

PH7259 - MECHANICAL & SYSTEMS ENGINEER

General Info

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Program Info

Program Code: PH7259 - MECHANICAL & SYSTEMS ENGINEER

Semesters

Program Abbr: MECH&SYS E

Program Name: MECHANICAL & SYSTEMS ENGINEER

Transcript Name: MECHANICAL AND SYSTEMS ENGINEERING

Degree Name: DOCTOR OF PHILOSOPHY

Department: ENTD (Engineering and Technology, Russ College of)

Semesters: This program WILL be offered in semesters.

Quarters

MECH&SYS ENT

MECHANICAL & SYSTEMS ENGINEER

MECHANICAL & SYSTEMS ENGINEER

College: ENT (Engineering and Technology, Russ College of)

Level: G (Graduate)

Program Overview

Overview: The Mechanical and Systems Engineering Ph.D. program is an interdisciplinary Ph.D. program with specialization tracks in Mechanical Engineering (ME) and Industrial and Systems Engineering (ISE).

The ME track includes academic and research specialties in the areas of biomedical engineering, CAD/CAM, machine and automotive design, energy, manufacturing, materials and deformable solid body mechanics, robotics and rigid body mechanics, and thermo-fluid systems.

The ISE track includes specialization areas in manufacturing systems, manufacturing information systems, artificial intelligence, systems simulation, process planning, warehousing, genetic algorithms, data mining, human factors, transportation logistics, supply chain management, reliability, and neural networks.

A minimum of 60 semester hours beyond the Master of Science (M.S.) degree is required. An interdisciplinary component, for which graduate coursework is taken outside the program track, is a general program requirement. In addition to general program requirements, specific track requirements must also be satisfied. Students must pass qualifying and comprehensive exams, as well as successfully defending a doctoral dissertation. A minimum of 30 semester hours of dissertation and 30 semester hours of approved graduate coursework are required. A plan of study is approved by the student's dissertation advisory committee, the specialization track coordinator, and the chair of the program steering committee.

Admissions Information: Freshman/First-Year Admission

The basic requirement for admission is a Master of Science degree in engineering or a related field, i.e., chemistry, physics, or applied mathematics. Applicants holding degrees in closely related fields or from non-accredited engineering institutions may be required to compensate for deficiencies with additional coursework. The Graduate Record Exam (GRE) general test and Test of English as a Foreign Language (TOEFL) is required for applicants whose native language is not English. Three letters of recommendation are required from persons who can attest to the applicant's academic and research aptitude. Admission to the program is restricted to those students whose educational plans fall within one of the two specialty areas.

Change of Major/Minor/Certificate Policy

No selective or limited admission requirements.

External Transfer Admission

A maximum of 8 semester hours of graduate coursework, completed at another university, will be considered for credit towards degree completion. Such a request must be made in writing to the Russ College of Engineering and Technology, and will require approval by the Steering Committee and the student's dissertation advisory committee. Graduate courses that were used to satisfy the requirements for another degree are not eligible for transfer. University residency requirements must be met as stated in the Ohio University Graduate Catalog. More than 8 semester hours will only be considered in exceptional situations.

Opportunities Upon Graduation: The Mechanical and Systems Engineering Ph.D. program prepares students for advanced engineering work in industry, government, or academia.

Curriculum

Nature of Changes: The changes to your program curriculum DOES NOT MAKE the comparison of the minimum number of credit hours in the quarter-based and semester-based curricular less meaningful for most of your curricular components.

Curricular Components:

	Semester	Quarter	Equiv	Change
General Program Requirements	60.0	90.0	60.0	0.0%
Dissertation	30.0	45.0	30.0	0.0%
Technical Writing	1.0	1.0	0.67	49.25%
Capstone Course	2.0	3.0	2.0	0.0%
Interdisciplinary Component	6.0	12.0	8.0	-25.0%
Advanced Engineering Coursework	15.0	20.0	13.33	12.53%
7000 Level Courses	6.0	10.0	6.67	-10.04%
Mechanical Engineering Track	15.0	20.0	13.33	12.53%

Thermo-fluid systems course requirements	6.0	8.0	5.33	12.57%
Mechanical systems course requirements	6.0	8.0	5.33	12.57%
Required Course	3.0	4.0	2.67	12.36%
Industrial and Systems Engineering Track	15.0	20.0	13.33	12.53%
Masters degree	30.0	45.0	30.0	0.0%

Min. Credit Hours:	Semester Hrs	Quarter Hrs	Equiv.Semester Hrs	Percent Change
	90.0	135.0	90.0	0.0

Sample: edu.ohio.ocean.domain.q2s.Q2SFile@188bc1d

Supplemental Information

Patron Departments	Department	Nature of Change
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General Program Requirements

Sem Hrs: 60.0 Qtrr Hrs: 90.0 Equiv Hrs: 60.0 % Change: 0.0%

Requirements:

The program requires a minimum of 60 semester hours beyond the Master of Science (M.S.) degree. A minimum of 30 semester hours of coursework and 30 semester hours of dissertation must be completed. A minimum of 15 semester hours of advanced engineering coursework (6000 level or above) must be taken, of which at least 6 semester hours must be at the 7000 level or above. An interdisciplinary component, in which coursework must be taken outside the program track, must also be satisfied.

Dissertation

Sem Hrs: 30.0 Qtrr Hrs: 45.0 Equiv Hrs: 30.0 % Change: 0.0%

Requirements:

The student must complete at least 30 semester hours on the dissertation and research.

