B.S. in Systems Engineering

Four-Year Plan

Catalog Year 2013-2014

Below is the *advised sequence* of courses for this degree program.
The official degree requirements can be found in the University General Catalog.

Course Number and Title	Units	Prerequisites
1ST SEMESTER		
MATH 122A/B or MATH 125 Calculus I with Applications	5/3	Appropriate Math Placement
CHEM 151 General Chemistry I	4	
ENGL 101 First-Year Composition	3	
ENGR 102 Introduction to Engineering	3	Concurrent Enrollment or completion of MATH 122B or MATH 125
Tier I General Education	3	
2ND SEMESTER		
MATH 129 Calculus II	3	MATH 122B or MATH 125
CHEM 152 General Chemistry II or MSE 110 Solid State Chemistry	4	For CHEM 152: CHEM 151. For MSE 110: CHEM 103A
ECE 175 Computer Programming for Engineering Applications	3	Concurrent enrollment in MATH 122B or MATH 125
ENGL 102 First-Year Composition	3	ENGL 101
PHYS 141 Introductory Mechanics	4	MATH 122B or MATH 125
3RD SEMESTER		
SIE 250 Introduction to Systems Engineering	3	ENGR 102 and MATH 129
MATH 223 Vector Calculus	4	MATH 120 or 250A with C or higher
PHYS 241 Introductory Mechanics	4	PHYS 141
SIE 277 Object-Oriented Modeling and Design	3	ECE 175 or CSC 127A
Tier I General Education	3	
4TH SEMESTER		
SIE 265 Engineering Management I	3	ENGR 102 and MATH 122B or 125
SIE 270 Mathematical Foundations of Systems and Industrial Engineering	3	ECE 175 or CSC 127A; MATH 129; PHYS 141
SIE 295S Systems and Industrial Engineering Sophomore Colloquium	1	
MATH 254 Intro to Ordinary Differential Equations	3	MATH 129 with C or higher
Technical Elective- see advisor for course approval	3	
Tier I General Education	3	

Course Number and Title	Units	Prerequisites
Advanced Standing is required for 3xx and 4xx courses (See advisor for requirements)		
5TH SEMESTER		
SIE 305 Introduction to Engineering Probability and Statistics	3	MATH 129
SIE 340 Deterministic Operations Research	3	SIE 265, SIE 270
ECE 207 Elements of Electrical Engineering	3	PHYS 241; Prerequisite or concurrent enrollment in MATH 254
Technical Elective - See advisor for course approval	3	
Technical Elective - See advisor for course approval	3	
6TH SEMESTER		
SIE 321 Probabilistic Models in Operations Research	3	SIE 305
SIE 330R Engineering Experiment Design	3	SIE 305
SIE 370 Embedded Computer Systems	4	ENGR 102 and ENGR 211M or ECE 207
Technical Elective - See advisor for course approval	3	
Technical Elective - See advisor for course approval	3	
7TH SEMESTER		
SIE 410A Human Factors & Ergonomics in Design	3	
SIE 431 Simulation Modeling and Analysis	3	SIE 305
SIE 454A The Systems Engineering Process	3	
ENGR 498A Cross-disciplinary Design	3	Senior status
ENGL 308 Technical Writing	3	ENGL 101 & 102 or ENGL 109H
Tier I General Education	3	
8TH SEMESTER		
ENGR 498B Cross-disciplinary Design	3	Senior status
Technical Elective-See advisor for course approval	3	
Technical Elective-See advisor for course approval	3	
Tier II General Education	3	
Tier II General Education	3	
Free Elective-See advisor for course approval	1	

*Tier I and II General Education Courses must meet University general education requirements. One course must be recognized by the university as meeting the Diversity Requirement.