

Engineering (B.S.) – Mechanical Engineering

2025-2026 Academic Catalog, Bachelor of Science – Engineering, Mechanical Engineering Track

Academic Core for B.S.		45 Hours	Engineering	81 Hours	
CHRISTIAN STUDIES		6	B.S. ENGINEERING MAJOR REQUIRED COURSES		28
CSBS 1311	Engaging the Old Testament	3	ENGR 2311	Numerical Algorithms	3
CSBS 1312	Engaging the New Testament	3	ENGR 2320	Engineering Mechanics: Statics	3
ENGLISH		9	ENGR 2321	Engineering Mechanics: Dynamics	3
ENGL 1321	Rhetoric & Composition I	3	ENGR 2130	Electric Circuits Laboratory	1
ENGL 1322	Rhetoric & Composition II	3	ENGR 2330	Electrical Circuit Theory	3
ENGL	Literature	3	ENGR 2345	Engineering Thermodynamics	3
<i>A grade of a "C" or higher is required in ENGL 1321 and ENGL 1322.</i>			ENGR 3360	Engineering Design: Engineering for Humanity	3
EXERCISE & SPORT SCIENCE – SELECT TWO DIFFERENT COURSES		2	ENGR 4370	Computer Science & Engineering Ethics Seminar	3
EXAC	Activity Course	1	ENGR 4380	Capstone Design I	3
EXAC	Activity Course	1	ENGR 4381	Capstone Design II	3
FINE ARTS – SELECT ONE		3	MECHANICAL ENGINEERING TRACK		20
ARTS 1310	Drawing I	3	ENGR 3120	Mechanics of Materials Lab	1
ARTS 1320	Design	3	ENGR 3320	Mechanics of Materials	3
ARTS 1350	Art Appreciation	3	ENGR 3315	Mechanical Design	3
ARTS 2360	Ceramics I	3	ENGR 3346	Advanced Thermodynamics	3
COMM 2335	Film Appreciation	3	ENGR 4150	Fluid Mechanics Lab	1
FINA 2330	Exploring the Fine Arts	3	ENGR 4350	Fluid Mechanics	3
MUSI 1340	Music Appreciation	3	ENGR 4340	Principles of Heat Transfer	3
THEA 2350	Theatre Appreciation	3	ENGR 3381	Introduction to Material Science	3
WORLD CULTURES – SELECT ONE		3	ENGINEERING UPPER-LEVEL ELECTIVES – SELECT TWO		6
ARTS 2354	World Art	3	CISC 3321	Object Oriented Development	3
EXSS 2353	Lifespan Nutrition	3	ENGR 3365	Introduction to Optics	3
GLBL 2310	Cultural Immersion	3	ENGR 4310	Vibrations	3
HIST 1311	History of World Civilizations to 1500	3	ENGR 4320	System Dynamics and Control	3
HIST 1312	History of World Civilizations since 1500	3	ENGR 4325	Radio Frequency Circuit	3
HIST 2350	An Introduction to the Politics and Culture of Ancient Greece and Rome	3	ENGR 4335	Introduction to Aerospace Engineering	3
HUMA 2355	Foundations of the Humanities	3	ENGR 4365	Mechatronics	3
MUSI 2358	World Music	3	ENGR 4391	Special Topics	3
PHIL 2315	Introduction to Philosophy	3	REQUIRED SUPPORT COURSES		27
LAB SCIENCE		8	CISC 2330	Introduction to Object-Oriented Programming	3
PHYS 2421	Physics and Calculus I	4	ENGR 1310	Introduction to Engineering	3
PHYS 2422	Physics and Calculus II	4	ENGR 1320	Introduction to Engineering Fundamentals	3
PUBLIC SPEAKING		3	ENGR 2010	AutoCAD Proficiency	0
COMM 1320	Public Speaking	3	ENGR 4090	Practical Experience	0
MATHEMATICS		4	MATH 2320	Linear Algebra	3
MATH 1430	Calculus I	4	MATH 2430	Calculus II	4
SOCIAL SCIENCE – SELECT ONE		3	MATH 3325	Ordinary Differential Equations	3
BECO 2311	Principles of Macroeconomics	3	MATH 3430	Calculus III	4
EDUC 2399	Child and Adolescent Development	3	CHEM 1410	General Chemistry I	4
PSYC 1301	General Psychology	3	Total Hours		
SOCI 1311	Introduction to Sociology	3	Academic Core for B.S.		45
SOCW 2311	Introduction to Social Work	3	B.S. Engineering Major Required Courses		28
US HISTORY OR US GOVERNMENT – SELECT ONE		3	Mechanical Engineering Track		20
HIST 2311	American History to 1877	3	Engineering Upper Level Electives		6
HIST 2312	American History since 1877	3	Required Support Courses		27
POLS 2305	United States Government	3	Total hours required for graduation		126
POLS 2306	Texas State and Local Government	3	Additional Graduation Requirements		
RESEARCH METHODS OR INTERNSHIP		0	Minimum Upper Level hours		36
ENGR 4090		0	Minimum hours taken at UMHB		30
FRESHMAN SEMINAR		1	Minimum Upper Level hours taken at UMHB		24
UMHB 1101	Freshman Seminar	1	Minimum cumulative GPA		2.0
CHAPEL – 1 to 4 credits					
UMHB 1002	Chapel				
Fine Arts Experience – 2 to 8 credits					
UMHB 1005	Fine Arts Experience				

