

# MECHANICAL ENGINEERING AND APPLIED MECHANICS, MINOR

Mechanical Engineering & Applied Mechanics (MEAM) is the study of forces, deformations and motions of solid bodies and fluids, heat generation and transport, and applications to analysis, design, and manufacture of components, machines, and systems. Students in mechanical engineering follow a program which contains basic groundwork in all aspects of mechanical engineering, but flexibility in the curriculum allows students to pursue elective programs in fields such as aeronautics, robotics, computers, electronics, automatic controls, and materials.

**For more information:** <http://www.me.upenn.edu/prospective-students/undergraduates/majors-minors.php>

## SEAS Second Major or Minor Option

Students interested in a second major (College students only) or minor with SEAS are required to meet with the Undergraduate Curriculum Chair from the major/minor department you wish to declare to discuss requirements and obtain approval on the Second Major or Minor form. The approved form must be returned to the SEAS Research and Academic Services Office, 109 Towne Building.

**For more information:** <http://www.seas.upenn.edu/undergraduate/degrees/minors.php>

A minor in Mechanical Engineering and Applied Mechanics (MEAM) requires the completion of six (6) course units with a grade of "C" or better. Courses taken on a Pass/Fail basis do not count toward the MEAM minor. Only two (2) 1000 level courses are permitted.

## MEAM, Minor

Code	Title	Course Units
<b>Required Courses</b>		
Select 2 of the following:		2
MEAM 2020	Introduction to Thermal-Fluids Engineering	
MEAM 2030	Thermodynamics I	
MEAM 2100	Statics and Strength of Materials	
MEAM 2110	Engineering Mechanics: Dynamics	
MEAM 3020	Fluid Mechanics	
MEAM 3200	Intro to Mechanical and Mechatronic Systems	
MEAM 3210	Dynamic Systems and Control	
MEAM 3330	Heat and Mass Transfer	
MEAM 3540	Mechanics of Solids	
<b>Electives</b>		
Select 4 MEAM Electives <sup>1</sup>		4
<b>Total Course Units</b>		<b>6</b>

<sup>1</sup> All MEAM courses (except MEAM 4450 (<https://catalog.upenn.edu/search/?P=MEAM%204450>) Mechanical Engineering Design Projects and MEAM 4460 (<https://catalog.upenn.edu/search/?>

P=MEAM%204460) Mechanical Engineering Design Projects) can be used.

Up to (2) approved Cognate courses can be substituted with department approval from the following list: BE 2000 Introduction to Biomechanics, BE 3300 Self-Assembly of Soft Materials, BE 5100 Biomechanics and Biotransport, CBE 4300 Introduction to Polymers, CBE 5350 Interfacial Phenomena, MSE 3300 Self-Assembly of Soft Materials, MSE 3930 Materials Selection, MSE 4050 Mechanical Properties of Macro/Nanoscale Materials, MSE 5300 Thermodynamics and Phase Equilibria.

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2023 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.