



Doctorate of Engineering Degree Requirements

72 Credits (Applicable Master's Degree not already earned)

Coursework			
	Cr.	Course Number	Course Title
Required	3	SYSE 501	Foundations of Systems Engineering
Required	3	ENGR 502†	Engineering Project Management and Program Management
Required	3	SYSE 530	Overview of Systems Engineering Processes
Required	3	ENGR 531	Engineering Risk Analysis
Required	3	SYSE 710	Leadership/Innovation in Systems Engineering
SE Depth Courses Choose 21 Credits	3	SYSE 512	Systems Sensing and Imaging Analysis
	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 510	Engineering Optimization: Methods and Applications
	3	ENGR 520	Engineering Decision Support/Expert Systems
	3	ENGR 525	Intellectual Property and Invention Systems
	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	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
Technical Electives (at least 12 credits)	3	PSY 648	Applied Organizational Psychology
			Choose from SE Elective List*
Research Project			
Minimum Required	9	SYSE 786	Applied Systems Engineering Practicum
Minimum Required	9	SYSE 799B	Dissertation: Professional Doctorate

* Maximum of 6 credits at 400-level may apply to degree

† 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