MINNESOTA STATE UNIVERSITY MANKATO

Undergraduate Degree Map for Completion in Four Years

College:	College of Science, Engineering & Technology
Department:	Auto & Manufacturing Engineering Tech
Name of Program:	MANUFACTURING ENGINEERING TECH
Degree Designation:	BS
Emphasis/Concentration:	MET: MANUFACTURING ENGR TECH
Option:	
Version:	N/A
Version Explanation:	
Type of Program:	Standard Major
Minor Required:	No
Specific Minor (if required):	

Program Description:

The Manufacturing Engineering Technology (MET) Program offered at Minnesota State University, Mankato is positioned to meet industry's competitive product and process design needs. The MET Program prepares students for the dynamic and versatile roles critical to the ever-changing industrial design applications required to survive in a world economy. The changing world of manufacturing is providing many opportunities in automation and production systems design.

The program focuses on the development of equipment and technology used in modern manufacturing. Industry leaders provided input to ensure the program is relevant to rapidly changing technologies for modern industry. Students use applied theory to learn how products and processes are effectively developed. In addition, they apply problem-solving and decision-making skills to a variety of manufacturing engineering technology issues. The senior year is often spent in an industry applied senior design project while taking senior courses in an online format.

The MET Program at MSU provides a broad technical background for students. Together with a proficiency in engineering methods and mathematics, this enables graduates to take advantage of opportunities for advancement in many directions. They often have their choice of challenging positions such as manufacturing engineer, production engineer, production manager, design engineer, quality manager, process analyst, project engineer, operations manager, continuous improvement manager, or sales engineer. Students work for a wide variety of international and national industries, including St. Jude Medical, Toyota, Coloplast, Bemis, Taylor Corporation, MICO, AGCO, ADC, Winland Electronics, Emerson and Motion Control Group among many others

Admission Requirements:

Admission to Major is granted by the department. Students must meet admission requirements prior to taking 300- and 400-level courses. Minimum admission requirements for the College of Science, Engineering and Technology are:

a minimum of 32 earned semester credit hours
a minimum cumulative GPA of 2.00 (C)
completion of ENG 101 and MATH 112 or a higher level math
In addition, completion of the following courses with a "C" or better is required for admission to MET:

CHEM 104
MET 104
STAT 154
CMST 100 OR 102
EET 113
MATH 121
MET 142
MET 144
MET 177

Advising:
You are expected to meet with your advisor on a regular basis to ensure courses are taken in an order that will lead to successful completion of the degree.

A complete listing of program faculty, policies, and course descriptions is available in the undergraduate bulletin.

TERM 1 - FALL				
Designator:	**Course:**	**Course Name:**	**Credits:**	**Milestones:** Overall GPA ≥ 2.0 Course Completion Rate ≥ 67% Completion of ≥ 15 credit hours
MET	104	Intro to Mfg Engineering Tech	1	Must receive grade of "C" (2.0 credits) or higher Required for admission to MET major Meet with Academic Adviser/Complete Graduation Plan
MET	144	Product Development & Design	3	Must receive grade of "C" (2.0 credits) or higher Required for admission to MET major
MATH	115	Precalculus	4	Must receive grade of "C" (2.0 credits) or higher
CMST	100	Fund. Comm. **OR CMST 102**	3	Must receive grade of "C" (2.0 credits) or higher Required for admission to MET major
EET	113	DC Circuits	3	Must receive grade of "C" (2.0 credits) or higher Required for admission to MET major

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Term 1 Notes:

Overall GPA ≥ 2.0
Course Completion Rate ≥ 67%
Completion of ≥ 15 credit hours

		TERM 2 - SPRING			
Designator:	*Course:*	*Course Name:*	*Credits:*	*Milestones:*	
				Overall GPA ≥ 2.0 Course Completion Rate ≥ 67% Completion of ≥ 30 credit hours Advance to Sophomore status	
MET	142	Introduction to Parametric Modeling	3	Must receive grade of "C" (2.0 credits) or higher Required for admission to MET major	
MET	177	Materials Process & Metallurgy	4	Must receive grade of "C" (2.0 credits) or higher Required for admission to MET major	
MATH	121	Calculus I	4	Must receive grade of "C" (2.0 credits) or higher Required for admission to MET major	
PHYS	211	Principles of Physics I	4	Must receive grade of "C" (2.0 credits) or higher Required for admission to MET major	
ENG	101	Composition	4	Must receive grade of "C" (2.0 credits) or higher Required for admission to MET major	

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Term 2 Notes:

Overall GPA ≥ 2.0
Course Completion Rate ≥ 67%
Completion of ≥ 30 credit hours
Advance to Sophomore status
Meet with Academic Adviser

		TERM 3 - FALL			
Designator:	*Course:*	*Course Name:*	*Credits:*	*Milestones:*	
				Overall GPA ≥ 2.0 Course Completion Rate ≥ 67%	
MET	277	Manufacturing Processes	3	Must receive grade of "C" (2.0 credits) or higher	
PHYS	212	Principles of Physics II	4	Must receive grade of "C" (2.0 credits) or higher	
MATH	122	Calculus II	4	Must receive grade of "C" (2.0 credits) or higher	
CHEM	104	Intro to Chemistry	3	Must receive grade of "C" (2.0 credits) or higher Required for admission to MET major	
STAT	154	Elementary Statistics	3	Must receive grade of "C" (2.0 credits) or higher Required for admission to MET major	

