General Education Requirements (21 units)

Lower Division (21 units)

BLOCK A – Basic Subjects
A1 – Oral Communication  
COMM 1100 or HNRS 1100 (3)
A2 – Written Communication  
ENGL 1005B or 1010 (3)

AMERICAN INSTITUTIONS
U.S. History  
1 course from approved list (3)
U.S. Constitution / Local Government  
POLS 1000 (3)

BLOCK C – Arts & Humanities
C1 – Arts  
1 course from approved list (3)

BLOCK D – Social Sciences
1 course from approved list (3)

BLOCK E – Lifelong Understanding
ENGR 1500 (3)

University Writing Requirement
UNIV 4000 (WPE)  
Writing Proficiency Exam (prior to completing 90 semester units)

Major Requirements (101 units)

All prerequisites to major courses listed below must be satisfied with a grade of C or better.

Lower Division Major Requirements (47 units)

CHEM 1040  
General Chemistry for Engineers (4)  
Prerequisites: Must be Engineering major, score of 50 or more (or exemption from) ELM or MATH 0930

CE/ME 2010  
Statics (3)  
Prerequisites: ME 1500, MATH 2120, PHYS 2100

ME 2040  
Mechanical Engineering Measurements and Instrumentation (3)  
Prerequisites: PHYS 2200

CE/ME 2050  
Strength of Materials I (3)  
Prerequisites: CE/ME 2010

ME 2070  
Materials Science and Engineering (3)  
Prerequisites: CHEM 1040, MATH 2110

CE/ME 2120  
Matrix Algebra and Statistics and Probability for Engineers (3)  
Prerequisites: MATH 2120

MATH 2110  
Calculus I: Differentiation (4)  
Prerequisites: MATH 1040 or MATH 1081 and MATH 1083, or satisfactory score on placement exam; students with a grade of less than B- in either MATH 1040 or in one of MATH 1081 or MATH 1083 must enroll concurrently in MATH 2111.

MATH 2120  
Calculus II: Integration (4)  
Prerequisites: MATH 2110; students with a grade of less than B- in MATH 2110 must enroll concurrently in MATH 2121.

MATH 2130  
Calculus III: Sequences, Series, and Coordinate Systems (3)  
Prerequisites: MATH 2120; students with a grade of less than B- in MATH 2120 must enroll concurrently in MATH 2131.

MATH 2150  
Differential Equations (3)  
Prerequisites: MATH 2130

PHYS 2100  
General Physics I: Mechanics and Thermodynamics (5)  
Prerequisites: High School Physics or equivalent, or permission of the department, MATH 2110 or equivalent (may be taken concurrently)

PHYS 2200  
General Physics II: Electromagnetism and Optics (5)  
Prerequisites: PHYS 2100; Co-requisite: MATH 2120

CE/ME 2800  
Numerical Methods for Engineers I (1)  
Prerequisites: CE/ME 2120

ENGL 2030  
Introduction to Technical Writing (3)  
Prerequisites: ENGL 1010

Upper Division Major Requirements (37 units)

CE/EE/ME 3000  
Economics for Engineers (3)  
Prerequisites: None

EE/ME 3010  
Ethics & Professionalism in Engineering (3)  
Prerequisites: Junior or Senior standing in engineering.

CE/ME 3030  
Fluid Mechanics I (3)  
Prerequisites: PHYS 2100, CE/ME 2010

ME 3040  
Experimental Methods in Biomedical Engineering (1)  
Prerequisites: ME 2040 or EE 2040

ME 3060  
Heat Transfer I (3)  
Prerequisites: MATH 2150, CE/ME 3030 and ME 3261

CE/ME 3120  
Strength of Materials Lab I (1)  
Prerequisites: CE/ME 2050

CE/ME 3130  
Fluid Mechanics Lab I (1)  
Prerequisites: CE/ME 3030

ME 3150  
Thermal Systems Lab I (1)  
Prerequisites: ME 3261, ME 3060

May 31, 2016
ME 3200  Dynamics I (3) Prerequisites: CE/ME 2010
ME 3210  Kinematics of Mechanisms (3) Prerequisite: ME 3200
ME 3230  Machine Design I (3) Prerequisites: CE/ME 2050, ME 2070, MATH 2130
ME 3261  Thermodynamics I (3) Prerequisites: MATH 2120, PHYS 2200
ME 3270  Manufacturing Processes (3) Prerequisites: CE/ME 2050, ME 2070
ME 3800  Numerical Methods for Engineers II (2) Prerequisites: MATH 2150, ME 2800
ME 4140  Machine Design II (3) Prerequisite: ME 3230
ME 4310  Material Laboratory (1) Prerequisite: None

