# ENGINEERING, B.S.E.

## Concentrations

## 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 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 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 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** | | **78** |

## Electrical Engineering Concentration

| 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 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 3003 | Python and UNIX | 3 |
| EGR 3053 and EGR 3053L | Analog Electronics and Analog Electronics Lab | 3 |
| EGR 3063 | Electricity, Magnetism, and Waves I | 3 |
| 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 4042 and EGR 4042L | Embedded Systems and Robotics and Embedded Systems and Robotics Lab | 2 |
| EGR 4063 | Solid State Physics | 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 3004 and PHY 3004L | Modern Physics and Modern Physics Lab | 4 |
| **Total Units** | | **78** |

## Mechanical Engineering - Physics Concentration[2]

| 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 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 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 3063 | Electricity, Magnetism, and Waves I | 3 |
| EGR 3083 | Electricity, Magnetism, and Waves II | 3 |
| EGR 3113 | Measurement and Instrumentation | 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** | | **77** |

[1]  Recommended Courses for Computer Engineering Concentration: EGR 4042/EGR 4042L and MTH 3043.

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