Physicists study the fundamental properties and interactions of all forms of matter. Experimental and theoretical investigations are combined to formulate mathematical relationships that describe and predict the behavior of nature. The physics undergraduate program can prepare students for employment, often in an industrial or governmental laboratory. The program can also prepare students for further study at graduate or professional schools in physics, earth science, engineering, biophysics, medicine, education, law, or business. The physics B.A. program is a liberal arts degree providing the flexibility to integrate a broad foundation in physics with coursework in physics or other disciplines. The required courses form a minimum program—students preparing for a specific career path may want to take more physics courses than required. Electives should be chosen to customize the physics degree to the individual need of the student. Students should consult a physics adviser to help formulate objectives for undergraduate study.

Degree Requirements

Students must complete at least 120 credits to graduate, including at least 40 credits in the major.

Physics majors are required to complete general University and college requirements including writing, second language and liberal education courses.

Physics majors must take all required physics and mathematics courses A–F and must earn a grade of C− or better in all of those courses (except those offered S-N only). Only students with grades of B or better in the introductory physics courses can generally expect to succeed in the major.

Required Courses

- PHYS 1301W, 1302W, 2503, and 2201. Note that PHYS 2201 and PHYS 2503 are Fall-only.
- MATH 1271, 1272, 2243, 2263 or MATH 1371, 1372, 2373, 2374.
- PHYS 2601 and 2605 (concurrent)—Quantum Physics and Quantum Physics Laboratory. Spring-only.
- PHYS 4051 and two or more of the following: PHYS 4001, PHYS 4002, PHYS 4101.
- Completion of a physics project (5 credits), either by the completion of PHYS 4052W, Methods of Experimental Physics II, or by some alternate means subject to departmental approval. If the approved alternate physics project total is fewer than 5 credits, an additional physics elective at the 3XXX-level or higher is required to fulfill the 5 credit requirement.

How to declare the Physics major

The following prerequisites must be completed before you will be allowed to declare the major. If you have not completed the prerequisites, consult your CLA advisor before contacting the major department.

- Phys 1301W and 1302W
- Math 1271 and 1272 or Math 1371 and 1372

Contact the Physics department in 148 Physics, 612-624-7375, to schedule an appointment to meet with the Physics adviser to declare the major. If you want to explore the Physics major the department will meet with you to answer questions but do not expect to declare the major until all prerequisites have been completed.

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Resources

The School of Physics and Astronomy website: www.physics.umn.edu contains information about the Undergraduate and Graduate programs in the Department and about its faculty.

Possible Areas of Employment

- Government—public information, campaigns, federal offices
- Science—research, computer programming, engineering
- Communication—technical or science writer
- Business—marketing, human resources, sales, consulting, recruiting
- Education—teaching, research, administration

Career and Community Learning Center

CLA Career Services located in 411 Science Teaching and Student Services (STSS), supports CLA students making career decisions. The office’s Resource Library in 411 STSS is open from 8:00am-4:30pm Monday-Friday, and no appointment is necessary. Resources include information about graduate schools and employment. Workshops are offered that cover resume writing, job and internship searches, interviewing, and other subjects. A current schedule is available online at www.clacareer.umn.edu.

Volunteer Resources

The Community Service-Learning Center office is located in 240 Appleby. Advisers are available to meet with students who wish to arrange volunteer opportunities or who wish to enroll in classes that involve service-learning. For more information, see www.servicelearning.umn.edu or call (612) 624-2044

Graduate and Professional School Information

The CLA Career Services Resource Library includes information on graduate and professional schools. Students visiting the office can learn more about potential programs and application procedures. In addition, staff members are available to review drafts of personal statements for students applying to graduate programs. Stop by 411 STSS for more information.

Resources Available at CLA Career Services, 411 STSS

Careers for Geniuses & Other Gifted Types by Jan Goldberg
Careers for Scientific Types & Others with Inquiring Minds by Jan Goldberg
Careers in Education by Roy Edelfelt
Careers in High Tech by Nick Basta
Careers in Science by Thomas A Easton
Great Jobs for Liberal Arts Majors by Blythe Camenson
Opportunities in Research and Development Careers by Jan Goldberg
Real People Working in Science by Jan Goldberg

Web Sites of Interest

University of Minnesota-School of Physics and Astronomy http://www.physics.umn.edu/
American Institute of Physics http://www.aip.org/
American Physical Society http://www.aps.org/
APS Careers in Physics http://www.aps.org/jobs/
Physics Today Job board http://www.physicstoday.org/jobs/
Physics Jobs Online http://physicsweb.org/TIPTOP/FORUM/JOBS/
Association of Science-Technology Centers - job listings http://www.astc.org/profdev/jobs/jobs.htm

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