

REQUIREMENT SHEET

**UNDERGRADUATE MAJOR: BS Mechanical Engineering
2021/22**

CREDITS REQUIRED IN MAJOR: 128.5

A grade of D- or higher is required in all courses for the major.

FOUNDATION/REQUIRED MAJOR COURSES

COURSE NUMBER	COURSE NAME	CREDIT S	PREREQUISITES	OFFERED	Online
Eng 100	Writing I: Writing, Reading, & Inquiry	3	FY Student	Fall, Spring	Yes
Eng 102	Academic Writing 2	3	Eng 100	Fall, Spring	Yes
ITP 210	Technical Writing Level 3	3	Eng 100 and Eng 102	Fall, Spring, Summer	Yes
CHY 113	Principles of Chemistry I	3	Mat 108, 140, 152 or concurrent	Fall, Spring	No
CHY 114	Principles of Chemistry Lab I	1.5	Co-req with CHY 113	Fall, Spring	No
PHY 121	General Physics I	4	Co-req Mat 152	Fall, Spring, Summer	No
PHY 114	Physics Lab I	1	Co-req Phy 121	Fall, Spring, Summer	No
PHY 123	General Physics 2	4	C or higher in Phy 121	Fall, Spring, summer	No
PHY 116	General Physics 2 Lab	1	Co-req Phy 123	Fall, Spring, Summer	No
Mat 152	Calculus A	4	Mat 140 or approp score on college level exam	Fall, Spring, Summer	Yes
Mat 153	Calculus B	4	Mat 152	Fall, Spring, Summer	Yes
Mat 252	Calculus C	4	Mat 153	Fall, Spring, Summer	No
Mat 380	Theory of Probability & Stats	3	Mat 153	Spring, Summer	Yes
ELE 216	Circuits I: Steady-State Analysis	3	Mat 153, Phy 123	Fall, Spring at SMCC	No
ELE 217	Circuits 2: System Dynamics	3	ELE 216, Co-req EGN 248, ITP 210	Spring, Summer	No
ELE 219	Circuits 2 Lab	1	Co-req ELE 217	Spring, Summer	No
EGN 160 or COS 160	Intro to Programming C or Java	3	EGN 160 None COS 160 Grade C or higher in Mat 108	Fall Fall, Spring	No Yes

COS 170	Java lab	1	Co-Req COS 160	Fall, Spring	Yes
EGN 182	Engineering Tools: Solidworks	1	None	Fall	No
EGN 248	Differential Equations & Linear Algebra	4	Mat 153	Fall, Spring	No
ELE 323	Electromechanical Energy Conversion	3	ELE 217, ITP 210	Fall	No
THE 170	Public Speaking	3	None	Fall, Spring, Summer	Yes
EGN 301	Jr. Design Project, EGN Profession	3	ITP 210, THE 170, or Permission	Spring	No
EGN 304	Engineering Economics	3	Mat 152	Spring	No
EGN 18_	Any Engineering Tools lab	1	None	Fall, Spring	No
EGN 402	Senior Design Project	3	EGN 301, EGN 304, or permission	Fall, Spring, Summer	No
EGN 3XX	Engineering Elective >300	3	Depends on course chosen	Fall or Spring	No
EGN 3XX	Engineering Elective >300	3	Depends on course chosen	Fall or Spring	No
EGN 3XX	Engineering Elective >300	3	Depends on course chosen	Fall or Spring	No
EGN 3XX	Engineering Elective >300	3	Depends on course chosen	Fall or Spring	No

MAJOR REQUIREMENTS: 40 CREDITS

COURSE NUMBER	COURSE NAME	CREDIT S	PREREQUISITES	OFFERED	Online
MEE 150	Applied Mechanics: Statics	3	Mat 152, Phy 121	Fall, Spring	No
MEE 251	Strengths of Materials	3	MEE 150, Mat 153	Fall at USM and Spring (at SMCC)	No
MEE 259	Strengths of Materials Lab	1	Co-req MEE 251	Fall	No
MEE 270	Applied Mechanics: Dynamics	3	MEE 150, co-req Mat 252	Spring	No
MEE 230	Thermodynamics 1: Laws & Properties	3	Mat 153, Phy 121	Fall (SMCC), Spring at USM	No
MEE 260	Materials Science for Engineers	3	CHY 113, Mat 153, Phy 123	Fall	No
MEE 360	Fluid Mechanics	3	MEE 270, EGN 248, Mat 252	Fall	No
MEE 372	Computer-Aided Design of Machine Elements	4	MEE 251/259	Spring	No

EGN 188	Engineering Tools: Materials Processing	1	EGN 182	Spring	No
MEE 373	Design of Machines & Mechanisms	4	MEE 270, EGN 248, Mat 252, EGN 160 or COS 160/170	Fall	No
MEE 331	Thermodynamics 2: Flows & Cycles	3	MEE 230	Fall	No
MEE 339	Thermodynamics 2 Lab	1	Co-req MEE 331	Fall	No
MEE 374	Theory & Applications Vibrations	3	EGN 248, MEE 260	Spring	No
MEE 379	Theory & Applications Lab	1	MEE 270, MEE 259, Co-req MEE 374	Spring	No
MEE 432	Heat Transfer	3	MEE 230, MEE 360	Spring	No
MEE 439	Heat Transfer Lab	1	MEE 339, Co-req MEE 432	Spring	No

CAPSTONE SENIOR SEMINAR (3 CREDITS)

COURSE NUMBER	COURSE NAME	CREDITS	PREREQUISITES	OFFERED	Online
EGN 402	Senior Design Project	3	EGN 301, EGN 304	Fall, Spring, Summer	No

MAJOR COURSES OVERLAPPING IN THE CORE:

CORE AREA	COURSE NUMBER	COURSE NAME	REQUIRED BY MAJOR?
WRI 1	Eng 100	Writing, Reading, & Inquiry 1	Yes
WRI 2	Eng 102	Academic Writing 2	Yes
WRI 3	ITP 210	Technical Writing 3	Yes
QR	Mat 152	Calculus 1	Yes
CE	THE 170	Public Speaking	Yes
SE	CHY 113/114	Principles of Chemistry 1 and Lab	Yes
EISRC	EGN 304	Engineering Economics	Yes
EL	EGN 301	Jr.Design Project	Yes
CAP	EGN 402	Senior Design Project	Yes

CORE CURRICULUM CODES

WRI 1 – Writing, Reading, & Inquiry 1 (ENG 100)

WRI 2 – Writing, Reading, & Inquiry 2 (ENG 102)

WRI 3 – Writing, Reading, & Inquiry 3 (ITP 210)

QR – Quantitative Reasoning

CE – Creative Expression

SCA – Socio-cultural Analysis

CI – Cultural Interpretation

SE – Science Exploration

EISRC – Ethical Inquiry, Social Responsibility, & Citizenship

DIV – Diversity

INT – International

EL – Engaged Learning

CAP – Capstone