Industrial Engineering and Management (IE&M)

Undergraduate Curriculum Guide effective Fall 2024 ~ North Dakota State University

STUDENT	ID#	Advisor

	Fall							Spring				
	Cour	se		Crs	Sem	Grade	Cou	rse		Crs	Sem	Grade
	CHEM	121	General Chemistry I	3			IME	111	Introduction to IME	3		
<u> </u>	CHEM	121L	General Chem Lab I	1			MATH	166	Calculus II	4		
7 crs)	[C] ENGL	_ 110	College Composition I	3			ME	212	Fund of Visual Comm	3		
Freshman (<27	ENGL	120	College Composition II	3			ME	221	Engr Mechanics I	3		
mar	MATH	165	Calculus I	4			CHEM	122	General Chemistry II	3		
resh	Comp Sc	i Elect	(see side bar)	3								
1 "												
				17						16		
	COMM	110	Fund of Public Speaking	3			IME	311	Work/Station Design	3		
(27-59 crs)	IME	330	Mfg Processes	3			MATH	266	Differential Equations	3		
27-5	MATH	129	Basic Linear Algebra	3			PHYS	252	University Physics II	4		
	MATH	259	Multivariate Calculus	3			PHYS		University Physics II Lab	1		
Sophomore	ME	222	Engr Mechanics II	3			ME	223	Mechanics of Materials	3		
do	Gen Ed E	Elect	(see side bar)	3			Gen Ed	Elect	(see side bar)	3		
0,				18						17		
	IME	456	Program & Project Mgmt	3			IME	461	Quality Assurance & Cntrl	3		
rs)	IME	460	Evaluation of Engr Data	3			IME	470	Operations Research I	3		
(60-89 crs)	ENGL	321	Writing in Tech Profession	3			IME	472	Simulation Bus & Indl Sys	3		
	CE	309	Fluid Mechanics	3			ME	350	Thermodynamics/Heat Trsf	3		
Junior	IME	440	Engineering Economy	3			Gen Ed		(see side bar)	3		
=							Wellnes	s Elect	(see side bar)	2		
				15						17		
	IME	480	Production & Inventory Cnt	3			IME	450	Systems Engr & Mgmt	3		
<u>S</u>	IME	482	Automated Mfg Systems	3			Engr Sc		(see side bar)	3		
(90 + crs)	IME	485	Indl & Mfg Facility Design	3			IME	489	IME Capstone	3		
(9)	ENGR	327	Ethics, Engr, & Techn.	3					(see side bar)	3		
Senior	Technica	l Elect	(see side bar)	3			Technic	al Elect	(see side bar)	3		
S												
				15						15		
	Key:								TOTAL CREDITS	130		

ion Ele	ctives						
See Registration Schedule for approved courses.							
Crs	Sem	Grade					
3							
3							
3							
3							
2							
14							
complete	d						
with [A] or	· [B]						
G - Global Perspectives: double up with [A] or [B]							
	for appro Crs 3 3 3 4 2 14 complete with [A] or	Crs Sem 3 3 3 3 2 14 completed with [A] or [B]					

IE&M Electives							
Approved electives are listed on the back of this page.							
	Crs	Sem	Grade				
Computer Science Elective	3						
Take ONE of the following 5 co	urses:						
CSCI 122, ECE 173, CSCI 159,							
CSCI 160, or CSCI 227							
Engineering Science	12						
CE 309, ME 223, & ME 350	9						
Choose ONE of the follow	wing 3 cour	ses below:					
ECE 275 or ECE 301 or EE 206	3-4						
Technical Electives	9						
*							
*							
*							

Grades less than "C" will not be accepted for CHEM, MATH, and PHYS.

[C] First Year students with an ACT score of 18 or higher in English may register for ENGL 120. A passing grade will be awarded for ENGL 110 by completing ENGL 120 with a "C' or better.

[&]quot;T" indicates requirement satisfied with transfer credits.

^{*} See reverse side for elective information.

IE&M Approved Electives/Requirements

Computer Science Electives (3 credits)						
CSCI	122	Visual BASIC	3			
ECE	173	Introduction to Computing	4			
CSCI	159	Computer Science Problem Solving	3			
CSCI	160	Computer Science I	4			
CSCI	227	Computing Fundamentals in Pythor	3			

Engineering Science Requirement (12 credits)								
CE	309	Fluid Mechanics						
ME	223	Mechanics of Materials	3					
ME	ME 350 Thermodynamics/Heat Trsf							
	Take 1 of the following 3 courses:							
EE	206	Circuit Analysis I	4					
ECE	275 Digital Systems I		4					
ECE 301 Electrical Engineering I		3						

		Technica	Elective	es (9 credits)	
		Approved Courses	Pre-requisites	*Offered	
IME 335 Welding Technology		3		s (even yrs)	
IME	380	CAD.CAM for Manufacturing	3	ME 212	f
IME	411	Human Factors Engr	3	IME 311, IME 460	f (odd yrs)
IME	427	Packaging for Electronics	3	Jr standing	f (even yrs)
IME	430	Process Engineering	3	IME 330	f
IME	431	Production Engineering	3	IME 330, junior standing	s
IME	432	Composite Materials Mfg	3	IME 330, ME 331	See ME 474 below
IME	433	Additive Manufacturing	3	MATH 166, IME 330, co-req IME 430	s (odd yrs)
IME	435	Plastics & Polymer Processing	3	MATH 166 & MATH 266	f (even yrs)
IME	437	Methods for Precision Mfg	3	IME 430 ME 331	s (even yrs)
IME	451	Logistics Engr & Mgmt	3	IME 470, co-requisite IME 450	See AGEC 378 below
IME	453	Hospital Management Engineering	3		s (odd yrs)
IME	462	Total Quality in Indl Mgmt	3		f (odd yrs)
IME	463	Reliability Engineering	3	IME 460	f (even yrs)
IME	464	Reliability Analysis	3	IME 460, IME 463	s (even yrs)
CSCI	425	Machine Learning	3		f
AGEC	378	Intro to Transportation & Logistics	3	Econ 201	f
ME	474	Mechanics of Composite Material	3	ME 331	S

Subst. for IME 465
Subst. for IME 451
Subst. for IME 432

	Maximum of 1 of the following 5 courses may be counted as technical elective.						
	BUSN	340	International Business	3			
٨	MGMT	320	Foundations of Mgmt	3			
٨	MIS	320	Mngt Information Systems	3			
٨	MRKT	320	Foundations Marketing	3			
٨	BUSN	431	Business Law I	3			

^{^ 300-400} level BUSN courses require at least Junior standing and a minimum 2.50 cumulative GPA.

<u>Note</u>: 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 the IME dept indicating the course of interest and why the course should be approved. This memo will be reviewed by the IME department Chair and advisor for approval. Two of the three technical electives must be IME courses.

^{*} Tech elective course schedules may change based on faculty availability and course enrollment.