DIVISION OF MATHEMATICS, SCIENCES, AND ENGINEERING

# ENGINEERING

ASSOCIATE OF SCIENCE DEGREE

The **Associate of Science Degree in Engineering** will prepare those students interested in laying a foundation for further study and for a bachelor's degree in an engineering field from a four-year college or university.

This degree program is for t**he Associate of Science Degree in Engineering** only and fulfills many of the requirements and foundation courses for transfer to baccalaureate engineering-related majors, but does not satisfy all transfer requirements for specific institutions. Students should consult with a counselor for major preparation for specific universities and colleges.

To acquire the **Associate of Science Degree in Engineering**, students must complete the required major courses below with a grade of "C" or better or of "P" if the course was taken on a Pass/No Pass basis, along with either of the following: Rio Hondo College General Education (RHC GE) or California General Education Transfer Curriculum (Cal-GETC). California State University General Education - Breadth (CSU GE) or Intersegmental General Education Transfer Curriculum (IGETC) may be used in some cases; please see a counselor for details.

| Required Courses | Units | N | IP | C |
|---|---|---|---|---|
| **MATH 190/H**  *Calculus I/Honors | 4 | | | |
| **MATH 191**     *Calculus II | 4 | | | |
| **PHY 211**      *Physics for Scientists & Engineers I | 4 | | | |
| **PHY 213**      *Physics for Scientists & Engineers III | 4 | | | |
| **Plus a minimum of 20 units from one of the following areas of specialization, including at least 3 units of Engineering courses listed in that area.** | | | | |
| **Areas of Specialization:** | | | | |
| **Mechanical, Aerospace, and Manufacturing Engineering** | | | | |
| **ENGR/ENGT 100** Intro. to Engineering | 2 | | | |
| **ENGR 141**        *Materials Science Engineering <br> and | 3 | | | |
| **ENGR 141L**    *Materials Science Engineering Lab | 1 | | | |
| **ENGR 212**     *Computational Methods in MATLAB/Octave | 4 | | | |
| **ENGR 217**      *Electric Circuit Analysis | 3 | | | |
| **ENGR 217L**   * Electric Circuit Analysis Lab | 1 | | | |
| **ENGR 235**     *Engineering Mechanics: Statics | 3 | | | |
| **ENGR 240**     *Strength of Materials | 3 | | | |
| **ENGR 245**      *Engineering Mechanics: Dynamics | 3 | | | |
| **ENGT 122**        Intermediate Engineering Design: Geometric Dimensioning & Tolerancing | 3 | | | |
| **CHEM 130**    *General Chemistry I | 5 | | | |
| **CHEM 140**    *General Chemistry II | 5 | | | |
| **MATH 250**    *Calculus III | 4 | | | |
| **MATH 251**    *Linear Algebra and Differential Equations <br> OR | 5 | | | |
| **MATH 260**    *Linear Algebra <br> OR | 4 | | | |
| **MATH 270**    *Differential Equations <br> OR | 4 | | | |
| **MATH 260**    *Linear Algebra <br> AND | 4 | | | |

