THE UNIVERSITY OF ARIZONA

azengineering

Bachelor of Science in Systems Engineering†

Department of Systems and Industrial Engineering

Mapping of Courses and Activities to Program Outcomes

	Program Outcomes				
Curriculum	(1) The ability to formulate a problem in technical terms including the relevant aspects from the mathematical, business, natural, social, and SIE engineering sciences.	(2) The ability to determine and implement the appropriate modeling approach for problem solution.	(3) The ability to apply feedback to improve system performance and perform sensitivity analyses.	(4) Students should understand all components in the design of large, complex systems from eliciting customer requirements through retirement, replacement and disposal.	(5) The ability to model and analyze systems having conflicting criteria and interacting decision variables.
SIE 250 Intro to SIE				X	X
SIE 265 Engineering Management I	X				
SIE 270 Math. Foundations of SIE					
SIE 277 Object-Oriented Model & Design	X				
SIE 295s SIE Soph. Colloquium					
SIE 305 Intro to Engr. Prob. & Stat.	X				
SIE 321 Prob. Models in Operation Research	X	X	X		
SIE 330R Engineering Experiment Design	X				X

†Accredited by the Engineering Accreditation Commission of ABET,
111 Market Place, Suite 1050, Baltimore, MD 21202-4012 - telephone: (410) 347-7700

Program Outcomes					
Curriculum	(1) The ability to formulate a problem in technical terms including the relevant aspects from the mathematical, business, natural, social, and SIE engineering sciences.	(2) The ability to determine and implement the appropriate modeling approach for problem solution.	(3) The ability to apply feedback to improve system performance and perform sensitivity analyses.	(4) Students should understand all components in the design of large, complex systems from eliciting customer requirements through retirement, replacement and disposal.	(5) The ability to model and analyze systems having conflicting criteria and interacting decision variables.
SIE 340 Deterministic Operations Research	X	X	X		X
SIE 350 Deterministic System	X	X	X		
SIE 370 Embedded Computer System					
SIE 410A Human Factors in Ergo. Design					
SIE 431 Simulation Modeling and Analysis					
SIE 453 Deterministic Control Systems		X	X		
SIE 454A Systems Engineering Process	X	X	X	X	X
ENGR498A-B Senior Design Project I & II		X	X		X

Program Outcomes					
Curriculum	(6) Understand the impact of the solution on society and the environment.	(7) The students should understand roles, advantages, disadvantages and dynamics of teams and have successful experience on team projects.	(8) Students should be able to communicate effectively with team members and clients through both oral and written means	(9) Students will be able to develop customized solution software.	(10) Students will know how to use high-level modeling and computation tools such as spreadsheet programs, equation solvers, UML and simulation software to analyze engineering problems.
SIE 250 Intro to SIE		X	X		X
SIE 265 Engineering Management I					
SIE 270 Math. Foundations of SIE				X	
SIE 277 Object-Oriented Model & Design		X	X	X	X
SIE 295s SIE Soph. Colloquium			X		
SIE 305 Intro to Engr. Prob. & Stat.					
SIE 321 Prob. Models in Operation Research					
SIE 330R Engineering Experiment Design					

Program Outcomes					
Curriculum	(6) Understand the impact of the solution on society and the environment.	(7) The students should understand roles, advantages, disadvantages and dynamics of teams and have successful experience on team projects.	(8) Students should be able to communicate effectively with team members and clients through both oral and written means	(9) Students will be able to develop customized solution software.	(10) Students will know how to use high-level modeling and computation tools such as spreadsheet programs, equation solvers, UML and simulation software to analyze engineering problems.
SIE 340 Deterministic Operations Research					X
SIE 350 Deterministic System					
SIE 370 Embedded Computer System		X	X		
SIE 410A Human Factors in Ergo. Design	X				
SIE 431 Simulation Modeling and Analysis					X
SIE 453 Deterministic Control Systems					
SIE 454A Systems Engineering Process		X	X		
ENGR498A-B Senior Design Project I & II	X				

Program Outcomes			
Curriculum	(11) The students should be able to deal with clients (including instructors) in a professional manner covering demeanor, presentation style and work ethic.	(12) The students should be able to understand different career options within the profession and preparation for lifelong learning.	(13) The students should be able to differentiate between ethical and unethical behavior.
SIE 250 Intro to SIE			
SIE 265 Engineering Management I			
SIE 270 Math. Foundations of SIE			
SIE 277 Object-Oriented Model & Design			
SIE 295s SIE Soph. Colloquium		X	X
SIE 305 Intro to Engr. Prob. & Stat.			
SIE 321 Prob. Models in Operation Research			
SIE 330R Engineering Experiment Design			

Program Outcomes			
Curriculum	(11) The students should be able to deal with clients (including instructors) in a professional manner covering demeanor, presentation style and work ethic.	(12) The students should be able to understand different career options within the profession and preparation for lifelong learning.	(13) The students should be able to differentiate between ethical and unethical behavior.
SIE 340 Deterministic Operations Research			
SIE 350 Deterministic System			
SIE 370 Embedded Computer System			
SIE 410A Human Factors in Ergo. Design			
SIE 431 Simulation Modeling and Analysis			
SIE 453 Deterministic Control Systems			
SIE 454A Systems Engineering Process			
ENGR498A-B Senior Design Project I & II	X	X	