


# Engineering

## Associate in Science

 MassBay courses are offered days, evenings, weekends, and online. View the complete list of online courses at <https://mbccweb.massbay.edu/online/>

Check current course availability at [www.massbay.edu/courses](http://www.massbay.edu/courses)

### ***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 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, English (EN 103 or higher), Film, Foreign Language, Humanities, Literature, Music, Oral Communication, Philosophy, Photography, Sign Language, Theater Arts

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

Anthropology, Economics, Geography, Government, History, LA 200 Media and the Law, LA230 Law and Society, Psychology, Sociology

Competency in mathematics is a MassBay graduation requirement. Prior to graduation, students must demonstrate competency at 100-level math. This may be accomplished by an appropriate placement test score or completion of any 100-level mathematics course or higher, except mathematics courses with a MAC prefix.

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.

COURSE	COURSE TITLE	CREDITS
<i>First Year</i>	<i>Semester 1</i>	
PY 103	Engineering Physics I w/ Lab	4
EN 101	Freshman English I	3
MA 200	Calculus I	4
MN 130	Engineering Design with CAD I	4
	<b>credits:</b>	15
<i>First Year</i>	<i>Semester 2</i>	
PY 104	Engineering Physics II w/ Lab	4
MN 125	Engineering Computation with Application Software	4
EN 102	Freshman English II	3
MA 201	Calculus II	4
CT 100	Critical Thinking	3
	<b>credits:</b>	18
<i>Second Year</i>	<i>Semester 1</i>	
CH 110	Principles of Chemistry I w/ Lab	4
	<b>or</b>	
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
	<b>credits:</b>	18
<i>Second Year</i>	<i>Semester 2</i>	
MA 211	Differential Equations	4
MN 204	Engineering Mechanics: Dynamics	3
MN 210	Strength of Materials I	4
	<b>or</b>	
	Career Pathway Elective	3/4
	Humanities Elective	3
	Humanities Elective	3
	<b>or</b>	
	Social Science Elective	3
	<b>credits:</b>	16/17
	<b>Total Credits:</b>	<b>67/68</b>

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).