

PRE-ENGINEERING

Associate in Science (AS) Degree

Minimum Credits: 62.0

Contact Hours: 71.0

INTRODUCTION This is a suggested program of study which may be altered to meet individual goals and specific transfer plans. Students should refer to the descriptions of Alpena Community College's graduation requirements and AS degree distribution requirements, and consult with an academic advisor concerning specific course selection. A minimum total of 60 credits is required for the Associate in Science degree.

GENERAL EDUCATION COURSES (MEETS GRADUATION REQUIREMENTS AND MTA)

COURSE	TITLE	CREDITS	CONTACT HOURS
ENG 111 or ENG 121	English Composition I or Advanced English Composition I	3.0	3.0
ENG 112 or ENG 122	English Composition II or Advanced English Composition II	3.0	3.0
MTH 131	Analytic Geometry & Calculus I	5.0	5.0
PLS 221	American Government and Politics	3.0	3.0
ANP,ECN,EDU,GEO,HST,PSY,SOC	Additional Social Science Requirement	3.0-4.0	3.0-5.0
ART,ASL,ENG,HST,HUM,MUS,PHL,SPE	Humanities/Fine Arts Req (excluding studio & performance classes)	8.0	8.0
CEM 121	General & Inorganic Chemistry	4.0	7.0
PHY 221	Physics	<u>5.0</u>	<u>7.0</u>
GENERAL EDUCATION CREDITS/CONTACT HOURS:		34.0-35.0	39.0-41.0

CORE PROGRAM COURSES (MEET WITH ACADEMIC ADVISOR TO DETERMINE CORE PROGRAM COURSES FOR CONCENTRATION AND TRANSFER)

COURSE	TITLE	CREDITS	CONTACT HOURS
EGR 122	Introduction to Engineering	1.0	1.0
EGR 130	Team Design Project	2.0	3.0
EGR 221	Statics	3.0	3.0
MTH 132	Analytic Geometry & Calculus II	5.0	5.0
MTH 231	Analytic Geometry & Calculus III	5.0	5.0
MTH 232	Differential Equations	4.0	4.0
MTH 221	C++ Programming	3.0	4.0
PHY 222	Physics	<u>5.0</u>	<u>7.0</u>
ADDITIONAL PROGRAM CREDITS/CONTACT HOURS:		28.0	32.0

SUGGESTED ELECTIVES (MEET WITH ACADEMIC ADVISOR TO DETERMINE ELECTIVES FOR CONCENTRATION AND TRANSFER)

From the list below, select courses until at total 60 credits are earned

CAD 150	3D Modeling	3.0	4.0
CEM 122	Inorganic Chemistry & Qualitative Analysis (if Chemical Engineering)	4.0	7.0
ECN 231 or ECN 232	Economics	3.0	3.0
EGR 290	Engineering Internship	1.0-3.0	1.0-3.0
GEO 151 & GEO 152	Introduction to GIS & Advanced GIS	3.0	4.0
PHL 125	Language & Reason	<u>3.0</u>	<u>3.0</u>

ELECTIVE CREDITS/CONTACT HOURS:

MINIMUM PROGRAM CREDITS/CONTACT HOURS: 62.0 71.0

SUGGESTED SEQUENCING OF COURSES:

YEAR 1 (FALL SEMESTER) <u>16.0-17.0</u> CREDITS	CREDITS	CONTACT HRS	YEAR 1 (SPRING SEMESTER) <u>16.0-18.0</u> CREDITS	CREDITS	CONTACT HRS
ENG 111 or ENG 121 English Comp	3.0	3.0	ENG 112 or 122 English Comp	3.0	3
MTH 131 Analytic Geometry & Calculus I	5.0	5.0	MTH132 Analytic Geometry & Calculus II	5.0	5
CEM 121 General & Inorganic Chemistry	4.0	7.0	II	3.0	4
EGR 122 Introduction to Engineering	1.0	1.0	MTH 221 C++ Programming	3	3
General Edu. Requirement	3.0-4.0	<u>3.0-4.0</u>	PLS 221 American Gov. and Politics		
TOTAL	16.0-17.0	19.0-20.0	EGR 130 Team Design Project, or CEM 122 or General Edu. Requirement	<u>2-4</u>	<u>3-7</u>
			TOTAL	16-18	18-22
YEAR 2 (FALL SEMESTER) <u>16-18.0</u> CREDITS	CREDITS	CONTACT HRS	YEAR 2 (SPRING SEMESTER) <u>14-15.0</u> CREDITS	CREDITS	CONTACT HRS
MTH231 Analytic Geometry & Calculus III	5	5	MTH 232 Differential Equations	4	4
PHY 221 Physics	5	7	PHY 222 Physics	5	7
General Edu. Requirement	3-4	3-4	EGR 221 Statics	3	3
General Edu. Requirement or Elective	<u>3-4</u>	<u>3-4</u>	General Edu. Requirement or Elective	<u>2-3</u>	<u>3-4</u>
TOTAL	16-18	18-20	TOTAL	14-15	17-18
YEAR 1 OR 2 (SUMMER SEMESTER) <u>3</u> CREDITS	CREDITS	CONTACT HRS	CREDITS	CONTACT HRS	
EGR 290 ENGINEERING SUMMER INTERNSHIP (OPTIONAL)			1-3	1-3	

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