

Program:	Engineering Physics	Dept:	Engineering and Physics
Major:	Mechanical Engineering	College:	Mathematics and Science
Degree:	Master of Science (M.S.)	Major Code:	6634

Engineering Physics - Mechanical Engineering, M.S.

This major is designed so that its graduates can enter industry/government as practicing engineers or pursue research and teaching careers with government and/or academic institutions. The major also provides advanced study in mechanical engineering, with emphasis in solid mechanics, thermo-fluid, and mechatronics, for students who intend to pursue a Ph.D. degree in Mechanical Engineering or related fields.

Graduate Advisor:	Dr. Yuhao Jiang
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GPA will be verified by the student's undergraduate academic advisor and by a representative of the Jackson College of Graduate Studies.

Admission Requirements

Submit the following items to:

Jackson College of Graduate Studies
100 N. University Drive, NUC 404
Edmond, OK 73034

- Online application for admission (www.uco.edu/graduate/).
- Official copies of undergraduate and graduate transcripts from each institution attended with all degrees posted. All transcripts must be from accredited institutions. Undergraduate transcripts must show: *
 - A minimal 2.75 GPA overall and 3.00 GPA in the last 60 hours attempted or a 3.00 overall GPA.
 - Completion of 24 undergraduate hours in physics or the equivalent and mathematics through differential equations and other prerequisites (if any), as determined by the graduate program advisor.
- Students with course deficiencies must complete 3000/4000 level courses in physics and engineering in addition to the program course requirements.
- Graduate Record Examination scores. Submission of scores on the GRE General Test is required. There is no minimum required for admission, but a combined verbal and quantitative score of 305 is recommended.
- Two letters of recommendation. Letters of recommendation are requested through the online application portal.
- All applicants must receive approval for admission to the program from the Engineering Physics Admissions Committee.

**Students falling below these standards may qualify for conditional admission. See [Admission to Graduate Studies \(p.17\)](#).*

Note: Students must meet with faculty mentor/advisor in group or individual advisement session before enrolling.

Accelerated Degree Pathway (ADP) Requirements

Qualifying current UCO undergraduate students seeking an Accelerated Degree Pathway (ADP) must abide by the policies and procedures outlined within the Graduate Catalog. Accelerated pathways are only available in approved bachelor's and master's degree programs (see [Accelerated Degree Pathways on p.196](#)).

- The undergraduate student must be pursuing an undergraduate UCO major that is designated and approved as part of the official UCO Accelerated Degree Pathway offerings.
- The undergraduate student must be classified as "senior" standing or be completing the last semester of their junior year (soon to be entering into their senior undergraduate year).
- The undergraduate student must have a minimum overall undergraduate grade point average (GPA) of 3.0 or higher and 3.0 or higher in major specific coursework; the undergraduate

Students applying for a Master Degree through the Accelerated BS/MS Degree Program must submit the following items to the Engineering Physics Department Accelerated Program Admissions Committee:

- Application for admission received by March 5 in the spring semester of the junior year.
- Official copies of transcripts from each institution attended. Transcripts must show:
 - The applicant is a UCO Mechanical Engineering major;
 - A minimum overall GPA of 3.00;
 - A minimum GPA of 3.00 in all Engineering and Physics courses specified in the junior year for their major. Grades for engineering courses taken in the spring semester of the junior year will be submitted when courses are completed at the end of junior year.
- Two letters of recommendation from Engineering & Physics faculty.
- A statement of purpose describing the applicant's:
 - Plans and rationale for graduate study at UCO;
 - Intentions toward and involvement in research activities.

Note: All applicants must receive approval for admission to the program from the Department's Accelerated Program Admissions Committee. The student must choose the thesis option in the graduate program. The thesis option requires the submission and public defense of an acceptable thesis based on independent research activities. In this program three 5000-level ENGR, BME, or PHY courses (9 hours) taken during the senior year will count towards both the BS and MS degrees. The three courses are specified by the undergraduate major being sought.

Other Requirements

- Plan of Study. Each student must file a plan of study with their graduate program advisor and the Jackson College of Graduate Studies (JCGS) by the end of the first semester during which they complete their twelfth hour of graduate work. The plan must be signed and dated by the student and the graduate program advisor before it can be considered official.
- Academic Standards. Meet the following course work standards:
 - Overall GPA of 3.00 or higher.
 - No more than six hours of "C".
 - No more than six advisor-approved hours from traditional correspondence courses.
- Thesis (optional). If applicable, complete an acceptable thesis and successfully defend it in public. Submit two paper copies of the thesis and one electronic copy to the library through Proquest and the thesis' original title page, original signature page, summary and abstract page to the JCGS.
- Final Requirements. Apply for graduation through the JCGS by

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advertised deadline.

Graduation Requirements

The student may select either the non-thesis option or the thesis option. The thesis option requires the submission and public defense of an acceptable thesis based on independent research activities.

Required Courses.....15 Hours

Course Prefix	Course No.	Course Title
PHY	5013	Mathematical Physics II
PHY	5443	Quantum Mechanics
ENG	5023	Technical Writing
PHY	5990	Thesis (6 hrs) OR
ENGR	5083	Electromagnetic Field II AND
ENGR	5633	Solid State Devices

Guided Electives.....6 Hours

Complete at least two courses from the list below

Course Prefix	Course No.	Course Title
Recommended Courses		
ENGR	5023	Heat Transfer
ENGR	5103	Finite Element Analysis
ENGR	5203	Refrigeration & Air Conditioning
BME	5343	Biomechanics
ENGR	5443	Fluid Dynamics
ENGR	5803	Mechatronics & Lab
PHY	5063	Analytical Mechanics
Other Courses		
ENGR	5303	Control Systems
ENGR	5323	Digital and Analog Communication
ENGR	5333	Digital Signal Processing
ENGR	5633	Solid State Devices
PHY	5103	Classical Mechanics

General Electives.....11 Hours

Students choosing the non-thesis option must enroll in ENGR 5930 for two hours credit as a capstone course elective during their final semester. All General electives must be approved by the student's advisement committee and selected from the following list:

Course Prefix	Course No.	Course Title
ENGR	5930	Ind. Study in Engineering (1-3 Hrs)
ENGR	5xxx	Graduate ENGR Course
BME	5xxx	Graduate BME Course
PHY	5xxx	Graduate PHY Course
MATH	5xxx	Graduate MATH Course
CMSC	5xxx	Graduate CMSC Course
STAT	5xxx	Graduate STAT Course

TOTAL HOURS REQUIRED 32 HOURS

Accelerated Degree Pathway: BS to MS

Accelerated Degree Pathway students who are accepted to the undergraduate degree in Mechanical Engineering may apply to take up to a maximum of nine hours during their senior year of the bachelor's degree. These courses will count toward both the B.S. Electrical Engineering and M.S Engineering Physics - Mechanical Engineering. The approved graduate courses are ENGR 5023 Heat Transfer, ENGR 5533 Thermal Systems Design, ENGR 5803 Mechatronics & Laboratory. During the last semester of their junior year or within 30 hours of graduation, undergraduate students with a 3.0 overall GPA may apply for admission to the Accelerated Degree Program.