

West Texas A&M University

Advising Services

Degree Checklist

2024-2025

(For assistance completing this form, contact Advising Services at 806-651-5300)

Name: _____ WT ID: _____ Date: _____

| Mechanical Engineering B.S. | |
|---|--------------------------------|
| College of Engineering (ECS-119) (651-5257) | |
| Degree: Bachelor of Science (B.S.) See the "Requirements for Baccalaureate Degrees" section of the Catalog. | |
| Major: Mechanical Engineering | BS.MECH.ENGR / PRE.ENGR |
| Major Code: 129 | |
| University Core Curriculum Requirements (42 hours) | Semester Credit Hours |
| Core 10 - Communication (3 hours from ENGL options) • ENGL 1301 or ENGL 1311 | 3 |
| Core 10 - Communication (3 hours from COMM options) • COMM 1315; COMM 1318; or COMM 1321 | 3 |
| Core 20 - Mathematics (3 hours) • See Major-Specific University Core Requirements below | |
| Core 30 - Life and Physical Sciences (6 hours) • See Major-Specific University Core Requirements below | |
| Core 40 - Language, Philosophy and Culture (3 hours) • ANTH 2351; ENGL 2321; ENGL 2326; ENGL 2331; ENGL 2341; ENGL 2343; HIST 2311; HIST 2323; HIST 2372; MCOM 1307; PHIL 1301; PHIL 2374; SPAN 2311; SPAN 2312 [or an equivalent course (second year or intermediate level) in a foreign language]; SPAN 2313; SPAN 2315; or SPAN 2371 | 3 |
| Core 50 - Creative Arts (3 hours) • ARTS 1301; ARTS 1303; ARTS 1304; DANC 2303; MUSI 1306; MUSI 1307; MUSI 1310; or THRE 1310 | 3 |
| Core 60 - American History (6 hours) • HIST 1301; HIST 1302; HIST 2301; HIST 2381; or HIST 2382 | 3 |
| Core 70 - Government / Political Science (6 hours) • POSC 2305 and POSC 2306 | 3 |
| Core 80 - Social and Behavioral Sciences (3 hours) • AGBE 2317; COMM 2377; CRIJ 1301; ECON 2301; ECON 2302; GEOG 1302; PSYC 2301; or SOCI 1301 | 3 |
| Core 90 - Component Area Option (6 hours or fewer; may depend on major requirements) • See Major-Specific University Core Requirements below | |

| Mechanical Engineering Major Requirements (95 hours) | | | |
|---|---|---|---|
| ***** C or better required in all courses in the Major Requirements ***** | | | |
| ***** C or better required in all prerequisites listed for College of Engineering courses required for MENG majors ***** | | | |
| Major-Specific University Core Requirements (15 hours) | | | |
| The following courses are required for their specific Core areas <u>instead of</u> the courses listed above in the general University Core Curriculum. | | | |
| Core 20 - Mathematics (3 hours) <ul style="list-style-type: none"> MATH 2413 - Calculus I (Fourth hour will count towards Core 90.) | 3 | | |
| Core 30 - Life and Physical Sciences (6 hours) <ul style="list-style-type: none"> PHYS 2425, 2425L - Calculus Physics I PHYS 2426, 2426L - Calculus Physics II (Lab hours will count towards Core 90.) | 3 | 3 | |
| Core 90 - Component Area Option (6 hours) <ul style="list-style-type: none"> ENGL 1302 - Academic Writing and Research or ENGL 2311 - Introduction to Professional and Technical Communication Lab hours from PHYS 2425/2426 and fourth hour from MATH 2413 | 3 | | |
| | 1 | 1 | 1 |
| Mechanical Engineering Requirements (80 hours) | | | |
| ENGR 1171 - Engineering Ethics | 1 | | |
| ENGR 1301 - Fundamentals of Engineering | 3 | | |
| ENGR 1304 - Engineering Graphics | 3 | | |
| ENGR 1375 - Principles of DC and AC Circuits | 3 | | |
| ENGR 2301 - Engineering Statics | 3 | | |
| ENGR 2302 - Engineering Dynamics | 3 | | |
| ENGR 2332 - Mechanics of Materials I | 3 | | |
| ENGR 3202 - Fundamentals of Engineering Economics | 2 | | |
| ENGR 3305 - Modern Engineering Tools | 3 | | |
| MENG 3320 - Engineering Thermodynamics | 3 | | |
| MENG 3304 - Fundamentals of Fluid Mechanics | 3 | | |
| MENG 4330 - Mechanical Vibration and Control Theory | 3 | | |
| MENG 4350 - Advanced Mechanics and Design | 3 | | |
| MENG 4352 - Thermal-Fluid System Design | 3 | | |
| MENG 4360 - Heat Transfer | 3 | | |
| MENG 4380 - Mechanical Engineering Design | 3 | | |
| CHEM 1411 - Chemistry I | 4 | | |
| CS 1315 - Programming Fundamentals or CS 1337 - Programming Principles I | 3 | | |
| ENGR 3371 - Materials and Fabrication/Metals and Ceramics | 3 | | |
| MATH 2414 - Calculus II | 4 | | |
| MATH 3340 - Calculus III | 3 | | |
| MATH 3342 - Differential Equations I | 3 | | |
| Two MENG electives | 6 | | |
| One elective in CS, ENGR, ET, CENG, EVEG or MENG | 3 | | |

