

## MECHANICAL ENGINEERING PROGRAM - Core Courses

### YEAR 1

SUBJ	NUM	TITLE	PREREQUISITES
CHEM	1300	Structure and Modelling in Chemistry	Applied Mathematics 40S or Pre-calculus Mathematics 40S, or the former Mathematics 40S (300); and Chemistry 40S (or equivalent) or CHEM 0900 (P), or a minimum grade of "B" in CHEM 1000 or CHEM 1001.
COMP	1012	Computer Programming for Scientists and Engineers	Any grade 12 or 40S Mathematics, or equivalent.
ENG	1430	Design in Engineering	A minimum grade of 60% in pre-calculus Mathematics 40S, or the former Mathematics 40S, Physics 40S, and Chemistry 40S.
ENG	1440	Introduction to Statics	A minimum grade of 60% in pre-calculus Mathematics 40S, or the former Mathematics 40S, Physics 40S, and Chemistry 40S.
ENG	1450	Introduction to Electrical and Computer Engineering	A minimum grade of 60% in pre-calculus Mathematics 40S, or the former Mathematics 40S, Physics 40S, and Chemistry 40S.
ENG	1460	Introduction to Thermal Sciences	A minimum grade of 60% in pre-calculus Mathematics 40S, or the former Mathematics 40S, Physics 40S, and Chemistry 40S.
ENGL	1400	The Study of Literature or W requirement from list below	English 40S or the former English 300 are strongly recommended, but English 40G or the former 301 or 305 will also be accepted.
MATH	1210	Techniques of Classical and Linear Algebra	A minimum grade of 60% in Pre-calculus Mathematics 40S or the former Mathematics 40S (300).
MATH	1510	Applied Calculus 1	A minimum grade of 60% in Pre-calculus Mathematics 40S or the former Mathematics 40S (300), & Physics 40S (300) or a "P" in PHYS0900.
MATH	1710	Applied Calculus 2	A grade of "C" or better in one of MATH 1500 or MATH 1510. Prerequisite or concurrent requirement: PHYS 1050.
PHIL	1290	Critical Thinking (recommended not required) or Choice	NA
PHYS	1050	Physics 1: Mechanics	Pre-calculus Mathematics 40S (300) (or equivalent) and Physics 40S (300) (or equivalent). Prerequisite or concurrent requirement: One of MATH 1500 or MATH 1510.

### YEAR 2

SUBJ	NUM	TITLE	PREREQUISITES
CHEM	1310	Applied Chemistry for Engineers	CHEM 1300
ENG	2030	Engineering Communication: Strategies for the Profession	ENGL 1400 (or equivalent) and ENG 1430
or ENG	2040	Engineering Communication: Strategies, Practice and Design	ENGL 1400 (or equivalent) and ENG 1430
MATH	2130	Engineering Mathematical Analysis 1	MATH 1210 and MATH 1710
MATH	2132	Engineering Mathematical Analysis 2	MATH 1210 and MATH 1710
MECH	2112	Computer Aided Design and Manufacturing Processes	ENG 1430
MECH	2150	Mechanical Engineering Modelling and Numerical Methods	COMP 1012 and Pre or Coreq MATH 2132.
MECH	2202	Thermodynamics	ENG 1460, MATH 1500/1510, and MATH 1700/1710
MECH	2222	Mechanics of Materials	PHYS 1050, ENG 1440, COMP 1012, and MATH 1700/1710
MECH	2262	Fundamentals of Fluid Mechanics	MATH 2130; Pre or Coreq: MATH 2132
MECH	2272	Engineering Materials 1	CHEM 1310 and MECH 2222
STAT	2220	Contemporary Statistics for Engineers	A "C" or better in one of MATH 1700 or MATH 1710.

### YEAR 3

SUBJ	NUM	TITLE	PREREQUISITES
MATH	3132	Engineering Mathematical Analysis 3	MATH 2130 and MATH 2132
MECH	3170	Project Management	MECH 2012 or CIVL 2830
MECH	3420	Vibrations and Acoustics	MATH 3132, MECH 3482
MECH	3430	Measurements and Control	MATH 3132, ENG 1450, Year class 3 restricted (students with 72 plus hours passed)
MECH	3460	Heat Transfer	MATH 3132, ENG 1460; Pre or Coreqs: MECH 3492
MECH	3482	Kinematics and Dynamics	PHYS 1050, ENG 1440, COMP 1012, and (MATH 1710 or MATH 1700). Year class 3 restricted (students with 72 plus hours passed)
MECH	3492	Fluid Mechanics and Applications	PHYS 1050, ENG 1440, COMP 1012, (MATH 1710 or MATH 1700) and MECH 2262 (MECH 2260)
MECH	3502	Stress Analysis and Design	MECH 2222 and MATH 2130
MECH	3542	Engineering Materials 2	MECH 2272
MECH	3652	Machine Design 4M	MECH 3482 and MECH 3502
MECH	3982	Mechanical Laboratory in Solid Mechanics	ENG 2030 or 2040, MECH 2202, MECH 2222; Pre or Coreqs: MECH 3420 and MECH 3502
MECH	3992	Mechanical Laboratory in Thermofluids	ENG 2030 or 2040, MECH 2202, MECH 2262; Pre or Coreqs: MECH 3460

### YEAR 4

SUBJ	NUM	TITLE	PREREQUISITES
ENG	3000	Engineering Economics	STAT 2220 (prerequisite override for MECH students...please contact your advisor)
ENG	3020	Technology, Society, and the Future	ENGL 1400 (or equivalent W requirement) Year class 3 restricted (students with 72 plus hours passed)
ECE	3010	Elements of Electric Machines and Digital Systems	ENG 1450 and MATH 2132, Year class 3 restricted (students with 72 plus hours passed)
MECH	4860	Engineering Design	ENG 2030 or ENG 2040, Pre or Co-requisite: MECH 3652 and eligibility to graduate
PHYS	1070	Physics 2: Waves and Modern Physics	PHYS 1050; and "C" or better in one of MATH 1500 or MATH 1510; Pre or Coreq: one of MATH 1700 or MATH 1710.