

# MANUFACTURING ENGINEERING TECHNOLOGY, BIO-MANUFACTURING OPTION (BACHELOR OF SCIENCE, B.S.)

## Overview

Manufacturing Engineering Technology is the profession in which an understanding and application of a broad range of technologies is necessary for production and control of manufacturing processes. Manufacturing includes methods of production of industrial commodities and consumer products. The manufacturing professional must be able to plan, design, and implement sequence of operations using current technologies to produce products at competitive prices. Four-year B.S. degree graduates qualify for jobs related to production, productivity improvement, and process design. They also qualify for supervisory and managerial positions in plant engineering.

The Bio-Manufacturing option in the B.S. MET program is created to meet the ever-growing demand of highly educated workforce by the bio-production and research companies in the animal health corridor. B.S. degree graduates in bio-manufacturing qualify for jobs related to bio-production, packaging, maintenance, design, and lab scale-up work.

## Program Educational Objectives (BS MET)

1. Possess the general knowledge of manufacturing industry such as concepts, terminologies, basic and standard problem-solving techniques.
2. Demonstrate the ability to analyze and implement production systems in a manufacturing setting.
3. Function effectively in a group environment in the industrial workplace through demonstration of technical and communication skills.
4. Understand professional, ethical, and social responsibilities.
5. Possess basic knowledge in organic chemistry, cell biology and microbiology
6. Familiarize with GMP, as well as governmental regulations related with bio-production.

## Requirements

Students who choose this bachelor degree program will have no more than 6 years from admission or subsequent declaration to meet the requirements listed below. If certification, accreditation or statutory requirements change and additional requirements become effective during this time, the new requirements take precedence.

Code	Title	Credit Hours
<b>General Studies</b>		<b>42</b>
Students must complete General Studies courses ( <a href="http://catalog.missouriwestern.edu/undergraduate/university-information/academic-standards-regulations/baccalaureate-degree/#bachelor-general-studies">http://catalog.missouriwestern.edu/undergraduate/university-information/academic-standards-regulations/baccalaureate-degree/#bachelor-general-studies</a> )		
<b>Major Requirements</b>		<b>83</b>
BIO 106	Principles of Cell Biology	4

BIO 205	Genetics	4
BIO 390	Microbiology	4
CHE 111	General Chemistry I	5
CHE 120	General Chemistry II with Qualitative Analysis	5
CHE 310	Organic Chemistry I	3
CHE 311	Organic Chemistry Laboratory I	2
EGT 205	Computer-Aided Drafting I	3
EGT 220	Engineering Materials	3
EGT 325	Machine Parts and Mechanical Design	3
EGT 356	Fluids and Hydraulics	3
EGT 440	Thermodynamics	3
EGT 490	Engineering Technology Internship	4
MAT 116	College Algebra	3
MAT 119	Trigonometry	2
MET 100	Electrical Circuits for Manufacturing	3
MET 101	Electronic Instrumentation for Manufacturing	3
MET 111	Manufacturing Processes	2
MET 132	Manufacturing Methods	3
MET 232	Automated Manufacturing	2
MET 315	Mechanical Systems	3
MET 322	Electrical Circuits II	4
MET 372	Programmable Logic Controllers	4
MET 452	Automation and Process Control Technology	4
PHY 110	College Physics I	4

## Program Graduation Requirements

1. Earn a grade of C or higher in all EGT and MET prefix major coursework.
2. Earn an overall GPA of at least 2.0 and a major GPA of at least 2.0.

## University Graduation Requirements

1. Earn a minimum of 120 credit hours (100 level and higher, maximum of 6 CED credit hours applicable).
2. Earn a minimum of 30 credit hours in upper-division courses. Lower-division transfer courses accepted as meeting upper-division departmental course requirements cannot be used to fulfill this requirement.
3. Earn 30 of the last 45 credit hours at MWSU in institutional coursework (exclusive of credit by examination).
4. Participate in required departmental and campus wide assessments.
5. Fulfill the Missouri Constitution requirement.
6. Successfully pass the Missouri Higher Education Civics Achievement exam.