Senior Design Requirements (6 units)
The Senior Design requirement is a 2 course series that must be completed sequentially.
The first course (4971) is only offered during the Fall quarter.
ME 4971  Mechanical Engineering Senior Project (3) Prerequisites: Satisfactory completion of Writing Proficiency Examination (WPE), ME 3230.
ME 4972  Mechanical Engineering Senior Project (3) Prerequisites: ME 4971, ME 3040, ME 3060, ME 3270, ME 3800

Upper Division Technical Electives (11 units)
Select at least 11 units from a combination of lecture and laboratory courses listed below. Select in consultation with advisor.
Lecture Electives:
ME 3262  Thermodynamics II (3) Prerequisite: ME 3261
ME 3801  Introduction to Biomedical Engineering (3) Prerequisites: MATH 2120, PHYS 2200, BIOL 2020
ME 4020  Advanced Mechanics of Materials (3) Prerequisites: ME 3230, MATH 2150
ME 4030  Aerodynamics (3) Prerequisites: CE/ME 3030, MATH 2130
ME 4040  Compressible Aerodynamics (3) Prerequisites: ME3030, ME3261, ME3060
ME 4060  Heat Transfer II (3) Prerequisites: ME 3030, ME 3060
ME 4070  Design of Thermal Systems (3) Prerequisites: ME 3060, ME 3261
ME 4080  Fluid Mechanics II (3) Prerequisites: CE/ME 3030, MATH 2130
ME 4090  Mechanical Engineering Analysis (3) Prerequisites: MATH 2150 and senior standing
ME 4100  Control of Mechanical Systems (3) Prerequisites: PHYS 2200, MATH 2150, ME 3060
ME 4110  Vibrational Analysis I (3) Prerequisites: ME 3200, MATH 2150
ME 4150  Air Conditioning (3) Prerequisites: ME 3060, ME 3262
ME 4160  Energy Systems (3) Prerequisites: ME 3261
ME 4180  Renewable Energy and Sustainability (3) Prerequisites: ME 3261, CHEM 1040
ME 4190  Computer-Aided Mechanical Engineering (3) Prerequisites: ME 2800, ME 3030, ME 3060, ME 3230, ME 3261
ME 4210  Dynamics of Mechanisms (3) Prerequisites: ME 3200
ME 4220  Optimization of Mechanical Engineering Systems (3) Prerequisites: PHYS 2200, MATH 2150, ME 3060
ME 4230  Introduction to the Finite Element Method (3) Prerequisites: CE/ME 2120, ME 2800, MATH 2150; Co-requisites: ME 3060, ME 3230
ME 4280  Automation and Computer-Aided Manufacturing (3) Prerequisites: ME 3270
ME 4300  Properties and Selection of Engineering Materials (3) Prerequisites: ME 2070, ME 3270
ME 4500  Biomechanics (3) Prerequisites: CE/ME 2050, ME 3200
ME 4510  Biomaterials (3) Prerequisites: CHEM 1040, ME 2070, ME 2050
ME 4520  Impact Biomechanics (3) Prerequisites: CE/ME 2050, ME 3200
ME 4540  Special Topics in Mechanical Engineering (1-3) Prerequisites: Senior standing in mechanical engineering; enrollment subject to approval of instructor in charge.
ME 4590  Rehabilitation Design & Internship (3) Prerequisites: ME3200; Co-requisites: ME 3210 or ME 4210
ME 4810  Introduction to Robotics (2) Prerequisites: EE 3600 or ME 4100

Laboratory Electives:
ME 3140  Machine Design Laboratory (1) Prerequisites: ME 3230
ME 4130  Fluid Mechanics Laboratory II (1) Prerequisites: CE/ME 3130; Co-requisite: CE 3870 or ME 4080
ME 4990  Undergraduate Directed Study (1-4) Prerequisites: Consent of an Instructor

May 31, 2016