Engineering (B.S.) — Mechanical Engineering 2023-2024 Academic Catalog, Bachelor of Science – Engineering, Mechanical Engineering Track

EXERCISE & SPOI EXAC EXAC FINE ARTS — SEL ARTS 1350 COMM 2335 FINA 2330 MUSI 1340 THEA 2350	Engaging the Old Testament Engaging the New Testament Rhetoric & Composition I Rhetoric & Composition II Literature or higher is required in ENGL 1321 and ENGL 1322. RT SCIENCE – SELECT TWO DIFFERENT COURSES Activity Course Activity Course ECT ONE Art Appreciation Film Appreciation Exploring the Fine Arts Music Appreciation Introduction to the Theatre IRES – SELECT ONE World Art Lifespan Nutrition	6 3 3 9 3 3 3 3 3 3 3 3 3 3 3 3	ENGR 2311 ENGR 2320 ENGR 2321 ENGR 2130 ENGR 2330 ENGR 2345 ENGR 3360 ENGR 4370 ENGR 4380 ENGR 4381 MECHANICAL ENGR 3130 ENGR 3315 ENGR 3315 ENGR 3346 ENGR 3346 ENGR 3440 ENGR 4350 ENGR 3381	RING MAJOR REQUIRED COURSES Numerical Algorithms Engineering Mechanics: Statics Engineering Mechanics: Dynamics Electric Circuits Laboratory Electrical Circuit Theory Engineering Thermodynamics Engineering Design: Engineering for Humanity Computer Science & Engineering Ethics Seminar Capstone Design I Capstone Design II ENGINEERING TRACK Electronics Laboratory Mechanical Design Mechanics of Materials Advanced Thermodynamics Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics Introduction to Material Science	288 333 333 333 333 333 333 333 333 333
CSBS 1311 CSBS 1312 ENGLISH ENGL 1321 ENGL 1322 ENGL A grade of a "C" of EXERCISE & SPOI EXAC EXAC EXAC FINE ARTS — SEL ARTS 1350 COMM 2335 FINA 2330 MUSI 1340 THEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	Engaging the Old Testament Engaging the New Testament Rhetoric & Composition I Rhetoric & Composition II Literature or higher is required in ENGL 1321 and ENGL 1322. RT SCIENCE – SELECT TWO DIFFERENT COURSES Activity Course Activity Course ECT ONE Art Appreciation Film Appreciation Exploring the Fine Arts Music Appreciation Introduction to the Theatre IRES – SELECT ONE World Art Lifespan Nutrition	3 3 9 3 3 3 1 1 1 3 3 3 3 3 3 3 3 3 3 3	ENGR 2320 ENGR 2321 ENGR 2130 ENGR 2330 ENGR 2345 ENGR 3360 ENGR 4370 ENGR 4380 ENGR 4381 MECHANICAL ENGR 3315 ENGR 3315 ENGR 3320 ENGR 3346 ENGR 4150 ENGR 4340 ENGR 4350 ENGR 3381	Engineering Mechanics: Statics Engineering Mechanics: Dynamics Electric Circuits Laboratory Electrical Circuit Theory Engineering Thermodynamics Engineering Design: Engineering for Humanity Computer Science & Engineering Ethics Seminar Capstone Design I Capstone Design II ENGINEERING TRACK Electronics Laboratory Mechanical Design Mechanics of Materials Advanced Thermodynamics Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics	33 33 33 33 33 34 20 20 31 31 33 33 33 33 33 33 33 33 33 33 33
ENGLISH ENGLISH ENGL 1321 ENGL 1322 ENGL A grade of a "C" of EXERCISE & SPONE EXAC EXAC EXAC EXAC FINE ARTS - SEL ARTS 1350 COMM 2335 FINA 2330 MUSI 1340 THEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	Rhetoric & Composition I Rhetoric & Composition II Literature or higher is required in ENGL 1321 and ENGL 1322. RT SCIENCE - SELECT TWO DIFFERENT COURSES Activity Course Activity Course ECT ONE Art Appreciation Film Appreciation Exploring the Fine Arts Music Appreciation Introduction