Mechanical Engineering Curriculum – Approved by Faculty
2020-2021 Catalog

Name _____ ULID_____ Advisor _____

IMPORTANT NOTES: Grade of "C" or better required in *all* major and general engineering (MCHE & ENGR) courses used toward the degree. A minimum of 2.0 cumulative *and* major GPA is required. Students are responsible for completing all course prerequisites with a "C" or better before enrolling in a course. Contact hour designation refers to (lecture, lab), or lecture hours/week and lab hours/week. Example: MCHE 201 (2,3) infers 2 hours lecture, 3 hours lab each week.

Fall Courses	Contact Hrs/Wk	Description	Cr	Pre-requisites (Co-requisites), Notes	Sem.	Gr.	Spring Courses	Contact Hrs/Wk	Description	Cr	Pre-requisites (Co-requisites), Notes	Sem.	Gr.
Freshman													
CHEM 107	(3,0)	Gen Chemistry I	3	(MATH 109 or higher)			ENGL 102	(3,0)	Composition & Lit.	3	English ACT ≥ 28 or ENGL 101		
ENGL 101	(3,0)	Rhetoric & Comp.	3	English ACT ≥ 18 or ENGL 90			MATH 301	(3,0)	Calculus II	4	MATH 270 or 272		
MATH 270	(4,0)	Calculus I	4	Math ACT ≥ 28 or Math SAT ≥ 630; or MATH 109 & 110; or MATH 143			Gen Ed Elec.	(3,0)	Biological Science[1]	3	Check Gen Ed Core Courses		
MCHE 101	(3,1)	Intro to MCHE	2	(MATH 270)			PHYS 201	(4,0)	General Physics I	4	MATH 270 or 272, (MATH 301)		
UNIV 100	(3,0)	Freshman Seminar	3	Restriction: Completed ≤ 62 hours			Gen Ed Elec.	(3,0)	Fine Arts Elective[2]	3	Check Gen Ed Core Courses		
		Total	**15**						**Total**	**17**			
Sophomore													
CHEE 317	(3,0)	Materials of ENGR	3	CHEM 107, MATH 270			Gen Ed Elec.	(3,0)	Comm. Elective	3	Choose either CMCN 310 or THEA 261		
ENGR 211	(3,0)	Statics	3	PHYS 201			ENGR 201	(3,0)	Electrical Circuits	3	PHYS 201		
MATH 302	(4,0)	Calculus III	4	MATH 301			ENGR 219	(3,0)	Mech. of Mat'ls.	3	ENGR 211		
PHYS 202	(4,0)	General Physics II	4	PHYS 201 (MATH 302 or 350)			MATH 350	(3,0)	Differential Eqns.	3	MATH 301 or 309		
Gen Ed Elec.	(3,0)	Lit. Elective[3]	3	Check Gen Ed Core Courses			ENGR 301	(3,0)	Thermodynamics	3	PHYS 201 or CHEM 108		
Gen Ed Elec.	(0,3)	General Science Lab[4]	1	[PHYS, CHEM, or BIOL] Check Gen Ed Core Courses			MCHE 201*	(2,3)	Introduction to Engineering Design	3	MCHE 101, ENGR 211		
		Total	**18**						**Total**	**18**			
Junior													
ENGR 313	(3,0)	Dynamics	3	ENGR 211, ENGR 219			Gen Ed Elec.	(3,0)	Soc & Beh. Sc.[5]	3	Check Gen Ed Core Courses, Any level		
ENGR 304	(3,0)	Fluid Mechanics	3	(ENGR 313)			MCHE 357*	(1,2)	Instruments/Meas.	2	MCHE 220, ENGR 201, PHYS 202		
MCHE 220*	(1,2)	Mechanics of Materials Lab	2	ENGR 219, ENGL 102 or 115			MCHE 365*	(2,3)	Manufacturing Processes	3	CHEE 317, ENGR 219, MCHE 220, MCHE 303		
MCHE 301*	(2,3)	Engineering Analysis	3	ENGR 201,211, MATH 302, (MATH 350)			MCHE 467	(2,3)	Machine Design I	3	CHEE 317, ENGR 219, MCHE 220, (MCHE 303)		
MCHE 362	(3,0)	Thermal Engineering	3	ENGR 301			MCHE 474*	(2,3)	Control Systems	3	MATH 302, MATH 350, ENGR 313		
MCHE 303*	(2,3)	Engineering Graphics & Solid Modeling	3	(ENGR 219, MCHE 201)			MCHE 363	(3,0)	Kinematics of Machines	3	ENGR 313, MCHE 201, MCHE 301, MCHE 303		
		Total	**17**						**Total**	**17**			
Senior													
Tech. Elec.	varies	Tech Elective[7]	3	Upper Division MCHE or ENGR			Tech. Elec.	varies	Tech Elective[7]	3	Upper Division MCHE or ENGR		
MCHE 469	(3,0)	Heat Transfer	3	ENGR 201, 301, 304, MATH 350			Tech. Elec.	varies	Tech Elective[7]	3	Upper Division MCHE or ENGR		
MCHE 482*	(2,3)	Projects I	3	(MCHE 358, 363, 365, 467), Senior Standing			MCHE 484*	(1,3)	Projects II	2	MCHE 482; Restriction: Must be taken the semester after MCHE 482		
MCHE 358	(1,3)	Energy Systems Lab	2	MCHE 301, 357, 362 (ENGR 304)			PHIL 316	(3,0)	Prof Ethics	3	ENGL 102 or ENGL 115		
Gen Ed Elec.	(3,0)	History Elective[6]	3	Check Gen Ed Core Courses			ECON 430G	(3,0)	Engineering Econ.	3	MATH 301, ENGR 219		
		Total	**14**						**Total**	**14**			

