Engineering

Associate in Science

DIVISION OF SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS

This comprehensive program provides an overview of the engineering field. Students following the program intend to transfer into the following programs: Civil/Environmental Engineering, Chemical Engineering, Biomedical Engineering or General Engineering.

Upon successful completion, the Associate in Science Degree in Engineering is awarded.

PROGRAM PATHWAYS

Students are advised to select program electives after careful consideration of their future education and career choices. Some electives may or may not transfer to an engineering program at some four-year institutions. Students are advised to check transfer requirements at four-year institutions.

PROGRAM FOOTNOTES

- CO 131 Oral Communications requirement can be substituted for a Humanities elective.
- EC 201 Principles of Macroeconomics requirement can be substituted for EC 202 Principles of Microeconomics or another Social Science elective.
- CT 100 Critical Thinking can be fulfilled by passing the Critical Thinking Challenge Exam.

PROGRAM ELECTIVES

MN 125 Engineering Computation with Application Software
MN 130 Engineering Design with CAD I
MN 203 Engineering Mechanics: Statics*
MN 204 Engineering Mechanics: Dynamics**
MN 210 Strength of Materials**
MN 220 Thermodynamics I***
MA 105 Introduction to Statistics
MA 210 Introduction to Linear Algebra
CH 201 Organic Chemistry I
CH 202 Organic Chemistry II**
BI 110 Principles of Biology I
BI 113 Essentials of Anatomy and Physiology w/Lab**
EV 103 Environmental Studies I
PY 104 Engineering Physics II

Humanities Electives:

Art, Communication, 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 ELECTIVES BY PATHWAYS

Students pursuing Chemical Engineering:

CH201 Organic Chemistry I (C3)
CH202 Organic Chemistry II (C4)**
BI110 Principles of Biology 1
MN220 Thermodynamics I***
MN130 Engineering Design with CAD I *(Northeastern University)*
MN 125 Engineering Computation with Application Software *(Northeastern University and Wentworth Institute of Technology)*

Students pursuing Civil/Environmental Engineering:

MN 203 Engineering Mechanics – Statics (M2)*
MN 204 Engineering Mechanics – Dynamics (M3)**
MN 210 Strength of Materials (*UMass Lowell-Civil Engineering)* (M3)**
MA 105 Introduction to Statistics *(UMass Lowell)*
BI 110 Principles of Biology 1 *(Northeastern University)*
EV 103 Environmental Studies I *(Northeastern University-Civil)*
PY 104 Engineering Physics II *(Wentworth Institute of Technology)*
MN 125 Engineering Computation with Application Software *(Northeastern University and Wentworth Institute of Technology)*

Students pursuing Biomedical Engineering:

CH201 Organic Chemistry I
MA105 Introduction to Statistics
PY 104 Engineering Physics II
BI110 Principles of Biology I
MN220 Thermodynamics I***
MN130 Engineering Design with CAD I *(Northeastern University and Wentworth Institute of Technology)*
BI 113 Essentials of Anatomy and Physiology w/Lab *(Wentworth Institute of Technology)***
MN 125 Engineering Computation with Application Software *(Northeastern University and Wentworth Institute of Technology)*

Transfer specific sequences/notes:

Courses must be taken in sequence:
M1, M2, M3 – Civil Engineering
C1, C2, C3, C4 – Chemical Engineering
MA 210 – Introduction to Linear Algebra is only recommended for transfer to Northeastern University

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.

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

MASSBAY COMMUNITY COLLEGE

Engineering Associate Degree Curriculum

COURSE	COURSE TITLE	CREDITS
First Year	*Semester 1*	
CH 110 (C1)	Principles of Chemistry I w/ Lab	4
EN 101	English Composition I	3
MA 200	Calculus I	4
CO 131 º	Oral Communications	3
ET 111	iCREAT I	3
MN 100	Career Readiness and Portfolio	1
	credits:	18
First Year	*Semester 2*	
PY 103 (M1)	Engineering Physics I w/ Lab	4
	OR	
	Program Elective	3/4
EN 102	English Composition II	3
MA 201	Calculus II	4
CT 100 º	Critical Thinking	3
CH 120 (C2)	Principles of Chemistry II w/ Lab	4
	credits:	17/18
Second Year	*Semester 1*	
MA 202	Calculus III	4
MN 101	Introduction to CAD (Civil Engineering)	4
	Program Elective	3/4
EC 201 º	Principles of Macroeconomics	3
	credits:	14/15
Second Year	*Semester 2*	
MA 211	Differential Equations	4
PH 102 º	Ethics	3
	Program Elective	3/4
	Program Elective	3/4
	credits:	13/15
	Total Credits:	**62/66**

* Fall only course
** Spring only course
*** Summer only course