to the Theatre IRES - SELECT ONE World Art Lifespan Nutrition	3 9 3 3 3 1 1 1 3 3 3 3 3 3 3 3 3 3 3	ENGR 2321 ENGR 2130 ENGR 2330 ENGR 2345 ENGR 3360 ENGR 4370 ENGR 4380 ENGR 4381 MECHANICAL ENGR 3315 ENGR 3315 ENGR 3320 ENGR 3346 ENGR 4150 ENGR 4340 ENGR 4350 ENGR 3381	Engineering Mechanics: Dynamics Electric Circuits Laboratory Electrical Circuit Theory Engineering Thermodynamics Engineering Design: Engineering for Humanity Computer Science & Engineering Ethics Seminar Capstone Design I Capstone Design II PENGINEERING TRACK Electronics Laboratory Mechanical Design Mechanics of Materials Advanced Thermodynamics Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics	200 200 210 210 210 210 210 210 210 210
ENGLISH ENGL 1321 ENGL 1322 ENGL A grade of a "C" of EXERCISE & SPONE EXAC EXAC EXAC EXAC EXAC EXAC EXAC EXA	Rhetoric & Composition I Rhetoric & Composition II Literature or higher is required in ENGL 1321 and ENGL 1322. RT SCIENCE — SELECT TWO DIFFERENT COURSES Activity Course Activity Course ECT ONE Art Appreciation Film Appreciation Exploring the Fine Arts Music Appreciation Introduction to the Theatre IRES — SELECT ONE World Art Lifespan Nutrition	9 3 3 3 3 1 1 1 3 3 3 3 3 3 3	ENGR 2130 ENGR 2330 ENGR 2345 ENGR 3360 ENGR 4370 ENGR 4380 ENGR 4381 MECHANICAL ENGR 3315 ENGR 3315 ENGR 3320 ENGR 3346 ENGR 4150 ENGR 4340 ENGR 4350 ENGR 3381	Electric Circuits Laboratory Electrical Circuit Theory Engineering Thermodynamics Engineering Design: Engineering for Humanity Computer Science & Engineering Ethics Seminar Capstone Design I Capstone Design II ENGINEERING TRACK Electronics Laboratory Mechanical Design Mechanics of Materials Advanced Thermodynamics Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics	20 20
ENGL 1321 ENGL 1322 ENGL A grade of a "C" of EXERCISE & SPONE EXAC EXAC EXAC EXAC EXAC EXAC EXAC EXA	Rhetoric & Composition II Literature or higher is required in ENGL 1321 and ENGL 1322. RT SCIENCE — SELECT TWO DIFFERENT COURSES Activity Course Activity Course ECT ONE Art Appreciation Film Appreciation Exploring the Fine Arts Music Appreciation Introduction to the Theatre IRES — SELECT ONE World Art Lifespan Nutrition	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	ENGR 2330 ENGR 2345 ENGR 3360 ENGR 4370 ENGR 4380 ENGR 4381 MECHANICAL ENGR 3315 ENGR 3315 ENGR 3320 ENGR 3346 ENGR 4150 ENGR 4340 ENGR 4350 ENGR 3381	Electrical Circuit Theory Engineering Thermodynamics Engineering Design: Engineering for Humanity Computer Science & Engineering Ethics Seminar Capstone Design I Capstone Design II ENGINEERING TRACK Electronics Laboratory Mechanical Design Mechanics of Materials Advanced Thermodynamics Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics	20
ENGL 1322 ENGL A grade of a "C" of EXERCISE & SPOI EXAC EXAC EXAC EINE ARTS 1350 COMM 2335 EINA 2330 MUSI 1340 FHEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	Rhetoric & Composition II Literature or higher is required in ENGL 1321 and ENGL 1322. RT SCIENCE — SELECT TWO DIFFERENT COURSES Activity Course Activity Course ECT ONE Art Appreciation Film Appreciation Exploring the Fine Arts Music Appreciation Introduction to the Theatre IRES — SELECT ONE World Art Lifespan Nutrition	3 3 2 1 1 3 3 3 3 3 3 3 3 3	ENGR 2345 ENGR 3360 ENGR 4370 ENGR 4380 ENGR 4381 MECHANICAL ENGR 3130 ENGR 3315 ENGR 3320 ENGR 3346 ENGR 4150 ENGR 4340 ENGR 4350 ENGR 3381	Engineering Thermodynamics Engineering Design: Engineering for Humanity Computer Science & Engineering Ethics Seminar Capstone Design I Capstone Design II ENGINEERING TRACK Electronics Laboratory Mechanical Design Mechanics of Materials Advanced Thermodynamics Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics	20 20
