

**Bachelor of Science in Mechanical Engineering (BSME)**  
**Mechanical Engineering**

The 2026-2027 list of core courses can be found in the 2026-2027 Undergraduate Catalog: [www.utrgv.edu/catalog](http://www.utrgv.edu/catalog) > See 'Bachelors Degree Program Regulations'

| Symbols Key  |           |              |                             |                   |   |               |             |  |  |  |
|--|-----------|--------------|-----------------------------|-------------------|---|---------------|-------------|--|--|--|
| Campus: B - Offered in Brownsville; E - Offered in Edinburg; O - Offered Online; T - Travel Required   |           |              |                             |                   |   |               |             |  |  |  |
| Bolted Course Number*: Program Admission Requirement   |           |              |                             |                   |   |               |             |  |  |  |
| Min Grade: A - Excellent; B - Good; C - Satisfactory; D - Below Average; CR - Credit; P - Passing; S - Satisfactory.   |           |              |                             |                   |   |               |             |  |  |  |
| Core: 010 - Communication; 020 - Mathematics; 030 - Life and Physical Sciences; 040 - Language, Philosophy & Culture; 050 - Creative Arts; 060 - American History; 070 - Government/Political Science; 080 - Social and Behavioral Sciences;   |           |              |                             |                   |   |               |             |  |  |  |
| Core: 090 - Applied Communication and Literacies; Humanities; Leadership; Science Labs; Interdisciplinary; Technologies; Language Diversity & Writing  |           |              |                             |                   |   |               |             |  |  |  |
| <b>Admission Requirements: A grade of C or better in MATH 2413 Calculus I in no more than 2 attempts, or a minimum composite score of 24 on the ACT or 1200 on the SAT, or a 3 or better on the Calculus AB AP Exam.</b><br><b>Progression Requirements: A GPA of 2.5 or better in Mechanical Engineering coursework on the degree plan. MECE 2301, MECE 2302, MECE 2340, MECE 3321, MECE 3335, and MECE 3440 cannot be taken more than 2 times without approval from the department.</b><br><b>Graduation Requirements: A GPA of 2.5 or better in Mechanical Engineering coursework. All Mechanical Engineering coursework must be passed with a grade of "C" or better (including prescribed electives).</b> |           |              |                             |                   |   |               |             |  |  |  |
| Year   | Semester  | Credit Hours | Campus                      | Course Number     | Course Title  | Minimum Grade | Core        | Prerequisite   | Additional Notes   |  |
| 1  | Fall      | 4            | B/E/O                       | <b>MATH 2413*</b> | Calculus I  | C             | 020         | MATH 2412 with a grade of 'C' or better; or passing the Precalculus Exemption Test administered by the Department of Mathematics.  | An option for BSME admission requirements: C or better within 2 attempts   |  |
| 1  | Fall      | 1            | B/E                         | MECE 1101         | Introduction to Mechanical Engineering  | C             |             |  | Can be taken as a Pre-ME major   |  |
| 1  | Fall      | 2            | B/E                         | MECE 1221         | Engineering Graphics  | C             |             |  | Includes lecture and lab sections; Can be taken as a Pre-ME major  |  |
| 1  | Fall      | 3            | B/E                         | CHEM 1309         | Chemistry for Engineers   | C             |             | MATH 1314, MATH 1414 or MATH 2412 with a grade of C or higher  |  |  |
| 1  | Fall      | 1            | B/E                         | CHEM 1109         | Chemistry for Engineers Lab   | C             | 090         | Credit/registration in CHEM 1309.  |  |  |
| 1  | Fall      | 3            | B/E                         | CSCI 1380         | Introduction to Programming   | C             | 090         | Concurrent enrollment or credit for MATH 1314 or higher level mathematics course.  |  |  |
| 1  | Fall      |              | B/E/O                       | UNIV              | 1301 Foundations of Academic and Career Success<br>1101 Academic and Career Success<br>1001/1300 Living and Working by Design |               |             |  | As required, based on a number of factors such as credit hours earned, TSI status, high school rank, major declaration, etc.                     |  |
