

# Mechanical Engineering

## Associate in Science

### **DIVISION OF SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS**

Mechanical engineers are active in all engineering functions of a product including creative design, research and development, production, and management. Energy, airplanes, automobiles, space vehicles, machinery, earth-moving equipment, and medical hardware are but a few examples of the infinite number of products that mechanical engineers have produced through their use of the basic laws of physical sciences.

Upon successful completion, the Associate in Science Degree in [Mechanical Engineering](#) is awarded.

### **CAREER PATHWAY**

Students are advised to select career pathway electives after careful consideration of their career choices in their second year. Some electives may not transfer to engineering programs at some four-year institutions.

#### **Career Pathway Electives:**

MN 118 Ethics for Engineers and Technologists, EC 201 Principles of Macroeconomics (fall), EC 202 Principles of Microeconomics (spring: recommended for transferring to UMass Lowell), BI 110 Principles of Biology I (fall) (recommended for transfer to Northeastern University Mechanical Engineering program)

#### **Career Pathway Electives:**

CS 120 Programming I (fall), CS 200 Programming II (spring), or Computer Science (CS) courses higher than CS 110 (for transfer to UMass Lowell for Electrical Engineering/Computer Science double major program)

#### **Humanities Electives:**

Art, Communication, Critical Thinking, English (EN 103 or higher), ESL (ES 100 or higher; up to 6 credits), Film, Foreign Language, Humanities, Literature, Music, Oral Communication, Philosophy, Photography, Sign Language, Theater Arts

#### **Social Science Electives:**

Anthropology, Economics, Geography, Government, History, Law, Psychology, Sociology

### **PROGRAM FOOTNOTES**

Students are advised to check transfer requirements at four-year institutions. Some institutions require 2 (two) Chemistry courses for specific engineering programs. The CH 110 and CH 120 sequence are recommended in such cases.

Quantitative skills are a MassBay graduation competency for associate degree programs. Prior to graduation, students must

| COURSE                        | COURSE TITLE                                      | CREDITS      |
|-------------------------------|---|--------------|
| <i>First Year Semester 1</i>  |   |              |
| CT 100                        | Critical Thinking                                 | 3            |
| PY 103                        | Engineering Physics I w/ Lab                      | 4            |
| EN 101                        | English Composition I                             | 3            |
| MA 200                        | Calculus I  | 4            |
| MN 130                        | Engineering Design with CAD I                     | 4            |
|                               | <b>credits:</b>                                   | 18           |
| <i>First Year Semester 2</i>  |   |              |
| MN 125                        | Engineering Computation with Application Software | 4            |
| PY 104                        | Engineering Physics II w/ Lab                     | 4            |
| EN 102                        | English Composition II                            | 3            |
|                               | Humanities Elective                               | 3            |
| MA 201                        | Calculus II                                       | 4            |
|                               | <b>credits:</b>                                   | 18           |
| <i>Second Year Semester 1</i> |   |              |
| CH 110                        | Principles of Chemistry w/ Lab                    | 4            |
|                               | <b>OR</b>   |              |
| CH 140                        | Chemistry for Engineers w/ Lab                    | 4            |
| MA 202                        | Calculus III                                      | 4            |
| CS 110                        | Introduction to Computer Science                  | 4            |
| MN 203                        | Engineering Mechanics: Statics                    | 3            |
|                               | Social Science Elective                           | 3            |
|                               | <b>credits:</b>                                   | 18           |
| <i>Second Year Semester 2</i> |   |              |
| MN 204                        | Engineering Mechanics: Dynamics                   | 3            |
| MA 211                        | Differential Equations                            | 4            |
| MN 210                        | Strength of Materials I                           | 4            |
|                               | Career Pathway Elective                           | 3/4          |
|                               | Humanities Elective                               | 3            |
|                               | <b>OR</b>   |              |
|                               | Social Science Elective                           | 3            |
|                               | <b>credits:</b>                                   | 17/18        |
|                               | <b>Total Credits:</b>                             | <b>71/72</b> |

demonstrate this competency by completing a 100-level math course (not MAC); or placing into a 200-level mathematics course.

This program qualifies as an Alternative Transfer Agreement (MassTransfer) with select public institutions in Massachusetts. For more information, visit [www.mass.edu/masstransfer](http://www.mass.edu/masstransfer).