ENGL 1322 ENGL A grade of a "C" of EXERCISE & SPOI EXAC EXAC EXAC FINE ARTS – SEL ARTS 1350 COMM 2335 FINA 2330 MUSI 1340 THEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	Rhetoric & Composition II Literature or higher is required in ENGL 1321 and ENGL 1322. RT SCIENCE — SELECT TWO DIFFERENT COURSES Activity Course Activity Course ECT ONE Art Appreciation Film Appreciation Exploring the Fine Arts Music Appreciation Introduction to the Theatre IRES — SELECT ONE World Art Lifespan Nutrition	3 3 2 1 1 3 3 3 3 3 3 3 3 3	ENGR 3360 ENGR 4370 ENGR 4380 ENGR 4381 MECHANICAL ENGR 3130 ENGR 3315 ENGR 3320 ENGR 3346 ENGR 4150 ENGR 4340 ENGR 4350 ENGR 3381	Engineering Design: Engineering for Humanity Computer Science & Engineering Ethics Seminar Capstone Design I Capstone Design II ENGINEERING TRACK Electronics Laboratory Mechanical Design Mechanics of Materials Advanced Thermodynamics Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics	20 20 1 3 3 3 3
ENGL A grade of a "C" of EXERCISE & SPOI EXAC EXAC EXAC FINE ARTS 1350 COMM 2335 FINA 2330 MUSI 1340 FHEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	Literature or higher is required in ENGL 1321 and ENGL 1322. RT SCIENCE – SELECT TWO DIFFERENT COURSES Activity Course Activity Course ECT ONE Art Appreciation Film Appreciation Exploring the Fine Arts Music Appreciation Introduction to the Theatre IRES – SELECT ONE World Art Lifespan Nutrition	3 2 1 1 1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	ENGR 4370 ENGR 4380 ENGR 4381 MECHANICAL ENGR 3130 ENGR 3315 ENGR 3320 ENGR 3346 ENGR 4150 ENGR 4340 ENGR 4350 ENGR 3381	Computer Science & Engineering Ethics Seminar Capstone Design I Capstone Design II ENGINEERING TRACK Electronics Laboratory Mechanical Design Mechanics of Materials Advanced Thermodynamics Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics	20 20
EXERCISE & SPONE EXAC EXAC EXAC EXAC FINE ARTS – SEL ARTS 1350 COMM 2335 FINA 2330 MUSI 1340 THEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	RES — SELECT ONE World Art Lifespan Nutrition	2 1 1 3 3 3 3 3 3 3 3 3	ENGR 4380 ENGR 4381 MECHANICAL ENGR 3130 ENGR 3315 ENGR 3320 ENGR 3346 ENGR 4150 ENGR 4340 ENGR 4350 ENGR 3381	Capstone Design I Capstone Design II ENGINEERING TRACK Electronics Laboratory Mechanical Design Mechanics of Materials Advanced Thermodynamics Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics	20
EXERCISE & SPOI EXAC EXAC FINE ARTS – SEL ARTS 1350 COMM 2335 FINA 2330 MUSI 1340 THEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	Activity Course Activity Course Activity Course Activity Course ECT ONE Art Appreciation Film Appreciation Exploring the Fine Arts Music Appreciation Introduction to the Theatre IRES – SELECT ONE World Art Lifespan Nutrition	1 1 3 3 3 3 3 3 3 3	ENGR 4381 MECHANICAL ENGR 3130 ENGR 3315 ENGR 3320 ENGR 3346 ENGR 4150 ENGR 4340 ENGR 4350 ENGR 3381	Capstone Design II ENGINEERING TRACK Electronics Laboratory Mechanical Design Mechanics of Materials Advanced Thermodynamics Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics	20 1 3 3 3 1
