

TECHNOLOGY WITH MANUFACTURING OPTION, BACHELOR OF SCIENCE (BS)

The manufacturing option focuses on select areas of technology, science and methods of materials processing. This option prepares the student to enter and progress in industry in a variety of areas including, quality assurance, inventory control, production line supervision or process management.

Note: Including university requirements, the above program requires a minimum of 180 credits, an average of 15 credits per quarter for a 12 quarter, four-year program. The 180 credits are based upon the following assumptions:

- Students have had one year of high school drafting (if this assumption is not true, then the student will have to take METC 102 Introduction to Engineering Graphics;
- Students will have satisfied university competencies. If this assumption is not true, then the student will have to complete up to six more credits of classes. (See university competencies.)
- technology majors with applied, construction, design or manufacturing options are not accredited by the Technology Accreditation Commission of ABET.

Required Supporting Outside Department Courses

CHEM 121	CHEMISTRY AND ITS ROLE IN SOCIETY	5
or CHEM 151	GENERAL CHEMISTRY	
MATH 142	PRECALCULUS II	5
or MATH 107	MATHEMATICAL REASONING	
PHYS 100	PHYSICAL SCIENCE I	5

Required Departmental Courses

MENG 217	3D PARAMETRIC COMPUTER AIDED DESIGN	4
MENG 353	INDUSTRIAL MATERIALS	5
METC 110	ENGINEERING GRAPHICS	5
TECH 208	SURVEY OF ELECTRICITY	4
TECH 301	METALLIC PROCESSES	5
TECH 320	NON-METALLIC PROCESSES	5
TECH 330	TECHNOLOGY PROBLEM ANALYSIS AND DESIGN I	4
TECH 331	TECHNOLOGY PROBLEM ANALYSIS AND DESIGN II	4
TECH 393	TECHNOLOGY WORLD CIVILIZATION	4
TECH 402	MACHINE TOOL I	5
TECH 403	COMPUTER-AIDED DESIGN AND PROJECT MANAGEMENT	4
TECH 404	COMPUTER NUMERICAL CONTROL	5
TECH 406	WELDING TECHNOLOGY	4
TECH 430	MACHINE TOOL II	5
TECH 452	ENGINEERING ECONOMICS	4
TECH 454	ENVIRONMENTAL ENGINEERING	4
TECH 456	ENGINEERING ETHICS, CONTRACTS AND PATENTS	4
TECH 458	QUALITY ASSURANCE	4
TECH 462	INDUSTRIAL SAFETY ENGINEERING	4

TECH 490	SENIOR CAPSTONE: PRODUCTION LAB	4
TECH 491	SENIOR PROJECT (3–10 credits but 4 credits only for this program)	4
TECH 495	INTERNSHIP (if an internship cannot be found by student, a TECH elective may be substituted—1–15 credits but 4 credits for this program)	4
Total Credits		110

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

Student Learning Outcomes—students will

- develop an appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines;
- develop a recognition of the need for, and the ability to engage in, lifelong learning;
- develop a commitment to quality, timeliness and continuous improvement,
- communicate effectively;
- identify, analyze and solve technical and creative problems;
- develop an ability to understand professional, ethical or social responsibilities.