

# DEPARTMENT OF ENGINEERING PHYSICS

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Department website: <https://www.uwplatt.edu/department/engineering-physics> (<https://www.uwplatt.edu/department/engineering-physics/>)

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## ABOUT THE DEPARTMENT AND MAJOR

The UW-Platteville Department of Engineering Physics offers a major in Engineering Physics.

### MAJOR

- Engineering Physics (<https://catalog.uwplatt.edu/undergraduate/engineering-mathematics-science/engineering-physics/bs/>)

## ENGINEERING PHYSICS

The Engineering Physics program is accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, under the commission's General Criteria and Program Criteria for Engineering, General Engineering, Engineering Physics, and Engineering Science.

The Engineering Physics program at UW-Platteville is a hybrid of applied physics, electrical engineering and mechanical engineering. The Engineering Physics curriculum provides students with a fundamental knowledge of physics and the application of physics to engineering problem solving, including design. It includes introductory courses in mechanical and electrical engineering, as well as a significant professional engineering concentration tailored to suit the individual's particular interest. The program is designed to address the needs of students seeking innovative careers in high-tech fields, areas where multiple engineering disciplines merge (e.g., electro-mechanical industries), or non-traditional engineering disciplines (e.g., optics or acoustics). The Engineering Physics program is also structured for those students who have an interest in the physical sciences as well as engineering. The majority of graduates of the Engineering Physics program have obtained engineering positions in fields such as automation/controls, mechanical design, electronics design, nuclear instrumentation, robotics, manufacturing/QC, medical devices, or research & development. Others have continued their studies earning M.S. and Ph.D.'s in Physics, Material Science, Electrical or Mechanical Engineering, and Electro-Optics.

### PROGRAM EDUCATIONAL OBJECTIVES

The Engineering Physics program provides our graduates with a quality undergraduate education in liberal studies, mathematics, science and engineering to prepare them to, within a few years after graduation,

- (1) attain positions as professionals in industry, government or academia
- (2) become responsible, accountable, current professionals who work effectively in multidisciplinary teams, readily adapt to broad technical challenges and demonstrate leadership.

### STUDENT OUTCOMES

By graduation, students in our program are expected to attain the following student outcomes:

- (1) an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- (2) an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- (3) an ability to communicate effectively with a range of audiences
- (4) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- (5) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- (6) an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- (7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

### CURRICULAR GOALS

The Engineering Physics curriculum is 123 credits including 62 credits of engineering. The Engineering Physics program provides a balanced curriculum emphasizing physics and engineering principles with design, diverse hands-on experiences to prepare the engineering physics graduate for the demands of laboratory or manufacturing environments, and strong communication and team working skills. The engineering credits are divided nearly equally among electrical and mechanical engineering science, engineering physics and a professional engineering concentration. The electrical

engineering and mechanical engineering science includes introductory courses that provide the necessary prerequisites for further study in these two areas. The engineering physics core covers nearly all the basic areas of physics with a special emphasis placed on practical problem solving, including design. The professional engineering concentration consists of electives. Here a student may tailor the program to suit individual interests by selecting from a long list of courses in electrical and mechanical engineering, as well as some courses in software engineering and industrial and systems engineering. While students are free to choose the electives, an emphasis in one of the following areas is recommended: controls, electronics/digital systems, electric power, materials science engineering, mechanisms machines and systems, or thermo-fluid and energy systems.

## ACADEMIC STANDARDS

1. An average G.P.A. > 2.00 is required for all professional engineering courses taken to fulfill the requirements of the Engineering Physics major (all required and elective engineering courses numbered 3000 or above) in order to graduate with an engineering physics degree.
2. A "C-" or better is required in ENGRPHYS 4930 (or GENENG 4930 with departmental permission) in order to graduate with an engineering physics degree.
3. Prerequisite courses in mathematics, science, and engineering often require a "C-" or better to advance to the next course (see course descriptions in this catalog for specific information).
4. Only one "D/D+" in an ENGRPHYS course may be counted toward graduation with an engineering physics degree.

## GENERAL REQUIREMENTS BACHELOR OF SCIENCE DEGREE

Course	Title	Credits
Total for graduation		123
General education		26

## MAJOR

- Engineering Physics Major, B.S. (<https://catalog.uwplatt.edu/undergraduate/engineering-mathematics-science/engineering-physics/bs/>)

## CERTIFICATE

- Interdisciplinary Engineering Design Certificate (<https://catalog.uwplatt.edu/undergraduate/engineering-mathematics-science/mechanical-industrial-engineering/interdisciplinary-engineering-design-certificate/>)

## FOUR-YEAR PLAN

- Engineering Physics Major, B.S., Four-Year Plan (<https://catalog.uwplatt.edu/undergraduate/engineering-mathematics-science/engineering-physics/engineering-physics-four-year-plan/>)

## FACULTY AND LECTURERS

Additional information about the Faculty and Lecturers below may be found in the Faculty and Academic Staff (<https://catalog.uwplatt.edu/faculty-academic-staff/>) section of this catalog.

Evensen, Harold T.

Gopalakrishnan, Gokul

Holden, Elizabeth A.

Li, Wei

Marsteller, Brian E.

Pawl, Andrew

Plumb, Andrew C.

Rabidoux, Katherine C.

St. John, W. Doyle

Wu, Yan