EXAC EXAC FINE ARTS — SEL ARTS 1350 COMM 2335 FINA 2330 MUSI 1340 THEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	Activity Course Activity Course ECT ONE Art Appreciation Film Appreciation Exploring the Fine Arts Music Appreciation Introduction to the Theatre World Art Lifespan Nutrition	1 1 3 3 3 3 3 3 3 3	MECHANICAL ENGR 3130 ENGR 3315 ENGR 3320 ENGR 3346 ENGR 4150 ENGR 4340 ENGR 4350 ENGR 3381	Electronics Laboratory Mechanical Design Mechanics of Materials Advanced Thermodynamics Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics	20
FINE ARTS — SEL ARTS 1350 COMM 2335 FINA 2330 MUSI 1340 THEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	Activity Course ECT ONE Art Appreciation Film Appreciation Exploring the Fine Arts Music Appreciation Introduction to the Theatre IRES – SELECT ONE World Art Lifespan Nutrition	1 3 3 3 3 3 3 3 3	ENGR 3130 ENGR 3315 ENGR 3320 ENGR 3346 ENGR 4150 ENGR 4340 ENGR 4350 ENGR 3381	Electronics Laboratory Mechanical Design Mechanics of Materials Advanced Thermodynamics Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics	3
FINE ARTS - SEL ARTS 1350 COMM 2335 FINA 2330 MUSI 1340 THEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	Activity Course ECT ONE Art Appreciation Film Appreciation Exploring the Fine Arts Music Appreciation Introduction to the Theatre IRES – SELECT ONE World Art Lifespan Nutrition	1 3 3 3 3 3 3 3 3	ENGR 3130 ENGR 3315 ENGR 3320 ENGR 3346 ENGR 4150 ENGR 4340 ENGR 4350 ENGR 3381	Electronics Laboratory Mechanical Design Mechanics of Materials Advanced Thermodynamics Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics	3
FINE ARTS - SEL ARTS 1350 COMM 2335 FINA 2330 MUSI 1340 THEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	Art Appreciation Film Appreciation Exploring the Fine Arts Music Appreciation Introduction to the Theatre IRES – SELECT ONE World Art Lifespan Nutrition	3 3 3 3 3 3	ENGR 3315 ENGR 3320 ENGR 3346 ENGR 4150 ENGR 4340 ENGR 4350 ENGR 3381	Mechanical Design Mechanics of Materials Advanced Thermodynamics Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics	3
ARTS 1350 COMM 2335 FINA 2330 MUSI 1340 THEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	Art Appreciation Film Appreciation Exploring the Fine Arts Music Appreciation Introduction to the Theatre IRES – SELECT ONE World Art Lifespan Nutrition	3 3 3 3 3 3	ENGR 3320 ENGR 3346 ENGR 4150 ENGR 4340 ENGR 4350 ENGR 3381	Mechanics of Materials Advanced Thermodynamics Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics	3 3 1
COMM 2335 FINA 2330 MUSI 1340 THEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	Film Appreciation Exploring the Fine Arts Music Appreciation Introduction to the Theatre RES – SELECT ONE World Art Lifespan Nutrition	3 3 3 3 3 3	ENGR 3346 ENGR 4150 ENGR 4340 ENGR 4350 ENGR 3381	Advanced Thermodynamics Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics	3 1 3