- ET 8950 Dissertation - minimum of 30 hours

Technical Writing

Sem Hrs: 1.0 Qtrr Hrs: 1.0 Equiv Hrs: 0.67 % Change: 49.25%

Requirements:

Students are required to take the 1-credit hour ET 6020 Technical Writing Seminar. Students that satisfied this requirement while earning a Masters degree at Ohio University are not required to retake this course during the doctoral program.

- ET 6020: Technical Writing Seminar (1.0HR) (EXPEDITED - PUBLISHED)

Capstone Course

Sem Hrs: 2.0 Qtrr Hrs: 3.0 Equiv Hrs: 2.0 % Change: 0.0%

Requirements:

Students in both specialty tracks shall take the Engineering Synthesis course (ET 7990) after completion of a majority of the Ph.D. courses.

- ET 7990: Engineering Synthesis Seminar (2.0HR) (SEMESTER - PUBLISHED)

Interdisciplinary Component

Sem Hrs: 6.0 Qtrr Hrs: 12.0 Equiv Hrs: 8.0 % Change: -25.0%

Requirements:

Coursework from at least one other department in the Russ College of Engineering and Technology (that is outside the program track) is required. At least 6 semester hours, at the 5000 level or above, from another department in the Russ College of Engineering and Technology is required. Students in the ME track may apply non-engineering graduate courses to their plan of study only upon prior approval by their advisor and ME graduate chairman. Courses taken to satisfy this requirement may also be used to satisfy the Advanced Engineering Coursework requirement.

- 6 semester hours, at the 5000 level or above, from another department in the Russ College of Engineering and Technology.

Advanced Engineering Coursework

Sem Hrs: 15.0 Qtrr Hrs: 20.0 Equiv Hrs: 13.33 % Change: 12.53%

Requirements:

A minimum of 15 semester hours of coursework must be taken at the 6000 level or above.

- 15 semester hours of coursework at the 6000 level or above.

7000 Level Courses

Sem Hrs: 6.0 Qtrr Hrs: 10.0 Equiv Hrs: 6.67 % Change: -10.04%

Requirements:

A minimum of 6 semester hours of coursework must be taken at the 7000 level or above. ISE 8930 cannot be used to fulfill this requirement.

- 6 semester hours of coursework at the 7000 level or above.

Mechanical Engineering Track

Sem Hrs: 15.0 Qtrr Hrs: 20.0 Equiv Hrs: 13.33 % Change: 12.53%

Requirements:

The Mechanical Engineering specialization track requires that four fundamental courses in thermo-fluid systems and mechanical systems be completed. Two courses must be completed in each category. No more than 3 semester hours of special investigation (ME 5930 and/or 7930) can be applied as credit for this program track. Courses taken to fulfill the ME Track requirements can also be used to fulfill the Interdisciplinary Component and Advanced Engineering Coursework requirements.

Thermo-fluid systems course requirements

Sem Hrs: 6.0 Qtrr Hrs: 8.0 Equiv Hrs: 5.33 % Change: 12.57%

Requirements:

A minimum of two thermo-fluid systems courses from this list are required.

- ME 5130: Conduction, Convection, and Radiation (3.0HR) (EXPEDITED - PUBLISHED)
- ME 5460: Potential Flow Theory (3.0HR) (EXPEDITED - PUBLISHED)
- ME 5950: Introduction to Kinetic Theory and Statistical Thermodynamics (3.0HR) (EXPEDITED - PUBLISHED)
- ME 7140: Viscous Flow and Convection Heat Transfer (3.0HR) (EXPEDITED - PUBLISHED)
- ME 7330: Numerical Heat Transfer and Fluid Flow (3.0HR) (EXPEDITED - PUBLISHED)
- CHE 6400: Transport Phenomena (3.0HR) (EXPEDITED - PUBLISHED)

Mechanical systems course requirements

Sem Hrs: 6.0 Qtrr Hrs: 8.0 Equiv Hrs: 5.33 % Change: 12.57%

Requirements:

A minimum of two mechanical systems courses from this list are required.

- ME 5630: Mechanics of Materials (3.0HR) (EXPEDITED - PUBLISHED)
- ME 6010: Advanced System Analysis and Control (3.0HR) (COMPOSITE - PUBLISHED)
- ME 6040: Mechanics and Control of Multi-Degree-of-Freedom-Systems (3.0HR) (COMPOSITE - PUBLISHED)
- ME 6050: Intermediate Dynamics (3.0HR) (COMPOSITE - PUBLISHED)
- ME 6100: Advanced Vibrations Analysis (3.0HR) (EXPEDITED - PUBLISHED)
- ME 6630: Advanced Mechanics of Materials (3.0HR) (EXPEDITED - PUBLISHED)
- ME 7850: Plasticity Theory and Application (3.0HR) (EXPEDITED - PUBLISHED)
- CE 6230: Continuum Mechanics I (3.0HR) (SEMESTER - PUBLISHED)

Required Course

Sem Hrs: 3.0 Qtrr Hrs: 4.0 Equiv Hrs: 2.67 % Change: 12.36%

Requirements:

ME 7970 (Advanced Engineering Analysis) is a required course.

- ME 7970: Advanced Engineering Analysis (3.0HR) (EXPEDITED - PUBLISHED)

Industrial and Systems Engineering Track

Sem Hrs: 15.0 Qtrr Hrs: 20.0 Equiv Hrs: 13.33 % Change: 12.53%

Requirements:

A minimum of 15 semester hours of Industrial and Systems (ISE) courses at the 5000 level or above is required. No more than 6 semester hours of independent study (ISE 6930 and/or 8930) can be applied as credit for this program track.

Masters degree

Sem Hrs: 30.0 Qtrr Hrs: 45.0 Equiv Hrs: 30.0 % Change: 0.0%

Requirements:

A masters degree is required for the Mechanical and Systems Engineering (MSE) PhD program