CHANDLER-GILBERT
COMMUNITY
COLLEGE

480.732.7000
2626 East Pecos Road
Chandler, AZ 85225-2499

ENGINEERING PROGRAM
DIVISION OF SCIENCE

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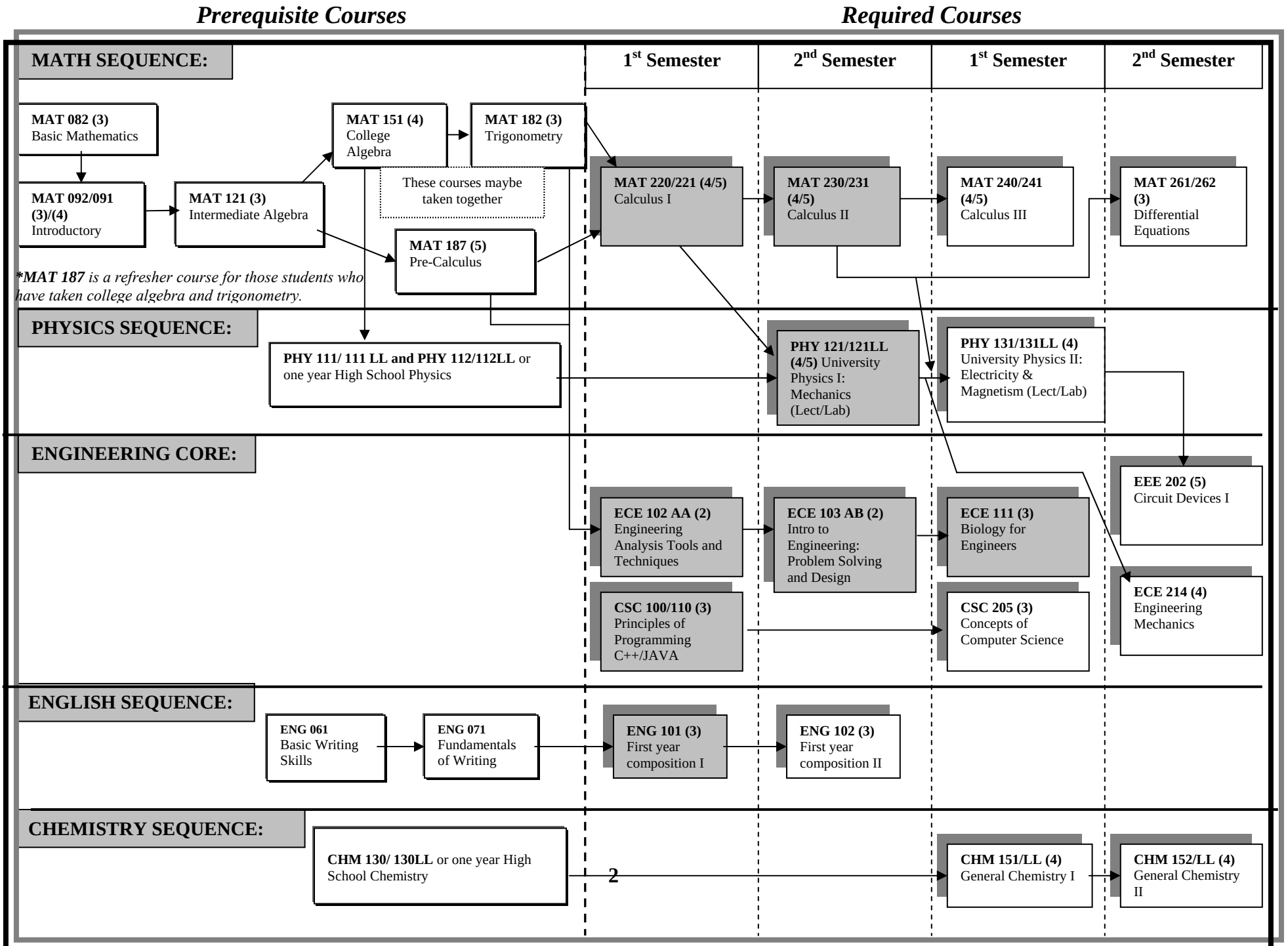
INDUSTRIAL ENGINEERING PROGRAM

Advisement Packet

The content of this document might change.
Please check with an advisor.