TOTAL CREDIT HOURS = 130

*Indicates linked course with X-credit lecture section(s) and 0-credit lab section(s). Both the lecture section and a lab section must be scheduled together.

Footnotes and Notes for Electives

[1] Choose from the General Education Core list of ***Biological Science*** courses.

[2] Choose from the General Education Core list of ***Fine Arts*** courses.

[3] Choose from the General Education Core list of ***Literature*** courses.

[4] Choose from **BIOL** 123, **BIOL** 124, **CHEM** 112, **CHEM** 115, **PHYS** 215, or **PHYS** 216.

[5] Choose from the General Education Core list of ***Social/Behavioral Science*** courses (**ANTH**, **ECON**, **GEOG**, **POLS**, **PSYC**, **SOCI**, **CJUS**).

[6] Choose from the General Education Core list of ***History*** courses.

[7] Choose courses from the list below in consultation with advisor. ENGR courses may be taken at the 400 level only.

MCHE Senior Electives – Solid Mechanics (Note: some not offered every semester)

MCHE 463G*	Computer-Aided Manufacturing I	3 Credits	(2,3)
MCHE 464G*	Computer-Aided Manufacturing II	3 Credits	(2,3)
MCHE 468*	Machine Design II	3 Credits	(2,3)
MCHE 470	Special Topics	3 Credits	varies
MCHE 473	Operations Management	3 Credits	(2,3)
MCHE 477G	Advanced Computer-Aided Design	3 Credits	(2,3)
MCHE 478G*	Finite Element Analysis	3 Credits	(2,3)
MCHE 480G	Composite Materials	3 Credits	(2,3)
MCHE 485G	Mechanical Vibrations	3 Credits	(3,0)
MCHE 487	Introduction to Metal Forming	3 Credits	(2,3)
MCHE 488G	Biomechanics I	3 Credits	(2,3)
MCHE 399-xxx	Internship	3 Credits	varies

MCHE Senior Electives – Thermal/Fluids (Note: some not offered every semester)

MCHE 461	Energy Systems Process Design	3 Credits	(2,3)
MCHE 462	Energy Conversion	3 Credits	(3,0)
MCHE 466G	Environmental Engineering	3 Credits	(2,3)
MCHE 470	Special Topics	3 Credits	varies
MCHE 471	Fluid Dynamics	3 Credits	(3,0)
MCHE 483	Energy Systems Design	3 Credits	(2,3)
MCHE 488G	Biomechanics I	3 Credits	(2,3)
MCHE 399-xxx	Internship	3 Credits	varies