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FRESHMAN FALL **15 Hours**

ENGL 1321	Rhetoric & Composition I	3
MATH 1430	Calculus I	4
ENGR 1310	Introduction to Engineering	3
PHYS 2421	Physics with Calculus I with Lab	4
UMHB 1101	First Year Seminar	1
UMHB 1002	Chapel	0
UMHB 1005	Fine Arts Experience	0

FRESHMAN SPRING **15 Hours**

ENGL 1322	Rhetoric & Composition II	3
MATH 2430	Calculus II	4
PHYS 2422	Physics with Calculus II with Lab	4
ENGR 1320	Intro to Engineering Fundamentals	3
EXAC	Activity Course	1
UMHB 1002	Chapel	0
UMHB 1005	Fine Arts Experience	0

SOPHOMORE FALL **17 Hours**

MATH 3430	Calculus III	4
ENGR 2320	Engineering Mechanics: Statics	3
ENGR 2311	Numerical Algorithms	3
ENGL	Literature	3
ENGR 2330/2130	Electrical Circuit Theory with Lab	4
UMHB 1002	Chapel	0
UMHB 1005	Fine Arts Experience	0

SOPHOMORE SPRING **16 Hours**

ENGR 2345	Engineering Thermodynamics	3
MATH 3325	Ordinary Differential Equations	3
ENGR 2321	Engineering Mechanics: Dynamics	3
CHEM 1410	General Chemistry I with Lab	4
CISC 2330	Introduction to Object-Oriented Programming	3
UMHB 1002	Chapel	0
UMHB 1005	Fine Arts Experience	0

JUNIOR FALL **16 Hours**

ENGR 3320/3120	Mechanics of Materials with Lab	4
ENGR 4340	Principles of Heat Transfer	3
MATH 2320	Linear Algebra	3
CSBS 1311	Old Testament	3
	Social Science	3
UMHB 1005	Fine Arts Experience	0

JUNIOR SPRING **16 Hours**

ENGR	Engineering Upper Level Elective	3
ENGR 3315	Mechanical Design	3
ENGR 3360	Engineering Design: Engineering for Humanity	3
EXAC	Activity Course	1
	World Cultures	3
CSBS 1312	Engaging the New Testament	3
UMHB 1005	Fine Arts Experience	0

SENIOR FALL **16 Hours**

ENGR 3381	Introduction to Materials Science	3
ENGR 4380	Capstone Design I	3
ENGR 4350/4150	Fluid Mechanics with Lab	4
ENGR 4370	Ethics Seminar for CSE Majors	3
COMM 1320	Public Speaking	3
ENGR 2010	AutoCAD Proficiency	0
UMHB 1005	Fine Arts Experience	0

SENIOR SPRING **15 Hours**

ENGR 4381	Capstone Design II	3
ENGR	Engineering Upper Level Elective	3
ENGR 3346	Advanced Thermodynamics	3
	US History or US Government	3
	Fine Arts	3
ENGR 4090	Practical Experience	0
UMHB 1005	Fine Arts Experience	0

Total Credit Hours: 126