

University of Texas at El Paso

Mechanical Engineering Dept.

Phone: (915) 747-5450 <http://me.utep.edu/> Email: MEAdvising@Utep.Edu

2019 B.S. in Mechanical Engineering Degree Plan

Year	Semester I			Hrs	Semester II			Hrs
Freshman	MECH	1305	Graphic and Design Fundamentals +	3	MECH	1321	Mechanics I – Statics + (MATH 1411+ PHYS 2420+)	3
	RWS	1301	Rhetoric & Composition I +	3	HIST	1301	History of US to 1865 +	3
	MATH	1411	Calculus I +	4	RWS	1302	Rhetoric & Composition 2 + (RWS 1301+)	3
	PHYS	2420	Physics I (MATH 1411 is CO requisite)	4	MATH	1312	Calculus II + (MATH 1411+)	3
	UNIV	1301 2350	Introduction to Engineering can be taught in a specific section. +	3	CHEM CHEM	1305 1105	Chemistry I +	4
			17				16	
Sophomore	MECH	2322	Mechanics of Materials + (MECH 1321+)	3	MECH	2340	Mechanics II – Dynamics + (MECH 1321+)	3
	MATH	2313	Calculus III + (MATH 1312+)	3	MECH	2311	Introduction to Thermo-Fluid Science + (MATH 1312+)	3
	MECH	2331	Mat’ls and Manufacturing Processes + (CHEM 1305+)	3	MECH	2103	Engineering Computations	1
			Design and Manufacturing Studio + (MECH 1305+) (see NOTE 8)	1	MECH	2342	Electro Mechanical Systems + (MATH 1312+)	3
	HIST	1302	History of US since 1865	3	CE	2326	Engineering Economics +	3
			Science Elective + (see NOTE 1)	4	MATH	2326	Differential Equations	3
			17				16	
Junior			Laboratory Experience (see NOTE 2)	1			Laboratory Experience (see NOTE 2)	1
	MECH	3352	Engineering Analysis II (MECH 2351+)	3	COMM	1302	Business and Professional Communication +	3
	MECH	3312	Thermodynamics (MECH 2311+)	3	MECH	3345	System Dynamics (MECH 2340+, MECH 2342+)	3
	MECH	3314	Fluid Mechanics (MECH 2311+)	3	MECH	3334	Mechanical Design (MECH 2331+, MECH 2322+)	3
	POLS	2310	Introduction to Politics +	3			Humanities Electives +	3
	MATH		Math Elective (see NOTE 3)	3			Science/Math Elective + (see NOTE 4)	3
				16				16
Senior			Design Elective Solid Mechanics Area (see NOTE 5)	3	MECH	4366	Senior Design (CE 2326 +, see NOTE 7)	3
			Design Elective Thermal Fluid Area (see NOTE 5)	3			Design Elective Any Area (see note 5)	3
	MECH	4315	Heat Transfer (MECH 3314, MECH 3312)	3			Design Elective Any Area (see note 5)	3
			Computational Elective (see note 6)	3	POLS	2311	American Government and Politics	3
			Design Elective Electro-Mechanical (see NOTE 5)	3			Visual and Performing Art Elective	3
			15				15	
Total 128 Credit hrs								

Design and Manufacturing Studio			
MECH	2131	Manufacturing Laboratory (CHEM 1305 +)	1
MECH	2132	Additive Manufacturing Laboratory (CHEM 1305 +)	1
MECH	2133	Metal Casting Laboratory (CHEM 1305 +)	1
Laboratory Experience			
MECH	3123	Solid Mechanics Lab (MECH 2322+)	1
MECH	3113	Thermo-fluid Lab (MECH 2311+)	1
MECH	3103	Mechatronics Lab (MECH 2342+)	1

Design Elective Solid Mechanics Area			
MECH	4336	Principles of Engineering Design (MECH 3334)	3
MECH	4395	Special Topics in Solid Mechanics Area	3

Design Elective Thermal Fluid Area			
MECH	4316	Thermal System Design (MECH 4315)	3
MECH	4394	Special Topics in Thermal Fluid Area	3

Design Elective Electro-Mechanical Area			
MECH	4346	Mechatronics (MECH 3345)	3
MECH	4393	Special Topics in Electro-Mechanical	3

Computational Elective			
MECH	4326	Finite Element Analysis (MECH 2351+, MECH 3334)	3
MECH	4330	Dynamic Systems Simulation (MECH 3345)	3
MECH	4392	Special Topics in Computation	3

Notes: Prerequisites listed in parentheses, +Grade of C or better required

1. Must be either CHEM 1306 with CHEM 1106, BIOL 1107 with 1305 or PHYS 2421 or by permission of advisor.
 2. From the department approved list of Design and Project Experience I and II courses.
 3. Selected from MATH 3323, 3335, 4326, 4329, 4336, STAT 3320. By completing 3 of these electives you may be eligible for a Mathematics minor, interested students should consult the Department of Mathematics.
 4. Approved courses are: BIOL 1306, PHYS 2325, PHYS 3351, PHYS 4348 or any course listed in NOTE 3 (not already taken). Also, as per the UTEP core curriculum requirements two of your science classes must be in the same area (either BIOL, PHYS, OR CHEM).
 5. From the department approved list of Design Electives.
 6. From the department approved list of Computational Electives.
 7. Must be in the last full semester and have a 2.0 GPA or better in major.
 8. From the department approved list of Design and Manufacturing Studio courses.
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