



IE FOCUS AREA: Entrepreneurship

Department of Industrial and Systems Engineering

General Education (19 sh)		sh
ALL	RHET:1030 Rhetoric	4
F/S	Diversity & Inclusion	3
ALL	Be Creative	3
ALL	Required Gen Ed Course: PSY:1001 Elementary Psychology	3
ALL	Approved Gen Ed Course	3
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Math & Basic Science Core (24 sh)		sh
F/S	MATH:1550 Math I: Single Variable Calculus (P: ALEKS score \geq 75 or MPT Level 3 score \geq 9)	4
ALL	MATH 1560 Math II: Multivariable Calculus (P: MATH:1550)	4
ALL	MATH:2550 Math III: Matrix Algebra (P: MATH:1550)	2
ALL	MATH:2560 Math IV: Differential Equations (P: MATH:1560, MATH:2550)	3
ALL*	STAT:2020 Probability & Statistics For Engr & Phys Sci (P: MATH:1560)	3
ALL	CHEM:1110 Principles of Chemistry I (P: ALEKS score \geq 55 or MPT Level 3 score \geq 9)	4
ALL	PHYS:1611 Introductory Physics I / Lab (C: MATH:1550)	4

Engineering Core (7 sh)		sh
F	ENGR:1000 Engineering Success for First-Year Students (First semester standing)	1
F	ENGR:1100 Intro to Engineering Problem Solving	3
F/S	ENGR:1300 Intro to Engineering Computing (C: MATH:1550)	3

IE Requirements (40 sh)		sh
F/S	PHYS:1612 Introductory Physics II / Lab (P: PHYS:1611; C: MATH:1560)	4
S	ISE:2500 Engineering Economy (C: STAT:2020)	3
F	ISE:2360 Design for Manufacturing	3
S	ISE:3300 Manufacturing Systems (P: ENGR:2760, ISE:3700)	3
F	ISE:3350 Process Engineering (P: ISE:3700)	3
F	ISE:3400 Human Factors (P: PSY:1001)	3
S	ISE:3450 Ergonomics	3
S	ISE:3500 Information Systems Design (P: ENGR:1300)	3
F	ISE:3600 Quality Control (P: STAT:2020, or BAIS:9100 or (STAT:3100 & STAT:3101 & STAT:3200)	3
F	ISE:3610 Stochastic Modeling (P: STAT:2020; C: ISE:3700)	3
S	ISE:3660 Data Analytics with R (P: STAT:2020)	3
F/S	ISE:3700 Operations Research (P: MATH:2550; C: STAT:2020)	3
S	ISE:3750 Digital Systems Simulation (P: ISE:3700 & ISE:3610)	3

IE Capstone Design Courses (4 sh)		sh
F/S	ISE:4600 Industrial Engineering Design Project (IEDP) (C: ALL IE Required Courses - ISE:2500, ISE:3300, ISE:3350, ISE:3400, ISE:3450, ISE:3500, ISE:3600, ISE:3660, & ISE:3750)	4

IE Departmental Seminars (0 sh)		sh
F	ISE:2000 Sophomore Seminar: Industrial Engineering (Status: Sophomore)	0
S	ISE:3000 Professional Seminar: Industrial Engineering (Status: Junior; x2)	0

Engineering Fundamentals Electives (11 sh)		sh
Select at least 11 sh from the list of courses below		
ALL	ENGR:2110 Statics (P: MATH:1550; C: MATH:1560, PHYS:1611)	2
ALL	ENGR:2120 Electrical Circuits (P: MATH:2560)	3
ALL	ENGR:2130 Thermodynamics (P: CHEM:1110, PHYS:1611; C:MATH:1560)	3
ALL*	ENGR:2710 Dynamics (P: ENGR:2110 & MATH:1550)	3
ALL*	ENGR:2720 Materials Science (P: CHEM:1110; C:MATH:1550)	3
F/S	ENGR:2730 Computers in Engineering (P: ENGR:1300)	3
ALL*	ENGR:2750 Mechanics of Deformable Bodies (P: ENGR:2110; C: MATH:2560)	3
TBD	BME:2995 Intro to AI & Machine Learning in Engr (P: ENGR:1300; C: MATH2550)	3

Required: Entrepreneurship (9 sh)		sh
ALL	ENTR:2000 Entrepreneurship & Innovation (C: ENTR:1350)	3
ALL	ENTR:3100 Entrepreneurial Finance (P: ENTR:2000 or ENTR:3520 or MGMT:3100)	3
S	ISE:4900 Introduction to Six Sigma (P: ISE:3600)	3

Electives: Entrepreneurship (15 sh)		sh
Elective: Focus Area - TEC Elective		
select two Technological Entrepreneurship Certificate (TEC) courses*		
*TEC course listing can be found at https://catalog.registrar.uiowa.edu/engineering/technological-entrepreneurship/certificate/		

Elective: Focus Area - Above 3000-level course		sh
select one course		
ALL	Any 3000 or above course offered by an engineering or business/entrepreneurship department**	3
** To obtain the Technological Entrepreneurship Certificate, this course should be another TEC Elective		

Elective: Focus Area - Math / Science		sh
select one course from this list		
S	PHYS:2704 Physics IV (P: MATH:1860 & PHYS:2703)	4
ALL	CHEM:1120 Principles of Chemistry II (P: CHEM:1110)	4
F	STAT:4510 Regression, Time Series, and Forecasting (P: STAT:3101)	3
S	STAT:3210 Experimental Design & Analysis (P: STAT:3200)	3
F/S	MATH:3800 Elementary Numerical Analysis (P: (MATH:2700 or MATH:2550) & (MATH:1560 or MATH:1860))	3
F/S	MATH:3550 Engineering Math V (P: MATH:1560 & (MATH:2550 or MATH:2700); C: MATH:2560)	3
ALL	BIOL:1411 Foundations of Biology (P: CHEM:1110)	4

Elective: Focus Area - Systems		sh
select one course from this list		
F/S	ENGR:2730 Computers in Engineering (P: ENGR:1300)	3
TBD	ISE:4172 Big Data Analytics (P: STAT:2020 or BAIS:9100)	3
F	ISE:4175 Safety Engineering	3
ALL	Any 5000 or above Industrial Engineering (ISE) course	3