

College of Engineering and Computer Science

Mechanical Engineering

Fall 2020

Name _____

SUID _____

pr= prerequisite, co=corequisite

Minor/Second Major (if any): _____

MATHEMATICS (15)

MAT295	Calculus 1	(4)	4							
MAT296	Calculus 2 (pr: MAT 295 min C-)	(4)		4						
MAT397	Calculus 3 (pr: MAT 296 min C-)	(4)			4					
MAT485	Diff Eqn & Matrix Algebra for Engrs (pr: MAT 397)	(3)				3				

SCIENCES (12)

CHE106	General Chem for Engrs (co: CHE 107)	(3)	3							
CHE107	General Chem Lab (co: CHE 106)	(1)	1							
PHY211	General Physics 1 (co: PHY 221, MAT 295)	(3)		3						
PHY221	General Physics Lab 1 (co: PHY 211)	(1)		1						
PHY212	General Physics 2 (pr: PHY 211, 221, co: PHY 222, MAT 296)	(3)			3					
PHY222	General Physics Lab 2 (co: PHY 212)	(1)			1					

WRITING SKILLS/SOCIAL SCIENCE/HUMANITIES (12)

WRT105	Studio 1: Practices of Academic Writing	(3)	3							
WRT205	Studio 2: Critical Research and Writing (pr: WRT 105)	(3)		3						
SSH Elective	_____	(3)		3						

Select One of the Following 3 Courses:

ECN101	Introductory Microeconomics	(3)	3							
ECN102	Introductory Macroeconomics									
ECN203	Economic Ideas & Issues									

PROGRAM CUSTOMIZATION (18)

Course1	_____	(3)			3					
Course2	_____	(3)				3				
Course3	_____	(3)					3			
Course4	_____	(3)							3	
Course5	_____	(3)								3
Course6	_____	(3)								

ENGINEERING (26)

ECS101	Intro. to Engr. & Comp. Sci.	(3)	3							
ECS104	Engr. Comp Tools (co: MAT 295)	(3)		3						
ECS221	Statics (pr: PHY 211, co: MAT 296)	(3)			3					
ECS222	Dynamics (pr: ECS 221, MAT 296)	(3)				3				
ECS325	Mechanics of Solids (pr: ECS 221, co: MAT 397)	(4)				4				
ECS326	Engr. Materials, Prop. & Proc.	(3)			3					
ELE231	Elec. Engr. Fundamentals 1 (pr: MAT 295, co: ELE 291)	(3)					3			
ELE291	Elec. Engr. Laboratory 1 (co: ELE 231)	(1)					1			
MAE322	Control Systems for MAE (pr: MAT 485, co: MAE 321)	(3)						3		

MECHANICAL ENGINEERING (45)

MAE284	Intro. to CAD (pr: ECS 101)	(3)				3				
MAE251	Thermodynamics (pr: PHY 211)	(4)				4				
MAE312	Engineering Analysis (pr: ECS 104, MAT 485)	(3)					3			
MAE315	Mech/Aero Lab I (pr: ECS 325, co: MAE 341)	(3)						3		
MAE321	Dynamics of Mech. Systems (pr: ECS 325, ECS 222, MAT 485)	(3)							3	
MAE341	Fluid Mechanics (pr: ECS 221, MAT 397, PHY 211)	(4)					4			
MAE355	Heat Transfer (pr: MAE 341, co: MAE 251)	(4)						4		
MAE333	Data Analysis for Engrs. (pr: MAT 397)	(3)							3	
MEE332	Intro. Machine Des. (pr: ECS 222, ECS 325)	(3)						3		
MEE416	Mechanical Engr. Lab (pr: MAE 251, MAE 315, MAE 341, MAE 355)	(3)								3
MEE431	Manufacturing Processes (pr: MAE 284 and ECS 326)	(3)								3
MEE471	Design Practice (pr: MEE 332, MAE 284)	(2)								3
MEE472	Syn. Mech. Systems II (pr: MEE 471)	(4)								

Select One of the Following 3 Courses:

MAE530	Intro to Design Optimization (3) (pr: MAT 397, MAT 485)	(3)							3	
MAE571	Applic of Cmpn'l Fluid Dymcs (3) (pr: MAE 341)									
MAE573	Applic of Finite Elemnt Anlsys (3) (pr: ECS 325, MAT 485)									

TOTAL CREDITS

		128	17	17	17	17	17	16	15	12
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*See reverse side for all notes

MECHANICAL ENGINEERING
Curriculum Notes
2020-2021

1. Mechanical Engineering students must take at least 3 credit hours in the Social Science/ Humanities in addition to at least 3 credit hours of economics: students may choose one from either ECN 101, ECN 102, or ECN 203. Further, they must take one Numerical Elective (3 credits); students may choose one from either MAE530, MAE571, or MAE573, as well as complete one of the following two 18-credit options, for a total of (27 credit hours):

Option 1: A University Minor – typically 18 credits coordinated by the offering department; the minor must have fewer than 12 credits of overlap with required MEE courses. A second major also satisfies this option.

Option 2: A Distribution of Electives – an additional 6 credits of Social Sciences/Humanities, 9 credits of Technical Electives, and a 3-credit Free Elective.
2. Technical Electives are courses at the 300 level or higher taken within the Mechanical and Aerospace (MAE) department. Selected courses from other ECS departments, mathematics, or natural sciences may be accepted as Technical Electives, but no more than 3 credit hours of the Technical Electives can be taken outside the MAE department.
3. Many technical electives in the MAE Department are scheduled on a 2-year rotation, so students should check availability of Technical Electives starting in their third year.
4. Mechanical Engineering students seeking to complete a Mathematics Minor can take a mathematics course as a Free Elective but must still complete one of the two 18-credit options listed above.
5. Mechanical Engineering students seeking to complete the Energy Systems Minor (15 credits) must take an additional 3-credit Social Sciences/Humanities Elective.
6. Students may bundle courses into free electives if desired. The bundled courses must be taken for a letter grade and either be at the 300-level or greater, or be a physical education course. AEW credit cannot be bundled.
7. Social science or humanities (SS/H) courses are to be selected from any foreign language course, the “Humanities List”, or the “Social Sciences List”, as published in the SU Course Catalog.
8. To earn a Mechanical Engineering B.S. degree from SU, students must take 60% of the (26) Engineering and (45) Mechanical Engineering credits, which means that students must take at least 43 credits at SU. Engineering and Mechanical Engineering credits are courses with the following prefixes: ECS, ELE, MAE, MEE.