ENGINEERING ASSESSMENTS AND COURSE SEQUENCE
INDUSTRIAL ENGINEERING



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ENGINEERING PROGRAM

SUGGESTED SEQUENCING OF COURSES

Industrial Engineering

Required Courses

(Equivalent units at ASU are indicated between parentheses)

FRESHMAN YEAR				**SOPHOMORE YEAR**			
First Semester		Second Semester		First Semester		Second Semester	
Course	Cr	Course	Cr	Course	Cr	Course	Cr
ECE 102 AA	**2**	**ECE 103 AB**	**2 (3)**	**ECE 111**	**3 (3)**	**EEE 202**	**5 (4)**
ENG 101	**3 (3)**	**ENG 102**	**3 (3)**	**CHM 151 & 151LL**	**4 (0)**	**ECE 214**	**4 (3)**
MAT 220/221	**4/5 (3)**	**MAT 230/231**	**4/5 (3)**	**MAT 240/241**	**4/5 (3)**	**MAT 262**	**3 (3)**
ECN 111/112	**3 (3)**	**PHY 121 & 121LL**	**4 (4)**	**PHY 131 & 131LL**	**4 (4)**	**CHM 152 & 152LL**	**4 (4)**
CSC 100/110	**3 (3)**	**HU/SB**	**3 (3)**	**CSC 205**	**3 (3)**	**HU/SB**	**3 (3)**
Total C.G.C.C. Credits: **15/16** Total ASU Units: **(12)**		Total C.G.C.C. Credits: **16/17** Total ASU Units: **(16)**		Total C.G.C.C. Credits: **18/19** Total ASU Units: **(13)**		Total C.G.C.C. Credits: **19/20** Total ASU Units: **(17)**	
Total number of credit hours at **CHANDLER-GILBERT COMMUNITY COLLEGE**:						**65/69**	
Total equivalent units at **ARIZONA STATE UNIVERSITY**:						**(55)**	

Note: According to ASU Industrial Engineering advisement sheet:
Humanities & Social Sciences (HU/SB) (15 hrs minimum)
(Required: 1 course upper division; 2 courses from the same dept; 2 depts. or more Represented; plus a minimum of two courses that satisfy three awareness areas: Cultural (C), Global (G), and Historical (H). Double counting is permissible between HU or SB and the awareness areas and also within the awareness areas.)

See attached sheet for available courses at CGCC.

The following courses meet the general studies requirements:

(Only lower division courses can be taken at Chandler-Gilbert Community College)

Awareness areas are coded:
(H) = **Historical** (G) = **Global** (C) = **Cultural**

HUMANITIES & FINE ARTS (HU)**:**

AJS Administration of Justice	123
ARH Art Humanities	100/101(H)/102(H) 115/118(G)/145(C)/201(G, H)
ASB Anthropology	211(G)/221(G)/222(G, H)/223(G, H)
COM Communication	241
DAH Dance Humanities	100(G)/201(G)
EDU Education	291/292(C)/294(C)
ENH English Humanities	110(C)/112(C)/113/114(C)/201(H)/202(G,H)/204/205(C)/206/214/221(H)222(H)/230/241/ 242/250/251(G)/254/255(C)/256/259(C)/260(C)/270/275/284(C)/285(C)/289/291/ 294/295(C)
HUM Humanities	101/105AA-AE(C)*/107/108/120(C)/125/190AA-AI*/201(G)/202(G)/203/205/206/207/ 208(C)/ 209(C,H)/210/211AA-AC(G)/213(G)/214(C)/250(H)/251(H)/260(C)/ 261(G,H)/292(C)
MHL Music: History/Literature	140(H)/142(H)/143(G)/145(C)/146/147/153(H)
PHI Philosophy	101/102/103/104(G)/105/106/109/201/213/218/224/225(C)/233AA/233AB/234AA/ 243(G,H)/244/245/246
REL Religious Studies	101/201(H)/202(G)/203(C)/205/213/225(C)/243(G,H)/244/246/270/271
THE Theatre	111/205(H)/206/210/220/260

