

**ILLINOIS STATE
UNIVERSITY**

**BOARD OF
TRUSTEES**

Resolution No. 2023.07/34
Approval of M.S. in Physics

Resolution

Whereas, the Board of Trustees, as authorized by the Board of Trustees Governing Document, Section A, Government Statutes, Subsection 5, Reservation of Powers, has reserved to itself the final decision-making authority for the establishment of any new unit of instruction requiring approval by the Illinois Board of Higher Education.

Therefore, be it resolved that the Board of Trustees approves the proposal for degree granting authority for the M.S. in Physics.

Board Action on: _____
Motion by: _____
Second by: _____
Vote: Yeas: _____ Nays: _____

Postpone: _____
Amend: _____
Disapprove: _____
Approve: _____

ATTEST: Board Action, _____ July 28, 2023

Secretary / Chairperson

**Board of Trustees
Illinois State University
M.S. in Physics**

The program will be administered by the Department of Physics in the College of Arts and Sciences. The Illinois State University physics department currently offers a B.S. in five separate degree sequences within the major. The program is one of the largest Bachelor's-only physics departments nationwide. Graduates of the program have gone on to enroll in graduate programs in prestigious public and private universities, as well as secured jobs in private sectors. The proposed M.S. program will build on the success of the department and its mentorship of undergraduates by offering opportunities for education and research to graduate students. As Illinois State becomes a more comprehensive university that includes engineering and other STEM disciplines, physics has the opportunity to grow into a department that not only supports these efforts, but thrives because of them.

Demand for the degree is high. Over the past few years, enrollment of some of the largest M.S. physics degree conferring departments (with 15–20 graduates a year) in the country have increased by 4-5 times. Data from the American Institute of Physics (AIP) indicates a healthy market demand for graduates with the majority of Physics M.S. graduates either employed (39 percent) or enrolled in a Ph.D. program (47 percent) within one year after their degree (6 percent unemployed, and 8 percent left the country). The program will provide an ideal platform for students to be trained in a wide range of growing fields in the STEM workforce such as optics and photonics skills, nanotechnology, and material science.

The program is expected to enroll up to 10 students each year, with a total enrollment of 20 students at steady state. One additional tenure track faculty member will be hired to supplement existing faculty to deliver the new program at its inception.

Students enrolling in the program will be required to enroll in four required core physics courses, two elective courses, a research development course, a seminar course, and complete a thesis. Faculty have developed fourteen new courses for the program, covering content such as mathematical methods, classical mechanics, statistical mechanics, advanced electricity and magnetism, solid state physics, general relativity, astrophysics, advanced experimental physics, space and plasma physics, advanced quantum mechanics, and advanced computational physics.

The proposal was approved by the Academic Senate on May 10, 2023.