

Moraine Valley Community College
Associate in Engineering Science (A.E.S.) Degree
Effective Date August 2022

68 Credit Hours

Curriculum Code 2400

This program is a recommended pathway for students pursuing a Bachelor of Science in Engineering degree who elect to complete the first two years of their engineering degree at Moraine Valley. By doing so, students can earn an Associate in Engineering Science (A.E.S.) degree. The program is suitable for all engineering majors, including but not limited to aerospace, agricultural and biological, architectural, biomedical, chemical, civil, computer, computer science, electrical, energy management, engineering mechanics, engineering physics, general, industrial, materials science, mechanical, nuclear, and systems engineering. Students are advised to work early on with an academic advisor at the institution they intend to transfer to, as well as at Moraine Valley, to ensure they choose the appropriate courses.

Summary of Credit Hours Required

A. General Education Core Curriculum: 34 credit hours

1. Communication (9)
2. Mathematics (14)
3. Physical Science (8)
4. Humanities and Fine Arts or Social/Behavioral Sciences (3)

B. Baccalaureate Major/Minor and Elective Courses: 34 credit hours

Total A.E.S. Degree: 68 credit hours

A. General Education Core Curriculum – 34 credit hours as follows:

The General Education courses required for the A.E.S. degree are approved by the Illinois Articulation Initiative (IAI); however, the structure of the A.E.S. does not meet the minimum IAI General Education Core Requirements. Students will need to complete the general education requirements of the school to which they transfer. Students interested in an engineering major should consult the catalog of their transfer school and an academic advisor for appropriate requirements.

Communications - 9 credit hours as follows:

COM-101	Composition I (3)
COM-102	Composition II (3)
COM-103	Speech Fundamentals (3)

Mathematics - 14 credit hours as follows:

MTH-150	Calculus I & Analytic Geometry (5)
MTH-151	Calculus II & Analytic Geometry (5)
MTH-152	Calculus III & Analytic Geometry (4)

Note: Students who are prepared to take MTH-150 during their first semester can complete the A.E.S. program in two years. Typically, such students have had four years of mathematics in high school, with calculus or pre-calculus coursework completed in their senior year. A.E.S. students not ready to take MTH-150 may have to take additional math coursework that does not count towards the degree's course requirements and may extend degree completion beyond two years.

Moraine Valley Community College
Associate in Engineering Science (A.E.S.) Degree
Effective Date August 2022

Physical Science - 8 credit hours as follows:

CHM-131 Chemistry (University Oriented) I (4)
PHY-203 Mechanics (4)

Humanities and Fine Arts or Social and Behavioral Sciences – Select 3 credit hours from the following Humanities and Fine Arts or Social/Behavioral Science courses below:

Humanities—

ARB-202 Arabic IV (4)
FRE-202 French IV (4)
HUM-101 Western Humanities I: Foundations (3)
HUM-102 Western Humanities II: Continuities (3)
HUM-115 World Mythology (3)
HUM-120 Women in the Humanities (3)
HUM-135 African & Middle Eastern Humanities (3)
HUM-140 Asian & Oceanic Humanities (3)
HUM-145 Native American Humanities (3)
HUM-155 LGBTQ Humanities (3)
LIT-205 Literature for Children/Young Adults (3)
LIT-213 American Literature I (3)
LIT-214 American Literature II (3)
LIT-215 Bible as Literature I (3)
LIT-216 Bible as Literature II (3)
LIT-217 Introduction to Poetry (3)
LIT-218 Introduction to Drama (3)
LIT-219 Women in Literature (3)
LIT-220 Introduction to Fiction (3)
LIT-221 English Literature I (3)
LIT-222 English Literature II (3)
LIT-223 Western Literature I (3)
LIT-224 Western Literature II (3)
LIT-225 Shakespeare (3)
LIT-226 Literature of the Non-Western World (3)
LIT-227 Literature as Film (3)
LIT-228 Latin American Literature (3)
LIT-230 African American Literature (3)
PHI-101 Introduction to Philosophy (3)
PHI-111 Critical Thinking (3)
PHI-120 World Religions (3)
PHI-125 Ethics (3)
PHI-200 Philosophy of Religion (3)
SPA-202 Spanish IV (4)
SPA-213 Introduction to Hispanic Literature (3)

Fine Arts

ART-110 Art Appreciation (3)

Moraine Valley Community College
Associate in Engineering Science (A.E.S.) Degree
Effective Date August 2022

ART-205 Survey of Art I (3)
ART-206 Survey of Art II (3)
ART-208 Survey of Art III (3)
ART-209 Survey of Non-Western Art (3)
HUM-101 Western Humanities I: Foundations (3)
HUM-102 Western Humanities II: Continuities (3)
HUM-120 Women in the Humanities (3)
HUM-135 African & Middle Eastern Humanities (3)
HUM-140 Asian & Oceanic Humanities (3)
HUM-145 Native American Humanities (3)
HUM-155 LGBTQ Humanities (3)
LIT-205 Lit. for Children/Young Adults (3)
LIT-227 Literature as Film (3)
MUS-106 Introduction to American Music (3)
MUS-107 Music Appreciation (3)
THE-105 Theatre Appreciation (3)
THE-107 Film Appreciation (3)
THE-110 History of the Theatre (3)
THE-111 History of Film (3)

