

School of Computing, Informatics, and Decision Systems Engineering

B.S.E. IN ENGINEERING MANAGEMENT INDUSTRY FOCUS STUDY AREAS

Select a minimum of 15 semester hours from one of the following Industry-Focus Study Areas, and a minimum of 6 hours from the corresponding Math/Science course list. Nine hours of upper division coursework is required. NOTE: Some of these courses may require additional prerequisites.

BUSINESS ANALYTICS (Select 5 classes from list below)	Pre/Co-requisites	Math/Science Courses
IEE 376 Operations Research Deterministic Techniques/Applications	CSE 205 with C or better; MAT 242, 342 or 343 with C or better	MAT 275 Modern Differential Equations
IEE 385 Engineering Statistics: Probability	IEE 380 with C or better	PHY 131 University Physics II
IEE 461 Production Control	IEE 376 with C or better; IEE 380 with C or better	
IEE 474 Quality Control	IEE 380 with C or better	
IEE 3XX or 4XX	*Check pre-requisite requirements	

SOFTWARE INDUSTRY	Pre/Co-requisites	Math/Science Courses
CSE 240 Intro to Programming Languages, or CSE 220 Programming for Computer Engineering	CSE 205 with C or better CSE 120 or EEE 120 with C or better; CSE 205 with C or better	MAT 243 Discrete Math Structures
CSE 310 Data Structures and Algorithms	CSE 220 or 240; MAT 243 (or 300 for CMS) with C or better	General Math or Science Course
CSE 360 Introduction to Software Engineering	CSE 220 or 240 with C or better	
CSE 3XX or 4XX	*Check pre-requisite requirements	
CSE 3XX or 4XX	*Check pre-requisite requirements	

SUSTAINABLE & ENVIRONMENTALLY BENIGN INDUSTRY (select 5 classes from the list below)	Pre/Co-requisites	Math/Science Courses
CEE 213 Introduction to Deformable Solids	CEE 210 (or CNE 210) with C or better; MAT 274 (or MAT 275) with C or better	MAT 275 Modern Differential Equations
CEE 361 Introduction to Environmental Engineering	CEE 213 with C or better; CHM 114 or CHM 116; Pre- or corequisite(s): IEE 380	CEE 210 Engineering Mechanics I: Statistics
CEE 400 Earth Systems Engineering and Management	CEE 300 with C or better OR non-CEE Junior or Senior	
CEE 467 Environmental Microbiology	CEE 361 or MIC 220 with C or better	

CEE 470 Sustainable Environmental Biotechnologies	CEE 361	
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ELECTRONICS/SEMICONDUCTOR INDUSTRY (select 5 classes from the list below)	Pre/Co-requisites	Math/Science Courses
EEE 202 Circuits I	Pre/Co-requisites: MAT 274 (or MAT 275), and PHY 131 (with C or better if completed)	MAT 275 Modern Differential Equations
EEE 241 Fundamentals of Electromagnetics	MAT 267 or 272 with C or better; MAT 274 or 275 with C or better; PHY 131 with C or better; Pre- or corequisite(s): EEE 202	PHY 131 University Physics II
EEE 352 Properties of Electronic Materials	CHM 114, 115, 116 or 118; EEE 241; PHY 241 with a C or better	
EEE 434 Quantum Mechanics for Engineers	EEE 352	
EEE 435 Fundamentals of CMOS and MEMS	EEE 352	
EEE 436 Fundamentals of Solid-State Devices	EEE 352	
EEE 439 Semiconductor Facilities and Cleanroom	EEE 352	

COMMUNICATION & NETWORKS	Pre/Co-requisites	Math/Science Courses
EEE 202 Circuits I	MAT 274 (or MAT 275), and PHY 131 (with C or better if completed)	MAT 275 Modern Differential Equations
EEE 203 Signals and Systems I	EEE 202; Pre-requisite: MAT 242 with C or better if completed or Pre/Co-requisite: MAT 342 or 343 with C or better if completed	PHY 131 University Physics II
EEE 350 Random Signal Analysis	MAE 317 or pre- or corequisite: EEE 203	
EEE 455 Communication Systems	EEE 350	
EEE 459 Communication Networks	EEE 203; corequisite(s): EEE 350	

POWER SYSTEMS INDUSTRY (select 5 classes from the list below)	Pre/Co-requisites	Math/Science Courses
EEE 202 Circuits I	MAT 274 (or MAT 275), and PHY 131 (with C or better if completed)	MAT 275 Modern Differential Equations
EEE 241 Fundamentals of Electromagnetics	MAT 267 or 272 with C or better; MAT 274 or 275 with C or better; PHY 131 with C or better; Pre- or corequisite(s): EEE 202 with C or better; PHY 131 with C or better; Pre- or corequisite(s): EEE 202	PHY 131 University Physics II
EEE 360 Energy Systems and Power Electronics	EEE 202; Pre- or corequisite(s): EEE 241	

EEE 463 Electrical Power Plants	CHM 114 or 116; MAE 240 (or ECE 340) or PHY 241 with C or better; MAT 274 or 275 with C or better	
EEE 470 Electric Power Devices	EEE 360	
EEE 472 Power Electronics and Power Management	EEE 203	
CEE 384 or MAE 384 Advanced Math for Engineering	Prerequisites: MAT 274 or 275; MAT 242 or 342 or 343; MAE 215; MAE 215 or CSE 110. Pre- or Co-requisite: MAT 267 or 272	
MECHANICAL SYSTEMS INDUSTRY (select 5 classes from the list below)	Pre/Co-requisites	Math/Science Courses
(REQUIRED) MAE 201: Mechanics of Particles and Rigid Bodies I: Statics	PHY 121 with C or better; PHY 122 with C or better; MAT 266 or 271 with C or better; Credit is allowed for only MAE 201 or MAE 212	PHY 131: University Physics II: Electricity and Magnetism
(REQUIRED) MAE 241: Introduction to Thermodynamics	Aerospace or Mechanical Engineering BSE major; CHM 114; MAT 267 or 272; PHY 121 OR non-Aero or Mech Engr major: MAT 267 or 272; PHY 121	MAT 275: Modern Differential Equations
CEE 384 or MAE 384 Advanced Mathematical Methods for Engineers	MAT 274 or 275 with a C or better; MAT 242 or 343 (or 342 if not MAE); MAE 215 (or MAE 294 Intro to Programming, CSE 100, or 110); Pre- or corequisite(s): MAT 267 or 272 with C or better	MSE 250: Structure and Properties of Materials
MEE 340 Heat Transfer	Aerospace or Mechanical Engineering BSE major; MAE 241 and 242 (or MAE 240) with C or better; MAT 267 or 272 with C or better; Pre- or corequisite(s): MAE 384 with C or better if completed	MAE 202: Mechanics of Particles and Rigid Bodies II: Dynamics
MEE 434 Internal Combustion Engines	MEE 340 or MEE 482 with C or better	
MEE 482 Intermediate Thermodynamics	MAE 241 (effective Spring 18) OR MAE 240 with C or	
MSE 355 Structure and Defects	Pre- or corequisite(s): MAT 242, 342, or 343	