| 1  | Fall      | <b>14</b>    | <b>Semester Total Hours</b> |                   |   |               |             |  |  |  |
| 1  | Spring    | 3            | B/E/O                       | Choose 1          | Communication   | C             | 010         | For all 010 courses: Satisfactory scores on English portion of ACT test and TSI examination or ENGL 0301. For ENGL 1302, a grade of "C" or better in ENGL 1301.  | See General Education Core for more details Option: ENGL 1301  |  |
| 1  | Spring    | 4            | B/E/O                       | MATH 2414         | Calculus II   | C             |             | MATH 2413 (or MATH 2487) with a grade of 'C' or better.  |  |  |
| 1  | Spring    | 4            | B/E/O                       | PHYS 2425         | Physics for Scientists and Engineers I  | C             | 030/<br>090 | MATH 2413.   | 1 hour lab to count for 090 Core Department requires a C or better in the prerequisite course(s)   |  |
| 1  | Spring    | 3            | B/E                         | MECE 2340         | Engineering Materials   | C             |             | A grade of 'C' or better in CHEM 1309 and CHEM 1109 or CHEM 1312 and CHEM 1112; a grade of 'C' or better or concurrent enrollment in MECE 2140.  | Lecture and lab must be taken together. Cannot be taken more than two times without approval from the department. Can be taken as a Pre-ME major |  |
| 1  | Spring    | 1            | B/E                         | MECE 2140         | Engineering Materials Lab   | C             |             | A grade of 'C' or better in CHEM 1309 and CHEM 1109 or CHEM 1312 and CHEM 1112; a grade of 'C' or better or concurrent enrollment in MECE 2340.  | Lecture and lab must be taken together. Can be taken as a Pre-ME major   |  |
| 1  | Spring    | <b>15</b>    | <b>Semester Total Hours</b> |                   |   |               |             |  |  |  |
| 1  | Summer II | 3            | B/E/O                       | Choose 1          | American History  |               | 060         |  | See General Education Core for more details. Options: HIST 1301 or HIST 2327.  |  |
| 1  | Summer II | 3            | B/E/O                       | Choose 1          | Creative Arts   |               | 050         |  | See General Education Core for course options.   |  |
| 1  | Summer II | <b>6</b>     | <b>Semester Total Hours</b> |                   |   |               |             |  |  |  |
| Year   | Semester  | Credit Hours | Campus                      | Course Number     | Course Title  | Minimum Grade | Core        | Prerequisite   | Additional Notes   |  |
| 2  | Fall      | 4            | B/E/O                       | MATH 2415         | Calculus III  | C             |             | MATH 2414 (or MATH 2488) with a grade of 'C' or better.  |  |  |
| 2  | Fall      | 4            | B/E/O                       | PHYS 2426         | Physics for Scientists and Engineers II   | C             | 030/<br>090 | PHYS 2425 and MATH 2414.   | 1 hour lab to count for 090 Core Department requires a C or better in the prerequisite course(s)   |  |
| 2  | Fall      | 3            | B/E                         | MANE 3332         | Engineering Statistics  | C             |             | MATH 2413 and credit for or enrollment in MATH 2414.   | Department requires a C or better in MATH 2413 and credit for or enrollment in MATH 2414   |  |
| 2  | Fall      | 4            | B/E                         | MECE 3440         | Mechanical Engineering Analysis   | C             |             | A grade of C or better in CSCI 1380 and MATH 2414. Must be officially admitted to the Mechanical Engineering major.  | Includes lecture and lab sections. Cannot be taken more than two times without approval from the department                                      |  |
| 2  | Fall      | 3            | B/E                         | MECE 2301         | Statics   | C             |             | A grade of 'C' or better in [MECE 1101 or CIVE 1221 or CIVE 1101] and PHYS 2425; a grade of 'C' or better or concurrent enrollment in MATH 2414. Must be officially admitted to the Mechanical Engineering major or Civil Engineering major. | Cannot be taken more than two times without approval from the department   |  |
