



Doctorate of Engineering Degree Requirements

42 Credits (Applicable Master's Degree already earned)

| Coursework | | | |
|--|-------------------------|------------------|---|
| | Cr. | Course Number | Course Title |
| Required | 3 | SYSE 710 | Leadership/Innovation in Systems Engineering |
| | | | Offering |
| SE Depth Courses Choose 15 Credits | 3 | SYSE 501 | Foundations of Systems Engineering |
| | 3 | SYSE 512 | Systems Sensing and Imaging Analysis |
| | 3 | SYSE 530 | Overview of Systems Engineering Processes |
| | 3 | SYSE/ECE 532 | Dynamics of Complex Engineering Systems |
| | 3 | SYSE 534 | Human Systems Integration |
| | 3 | SYSE 541 | Engineering Data Design and Visualization |
| | 3 | SYSE 549 | Secure Vehicle and Industrial Networking |
| | 3 | SYSE 567 | Systems Engineering Architecture |
| | 3 | SYSE 569 | Cybersecurity Awareness for Systems Engineers |
| | 3 | SYSE 571 | Analytics in Systems Engineering |
| | 3 | SYSE 573 | Cost Optimization for Systems Engineers |
| | 3 | SYSE 602 | Systems Requirements Engineering |
| | 3 | SYSE 603 | Introduction to Systems Test and Evaluation |
| | 3 | SYSE 667 | Advanced Model-Based Systems Engineering |
| | 3 | ENGR 502† | Engineering Project and Program Management |
| | 3 | ENGR 510 | Engineering Optimization: Methods and Applications |
| | 3 | ENGR 520 | Engineering Decision Support/Expert Systems |
| | 3 | ENGR 525 | Intellectual Property and Invention Systems |
| | 3 | ENGR 531 | Engineering Risk Analysis |
| | 3 | ENGR 533 | Spaceflight and Biological Systems |
| | 3 | ENGR 540 | Design & Analysis of Engineering Experiments |
| | 3 | ENGR/ECE 565 | Electrical Power Engineering |
| | 3 | ENGR 570 | Coupled Electromechanical Systems |
| | 3 | ECE 566 | Grid Integration of Wind Energy Systems |
| | 3 | MECH 513 | Simulation Modeling and Experimentation |
| | | SYSE _____ | (Experimental or new courses may be offered; complete list available at https://www.engr.colostate.edu/se/courses/) |
| Applied Electives (at least 3 credits) | 2 | BUS 500 | Business Systems and Processes |
| | 2 | BUS 601 | Quantitative Business Analysis |
| | 3 | CIS 570 | Business Intelligence |
| | 3 | CIS 575 | Applied Data Mining and Analytics in Business |
| Professional Electives (at least 3 credits) | 2 | BUS 620 | Leadership and Teams |
| | 2 | BUS 630 | Information Management |
| | 3 | CIS 676 | Information Technology Management |
| | 1 | SYSE 711 | Ethics in Systems Engineering |
| | 3 | PSY 647 | Applied Industrial Psychology |
| Minimum Required | Research Project | | |
| | 9 | SYSE 786 | Applied Systems Engineering Practicum |
| Minimum Required | 9 | SYSE 799B | Dissertation: Professional Doctorate |

Bold are suggested core courses

† CIS 600A or CIS 670 may be substituted for ENGR 502

SYSE 710 must be completed before enrolling in SYSE 786. The preliminary exam and most 786 credits should be complete before SYSE 799B. Please note other courses may have additional prerequisites.

‘Offering’ Key (when courses are *expected* to be offered; there is no guarantee for any specific semester):

F = Fall, S = Spring, Su = Summer, ° = even years only, ° = odd years only