

B.S/M.S. DUAL DEGREE IN INDUSTRIAL ENGINEERING

Curriculum Requirements

Code	Title	Credit Hours
Engineering Courses		
IEN 111	Introduction to Engineering I	3
IEN 112	Introduction to Engineering II	2
IEN 201	Methods Analysis and Work Measurement	3
IEN 310	Introduction to Engineering Probability	3
IEN 312	Applied Statistical Methods	3
IEN 351	Industrial Safety Engineering	3
IEN 361	Industrial Cost Analysis	3
IEN 363	Project Management for Engineers	3
IEN 380	Engineering Economy	3
IEN 406	Computer-Aided Manufacturing	3
IEN 441	Deterministic Models in Operations Research	3
IEN 442	Stochastic Models in Operations Research	3
IEN 465	Production and Inventory Control	3
IEN 512	Statistical Quality Control and Quality Management	3
IEN 524	Decision Support Systems in Industrial Engineering	3
IEN 547	Computer Simulation Systems	3
IEN 557	Ergonomics and Human Factors Engineering	3
IEN 568	Materials Handling and Facilities Planning	3
IEN 694	Master's Capstone Design Project	3.00
IEN 712	Design of Experiments	3
IEN 742	Linear Programming and Extensions	3
IEN 757	Ergonomics and Occupational Biomechanics	3
IEN 764	Supply Chain Management	3
IEN 765	Advanced Production Systems	3
Choose one of the following:		
CAE 210	Mechanics of Solids I	
ECE 205	Principles of Electrical Engineering-I	
MAE 303	Thermodynamics	
IEN Electives		21
Technical Elective		3
Math and Science Courses		
MTH 151	Calculus I for Engineers	5
MTH 162	Calculus II	4
MTH 210	Introduction to Linear Algebra	3
MTH 311	Introduction to Ordinary Differential Equations	3
CHM 151	Chemistry for Engineers	3
CHM 153	Chemistry Laboratory for Engineers	1
PHY 221	University Physics I	3
PHY 222	University Physics II	3
PHY 223	University Physics III	3
PHY 224	University Physics II Lab	1
PHY 225	University Physics III Lab	1
Additional Requirements		
ECO 211 or ECO 212	Principles of Microeconomics Principles of Macroeconomics	3
ENG 105	English Composition I	3

ENG 107	English Composition II: Science and Technology	3
Arts and Humanities Cognate		9
People and Society Cognate		9
Total Credit Hours		155

Plan of Study

Freshman Year		Credit Hours
Fall		
IEN 111	Introduction to Engineering I	3
ENG 105	English Composition I	3
MTH 151	Calculus I for Engineers	5
PHY 221	University Physics I	3
Credit Hours		14
Spring		
IEN 112	Introduction to Engineering II	2
ENG 107	English Composition II: Science and Technology	3
MTH 162	Calculus II	4
ECO 211 or 212	Principles of Microeconomics or Principles of Macroeconomics	3
PHY 222	University Physics II	3
PHY 224	University Physics II Lab	1
Credit Hours		16
Sophomore Year		
Fall		
HA Cognate (HA Elective) ¹		3
IEN 201	Methods Analysis and Work Measurement	3
MTH 210	Introduction to Linear Algebra	3
PHY 223	University Physics III	3
PHY 225	University Physics III Lab	1
PS Cognate (PS Elective) ¹		3
Credit Hours		16
Spring		
HA Cognate (HA Elective) ¹		3
CAE 210, ECE 205, or MAE 303	Mechanics of Solids I or Principles of Electrical Engineering-I or Thermodynamics	3
CHM 151	Chemistry for Engineers	3
CHM 153	Chemistry Laboratory for Engineers	1
PS Cognate (PS Elective) ¹		3
MTH 311	Introduction to Ordinary Differential Equations	3
Credit Hours		16
Junior Year		
Fall		
HA Cognate (Advanced HA Elective) ¹		3
IEN 310	Introduction to Engineering Probability	3
IEN 351	Industrial Safety Engineering	3
IEN 380	Engineering Economy	3
IEN 441	Deterministic Models in Operations Research	3
PS Cognate (Advanced PS Elective) ¹		3
Credit Hours		18
Spring		
IEN 312	Applied Statistical Methods	3

IEN 361	Industrial Cost Analysis	3
IEN 363	Project Management for Engineers	3
IEN 406	Computer-Aided Manufacturing	3
IEN 442	Stochastic Models in Operations Research	3
Technical Elective ²		3
Credit Hours		18
Senior Year		
Fall		
IEN 465	Production and Inventory Control	3
IEN 512	Statistical Quality Control and Quality Management	3
IEN 547	Computer Simulation Systems	3
IEN 557	Ergonomics and Human Factors Engineering	3
IEN Elective ³		3
IEN Elective ⁴		3
Credit Hours		18
Spring		
IEN 524	Decision Support Systems in Industrial Engineering	3
IEN 568	Materials Handling and Facilities Planning	3
IEN Elective ³		3
IEN Elective ³		3
IEN Elective ⁴		3
IEN Elective ⁴		3
Credit Hours		18
Fifth Year		
Fall		
IEN 694	Master's Capstone Design Project	3.00
IEN 712	Design of Experiments	3
IEN 742	Linear Programming and Extensions	3
IEN Elective ⁴		3
Credit Hours		12
Spring		
IEN 757	Ergonomics and Occupational Biomechanics	3
IEN 764	Supply Chain Management	3
IEN 765	Advanced Production Systems	3
Credit Hours		9
Total Credit Hours		155

¹ To be selected from lists of approved People and Society (PS)/Humanities and Arts (HA) (or applicable cognates). Students take a minimum of 3 courses (9 credit hours) in HA cognate and 3 courses in PS Cognate (9 credit hours).

² The Technical Elective is selected from courses at the 300 level or above, offered by one of the following departments: MTH, BME (except BME 320), CAE, ECO, EEN, IEN, MEN, ACC, FIN, MGT(Except MGT 303), MAS, MKT.

³ IEN Electives are selected from courses at the 300 level or above, offered by the Department of Industrial Engineering.

⁴ IEN Electives are selected from courses at the 600 or 700 level, offered by the Department of Industrial Engineering.

Note: Failure to follow the plan of study may result in a delay in your graduation.