IE Program Electives (Choose 5)

IMSE Courses (at least 3)

IMSE courses in the 3 research areas of Industrial Engineering; Advanced Manufacturing, Human Factors and Ergonomics, Operations Research and Analytics (**Students must pick at least 2 courses from AM, HFE, ORA**). IMSE courses in Systems Engineering and Engineering Management (**Students must pick at least 1 course from SE/EM**).

Advanced Manufacturing		
I E 4440/5440	Micro/Nano Scale Additive Printing	
I E 4450/5450	Additive Manufacturing and Rapid Production Methods	
I E 4460/5460	Geometric Variability in Manufacturing	
I E 4470/5470 (BME)	Biomedical Materials Manufacturing and Design	
I E 4490/5490	Computer Aided Design and Manufacturing	
I E 5880	Information Systems for Manufacturing	
Human Factors and Ergonomics		
I E 4370/5370	Reliability and Safety Engineering	
I E 5710	Occupational Biomechanics	
I E 4720/5720	Design and Evaluation of Human-Computer Interaction	
I E 5760	Human Factors in Product Design	
I E 5770	Human Factors	
I E 5780X	Human-Centered Design and Manufacturing	
Operations Research and Analytics		**PICK AT LEAST 2 COURSES**
I E 4830/5830	Data Mining	
I E 4870/5870	Big Data Optimization	
I E 5080	Design and Analysis of Allocation Mechanisms	
I E 5100	Network Analysis	
I E 5130	Analysis of Stochastic Systems	
I E 5140	Production Scheduling	
I E 5190	Simulation Modeling and Analysis	
IE 5330 (STAT)	Reliability	
I E 5340	Linear Programming	
I E 5410	Inventory Control and Production Planning	
I E 4030/5030	Introduction to Sustainable Production Systems	
I E 4050/5050	Advanced Engineering Economy for Complex Engineering Projects	
I E 4200/5200	Engineering Problem Solving with R	

Systems Engineering and Engineering Management		
I E 4300	Entrepreneurial Product Development Engineering ENGR)	
I E 4500	Technical Sales for Engineers I	
I E 4510	Technical Sales for Engineers II	
I E 4520	Introduction to Systems Engineering & Analysis	
I E 4700/5700	Systems Engineering and Project Management	**PICK AT LEAST 1 COURSE**
I E 4810/5810	e-Commerce Systems Engineering	
I E 5600	Engineering Risk Analysis	
IE 5610	Total Quality Management	
I E 5630	Engineering and Systems Management	
I E 5640	Decision Analysis	
I E 5820	Enterprise Modeling and Integration	
I E 5850	Requirements and Architecture Engineering	

* Experimental courses may be added to this column after review by IMSE

Non-IMSE STEM courses (at least 1)

Non-IMSE courses from other engineering majors or relevant STEM courses fundamental to engineering; including Biology, Physics, Chemistry, Math, Statistics, Computer Science, or Software Engineering.
(Students must pick at least 1 course)

ECON	**only 2070, 3710, 5000, 5090**
ENG	**All 2000+ level courses in Engineering** Except: ABE 2010; AER E 2650,2940,3010; CE 2060, 3060; CH E 2020,2040,2050,2900,3910,3920; EE 2010,2320,2850,2940,3940,4420; ME 2020,2200,2310, 3240, 3240L
BIO	**All 2000+ level courses in Biology**
PHYSICS	**All 2000+ level courses in Physics** Except: 2310 & 2310L, 2320 &2320L, 2410
CHEM	**All 2000+ level courses in Chemistry** Except: 5550
MATH	**All Math** at 2010 or above except: 2020, 2650, 2900, 2900H, 2970, 3970, 3980, 4900, 4900H, 4910, 4920, 4950, 4970, 5900, 5910, 5920, 5950, 5990. Conditions: only one of 2070 or 3170, or one of 2660,2670,2690 may be applied to graduation, only one of 2670 or combination of 2660 and 2680 can be applied to graduation. Experimental courses approved: 3920X
STAT	**All 2000+ level courses in Statistics** Except: 2020,2260,2310, 3050,3360
COMPSCI	**All 2000+ level courses in Computer Science**
SE	**All 3000+ level courses in Software Engineering**

* Experimental courses by written request from student only, and only if approved by IMSE Dept.

* No Independent study, undergraduate research, or capstone courses

Business and Professional Courses

Non-STEM courses that support professional practice in IE careers.

ACCT 2150	Legal Environment of Business
ACCT 2840	Financial Accounting
ACCT 2850	Managerial Accounting
AFAS 3410	Air Force Leadership Studies I
ECON 2070	Applied Economic Optimization
ECON 2300	Farm Business Management
ECON 2340	Small Business Management
ECON 3200	Labor Economics
ECON 3300	Advanced Farm Business Management
ECON 3340	Entrepreneurship in Agriculture
ECON 3360	Agricultural Selling
ECON 3370	Agricultural Marketing
ECON 3440	Public Finance
ECON 3550	International Trade and Finance *
ECON 3710	Introductory Econometrics
ECON 4160	Industrial Organization
ECON 4310	Managerial Economics
ECON 4370	Commodity Marketing and Risk Management
ECON 4550	International Trade *
ECON 4570	International Finance *
ECON 5320	Managerial Economics for the Global Organization
ECON 5710	Intermediate Econometrics
FIN 4500	Analytical Methods in Finance
MGMT 3100	Entrepreneurship and Innovation
MGMT 3130	Feasibility Analysis and Business Planning
MGMT 3700	Management of Organizations
MGMT 3710	Organizational Behavior
MGMT 4140	International Management
MGMT 4710	Personnel and Human Resource Management
MGMT 4720	Management of Diversity
MIS 3010	Management Information Systems
MKT 3400	Principles of Marketing
MKT 3680	Marketing Analytics (MIS)
MKT 4420	Sales Management
SCM 3010	Supply Chain Management
SCM 4500	Enterprise Resource Planning Systems in Supply Chain (MIS)
SCM 4610	Principles of Transportation
SCM 4660	Global Trade Management