| 2  | Fall      | <b>18</b>    | <b>Semester Total Hours</b> |                   |   |               |             |  |  |  |
| 2  | Spring    | 4            | B/E                         | MECE 3450         | Mechanical Engineering Analysis II  | C             |             | A grade of "C" or better in (MECE 2350 and MECE 3449) or (MECE 3440 and MATH 2415) or (MECE 3449 and MECE 3440). Must be officially admitted to the Mechanical Engineering major.  | Includes lecture and lab sections  |  |
| 2  | Spring    | 3            | B/E                         | MECE 2302         | Dynamics  | C             |             | A grade of 'C' or better in MECE 2301 and MATH 2414 (or MATH 2488). Must be officially admitted to the Mechanical Engineering major or Civil Engineering major.  | Cannot be taken more than two times without approval from the department   |  |
| 2  | Spring    | 3            | B/E                         | MECE 3335         | Thermodynamics I  | C             |             | A grade of 'C' or better in CHEM 1309 or CHEM 1311, MATH 2414 and PHYS 2425. Must be officially admitted to the Mechanical Engineering major or minor.   | Cannot be taken more than two times without approval from the department   |  |
| 2  | Spring    | 3            | B/E                         | MECE 3321         | Mechanics of Solids   | C             |             | A grade of C or better in MATH 2414, MECE 2340, and MECE 2301 or MANE 2403. Must be officially admitted to the Mechanical Engineering major or Manufacturing Engineering major.  | Cannot be taken more than two times without approval from the department   |  |
| 2  | Spring    | 3            | B/E/O                       | Choose 1          | American History  |               | 060         |  | See General Education Core for more details. Options: HIST 1302 or HIST 2328   |  |
| 2  | Spring    | <b>16</b>    | <b>Semester Total Hours</b> |                   |   |               |             |  |  |  |

| Year | Semester | Credit Hours | Campus                      | Course Number | Course Title                       | Minimum Grade | Core | Prerequisite  | Additional Notes   |  |
|------|----------|--------------|-----------------------------|---------------|------------------------------------|---------------|------|---|--|--|
| 3    | Fall     | 3            | B/E                         | MECE 3304     | System Dynamics                    | C             |      | A grade of 'C' or better in MECE 2302 and MECE 3450.  |  |  |
| 3    | Fall     | 3            | B/E                         | MECE 3315     | Fluid Mechanics                    | C             |      | A grade of 'C' or better in (MECE 3335 or MECE 2335) and MECE 3450.   |  |  |
|      |          | 3            | B                           | EECE 2317     | Electrical and Electronics Systems | C             |      | Grade of C or better in PHYS 2426.  | Includes lecture and lab sections  |  |
| 3    | Fall     | 3            | B/E                         | MECE 3380     | Kinematics & Dynamics of Machines  | C             |      | A grade of 'C' or better in MECE 1221 and MECE 2302. Must be officially admitted to the Mechanical Engineering major.   |  |  |
| 3    | Fall     | 3            | B/E/O                       | Choose 1      | Social and Behavioral Sciences     |               | 080  |   | Choose from: ECON 2301 Macroeconomics, PSYC 2301 General Psychology, or SOCI 1301 Introduction to Sociology  |  |
| 3    | Fall     | 15           | <b>Semester Total Hours</b> |               |                                    |               |      |   |  |  |
| 3    | Spring   | 3            | B/E                         | MECE 3320     | Measurement & Instrumentation      | C             |      | A grade of 'C' or better in (ELEE 2317 or EECE 2317) and MECE 3450 and (MANE 3332 or MANE 2332).  |  |  |
| 3    | Spring   | 3            | B/E                         | MECE 3360     | Heat Transfer                      | C             |      | A grade of 'C' or better in MECE 3315.  |  |  |
| 3    | Spring   | 1            | B/E                         | MECE 3170     | Thermal Fluids Laboratory          | C             |      | A grade of C or better in MECE 3315 Fluid Mechanics and a grade of C or better or concurrent enrollment in MECE 3360 Heat Transfer.                             |  |  |