LITERACY & CRITICAL INQUIRY (L):

COM Communication	207/222/225/230/241
CRE Critical Reading	101
ENG English	111/200/213/215/216/217/218
ENH English Humanities	254/255(C)
GPH Physical Geography	211
HUM Humanities	250(H)/251(H)
JRN Journalism	201/212
MCO Mass Communications	220(C)
PHI Philosophy	103/106
POS Political Science	115
PSY Psychology	290AB-AC
REL Religion	203(C)/205
THE Theatre	220

SOCIAL & BEHAVIORAL SCIENCES (SB)**:**

AJS Administration of Justice	101/200/225/258(C)/270(C)
ASB Anthropology	102(G)/211(G)/214(G)/222(G,H)/223(G,H)/230/235(C,H)/238(H)/245(C,H)
CFS Child/Family Studies	157/159/176/205/259
COM Communication	100/110/230/250/263(C,G)
ECN Economics	111/112/160(H)/212(G)/250(G)
EDU Education	221/222(C)
GBS General Business	280
HES Health Science	100
HIS History	100(H)/101(H)/102(G,H)/103(H)/104(H)/105(H)/105AA-AC(H)/106(C,H)/109(C,H)/ 135(H)/145(G,H)/170(C,H)173(H)/201(C,H)/203(C,H)/209(C,H)/241(H)/242(G,H)/ 251(H)/252(H)/272(G,H)/273(G,H)/277(G,H)
POS Political Science	100/110/115/120(G)/125(G)/130/140(G)/210/223(C)/285
PSY Psychology	101/132(C,G)/157(C,G)/215/218/235©/240/245/250/258/260/266/270/277/280/281/292
SOC Sociology	101/110/130/140(C)/141(C,H)/143(C)/157/210/212(C)/215/240(C)/245/251/253/265/270

EQUIVALENCY INFORMATION
for INDUSTRIAL ENGINEERING

For transfer from CGCC to ASU

CHANDLER-GILBERT COMMUNITY COLLEGE			*Arizona State University*	
Course	***Cr***	***Title***	***Course***	***Cr***
ECE 111	**3**	Biology for Engineers	BME 111	**3**
ECE102 & 103	**2,2=4**	Intro to Engineering	IEE 100	**3**
ECE 214	**4**	Engineering Mechanics	CEE 211	**4**
ECE 214	**4**	Engineering Mechanics	MAE 212	**4**
EEE 202	**5**	Circuit Devices I	EEE 202	**4**
CSC 100	**3**	Principles of Programming C++	CSE 100	**3**
CSC 110	**3**	Principles of Programming JAVA	CSE 110	**3**
CSC 205	**3**	Concepts of Computer Science	CSE 205	**3**
MAT 220/221	**4/5**	Calculus I	MAT 265	**3**
MAT 230/231	**4/5**	Calculus II	MAT 266	**3**
MAT 240/241	**4/5**	Calculus III	MAT 267	**3**
MAT 261/262	**3/4**	Differential Equations	MAT 275	**3**
PHY 121 & 121LL	**4**	Physics I & Lab	PHY 121 & 122	**4**
PHY 131 & 131LL	**4**	Physics II & Lab	PHY 131 & 132	**4**
ENG 101	**3**	First Year Comp. (ENGLISH)	ENG101	**3**
ENG 102	**3**	First Year Comp. (ENGLISH)	ENG102	**3**

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INDUSTRIAL ENGINEERING PROGRAM

PERSONAL ENGINEERING SCHEDULE

FRESHMAN YEAR				**SOPHOMORE YEAR**			
First Semester		Second Semester		First Semester		Second Semester	
Course	Cr	Course	Cr	Course	Cr	Course	Cr
Total C.G.C.C. Credits: Total ASU Units:	**( )**	Total C.G.C.C. Credits: Total ASU Units:	**( )**	Total C.G.C.C. Credits: Total ASU Units:	**( )**	Total C.G.C.C. Credits: Total ASU Units:	**( )**
Total number of credit hours at **CHANDLER-GILBERT COMMUNITY COLLEGE**:							
Total equivalent units at **ARIZONA STATE UNIVERSITY**:						**( )**	

