

GENERAL ENGINEERING: MECHANICAL ENGINEERING PHYSICS, B.S.E.

Program Learning Outcomes

Graduates of the program will demonstrate:

- an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- 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.
- an ability to communicate effectively with a range of audiences.
 - Students will effectively communicate complicated technical information in writing.
 - Students will effectively communicate complicated technical information orally.
 - Students will be able to identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand.
- 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.
- 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.
- an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Code	Title	Units
Lower-Division Requirements		
EGR 1012 and EGR 1012L	Introduction to Engineering I and Introduction to Engineering I Lab	2
EGR 1023 and EGR 1023L	Introduction to Engineering II and Introduction to Engineering II Lab	3
EGR 1043 and EGR 1043L	Introduction to Computer Programming and Introduction to Computer Programming Lab	3
EGR 1054 and EGR 1054L	Objects and Elementary Data Structures and Objects and Elementary Data Structures Lab	4
EGR 2014 and EGR 2014L	Engineering Mechanics: Statics and Engineering Mechanics: Statics Lab	4
EGR 2024 and EGR 2024L	Circuit Analysis and Circuit Analysis Lab	4
MTH 1064 and MTH 1064L	Calculus I (FE) and Calculus I Lab (FE)	4
MTH 1074 and MTH 1074L	Calculus II and Calculus II Lab	4
MTH 2074	Calculus III	4

PHY 2044 and PHY 2044L	University Physics I (FE) and University Physics I Lab (FE)	4
PHY 2054 and PHY 2054L	University Physics II and University Physics II Lab	4
Upper-Division Requirements		
EGR 3013 and EGR 3013L	Nuclear Physics and Nuclear Physics Lab	3
EGR 3034 and EGR 3034L	Mechanics of Materials and Mechanics of Materials Lab	4
EGR 3043	Analytical Mechanics: Dynamics	3
EGR 3063	Electricity, Magnetism, and Waves I	3
EGR 3083	Electricity, Magnetism, and Waves II	3
EGR 4013	Thermodynamics	3
EGR 4063	Solid State Physics	3
EGR 4072	Senior Project I	2
EGR 4082	Senior Project II	2
EGR 4092	Internship in Engineering	2
MTH 3033	Differential Equations	3
PHY 3004 and PHY 3004L	Modern Physics and Modern Physics Lab	4
MTH 3063 or MTH 3083	Calculus Based Statistics with R Mathematical Probability and Statistics	3
Total Units		78

Total Units for Degree: 78 (70 without FE)

Recommended:

Code	Title	Units
CHE 1052 and CHE 1052L	General Chemistry I (FE) and General Chemistry I Lab (FE)	5
MTH 2033	Linear Algebra	3