# Systems Engineering MS Course Requirement Worksheet

(Include in Plan of Study)

[ ]  **Thesis**: Submit MS Course requirement worksheet, 1 paragraph summary of proposed thesis research area, and a listing of proposed Thesis defense committee members.

[ ]  **MS Report**: Submit MS Course requirement worksheet

[ ]  **Coursework**: Submit MS Course requirement worksheet

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| Name |  | **EGT:**  |
| Date |  |
| Prior Degree |  |
| Student ID |  |

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| **Required Units** | **Semester(s)** | **Grades** |
| SIE 554A (3) – Systems Engineering Process  | Fall or Spring |  |
| SIE 558 (3) – Model-Based Systems Engineering | Spring |  |
| SIE 550 (3) – Theory of Linear Systems **OR** SIE 531 (3) – Simulation Modeling and Analysis | SpringFall or Spring |  |
| SIE 522 (3) – Engineering Decision Making Under Uncertainty **OR**SIE 530 (3) – Engineering Statistics | FallFall |  |
| *Elective Coursework (Follow One Option)*Thesis* SIE Approved Electives (12 units – see page 2)
* SIE 910 – Master’s Thesis (6 units)

Report/Project* SIE Approved Electives (12-15 units – see page 2)
* SIE 909 – Master’s Report (3-6 units)

Coursework* SIE Approved Electives (21 units – see page 2)
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| ***General Notes:***  |

**TOTAL = 30 minimum** (33 for Coursework Option) **TOTAL** (overall, not current) **=**

**Approved SIE Graduate Electives (**[**SIE website**](https://sie.engineering.arizona.edu/grad-programs/courses)**)**

* 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 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: 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: Production Systems Analysis (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: Large-Scale Optimization (3.00 credits)
* SIE 644: 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)