**Engineering**
Associate in Science

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

This program is designed to enhance students’ interest in the math and science fields by pursuing a career in engineering. The program’s core curriculum emphasizes mathematics, physics, and chemistry -- the foundation for all engineering projects. The core curriculum is complemented with courses in engineering design, engineering mechanics, and engineering physics.

Upon successful completion, the Associate in Science Degree in 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 or may not transfer to an engineering program at some four-year institutions

**PROGRAM FOOTNOTE**

**Career Pathway Electives:**
- MN 118 Ethics for Engineers and Technologists
- EC 201 Principles of Microeconomics (fall)
- BI 110 Principles of Biology I (fall) (recommended for transferring to UMass Lowell)

**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, English (EN 103 or higher), ESL 101 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

Quantitative skills are a MassBay graduation competency for associate degree programs. Prior to graduation, students must demonstrate this competency by completing a 100-level math course (not MAC); or placing into a 200-level mathematics course.

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

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).

**COURSE** | **COURSE TITLE** | **CREDITS**
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**First Year** | **Semester 1**
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
**credits:** | **15**
**First Year** | **Semester 2**
PY 104 | Engineering Physics II w/ Lab | 4
MN 125 | Engineering Computation with Application Software | 4
EN 102 | English Composition II | 3
MA 201 | Calculus II | 4
CT 100 | Critical Thinking | 3
**credits:** | **18**
**Second Year** | **Semester 1**
CH 110 | Principles of Chemistry I w/ Lab | 4
or
CH 140 | Chemistry for Engineers w/ Lab | 4
CS 110 | Introduction to Computer Science | 4
MA 202 | Calculus III | 4
MN 203 | Engineering Mechanics: Statics | 3
Social Science Elective | 3
**credits:** | **18**
**Second Year** | **Semester 2**
MA 211 | Differential Equations | 4
MN 204 | Engineering Mechanics: Dynamics | 3
MN 210 | Strength of Materials I | 4
or
Career Pathway Elective | 3/4
Humanities Elective | 3
Humanities Elective | 3
or
Social Science Elective | 3
**credits:** | **16/17**
**Total Credits:** | **67/68**

*AY 22 - 23*