engaging liberal arts education utilizing strong connections with community organizations and industries. We offer collaborative research and facilitate internship opportunities for our students and pride ourselves in preparing them for careers or graduate study in physics and related fields.

FACULTY AND STAFF

**DR. JERRY ARTZ**, Professor, Radiation Safety Officer, MAAC Faculty Rep, jartz@hamline.edu
Research Interests: nuclear physics; alternative energy resources & policy; physics of the environment; radiation safety; medical impairment ratings.

**DR. BRUCE BOLON**, Professor bbolon@hamline.edu
Research Interests: magnetic properties of multilayered thin films; medical impairment ratings; determining the suitability of various materials for potential use in spintronic devices.

**DR. LIFENG DONG**, Emma K. and Carl R. N. Malmstrom Endowed Chair in Physics, Professor, Department Chair ldong03@hamline.edu
Research Interests: nanoscale materials & devices (i.e., solar cells, supercapacitors, batteries, fuel cells, biosensors).

**DR. BENJAMIN GOLD**, Laboratory Coordinator and Instructor bgold01@hamline.edu
Research Interests: cosmology; statistics and data analysis; early universe physics.

**DR. ANDY RUNDQUIST**, Professor, Associate Dean of CLA arundquist@hamline.edu
Research Interests: ultrafast optical pulse generation, characterization, and optimization; next-generation particle accelerators; modeling.

**DR. KEVIN STANLEY**, Lecturer mstanley01@hamline.edu
Research Interests: condensed matter physics; quantum mechanical effects in surface physics; field emission.

**DR. RICHARD PONTINEN**, Emeritus Professor of Physics
Dr. Pontinen maintains strong ties to the physics department and the university as a whole. The scholarship he generously established continues to provide funding for several students each year.

**PHYSICS DEPARTMENT CONTACT INFORMATION**

LIFENG DONG
physics@hamline.edu
651-523-2634
1536 Hewitt Ave
St. Paul, MN 55104
hamline.edu/clas/physics
Start your Career in Engineering with a Physics Degree

The Benefits of Getting Your Physics Degree First

A physics background, especially from a liberal arts school like Hamline, helps tremendously with career advancement. It’s a great stepping stone to a master’s degree in engineering, which can help you go much further than you could with an engineering bachelor’s alone. In addition to problem-solving skills, we focus on broadly applicable skills like collaboration and giving presentations, which prepare our students for interviews and working with others.

It is quite common for a student’s interests to shift during their studies, which can be difficult in engineering due to the specialization of the field. However, physics provides students with a general problem-solving background that prepares them well for almost any engineering field.

PHYSICS DEGREE OPTIONS

Bachelor of Science (BS) Degree
This major is intended for students planning to proceed to graduate work in either physics or engineering. It focuses both on high-level physics courses and on providing a breadth of science education.

Bachelor of Arts (BA) Degree
This major can be done in three years and is intended for students who plan to double major. It focuses on core physics concepts and skills with broad applications.

Minor
The minor is intended for students who have an interest in physics but do not intend to pursue a career in physics or engineering. For example, it is a helpful transcript addition for students pursuing medical school or patent law.

SUGGESTED FIRST-YEAR SCHEDULE

Fall
FYSEM 1010 (required)
PHYS 1230
MATH 1170
CHEM 1130**
or elective

Spring
FYW 1120
PHYS 1240
MATH 1180
CHEM 1140**
or elective

**CHEM 1500 counts as CHEM 1130 & 1140

SUGGESTED FIRST-YEAR SCHEDULE

Fall
FYSEM 1010 (required)
PHYS 1230
MATH 1170
CHEM 1130**
or elective

Spring
FYW 1120
PHYS 1240
MATH 1180
CHEM 1140**
or elective

**CHEM 1500 counts as CHEM 1130 & 1140

APPLIED PHYSICS DEGREE OPTIONS

BS with an Emphasis in Energy and Environmental Science
This track is intended for students interested in studying energy resources, sustainability, and environmental issues, preparing them for graduate programs and careers in a variety of energy and environmental-related fields.

BS with an Emphasis in Engineering
This track is intended for students interested in pursuing a career in engineering, whether they intend to proceed to graduate school or directly into a professional position.

BS with an Emphasis in Materials Science
This track is intended for students interested in pursuing a career in the discovery, design, and development of new materials. We have had many physics majors proceed to graduate school in materials science at UMN, as well as finding positions in the field.

BA with an Emphasis in Computation
This track is intended for students interested in physics who seek careers that utilize their scientific education in a computational field, such as signal processing, computational modeling, and actuarial jobs.

BA with an Emphasis in Innovation
This track is intended for students interested in combining their scientific education with innovative business practices in both established and entrepreneurial venues.

RESEARCH FACILITIES AND OPPORTUNITIES

Hamline has research facilities in the fields of astrophysics, renewable energy, materials science, environmental science, optics, flexible electronics, and computational physics. These facilities are used in a variety of curricular and collaborative projects proposed by both faculty and students. Hamline Physics students frequently participate in national research competitions such as the EPA Student Design Competition and the NASA-funded MnSGC quadcopter challenge. For a list of equipment and more information on research projects, please visit the Hamline Physics website.

The Dual Degree Engineering Program with Washington University in St. Louis is an attractive alternative to traditional engineering programs and offers the opportunity to earn a liberal arts degree from Hamline and an undergraduate engineering degree from WashU.