COMM 2335 FINA 2330 MUSI 1340 THEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	Film Appreciation Exploring the Fine Arts Music Appreciation Introduction to the Theatre RES – SELECT ONE World Art Lifespan Nutrition	3 3 3 3	ENGR 4150 ENGR 4340 ENGR 4350 ENGR 3381	Fluid Mechanics Laboratory Principles of Heat Transfer Fluid Mechanics	1
FINA 2330 MUSI 1340 THEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	Exploring the Fine Arts Music Appreciation Introduction to the Theatre RES – SELECT ONE World Art Lifespan Nutrition	3 3 3 3	ENGR 4340 ENGR 4350 ENGR 3381	Principles of Heat Transfer Fluid Mechanics	3
MUSI 1340 THEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	Music Appreciation Introduction to the Theatre IRES – SELECT ONE World Art Lifespan Nutrition	3 3 3	ENGR 4350 ENGR 3381	Fluid Mechanics	
THEA 2350 WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	Introduction to the Theatre IRES – SELECT ONE World Art Lifespan Nutrition	3 3	ENGR 3381		
WORLD CULTU ARTS 2354 EXSS 2353 GLBL 2310	IRES – SELECT ONE World Art Lifespan Nutrition	3			
ARTS 2354 EXSS 2353 GLBL 2310	World Art Lifespan Nutrition	3	ENGINEERING	introduction to Material Science	3
EXSS 2353 GLBL 2310	Lifespan Nutrition			G UPPER-LEVEL ELECTIVES – SELECT TWO	6
GLBL 2310	•		CISC 3321	Object Oriented Development	3
	Cultural Image and a	3	ENGR 3365	Introduction to Optics	3
HIST 1311	Cultural Immersion	3	ENGR 4310	Vibrations	3
	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
MUSI 2358	World Music	3	ENGR 4335	Introduction to Aerospace Engineering	3
PHIL 2315	Introduction to Philosophy	3	ENGR 4365 ENGR 4391	Mechatronics Special Topics	3
LAB SCIENCE		8	LINGIT 4331	эрссіаі торісэ	
PHYS 2421	Physics and Calculus I	4		IPPORT COURSES	27
PHYS 2422	Physics and Calculus II	4	CISC 2330	Introduction to Object-Oriented Programming	3
PH13 2422	Physics and Calculus II	4	ENGR 1310	Introduction to Engineering	3
PUBLIC SPEAKING	G	3	ENGR 1320	Introduction to Engineering Fundamentals	3
COMM 1320	Public Speaking	3	ENGR 2010	AutoCAD Proficiency	C
COIVIIVI 1320	rubiic Speaking	J	ENGR 4090	Practical Experience	C
MATHEMATICS		4	MATH 2320	Linear Algebra	3
MATH 1430	Calculus I	4	MATH 2430	Calculus II	4
		·	MATH 3325	Ordinary Differential Equations	3
SOCIAL SCIENC	E – SELECT ONE	3	MATH 3430	Calculus III	4
BECO 2310	Principles of Economics	3	CHEM 1410	General Chemistry I	4
PSYC 1301	General Psychology	3			
PSYC 2399	Child and Adolescent Development	3			
SOCI 1311	Introduction to Sociology	3	Total Hours		
SOCW 2311	Introduction to Social Work	3	Academic Core	for B.S.	45
				g Major Required Courses	28
US HISTORY O	R US GOVERNMENT – SELECT ONE	3	Mechanical Eng		20
HIST 2311	American History to 1877	3		pper Level Electives	6
HIST 2312	American History since 1877	3	Required Suppo		27
POLS 2305	United States Government	3	Total hours req	juired for graduation	126
POLS 2306	Texas State and Local Government	3	Additional Grad	duation Requirements	
RESEARCH MF	THODS OR INTERNSHIP	0	Minimum Uppe	•	36
ENGR 4090	1777	0		rs taken at UMHB	30
			Minimum Upper Level hours taken at UMHB		24
FRESHMAN SEM		1	Minimum cum	ulative GPA	2.0
JMHB 1101	Freshman Seminar	1			
CHAPEL-1 to 4 c					
UMHB 1002	Chapel				
Fine Arts Experie	nce – 2 to 8 credits				
UMHB 1005	Fine Arts Experience				