| 3    | Spring   | 3            | B/E                         | MECE 4350     | Machine Elements                   | C             |      | A grade of 'C' or better in MECE 2302, MECE 2340, and MECE 3321. Must be officially admitted to the Mechanical Engineering major.                               |  |  |
| 3    | Spring   | 3            | B/E/O                       | Choose 1      | Prescribed Elective                | C             |      | Prerequisites Vary.   | MECE 33XX or MECE 43XX course from the approved list - OR - one of the following, which requires PRIOR approval from the Department of Mechanical Engineering: (1) MECE 3100 for three terms, (2) MECE 3100 and MECE 3200 across two terms for industry internships/co-ops, (3) non-MECE advanced engineering, mathematics, or science course. |  |
|      | Spring   | 3            | B                           | MANE 3364     | Manufacturing Processes            | C             |      | MECE 2140 and 2340.   | Department requires a C or better in the prerequisite course(s)  |  |
|      | Spring   | 1            | B                           | MANE 3164     | Manufacturing Processes Lab        | C             |      | Credit for [MECE 2140 and MECE 2340] and credit for/registration in MANE 3364.  | Department requires a C or better in the prerequisite course(s)  |  |
| 3    | Spring   | 17           | <b>Semester Total Hours</b> |               |                                    |               |      |   |  |  |
| Year | Semester | Credit Hours | Campus                      | Course Number | Course Title                       | Minimum Grade | Core | Prerequisite  | Additional Notes   |  |
| 4    | Fall     | 3            | B/E                         | MECE 4361     | Senior Design Project I            | C             |      | A grade of 'C' or better in MECE 3304 and a grade of 'C' or better or concurrent enrollment in MECE 3315, MECE 3320, MECE 3360, MECE 3380, and MECE 4350.       | Includes lecture and lab section   |  |
| 4    | Fall     | 3            | B/E/O                       | Choose 1      | Communication                      | C             | 10   | For all 010 courses: Satisfactory scores on English portion of ACT test and TSI examination or ENGL 0301. For ENGL 1302, a grade of "C" or better in ENGL 1301. | See General Education Core for more details Options: ENGL 1302 or ENGL 1305  |  |
| 4    | Fall     | 3            | B/E                         | MECE 3336     | Thermodynamics II                  | C             |      | A grade of 'C' or better in MECE 3335 or MECE 2335.   |  |  |
| 4    | Fall     | 1            | B/E                         | MECE 4101     | Fundamentals of Engineering        | C             |      | Grade of "C" or better or concurrent enrollment in MECE 4361.   |  |  |
| 4    | Fall     | 3            | B/E/O                       | Choose 1      | Prescribed Elective                | C             |      | Prerequisites Vary.   | MECE 33XX or MECE 43XX course from approved list   |  |
| 4    | Fall     | 3            | B/E/O                       | POLS 2305     | U.S. Federal Govt & Politics       |               | 070  |   |  |  |
| 4    | Fall     | 16           | <b>Semester Total Hours</b> |               |                                    |               |      |   |  |  |
| 4    | Spring   | 3            | B/E                         | MECE 4362     | Senior Design Project II           | C             |      | A grade of 'C' or better in MECE 4361 and a grade of 'C' or better or concurrent enrollment in MECE 3315, MECE 3320, MECE 3360, MECE 3380, and MECE 4350.       |  |  |
| 4    | Spring   | 3            | B/E/O                       | Choose 1      | Prescribed Elective                | C             |      | Prerequisites Vary.   | MECE 33XX or MECE 43XX course from approved list   |  |
| 4    | Spring   | 3            | B/E/O                       | PHIL 2326     | Ethics, Technology, & Society      |               | 040  |   |  |  |
| 4    | Spring   | 3            | B/E/O                       | POLS 2306     | Texas Government & Politics        |               | 070  |   |  |  |
| 4    | Spring   | 12           | <b>Semester Total Hours</b> |               |                                    |               |      |   |  |  |

129  
(42) TOTAL HOURS  
Advanced minimum credit hours