ENGINEERING, B.S.E.

Concentrations

- Computer Engineering (p. 1)
- Electrical Engineering (p. 1)
- Mechanical Engineering (p. 1)

Computer Engineering Concentration[1]

Code	Title	Units
Lower-Division Requirements		
CSC 2054 and CSC 2054L	Data Structures and Algorithms and Data Structures and Algorithms Lab	4
EGR 1003 and EGR 1003L	Introduction to Engineering I and Introduction to Engineering I Lab	3
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 2024 and EGR 2024L	Circuit Analysis and Circuit Analysis Lab	4
MTH 1064 and MTH 1064L	Calculus I (GE) and Calculus I Lab (GE)	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 (GE) and University Physics I Lab (GE)	4
PHY 2054 and PHY 2054L	University Physics II and University Physics II Lab	4
Upper-Division Requirements		
EGR 3014	Operating Systems	4
EGR 3023	Software Engineering	3
EGR 3053 and EGR 3053L	Analog Electronics and Analog Electronics Lab	3
EGR 3073	Networking and Security	3
EGR 3093 and EGR 3093L	Digital Electronics and Digital Electronics Lab	3
EGR 4003	Information and Computer Security	3
EGR 4054	Computer Architecture and Assembly Language	4
EGR 4072	Senior Project I	2
EGR 4082	Senior Project II	2
EGR 4092	Internship in Engineering	2
EGR 4103	Electrical Signals and Systems	3
MTH 3033	Differential Equations	3
MTH 3063 or MTH 3083	Calculus Based Statistics with R Mathematical Probability and Statistics	3
Total Units		**79**

Electrical Engineering Concentration

Code	Title	Units
Lower-Division Requirements		
EGR 1003 and EGR 1003L	Introduction to Engineering I and Introduction to Engineering I Lab	3
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 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 (GE) and Calculus I Lab (GE)	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 (GE) and University Physics I Lab (GE)	4
PHY 2054 and PHY 2054L	University Physics II and University Physics II Lab	4
Upper-Division Requirements		
EGR 3003	Python and UNIX	3
EGR 3053 and EGR 3053L	Analog Electronics and Analog Electronics Lab	3
EGR 3062	Electricity, Magnetism, and Waves I	2
EGR 3083	Electricity, Magnetism, and Waves II	3
EGR 3093 and EGR 3093L	Digital Electronics and Digital Electronics Lab	3
EGR 3113	Measurement and Instrumentation	3
EGR 4043 and EGR 4043L	Embedded Systems and Robotics and Embedded Systems and Robotics Lab	3
EGR 4063	Solid State Engineering	3
EGR 4072	Senior Project I	2
EGR 4082	Senior Project II	2
EGR 4092	Internship in Engineering	2
EGR 4103	Electrical Signals and Systems	3
MTH 3033	Differential Equations	3
MTH 3063 or MTH 3083	Calculus Based Statistics with R Mathematical Probability and Statistics	3
PHY 3003 and PHY 3003L	Modern Physics and Modern Physics Lab	3
Choose a minimum of one (1) course from the following:		1-2
CSC 3011	Machine Learning and Multivariate Modeling in R	
CSC 3022	Data Management for Data Analytics	
CSC 3031	Data Visualization and Communication with R	
Total Units		**79-80**

Mechanical Engineering Concentration[2]

Code	Title	Units
Lower-Division Requirements		
EGR 1003 and EGR 1003L	Introduction to Engineering I and Introduction to Engineering I Lab	3

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 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 (GE) and Calculus I Lab (GE)	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 (GE) and University Physics I Lab (GE)	4
PHY 2054 and PHY 2054L	University Physics II and University Physics II Lab	4
Upper-Division Requirements		
EGR 3003	Python and UNIX	3
EGR 3034 and EGR 3034L	Mechanics of Materials and Mechanics of Materials Lab	4
EGR 3043	Analytical Mechanics: Dynamics	3
EGR 3113	Measurement and Instrumentation	3
EGR 3123 and EGR 3123L	Mechanical Engineering Applications and Mechanical Engineering Applications Lab	3
EGR 4013	Thermodynamics	3
EGR 4043 and EGR 4043L	Embedded Systems and Robotics and Embedded Systems and Robotics Lab	3
EGR 4063	Solid State Engineering	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 3003 and PHY 3003L	Modern Physics and Modern Physics Lab	3
MTH 3063 or MTH 3083	Calculus Based Statistics with R Mathematical Probability and Statistics	3
Total Units		**77**

[1] Recommended Courses for Computer Engineering Concentration: EGR 4043/EGR 4043L and MTH 3043.

[2] Recommended Courses for Mechanical Engineering - Physics Concentration: CHE 1052/CHE 1052L and MTH 2033.