Industrial Engineering Skill Set

Course	Credits	Course Name	Course Description
ECE 111	3	Biology for Engineers (LEC)	N/A
CSC 100	3	Principles of Programming C++ (L+L)	Concepts of problem solving, structured programming in C++, fundamental algorithms and techniques, and computer system concepts. Social and ethical responsibilities. Intended for majors other than Computer Science. Prerequisites: MAT120, or MAT121, or MAT122.
OR CSC 110	3	Principles of Programming JAVA (L+L)	Concepts of problem solving, structured and object-oriented programming in Java, fundamental algorithms and techniques and computer system concepts. Social and ethical responsibilities. Intended for Computer Science and Computer Systems Engineering Majors. Prerequisites: MAT120, or MAT121, or MAT122.
ENG 101	3	First-Year Composition (LEC)	Emphasis on rhetoric and composition with a focus on expository writing and understanding writing as a process. Establishing effective college-level writing strategies through four or more writing projects comprising at least 3,000 words in total. Prerequisites: Appropriate English placement test score or (a grade of "C" or better in ENG071).
ECN 111	3	Macroeconomic Principles (LEC)	A descriptive analysis of the structure and functioning of the American economy. Emphasis on basic economic institutions and factors that determine national income and employment levels. Consideration given to the macroeconomic topics of national income, unemployment, inflation and monetary and fiscal policies. Prerequisites: None.
ECE 102 AA	2	Engineering Analysis Tools and Techniques	Learning culture of engineering, engineering use of computer tools, and computer modeling as applied to engineering analysis and design. Prerequisites: Two years of high school algebra or MAT122 or departmental approval. Corequisites: MAT151 or MAT182 or MAT187.
ECE 103 AB	2	Engineering Problem Solving and Design	Fundamentals of the design process: engineering modeling, communication and problem-solving skills in a team environment. Emphasis on process-based improvements to the design process. Introduction to engineering as a profession. Prerequisites: ECE102 and (high school physics or PHY111).
MAT 220/221	4/5	Calculus with Analytic Geometry I (LEC)	Real numbers, limits, continuity, differential and integral calculus of functions of one variable. May receive credit for only one of the following: MAT220 or MAT221. Prerequisites: Grade of "C" or better in (MAT150 or MAT151 or MAT152) and (MAT182 or MAT187 or equivalent), or satisfactory score on district placement exam.
MAT 230/231	4/5	Calculus with Analytic Geometry II (LEC)	Methods of integration, applications of calculus, elements of analytic geometry, improper integrals, sequences and series. May receive credit for only one of the following: MAT230 or MAT231. Prerequisites: Grade of "C" or better in MAT220, or MAT221, or equivalent.
PHY 121+121LL	4	University Physics I: Mechanics (L+L)	Kinematics, Newton's laws, work, energy, momentum, conservation laws, dynamics of particles, solids, fluids, mechanical waves, and sound. Prerequisites: MAT220, or MAT221, or department consent. One year of High School physics or PHY111 a PHY112 suggested but not required.
TOTAL CREDITS	*28/30*		

Minimum GPA may vary from semester to semester. See ASU's Industrial Engineering department/website for more details (http://construction.asu.edu/undergraduate/ugprospect.shtml).

Name _____ Major: Industrial Engineering Degree BSE

ASU ID _____

Anticipated Grad. Date _____ *AGEC-A, AGEC-B, AGEC-S;* *Completed:* □ *Yes* □ *No*

ASU Requirement for all incoming Freshmen				
ASU 101 The ASU Experience	1 credit			
I. English Proficiency (6 hrs) *(University requirement –"C" min required)*	Hrs Cr ASU Tr		Trans From	Gr
+ENG 101 / 107 First-Year Comp (3) **ENG 101** and				
+ENG 102 / 108 First-Year Comp (3) **ENG 102**				
Or, if eligible (see Catalog for eligibility), +ENG 105 Adv First-Year Comp (3) and				
An Applicable Elective (3) – see Department				
Sub Total (I) _____				

II. General Requirements (15 hrs) *(See Catalog for approved courses)*

A. Humanities & Social Sciences *(15 hrs min)*

(Required: 1 course upper division; plus a minimum of two courses that satisfy three awareness areas: cultural (C) global (G), and historical (H). Double counting is permissible between HU or SB and the awareness areas and also within the awareness areas.)

