MESA COMMUNITY COLLEGE

Associate in Science (AS) Degree
MCC/ASU Fulton Mechanical Engineering (Energy and Environment) Advisement Flow Chart
2009-2010 Catalog Year

First Year Composition

FYC ENG 101 or 107
First-Year Comp (3)
Completed: _____

FYC ENG 102 or 108
First-Year Comp (3)
Completed: _____

Social & Behavioral Sciences

SB _____
3 Credits
Completed: _____

SB _____
3 Credits
Completed: _____

Humanities and Fine Arts

HU _____
3 Credits
Completed: _____

HU _____
3 Credits
Completed: _____

Reading and Communication

Oral Communication
COM 230 (0-3 Credits)
Completed: _____

Critical Reading
CRE 101 (0-3 Credits)
Completed: _____

Chemistry Requirements

Program Prerequisites

CHM 130/130LL
General Chem I (4)
Completed: _____

CHM 151/151LL
General Chem I (4)
Completed: _____

CHM 152/152LL
General Chem II (4)
Completed: _____

CHM 230
Organic Chem (3)
Completed: _____

Note: Students who have not completed high school chemistry or completed high school chemistry more than two years prior to enrolling in CHM 151 should take CHM 130/130LL.

Physics Requirements

Program Prerequisites

PHY 111
General Physics I (4)
Completed: _____

PHY 112
General Physics 2 (4)
Completed: _____

SQ PHY 121
Univ Physics I (4)
Completed: _____

SQ PHY 131
Univ Physics II (4)
Completed: _____

Note: Students who have not completed high school physics or completed high school physics more than two years prior to enrolling in PHY 121 should take PHY 111.

Mathematics Requirements

Program Prerequisites

MAT 150, 151 or 152
College Algebra (3)
Completed: _____

MAT 182 or 187
Trig or PreCalc (3)
Completed: _____

MA MAT 221
Calculus I (4)
Completed: _____

MAT 231
Calculus II (4)
Completed: _____

MAT 241
Calculus III (4)
Completed: _____

MAT 262
Diff Equations (3)
Completed: _____

Engineering Requirements

ECE 102
Engineering Anal (2)
Completed: _____

ECE 103
Engineering Design (2)
Completed: _____

ECE 214
Engineering Mech (4)
Completed: _____

ECE 215
Mech of Materials (3)
Completed: _____

EEE 202
Circuits & Devices (5)
Completed: _____

ASU ARIZONA STATE UNIVERSITY

Major Map: Mechanical Engineering (Energy and Environment) – Bachelor of Science in Engineering (B.S.E.)

Ira A. Fulton School of Engineering, Tempe Campus
Catalog Year: 2009-2010

Mesa Community College courses shown in blue.