Social/Behavioral Sciences

ANT-201 Introduction to Physical Anthropology (3)
ANT-202 Introduction to Cultural Anthropology (3)
ANT-210 Introduction to Archaeology (3)
ECO-101 Principles of Macroeconomics (3)
ECO-102 Principles of Microeconomics (3)
GEO-101 Cultural Geography (3)
GEO-102 World Regional Geography (3)
GEO-201 Economic Geography (3)
HIS-101 Western Civilization I (3)
HIS-102 Western Civilization II (3)
HIS-150 World History to 1500 (3)
HIS-151 World History since 1500 (3)
HIS-201 American History I (3)
HIS-202 American History II (3)
HIS-210 History of Asia (3)
HIS-215 History of Africa (3)
HIS-220 History of Latin America (3)
PSC-103 Introduction to Political Science (3)
PSC-110 American National Government (3)
PSC-115 State and Local Government (3)
PSC-210 International Relations (3)
PSC-215 Comparative Government (3)
PSC-225 Non-Western Comparative Politics (3)
PSC-245 Politics of the Middle East (3)
PSY-101 Introduction to Psychology (3)

Moraine Valley Community College
Associate in Engineering Science (A.E.S.) Degree
Effective Date August 2022

PSY-104 Life-Span Developmental Psychology (3)
PSY-105 Child Psychology (3)
PSY-106 Adolescent Psychology (3)
PSY-202 Social Psychology (3)
PSY-210 Adult Psychology (3)
SOC-101 General Sociology (3)
SOC-102 Marriage and Family (3)
SOC-204 Sociology of Contemporary Social Problems (3)
SOC-210 Minority Groups (3)
SOC-215 Sociology of Sex and Gender (3)
SSC-101 Social Science I (3)

B. Baccalaureate Major/Minor Field and Elective Courses —34 credit hours as follows:

First Year Engineering Experience Courses—3 credit hours as follows:

EGN-110	Introduction to Engineering I	1
EGN-120	Introduction to Engineering II	2

Major Field Courses—10 credit hours as follows:

CSC-140	Introduction to Computer Science	3
MTH-201	Differential Equations	3
OR		
MTH-215	Discrete Mathematics (for CS majors)	
PHY-204	Heat, Electricity and Magnetism	4

Electives —At least 21 credit hours as follows:

BIO-111	General Biology I	4
CHM-132	Chemistry (University Oriented) II **	4
CHM-203	Organic Chemistry I	5
CIS-165	Python Programming	3
CIS-176	Java Programming I	3
CSC-240	Advanced Computer Science	3
CSC-280	Data Structures with Applications	4
EGN-150	Introduction to Design	3
EGN-201	Engineering Statics *	
EGN-202	Engineering Dynamics	3
EGN-205	Circuits Analysis	4
EGN-227	Strength of Materials	3
EGN-252	Thermodynamics	3
MTH-210	Linear Algebra	3
MTH-215	Discrete Mathematics	3
PHY-205	Waves and Modern Physics	4

* Engineering Pathways students must take at least EGN-201

** Engineering Pathways students must take CHM-132

Moraine Valley Community College
Associate in Engineering Science (A.E.S.) Degree
 Effective Date August 2022

68 Credit Hours
Curriculum Code 2400

Suggested Schedule

Semester 1

COM-101	Composition I	3
CSC-140	Introduction to Computer Science	3
CHM-131	Chemistry (University Oriented) I	4
EGN-110	Introduction to Engineering I	1
MTH-150	Calculus I/Analytic Geometry	<u>5</u>
		16

Semester 2

COM-102	Composition II	3
EGN-120	Introduction to Engineering II	2
MTH-151	Calculus II/Analytic Geometry	5
PHY-203	Mechanics	4
_____	Elective ***	<u>3-4</u>
		17-18

** Note: Engineering Pathways students must take CHM-132; all other AES students, select only electives from the listed program options.

Semester 3

___-___	Elective ***	3-4
___-___	Elective ***	3-4
MTH-152	Calculus III/Analytic Geometry	4
PHY-204	Heat, Electricity, and Magnetism	4
COM-103	Speech Fundamentals	<u>3</u>
		17-19

* Note: Engineering Pathways students must take at least EGN-201

Semester 4

MTH-201	Differential Equations	3
___-___	Elective***	3
___-___	Elective ***	3-4
___-___	Elective ***	3-4
___-___	Humanities and Fine Arts or Social and Behavioral Sciences Elective	<u>3</u>
		15-17

Semester 5 (Summer)

___-___	Elective ***	3-4
---------	--------------	-----

*** Note: Select only electives from the listed program options.