Humanities, Fine Arts, and Design (6 hrs min)(HU)				
Social/Behavioral Sciences (6 hrs min)(SB)				
ECN 211 Macroeconomics Prin *(SB)* **ECN211**	3			
Awareness Areas:				
Cultural				
Global				
Historical				

B. Literacy/Critical Inquiry *(6 hrs)*	***Satisfied by required courses in Major***
C. Natural Sciences/Basic Sciences *(8 hrs)*	***Satisfied by required courses in Major***
D. Mathematical Studies (*6 hrs)*	***Satisfied by required courses in Major***

Sub Total (II) _____

III. Required Lower Division Courses (54 hrs)

A. Natural Sciences/Basic Sciences *(15 hrs)*					
BME 111 Engr Persp on Bio Sys	**ECE 111**	3			
CHM 114 or 116[1] Chemistry *(SQ)* **CHM151+Lab, CHM 152+Lab**		4			
PHY 121 University Physics I *(SQ)*[2]	**PHY 115**	3			
PHY 122 Univ. Physics Lab I *(SQ)*[2]	**PHY 115LL**	1			
PHY 131 University Physics II *(SQ)*[2]	**PHY 116**	3			
PHY 132 Univ. Physics Lab II *(SQ)*[2]	**PHY 116LL**	1			
B. Mathematical Studies *(14 hrs)*					
MAT 242 Elem. Linear Algebra	**MAT 225**	2			
+ MAT 265 Calc for Engrs I	**MAT 220**	3			
+ MAT 266 Calc for Engrs II	**MAT 230**	3			
MAT 267 Calc for Engrs III	**MAT 240**	3			
MAT 275 Mod Diff. Eqs *(MA)*	**MAT 261**	3			

C. Lower Division Engineering *(25 hrs)*	Hrs Cr ASU Tr		Trans From	Gr
CEE 211 Engr Mechanics: Stat & Dyn ***OR*** MAE 212 Engr Mechanics **ECE 214**	4			
CSE 110 Prin. of Prog. with Java *(CS)* **CSC 110**	3			
CSE 205 Con of CS & Data Struc*(CS)* **CSC 205**	3			
EEE 202 Circuits I **EEE 202**	4			
+IEE 100 Intro Engr Dsgn For IE *(CS)* **ECE 102+103**	3			
+IEE 210 Intro to Indust Engr	2			
+IEE 220 Business & Ind. Engr.	3			
MSE 250 Structure / Prop. of Matter	3			
Sub Total (III) _____				

IV. Required Upper Division Courses (45 hrs)				
+IEE 300 Econ. Analysis. For Engrs	3			
+IEE 305 Information Systems Eng. *(CS)*	3			
+IEE 368 Facilities Analysis & Dsgn *(L)* ***OR*** +IEE 369 Work Analysis & Design *(L)*	3			
+IEE 376 Deterministic Operation Res. *(CS)*	3			
+IEE 380 Prob./Stat. for Engr Prob *(CS)*	3			
+IEE 385 Engr. Statistics With Probability *(CS)*	3			
+IEE 461 Production Control	3			
+IEE 470 Stochastic Oper Research	3			
+IEE 474 Quality Control *(CS)*	3			
+IEE 475 Sim Stochastic Syst *(CS)*	3			
+IEE 490 Project in Design *(L)*	3			
Career-Focused Area Electives *(9 hrs) See Dept*				
+IE Technical Elective *(3 hrs) See Dept*				
Sub Total (IV) _____				

Total Upper Division _____ (minimum 45 required)

+ A minimum grade of "C" (2.0) required

Designates a skill-set course

[1] CHM 113 is prerequisite and does not apply toward degree credit

[2] Must complete lecture and lab to receive SQ credit.

Graduation Requirements:

Regular Curriculum – 120 Hours

Semester Hour Summary	*Hrs/ASU*	*Tr Hrs*	*Total*
I. English Proficiency			
II. General Studies			
III. Required Lower Division			
IV. Required Upper Division			
Total Program Hours			