MANUFACTURING/ MECHANICAL ENGINEERING

Students with an interest in both areas can pursue a dual B.S.E. program in Manufacturing and Mechanical Engineering and thus can earn two B.S.E. degrees at the same time:

- B.S.E. degree in Manufacturing Engineering
- B.S.E. degree in Mechanical Engineering

The dual degree program requires specified coursework that equals a minimum of 143 total credits.

Dearborn Discovery Core Requirement

The minimum GPA for the program is 2.0. In addition, the DDC permits any approved course to satisfy up to three credit hours within three different categories. Please see the General Education Program: The Dearborn Discovery Core (http://catalog.umd.umich.edu/undergraduate/general-information/general-education-program-dearborn-discovery-core) section for additional information.

Foundational Studies

Written and Oral Communication (GEWO) – 6 Credits (http://catalog.umd.umich.edu/undergraduate/general-information/general-education-program-dearborn-discovery-core/#gewo)

Upper Level Writing Intensive (GEWI) – 3 Credits (http://catalog.umd.umich.edu/undergraduate/general-information/general-education-program-dearborn-discovery-core/#gewi)

Quantitative Thinking and Problem Solving (GEQT) – 3 Credits (http://catalog.umd.umich.edu/undergraduate/general-information/general-education-program-dearborn-discovery-core/#geqt)

Critical and Creative Thinking (GECC) – 3 Credits (http://catalog.umd.umich.edu/undergraduate/general-information/general-education-program-dearborn-discovery-core/#gecc)

Areas of Inquiry

Natural Science (GENS) – 7 Credits (http://catalog.umd.umich.edu/undergraduate/general-information/general-education-program-dearborn-discovery-core/#gens)

- Lecture/Lab Science Course
- Additional Science Course

Social and Behavioral Analysis (GESB) – 9 Credits (http://catalog.umd.umich.edu/undergraduate/general-information/general-education-program-dearborn-discovery-core/#gesb)

Humanities and the Arts (GEHA) – 6 Credits (http://catalog.umd.umich.edu/undergraduate/general-information/general-education-program-dearborn-discovery-core/#geha)

Intersections (GEIN) – 6 Credits (http://catalog.umd.umich.edu/undergraduate/general-information/general-education-program-dearborn-discovery-core/#gein)

Capstone

Capstone (GECE) – 3 Credits (http://catalog.umd.umich.edu/undergraduate/general-information/general-education-program-dearborn-discovery-core/#gece)

In addition to completion of the Dearborn Discovery Core, the following courses are required to earn a dual BSE degree in Manufacturing and Mechanical Engineering from UM-Dearborn.

Basic PREP Requirements (53)

Code	Title	Credit Hours
COMP 270	Tech Writing for Engineers (Fulfills 3 credits of DDC Written and Oral Communication)	
ECON 201	Prin: Macroeconomics (Fulfills 3 credits of DDC Social and Behavioral Analysis)	
or ECON 202	Prin: Microeconomics	
Intro to Engineering		4
ENGR 100	Intro to Eng and Computers	2
ENGR 126	Engineering Computer Graphics	2
Mathematics and Science		32
MATH 115	Calculus I	4
MATH 116	Calculus II	4
MATH 215	Calculus III	4
MATH 228	Diff Eqns with Linear Algebra	4
PHYS 150	General Physics I	4
PHYS 151	General Physics II	4
CHEM 134 & CHEM 136	General Chemistry IA and General Chemistry IIA	8
or		
CHEM 144 & CHEM 146	Gen Chemistry IB and General Chemistry IIB	0-8
Basic Engineering Courses		17
ENGR 216	Computer Meth for Engineers	2
ENGR 250	Principles of Eng Materials	3
ME 230	Thermodynamics	4
ME 260	Design Stress Analyses	4
ECE 305	Intro to Electrical Eng	4

Professional Requirements (69)

Code	Title	Credit Hours
ME Requirements (8 courses)		33
ME 325	Thermal Fluid Sciences I	4
ME 345	Engineering Dynamics	4
ME 349	Instrument & Measuremt Systems	3
ME 3601	Des and Analy of Mach Elem	4
ME 364	Prob, Stats, and Rel in Mach D	3
ME 375	Thermal Fluid Sciences II	4
ME 379	Thermal-Fluids Laboratory	3
ME 381	Manufacturing Processes I	4
or IMSE 382	Manufacturing Processes	
ME 442	Control Syst Anly and Design	4
MFGE Requirements (6 courses)		22

IMSE 421	Eng Economy and Dec Anlys	3
IMSE 440	Applied stat models in engin	3
IMSE 4425	Human Factors and Ergonomics	4
IMSE 4675	Six Sigma & Stat Proc Improv	4
IMSE 4795	Prod, Inven Control & Lean Mfg	4
IMSE 4835	Comp.-Aided Prcs Desgn & Mfg	4
Capstone		5
ME 4671	Senior Design I	4
IMSE 4953	Design Project in Mfge	1
Upper-Level ME Design Courses		3-4
One course (3-4 credit hours) from:		
ME 4191	Structural Mech & Design	4
ME 4201	Design of Turbomachinery	4
ME 4202	Design Turbo. and Wind Gen.	4
ME 4471	Solar Energy Sys Analy&Design	4
ME 460	Design for Manufacturing	3
ME 472	Prin & Appl of Mechatronic Sys	4
ME 483	Dsgn Cons in Poly and Comp Mat	3
ME 490	Directed Design Project	1-3
or		
ENGR 493	Exper Hnrs Dir Dsgn	1
MFGE Elective		3-4
One course (3-4 credit hours) from:		
ENGR 350	Nanoscience and Nanotechnology	4
ME 484	Manufacturing Poly Comp Matl	3
IMSE 488	Metal Forming Processes	3
General Electives		1-3

As needed to reach 69 credits in Professional Requirements. ENGR 399, ENGR 492 may be taken to fulfill CECS Experiential Honors Program.