

COLLEGE OF ENGINEERING

MAJOR: MANUFACTURING ENGINEERING

ACADEMIC YEAR: 2013-2014

DEGREE TYPE: B.S.Mfg.E.

REQUIRED DEGREE CREDITS TO GRADUATE: 131

GENERAL EDUCATION REQUIREMENTS – 40 CREDITS

Lower Division Requirements – 37 Credits

First Year Experience (F) - 1 Credit

UNIV	189	Skills for Academic Success	1 cr
Students transferring in 24 or more credits do not need to take UNIV 189.			

Communication (C) - 9 Credits

ENGL	110	College Composition I	3 cr
ENGL	120	College Composition II	3 cr
COMM	110	Fund of Public Speaking	3 cr

Quantitative Reasoning (R) - 3 Credits

MATH	165	Calculus I	4 cr
------	-----	------------	------

Science & Technology (S) - 10 Credits

CHEM	121/L	General Chemistry I/Lab	3/1 cr
CHEM	122	General Chemistry II	3 cr
PHYS	252	University Physics II	4 cr

Humanities & Fine Arts (A) - 6 Credits

Select from current general education courses www.ndsu.edu/registrar/gened/

Social & Behavioral Sciences (B) - 6 Credits

Select from current general education courses www.ndsu.edu/registrar/gened/

Wellness (W) - 2 Credits

Select from current general education courses www.ndsu.edu/registrar/gened/

Cultural Diversity (D)

Select from current general education courses www.ndsu.edu/registrar/gened/

Global Perspectives (G)

Select from current general education courses www.ndsu.edu/registrar/gened/

Upper Division Requirements - Writing – 3 Credits

ENGL	321	Writing in the Tech Profession	3 cr
------	-----	--------------------------------	------

MANUFACTURING ENGINEERING REQUIREMENTS - 89 CREDITS

IME Courses Required - 42 Credits

IME	111	Introduction to IME	3 cr
IME	311	Work/Station Design	3 cr
IME	330	Manufacturing Processes	3 cr
IME	380	CAD/CAM for Manufacturing	3 cr
IME	430	Process Engineering	3 cr
IME	431	Production Engineering	3 cr
IME	432	Composite Materials Manufacturing	3 cr
IME	440	Engineering Economy	3 cr
IME	456	Program and Project Management	3 cr

MANUFACTURING ENGINEERING REQUIREMENTS - CONTINUED

IME Courses - Continued

IME	460	Evaluation of Engineering Data	3 cr
IME	461	Quality Assurance and Control	3 cr
IME	480	Production and Inventory Control	3 cr
IME	482	Automated Manufacturing Systems	3 cr
IME	489	Industrial & Manufacturing Engr. Capstone	3 cr

MATH Courses Required - 11 Credits

MATH	128	Intro to Linear Algebra	1 cr
MATH	166	Calculus II	4 cr
MATH	259	Multivariate Calculus	3 cr
MATH	266	Intro to Differential Equations	3 cr

ME Courses Required - 16 Credits

ME	212	Fundamentals of Visual Communication	3 cr
ME	221	Engineering Mechanics I	3 cr
ME	222	Engineering Mechanics II	3 cr
ME	223	Mechanics of Materials	3 cr
ME	331	Materials Science & Engineering	4 cr

Other Courses Required – 2 Credits

ENGR	402	Engineering Ethics & Social Responsibility	1 cr
PHYS	252L	University Physics II Lab	1 cr

IEM Electives – 18 Credits

Computer Science Electives – 3 Credits

CSCI 122	3 cr	CSCI 126	3 cr	CSCI 160	4 cr	ECE 173	3 cr
----------	------	----------	------	----------	------	---------	------

Any programming language course must be approved by your adviser.

Engineering and Science Requirements – 9 Credits

CE 309	3 cr	ME 350	3 cr
--------	------	--------	------

And one of the following:

EE 206	4 cr	ECE 275	3 cr	ECE 301	3 cr
--------	------	---------	------	---------	------

Technical Electives – 6 Credits

IME 335	3 cr	IME 411	3 cr	IME 427	3 cr	IME 435	3 cr
IME 450	3 cr	IME 451	3 cr	IME 452	3 cr	IME 462	3 cr
IME 463	3 cr	IME 470	3 cr	IME 472	3 cr	IME 485	3 cr
IME 494	1-3 cr						

Only one of the following four courses may be counted as technical electives.

BUSN 340	3 cr	MGMT 320	3 cr	MRKT 320	3 cr	BUSN 431	3 cr
----------	------	----------	------	----------	------	----------	------

- 300-400 level BUSN courses require at least junior standing and a minimum 2.50 cumulative GPA.
- Other technical elective courses: Students may request approval for other 300-400 level engineering or related courses to be approved as technical electives. To request approval, a student should submit a memo to their academic adviser indicating the course of interest and why the course should be approved as a technical elective. This memo will be reviewed by the academic adviser and the IME Department for approval.

Degree Requirements and Notes:

- A student must complete at least 60 semester credits of professional level course work in his/her program while in residence and enrolled in the college. Students transferring into the college from programs with professional accreditation are exempt from this residency requirement but are subject to the residency requirement of NDSU.
- Grades less than 'C' will not be accepted for CHEM, MATH, and PHYS.