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| <p>Two courses (6 hours) upper-level MATH/PHYS electives selected from:</p> <p>MATH 3311 - Linear Algebra MATH 4340 - Complex Variables I MATH 4341 - Advanced Calculus MATH 4361 - Statistics for the Sciences MATH 4362 - Introduction to Numerical Analysis PHYS 3310 - Modern Physics I PHYS 4310 - Modern Physics II PHYS 4330 - Optics</p> | 6 |
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Fire Protection Track

Completion of the Fire Protection Track will qualify students in the field of Fire Protection Engineering. Fire Protection Engineers ensure the safety of programs, designs, and operations. They perform a range of essential functions including designing fire protection detection and suppression systems; ensuring appropriate implementation of applicable consensus codes; calculating the ability of existing systems to meet operational needs; maintaining operability of existing fire suppression and alarm systems; analyzing fire behavior; and evaluating production processes to ensure safe and compliant operations are performed.

- MENG 4370 Fire Protection Engineering Principles
- MENG 4372 Fire Dynamics

MENG 4370, 4371, 4372 will replace the two MENG electives and one elective in CS, ENGR, ET, CENG, EVEG or MENG defined in MENG degree requirements.

Mechanical Engineering Design project completed in MENG 4380 must have a focus in Fire Protection Engineering.

Total hours required to complete degree: 122 hours

Depending on transfer credits and other substitutions/waivers, student may need to take additional electives as needed to total a minimum of 122 hours or the minimum total hours required for this degree, of which at least 36 must be advanced (3000/4000 level) and earned at WTAMU.

Admission Requirements for Pre-Engineering and Mechanical Engineering

All mechanical engineering students must meet WTAMU admission standards as outlined in this catalog. Upon admission to the University, all students would be eligible to engage in and complete the first two years of the Engineering Program. In the semester during which the student would complete the pre-engineering sequence (cited below), the student may petition for admittance into the Mechanical Engineering Program. Every student enrolled in mechanical engineering courses must first be admitted into the Mechanical Engineering Program or receive special permission from the program director.

Criteria for Admission into the Mechanical Engineering Program

- Overall GPA of at least 2.25
- Completion of the pre-engineering sequence
- Successful completion of the entrance interview with adviser

Pre-Engineering Sequence

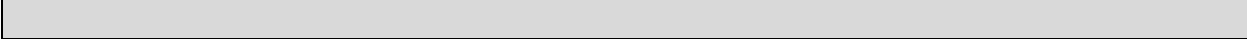
Major Code: 128

The pre-engineering sequence must be completed with a GPA of at least 2.75.

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|---|----------|
| MATH 2413 - Calculus I | 4 |
| MATH 2414 - Calculus II | 4 |
| PHYS 2425 - Calculus Physics I | 4 |
| PHYS 2426 - Calculus Physics II | 4 |
| CS 1315 - Programming Fundamentals or CS 1337 - Programming Principles I | 3 |

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|---|---|
| ENGR 1301 - Fundamentals of Engineering | 3 |
| ENGR 2301 - Engineering Statics | 3 |
| ENGR 2302 - Engineering Dynamics | 3 |

Note: Students pursuing a mechanical engineering degree who do not meet the aforementioned criteria are to be listed as pre-engineering (Major Code 128) students. Students may appeal the Engineering Admissions Committee decisions, first to the committee and then to the CS Director. Exceptions, resulting in conditional admission, will be considered on an individual basis by the program director.



Prerequisites: Some courses may require prerequisites. See the University Catalog for more information.

Advising Notes



NOTE: This is NOT a degree plan. All undergraduate students must request an official degree plan from their academic dean’s office by the time they have completed 30 credit hours. In addition, this document is used as an advising resource. For official information, please refer to the University Catalog.