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| **MATH 270**  *Differential Equations | **4** | | | | |
| **PHY 212**   *Physics for Scientists & Engineers – II | **4** | | | | |
| **Electrical Engineering** | | | | | |
| **ENGR/ENGT 100**  Introd. to Engineering | **2** | | | | |
| **ENGR 141**     *Materials Science Engineering<br>and | **3** | | | | |
| **ENGR 141L**    *Materials Science Engineering Lab | **1** | | | | |
| **ENGR 212**     *Computational Methods in MATLAB/Octave | **4** | | | | |
| **ENGR 217**     *Electric Circuit Analysis | **3** | | | | |
| **ENGR 217L**    * Electric Circuit Analysis Lab | **1** | | | | |
| **ENGR 235**     *Engineering Mechanics: Statics | **3** | | | | |
| **CIT 125**        Introduction to C++ Programming<br>or | **4** | | | | |
| **CIT 127**       *Python Programming I<br>or | **3** | | | | |
| **CIT 135**        Introduction to Java Programming | **4** | | | | |
| **CHEM 130**   *General Chemistry I | **5** | | | | |
| **MATH 250**   *Calculus III | **4** | | | | |
| **MATH 251**   *Linear Algebra and Differential Equations<br>OR | **5** | | | | |
| **MATH 260**   *Linear Algebra<br>OR | **4** | | | | |
| **MATH 270**   *Differential Equations<br>OR | **4** | | | | |
| **MATH 260**   *Linear Algebra<br>AND | **4** | | | | |
| **MATH 270**  *Differential Equations | **4** | | | | |
| **PHY 212**     *Physics for Scientists & Engineers – II | **4** | | | | |
| **Civil Engineering** | | | | | |
| **ENGR/ENGT 100**     Intro. to Engineering | **2** | | | | |
| **ENGR 141**     *Materials Science Engineering<br>and | **3** | | | | |
| **ENGR 141L**    *Materials Science Engineering Lab | **1** | | | | |
| **ENGR 212**     *Computational Methods in MATLAB/Octave | **4** | | | | |
| **ENGR 217**     *Electric Circuit Analysis | **3** | | | | |
| **ENGR 235**     *Engineering Mechanics: Statics | **3** | | | | |
| **ENGR 240**     *Strength of Materials | **3** | | | | |
| **ENGR 245**     *Engineering Mechanics: Dynamics | **3** | | | | |
| **CIV 140**        Civil Engineering & Construction Fundamentals | **4** | | | | |
| **CIV 142**        Introduction to Land Surveying and GPS | **4** | | | | |
| **CHEM 130**   *General Chemistry I | **5** | | | | |
| **MATH 250**   *Calculus III | **4** | | | | |
| **MATH 251**   *Linear Algebra and Differential Equations<br>OR | **5** | | | | |
| **MATH 260**   *Linear Algebra<br>OR | **4** | | | | |
| **MATH 270**   *Differential Equations<br>OR | **4** | | | | |
| **MATH 260**   *Linear Algebra<br>AND | **4** | | | | |

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| **MATH 270**  *Differential Equations | **4** | | | | |
| **PHY 212**  *Physics for Scientists & Engineers – II | **4** | | | | |
| **Computer, Software Engineering** | | | | | |
| **ENGR/ENGT 100**  Intro. to Engineering | **2** | | | | |
| **ENGR 212**  *Computational Methods in MATLAB/Octave | **4** | | | | |
| **ENGR 217**  *Electric Circuit Analysis | **3** | | | | |
| **ENGR 217L**  * Electric Circuit Analysis Lab | **1** | | | | |
| **CIT 125**  Introduction to C++ Programming<br>or<br>**CIT 135**  Introduction to Java Programming | **4**<br><br>**4** | | | | |
| **CIT 127**  *Python Programming I | **3** | | | | |
| **CIT 128**  *Python Programming II | **3** | | | | |
| **CS 152**  *Discrete Structures | **3** | | | | |
| **MATH 250**  *Calculus III | **4** | | | | |
| **MATH 251**  *Linear Algebra and Differential Equations<br>OR<br>**MATH 260**  *Linear Algebra<br>OR<br>**MATH 270**  *Differential Equations<br>OR<br>**MATH 260**  *Linear Algebra<br>AND<br>**MATH 270**  *Differential Equations | **5**<br><br>**4**<br><br>**4**<br><br>**4**<br><br>**4** | | | | |
| **PHY 212**  *Physics for Scientists & Engineers – II | **4** | | | | |
| **Chemical Engineering** | | | | | |
| **ENGR/ENGT 100**  Introduction to Engineering | **2** | | | | |
| **ENGR 212**  *Computational Methods in MATLAB/Octave | **4** | | | | |
| **ENGR 217**  *Electric Circuit Analysis | **3** | | | | |
| **ENGR 217L**  * Electric Circuit Analysis Lab | **1** | | | | |
| **ENGR 235**  *Engineering Mechanics: Statics | **3** | | | | |
| **CHEM 130**  *General Chemistry I | **5** | | | | |
| **CHEM 140**  *General Chemistry II | **5** | | | | |
| **CHEM 230**  *Organic Chemistry I | **5** | | | | |
| **CHEM 231**  *Organic Chemistry II | **5** | | | | |
| **MATH 250**  *Calculus III | **4** | | | | |
| **MATH 251**  *Linear Algebra and Differential Equations<br>OR<br>**MATH 260**  *Linear Algebra<br>OR<br>**MATH 270**  *Differential Equations<br>OR<br>**MATH 260**  *Linear Algebra<br>AND<br>**MATH 270**  *Differential Equations | **5**<br><br>**4**<br><br>**4**<br><br>**4**<br><br>**4** | | | | |
| **PHY 212**  *Physics for Scientists & Engineers – II | **4** | | | | |
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| **Total major units needed for Associate of Science** | **36-38** | | | | |
| *Prerequisite/Corequisite | | | | | |