Completed ATP: ☐ *Yes* ☐ *No* | *Completed AGEC:* ☐ *Yes* ☐ *No*

Course Subject and Title *(courses in **bold/shading** are critical)*	Hrs.	Upper Division	Transfer Course/Grade	Minimum Grade if Required	Additional Critical Requirement Notes
TERM ONE: 0-15 CREDIT HOURS					
+ASU 101-FSE: The ASU Experience	1	☐	ECE 102/103		• **Complete CHM 114 or 116 or 115; MAT 265 each with a minimum grade of "C"**
CHM 114: General Chemistry for Engineers(SQ) OR CHM 115: General Chemistry with Qualitative Analysis (SQ) OR CHM 116: General Chemistry II* (SQ)	4	☐	CHM 152 *(3)* CHM 152LL *(1)*	Grade of C	+ ASU 101-FSE and MAE 100 required for freshmen and should be completed first semester. Non-freshmen see advisor for petitioning replacement electives.
+MAE 100: Introduction to Mechanical and Aerospace Engineering (or Department Approved Elective)	2	☐	ECE 102/103	Grade of C in MAE 100	• An SAT, ACT, Accuplacer, or TOEFL score determines placement into first-year composition courses
MAT 265: Calculus for Engineers I	3	☐	MAT 221 *(4)*	Grade of C	• ASU Math Placement Exam score determines placement in Mathematics course
ENG 101 or 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or 108: English for Foreign Students**	3	☐	ENG 101/102 ENG 107/108	Grade of C	*CHM 113 is a prerequisite and does not apply towards degree credit
Social & Behavioral Science (SB) AND Cultural Diversity in the US (C), or Historical Awareness (H)	3	☐	SB Elective *(3)*		**If ENG 105 a 3 hr applicable elective must also be taken prior to graduation. See Advisor.
TERM TWO: 16-30 CREDIT HOURS					
MAT 266: Calculus for Engineers II	3	☐	MAT 231 *(4)*	Grade of C	• **Complete MAT 266; PHY 121, 122 each with a minimum grade of "C"**
PHY 121/122: University Physics I/ Laboratory I (SQ)	3/1	☐	PHY 121 *(4)*	Grade of C	
ENG 101 or 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or 108: English for Foreign Students**	3	☐	ENG 101/102 ENG 107/108	Grade of C	
Humanities, Fine Arts & Design (HU) AND Cultural Diversity in the US (C), or Historical Awareness (H)	3	☐	HU Elective *(3)*		
TERM THREE: 31-45 CREDIT HOURS					
MAE 212: Engineering Mechanics	4	☐	ECE 214 *(4)*	Grade of C	• **Complete ENG 102 or 108 or 105 ; MAT 275; PHY 131, 132; MAE 212 each with a minimum grade of "C"**
MAT 275: Modern Differential Equations (MA)	3	☐	MAT 262 *(3)*	Grade of C	• Complete First Year Composition requirement: ENG 101 & 102 or ENG 107 & 108 or ENG 105
PHY 131/132: University Physics II Electricity and Magnetism/ Laboratory (SQ)	3/1	☐	PHY 131 *(4)*	Grade of C	
MAE 214: Computer-Aided Engineering I	1	☐		Grade of C	
MAT 267: Calculus for Engineers III	3	☐	MAT 241 *(4)*	Grade of C	
TERM FOUR: 46-60 CREDIT HOURS					
MAE 213: Solid Mechanics	3	☐	ECE 215 *(3)*	Grade of C	• **Complete MAE 213, 240 each with a minimum grade of "C"**
MAE 240: Thermofluids I	4	☐		Grade of C	
CHM 231: Elementary Organic Chemistry	3	☐	CHM 230 *(3)*	Grade of C	
MAT 343: Applied Linear Algebra	3	☒		Grade of C	
MSE 250: Structure and Properties of Materials	3	☐		Grade of C	
TERM FIVE: 61-75 CREDIT HOURS					
MAE 340: Thermofluids II	3	☒		Grade of C	
EEE 202: Circuits I	4	☐	EEE 202 *(5)*	Grade of C	
MAE 322: Structural Mechanics	4	☒		Grade of C	
MAE 323: Computer-Aided Engineering II	2	☒		Grade of C	
MAE 384: Numerical Methods for Engineers (CS)	3	☒		Grade of C	
TERM SIX: 76-90 CREDIT HOURS					
BIO 319 Environmental Science (G) or BIO 320: Fundamentals of Ecology	3	☒			
MAE 318: Sensors and Controls	5	☒		Grade of C	
MAE 342: Principles of Mechanical Design	3	☒		Grade of C	
Technical Elective	3	☒		Grade of C	
TERM SEVEN: 91-105 CREDIT HOURS					
MAE 382: Thermodynamics	3	☒		Grade of C	
MAE 491: Experimental Mechanical Engineering (L)	3	☒		Grade of C	
Technical Elective	3	☒		Grade of C	
Technical Elective	3	☒		Grade of C	
GCU 364: Energy in the Global Arena (SB,G) or PUP 190: Sustainable Cities (HU, G or SB,G)	3	☐			
TERM EIGHT: 106-120 CREDIT HOURS					
MAE 400: Engineering Profession (L)	3	☒		Grade of C	
MAE 446: Energy Systems Design	3	☒		Grade of C	
Technical Elective	3	☒		Grade of C	
GPH 314: Global Change (HU,G) or PHI 310: Environmental Ethics (HU)	3	☒			
Humanities, Fine Arts & Design (HU) OR Social & Behavioral Science (SB) (6 hrs min in both SB & HU required)	3	☐	HU Elective *(3)*		

ASU ARIZONA STATE UNIVERSITY

Major Map: Mechanical Engineering (Energy and Environment) – Bachelor of Science in Engineering (B.S.E.)

Ira A. Fulton School of Engineering, Tempe Campus
Catalog Year: 2009-2010

Graduation Requirements Summary:

Total Hours Regular Curriculum (120)	Total UD Hrs (45 min)	Total Hrs at ASU (30 min)	Cumulative GPA (2.00 minimum)	Major GPA (2.00 minimum GPA)	Hrs Resident Credit for Academic Recognition (56 min)	Total Comm. College Hrs. (64 Max)

General University Requirements: Legend

- General Studies Core Requirements:
  - Literacy and Critical Inquiry (L)
  - Mathematical Studies (MA)
  - Computer/Statistics/Quantitative applications (CS)
  - Humanities, Fine Arts, and Design (HU)
  - Social and Behavioral Sciences (SB)
  - Natural Science-Quantitative (SQ)
  - Natural Science-General (SG)
- General Studies Awareness Requirements
  - Cultural Diversity in the US (C)
  - Global Awareness (G)
  - Historical Awareness (H)
- First-Year Composition

Additional Notes: