

# PRE-ENGINEERING

## ASSOCIATE IN SCIENCE (AS) DEGREE

DESCRIPTION: This is a suggested program of study which may be altered to meet individual goals and specific transfer plans. Students should refer to the description of Alpena Community College 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 REQUIREMENTS CREDITS: 34

ENG 111 <i>or</i>	ENGLISH COMPOSITION I (3/3) <i>or</i>
ENG 121	ADVANCED ENGLISH COMPOSITION I (3/3)
ENG 112 <i>or</i>	ENGLISH COMPOSITION II (3/3) <i>or</i>
ENG 122	ADVANCED ENGLISH COMPOSITION II (3/3)
MTH 131	ANALYTICAL GEOMETRY & CALCULUS I (5/5)
PLS 221	AMERICAN GOVERNMENT & POLITICS (3/3)

ANP, ECN, EDU, GEO, HST, PSY, SOC  
SOCIAL SCIENCE REQUIREMENT (3/4)

ART, ASL, ENG, HST, HUM, MUS, PHL, SPE  
HUMANITIES/FINE ARTS REQUIREMENT (8/8) <sup>A</sup>

CEM 121 GENERAL & INORGANIC CHEMISTRY (4/7)  
PHY 221 PHYSICS (5/7)

### CORE PROGRAM REQUIREMENTS CREDITS: 29

EGR 122	INTRODUCTION TO ENGINEERING (1/1)
EGR 130	TEAM DESIGN PROJECT (2/3)
EGR 221	STATICS (3/3)
MTH 132	ANALYTIC GEOMETRY & CALCULUS II (5/5)
MTH 231	ANALYTIC GEOMETRY & CALCULUS III (5/5)
MTH 232	DIFFERENTIAL EQUATIONS (4/4)
MTH 221	C++ PROGRAMMING (4/5)
PHY 222	PHYSICS (5/7)

### SUGGESTED ELECTIVES CREDITS:

CAD 150	3D MODELING (3/4)
CEM 122	INORGANIC CHEM & QUALITATIVE ANALYSIS (4/7) (IF CHEMICAL ENGINEERING)
ECN 231 <i>or</i>	ECONOMICS (MICRO) (3/3) <i>or</i>
ECN 232	ECONOMICS (MACRO) (3/3)
EGR 290	ENGINEERING INTERNSHIP (1/1)
GEO 151	INTRODUCTION TO GIS (1.5/2)
GEO 152	ADVANCED GIS (1.5/2)
PHL 125	LANGUAGE & REASON (3/3)

### MINIMUM 63 CREDIT HOURS/76 CONTACT HOURS

#### NOTES:

<sup>A</sup> Excluding studio & performance classes.

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### SUGGESTED SEQUENCE OF COURSES

#### YEAR 1 (FALL SEMESTER) CREDITS: 16

ENG 111 <i>or</i>	ENGLISH COMPOSITION I (3/3) <i>or</i>
ENG 121	ADVANCED ENGLISH COMPOSITION I (3/3)
MTH 131	ANALYTICAL GEOMETRY & CALCULUS I (5/5)
CEM 121	GENERAL & INORGANIC CHEMISTRY (4/7)
EGR 122	INTRODUCTION TO ENGINEERING (1/1) GENERAL EDUCATION REQUIREMENTS (3/3)

#### YEAR 1 (SPRING SEMESTER) CREDITS: 16

ENG 112 <i>or</i>	ENGLISH COMPOSITION II (3/3) <i>or</i>
ENG 122	ADVANCED ENGLISH COMPOSITION II (3/3)
MTH 132	ANALYTIC GEOMETRY & CALCULUS II (5/5)
MTH 221	C++ PROGRAMMING (4/5)
PLS 221	AMERICAN GOVERNMENT & POLITICS (3/3)

EGR 130 *or* TEAM DESIGN PROJECT (2/3) *or*  
CEM 122 *or* INORGANIC CHEM & QUALITATIVE ANALYSIS (4/7) *or*  
GENERAL EDUCATION REQUIREMENT (3/3)

#### YEAR 2 (FALL SEMESTER) CREDITS: 16

MTH 231	ANALYTIC GEOMETRY & CALCULUS III (5/5)
PHY 221	PHYSICS (5/7) GENERAL EDUCATION REQUIREMENT (3/3) GENERAL EDUCATION REQ OR ELECTIVE (3/3)

#### YEAR 2 (SPRING SEMESTER) CREDITS: 14

MTH 232	DIFFERENTIAL EQUATIONS (4/4)
PHY 222	PHYSICS (5/7)
EGR 221	STATICS (3/3) GENERAL EDUCATION REQ OR ELECTIVE (3/3)

#### YEAR 1 OR 2 (SUMMER SEMESTER) CREDITS: 1

EGR 290	ENGINEERING INTERNSHIP (1/1)
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