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Term 3 Notes:

Overall GPA ≥ 2.0
Course Completion Rate ≥ 67%

TERM 4 - SPRING

Designator:	Course:	Course Name:	Credits:	Milestones: Overall GPA ≥ 2.0 Course Completion Rate ≥ 67% Completion of ≥ 60 credit hours Advance to Junior status
AET	334	Fluid Power	3	Must receive grade of "C" (2.0 credits) or higher
MET	323	Statics	3	Must receive grade of "C" (2.0 credits) or higher
ENG	271W	Technical Communications	4	Must receive grade of "C" (2.0 credits) or higher
		General Education	3	Meet with adviser to verify completion of required goal areas and categories
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Term 4 Notes:

Overall GPA ≥ 2.0
Course Completion Rate ≥ 67%
Completion of ≥ 60 credit hours
Advance to Junior status
Meet with Academic Adviser

TERM 5 - FALL

Designator:	Course:	Course Name:	Credits:	Milestones: Overall GPA ≥ 2.0 Course Completion Rate ≥ 67% Apply for Graduation
MET	324	Strength of Materials & Dynamics	4	Must receive grade of "C" (2.0 credits) or higher
MET	341	Advanced Parametric Modeling	3	Must receive grade of "C" (2.0 credits) or higher
MET	386	Metrology for Eng Technologist	3	Must receive grade of "C" (2.0 credits) or higher
MET	425	Project & Value Management	3	Must receive grade of "C" (2.0 credits) or higher
MET	427	Quality Management Systems	3	Must receive grade of "C" (2.0 credits) or higher

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Term 5 Notes:

Overall GPA ≥ 2.0
Course Completion Rate ≥ 67%

TERM 6 - SPRING

Designator:	Course:	Course Name:	Credits:	Milestones: Overall GPA ≥ 2.0 Course Completion Rate ≥ 67% Completion of ≥ 90 credit hours Advance to Senior status
AET	378	Composite Materials	3	Must receive grade of "C" (2.0 credits) or higher
MET	347	Manufacturing Automation	3	Must receive grade of "C" (2.0 credits) or higher
MET	424	Industrial Safety	2	Must receive grade of "C" (2.0 credits) or higher
MET	428	Lean Manufacturing	3	Must receive grade of "C" (2.0 credits) or higher
		General Education	4	Meet with adviser to verify completion of required goal areas and categories

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Term 6 Notes:

Overall GPA ≥ 2.0
Course Completion Rate ≥ 67%
Completion of ≥ 90 credit hours
Advance to Senior status
Meet with Academic Adviser/Submit Graduation Plan

TERM 7 - FALL				
Designator:	Course:	Course Name:	Credits:	Milestones: Overall GPA ≥ 2.0 Course Completion Rate ≥ 67%
MET	407	Mfg. Resource Plng & Cntrl	3	Must receive grade of "C" (2.0 credits) or higher
MET	448	Computer Integrated Mfg	3	Must receive grade of "C" (2.0 credits) or higher
MET	488	Senior Design I	2	Must receive grade of "C" (2.0 credits) or higher
		General Education	3	Meet with adviser to verify completion of required goal areas and categories
		Elective Credits (Internship Optional)	4	Must receive grade of "C" (2.0 credits) or higher

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Term 7 Notes:

Overall GPA ≥ 2.0
Course Completion Rate ≥ 67%
Meet with Academic Adviser/Review Graduation Plan

TERM 8 - SPRING				
Designator:	Course:	Course Name:	Credits:	Milestones: Overall GPA ≥ 2.0 Course Completion Rate ≥ 67%
MET	423	Ergonomics & Work Measurement	3	Must receive grade of "C" (2.0 credits) or higher

Designator:	Course:	Course Name:	Credits:	Milestones: Overall GPA ≥ 2.0 Course Completion Rate ≥ 67%
MET	426	Logistics & Transportation	3	Must receive grade of "C" (2.0 credits) or higher
MET	489	Senior Design II	2	Must receive grade of "C" (2.0 credits) or higher
		General Education	2	Meet with adviser to verify completion of required goal areas and categories
		Elective Credits (Internship Optional)	6	Must receive grade of "C" (2.0 credits) or higher

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Term 8 Notes:

Overall GPA ≥ 2.0
Course Completion Rate ≥ 67%
Graduate with BSMET

PROGRAM NOTES

DEGREE MAP CHECKLIST: GRADUATION REQUIREMENTS

- ☑ 1. Minimum of 15 credits per semester
- ☑ 2. General Education = 44 credits
- ☑ 3. Diverse Cultures = 2 course (6 credits minimum) from two disciplines
- ☑ 4. Writing Intensive = 2 courses (6 credits minimum)
- ☑ 5. Major = 63 credits
- ☑ 6. Upper-Division Requirements = 40 credits minimum
- ☐ 7. Professional Education (if required) = 30 credits
- ☐ 8. Language Requirements (if BA) = 8 credits minimum
- ☑ 9. Minor = 0 credits
- ☑ 10. Total credits required for degree 128

DEGREE MAP COMPLETE

- ☑ Map is complete and ready for review
  1. Faculty please send an email to your Department Chair when map is ready to review.
  2. Department Chair please send an email to your Dean when map is ready to review.
  3. Dean please send an email to the Assistant Vice President for Undergraduate Studies when map is ready to review.

DEAN APPROVAL	
☑	Map reviewed and approved by Dean

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