

MECHANICAL ENGINEERING TECHNOLOGY, BACHELOR OF SCIENCE (BS)

This degree combines studies of Mathematics, Computer Science, Physics and Mechanical Engineering Technology with an emphasis on applications. The Bachelor of Science in Mechanical Engineering Technology Degree is accredited by the Engineering Technology Accreditation Commission of ABET (<http://www.abet.org>). Before graduation each student will participate in a design project or an internship in industry to gain industrial experience during his or her academic career before employment. The emphasis of this program is the application of engineering principles to the solution of practical problems. MET graduates are in great demand and are employed in a variety of interesting, high-tech careers throughout the state and region. Employment opportunities are available in mechanical design, industrial engineering technology, industrial management, manufacturing, CAD, applied research and sales and service.

Minimum required to apply for admission to the Mechanical Engineering Program

Students must have completed or, be scheduled to complete, the following courses:

MATH 161, MATH 162; all ≥ 2.0

- PHYS 131 and PHYS 132 and PHYS 133, or PHYS 151 or PHYS 152 or PHYS 153; and PHYS 161, PHYS 162 and PHYS 163; all ≥ 2.0
- MENG 240 and MENG 241; all ≥ 2.0
- ENGL 201; ≥ 2.0
- CHEM 151
- Students must apply for admission to the Mechanical Engineering program at EWU (<http://www.ewu.edu/cstem/programs/engineering/engineering-degrees/bsme>) by February 15. Admission is based upon the student's GPA in the core courses listed above and a short essay.

Notes:

- *if an internship cannot be found by student, independent study METC 491 may be substituted.
- Including university requirements for the degree the above program requires a minimum of 188 credits or an average load of 15.67 credits per quarter, for a 12 quarter, four-year program. The 188 credits are based on the following assumption: a. students have had one year of high school drafting. If this assumption is not true, then the student will have to take METC 102.

Required Supporting Outside Department Courses

CHEM 151	GENERAL CHEMISTRY	5
MATH 161	CALCULUS I	5
MATH 162	CALCULUS II	5
PHYS 131 or PHYS 151	INTRODUCTORY PHYSICS I GENERAL PHYSICS I	4

PHYS 132 or PHYS 152	INTRODUCTORY PHYSICS II GENERAL PHYSICS II	4
PHYS 133 or PHYS 153	INTRODUCTORY PHYSICS III GENERAL PHYSICS III	4
PHYS 161	MECHANICS LABORATORY	1
PHYS 162	HEAT AND OPTICS LABORATORY	1
PHYS 163	INSTRUMENTATION LAB I	1

Required MATH supporting courses—other choices may be made with permission of advisor.

MATH 141	PRECALCULUS I	5
MATH 142	PRECALCULUS II	5

Required Departmental Courses

MENG 201 or CSCD 255 or CSCD 409	MATLAB C PROGRAMMING FOR ENGINEERS SCIENTIFIC PROGRAMMING	4-5
MENG 207	ELECTRICITY	4
MENG 217	3D PARAMETRIC COMPUTER AIDED DESIGN	4
MENG 353	INDUSTRIAL MATERIALS	5
MENG 381	LABORATORY ANALYSIS AND REPORTS	5
MENG 385	ROBOTICS AND AUTOMATION	5
MENG 412	FUNDAMENTALS OF ENGINEERING	2
MENG 452	ENGINEERING ECONOMICS	2
MENG 493	SENIOR SEMINAR	1
METC 110	ENGINEERING GRAPHICS	5
METC 340	STATICS	5
METC 341	STRENGTH OF MATERIALS	4
METC 342	DYNAMICS	4
METC 387	FLUID MECHANICS	5
METC 388	THERMODYNAMICS AND HEAT TRANSFER	5
METC 415	DESIGN OF MACHINE ELEMENTS	5
METC 456	ENGINEERING ETHICS, CONTRACTS AND PATENTS	2
METC 490A	SENIOR CAPSTONE: DESIGN LABORATORY I	2
METC 490B	SENIOR CAPSTONE: DESIGN LABORATORY II	3
METC 495	INTERNSHIP (if an internship cannot be found by student, METC 491 may be substituted)	6
TECH 301	METALLIC PROCESSES	5
TECH 393	TECHNOLOGY WORLD CIVILIZATION	4
TECH 403	COMPUTER-AIDED DESIGN AND PROJECT MANAGEMENT	4

Required Supporting Departmental Courses—choose three of the following

MENG 407	HVAC	15
METC 417	ADVANCED PARAMETRIC DESIGN	
METC 468	QUALITY ASSURANCE AND INTRO TO LEAN	
TECH 404	COMPUTER NUMERICAL CONTROL	

Total Credits 146-147

For information on General Education, see Undergraduate Degree (<http://catalog.ewu.edu/archives/2016-2017/undergraduate-degree>).

Student Learning Outcomes—students will

- show respect for diversity and a knowledge of contemporary professional, societal and global issues;

- develop the ability to understand professional, ethical or social responsibilities.
- function effectively on teams;
- communicate effectively;
- develop appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines;
- conduct, analyze and interpret experiments and apply results to improve processes.