



Systems and Industrial Engineering PhD Course Requirement Worksheet

(Include in Plan of Study)

Name	
Date	
Prior Degree	
Student ID	

Required Units	Units	Grades
<p>Required Core (select 1 from each core area)</p> <p>Probability & Statistics (3 units)</p> <ul style="list-style-type: none"> - SIE 520 – Stochastic Modeling I OR - SIE 530 – Engineering Statistics <p>Optimization (3 units)</p> <ul style="list-style-type: none"> - SIE 540 – Survey of Optimization Methods OR - SIE 545 – Fundamentals of Optimization <p>Systems Engineering (3 units)</p> <ul style="list-style-type: none"> - SIE 554A – The Systems Engineering Process OR - SIE 550 – Theory of Linear Systems 	9 units	
<p>Elective Courses – 27 units of SIE-related coursework</p> <ul style="list-style-type: none"> - 12 units must be taken from SIE - 15 units may be taken from SIE or an SIE-related domain with Faculty Advisor & Director of Grad Studies approval 	27 units	
<p>Minor Courses – 12 units</p> <ul style="list-style-type: none"> - All minor coursework can come from single discipline or split between two (6 units from each discipline*) <p><i>*If the academic department of the respective discipline allows split minors</i></p>	12 units	
<p>Colloquium</p> <ul style="list-style-type: none"> - SIE 695A Graduate Seminar: Minimum 2 units required 	2 units	
<p>Dissertation Research</p> <ul style="list-style-type: none"> - SIE 920 Dissertation: Minimum 18 units required 	18 units	

TOTAL = 68 minimum

TOTAL (overall, not current) =

*3.0 GPA Required. A grade of 'C' or higher is required for a course to be used to satisfy the degree requirements (A or B for transfer credits).



THE UNIVERSITY OF ARIZONA
COLLEGE OF ENGINEERING

Systems & Industrial Engineering

Approved SIE Graduate Electives ([SIE website](#))

- SIE 506: Quality Engineering (3.00 credits)
- SIE 508: Reliability Engineering (3.00 credits)
- SIE 511: Human-Machine Interaction (3.00 credits)
- SIE 512: Human Factors Engineering Research Methods (3.00 credits)
- SIE 513: Ergonomics for Inclusive Design (3.00 credits)
- SIE 514: Law for Engineers and Scientists (3.00 credits)
- SIE 515: Technical Sales and Marketing (3.00 credits)
- SIE 520: Stochastic Modeling I (3.00 credits)
- SIE 530 Engineering Statistics (3.00)
- SIE 522: Engineering Decision Making under Uncertainty (3.00 credits)
- SIE 525: Queuing Theory (3.00 credits)
- SIE 530: Engineering Statistics (3.00 credits)
- SIE 531: Simulation Modeling and Analysis (3.00 credits)
- SIE 532: Sports Analytics (3.00 credits)
- SIE 533: Fundamentals of Data Science for Engineers (3.00 credits)
- SIE 536: Experiment Design and Regression (3.00 credits)
- SIE 540: Survey of Optimization Methods (3.00 credits)
- SIE 544: Linear Programming (3.00 credits)
- SIE 545: Fundamentals of Optimization (3.00 credits)
- SIE 546: Algorithms, Graphs, and Networks (3.00 credits)
- SIE 552: Space Systems Engineering (3.00 credits)
- SIE 554A: The Systems Engineering Process (3.00 credits)
- SIE 555: Sensor Systems Engineering (3.00 credits)
- SIE 557: Project Management (3.00 credits)
- SIE 556: Fundamental of Guidance for Aerospace Systems (3.00 credits)
- SIE 558: Model-Based Systems Engineering (3.00 credits)
- SIE 561: Traffic Modeling and Simulation (3.00 credits)
- SIE 562: Advanced Production Control (3.00 credits)
- SIE 563: Integrated Logistics and Distribution Systems (3.00 credits)
- SIE 564: Cost Estimation (3.00 credits)
- SIE 565: Supply Chain Management (3.00 credits)
- SIE 566: Life Cycle Analysis for Sustainable Design (3.00 credits)
- SIE 567: Financial Modeling for Innovation (3.00 credits)
- SIE 570: Intelligent Control Systems & Applications (3.00 credits)
- SIE 571: Systems Cyber Security (3.00 credits)
- SIE 572: Information Security and Research (INSuRE) (3.00 credits)
- SIE 573: Engineering of Trustworthy Systems (3.00 credits)
- SIE 577: Introduction to Biomedical Informatics (3.00 credits)
- SIE 578: Artificial Intelligence for Health and Medicine (3.00 credits)
- SIE 583: Computer Integrated Manufacturing Systems (CIM) (3.00 credits)
- SIE 596: Special Topics in SIE (3.00 credits)
- SIE 606: Advanced Quality Engineering (3.00 credits)
- SIE 608: Advanced Reliability Engineering (3.00 credits)
- SIE 631: Distributed Multi-Paradigm Simulation Systems (3.00 credits)
- SIE 640: Integer and Combinatorial Optimization (3.00 credits)
- SIE 645: Nonlinear Optimization (3.00 credits)
- SIE 649: Stochastic Optimization (3.00 credits)
- SIE 654: Advanced Concepts in Systems Engineering (3.00 credits)
- SIE 678: Transportation Systems (3.00 credits)

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