

MECHANICAL ENGINEERING AND APPLIED MECHANICS, BSE

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: <https://www.seas.upenn.edu/prospective-students/undergrad/majors/mechanical-engineering-and-applied-mechanics/>

Mechanical Engineering and Applied Mechanics (MEAM) Major Requirements

40 course units are required. Read more about the Undergraduate Student Handbook (<http://www.seas.upenn.edu/undergraduate/handbook>).

Code	Title	Course Units
Engineering		
MEAM 203	Thermodynamics I	1
MEAM 210	Statics and Strength of Materials	1
MEAM 211	Engineering Mechanics: Dynamics	1
MEAM 247	Mechanical Engineering Laboratory I	0.5
MEAM 248	Mechanical Engineering Lab I	0.5
MEAM 302	Fluid Mechanics	1
MEAM 321	Vibrations of Mechanical Systems	1
MEAM 333	Heat and Mass Transfer	1
MEAM 347	Mechanical Engineering Design Laboratory	1
MEAM 348	Mechanical Engineering Design Laboratory	1
MEAM 354	Mechanics of Solids	1
Math and Natural Science		
MATH 104	Calculus, Part I	1
MATH 114	Calculus, Part II	1
MATH 240	Calculus, Part III	1
ENM 251	Analytical Methods for Engineering	1
	or MATH 241	Calculus, Part IV
Mathematics course		1
MEAM 110	Introduction to Mechanics	1
	or PHYS 150	Principles of Physics I: Mechanics and Wave Motion
MEAM 147	Introduction to Mechanics Lab ¹	0.5
PHYS 151	Principles of Physics II: Electromagnetism and Radiation	1.5
CHEM 101	General Chemistry I	1
CHEM 053	General Chemistry Laboratory I	0.5
Math or Natural Science		1

Professional Electives

MEAM 445	Mechanical Engineering Design Projects (Design Project I)	1
MEAM 446	Mechanical Engineering Design Projects (Design Project II)	1
ENGR 105	Introduction to Scientific Computing	1
MEAM Upper Level ²		3
Professional Elective ²		4
Social Sciences and Humanities ³		
EAS 203	Engineering Ethics	1
Select 1	Social Science course	1
Select 2	Humanities courses	2
Select 1	Social Science or Humanities course	1
Select 2	Social Science or Humanities or Technology in Business & Society courses	2
Free Elective		
Select 3	course units of free electives	3
Total Course Units		40

¹ MEAM 147 Introduction to Mechanics Lab lab is required if MEAM 110 Introduction to Mechanics is taken.

² A max of (3) 100 level courses permitted. Other Programming Courses such as CIS 110 Introduction to Computer Programming, or CIS 120 Programming Languages and Techniques I may be substituted for ENGR 105 Introduction to Scientific Computing. MEAM Upper Level courses include: MEAM 405 Mechanical Properties of Macro/Nanoscale Materials, MEAM 410, MEAM 454, MEAM 455 Continuum Biomechanics, and all MEAM 500 level courses.

Professional Electives include courses from the Math, Science and Engineering categories. Up to two Professional Electives may be satisfied with advanced dual degree requirements (with approval).

³ The Social Science & Humanities Depth and Writing Requirement can be satisfied with the 7 total course units.

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2018 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.