Overview
Become part of a community of engineering professionals exploring the frontier of modern research, pushing the boundaries in the field of systems engineering, and solving issues faced by your current employer, when you begin your Ph.D. in systems engineering online with Colorado State University. Designed for senior management and top-level executives, our highly selective systems engineering Ph.D. program only accepts a handful of students each semester to maintain the integrity and quality of the student experience.

You’ll study with faculty who bring decades of experience in applying academic research to real-world situations, and are conducting cutting-edge research of their own that will help write the textbooks of tomorrow. Watch as Dr. Ron Sega, director of systems engineering graduate programs at CSU, shares what that looks like for his classroom.

The online program offers the advantage of synchronous or asynchronous delivery, allowing you the flexibility to study when and where it works best for your situation with options like:

- Online while the lecture is happening live on campus
- Watching a recorded version sometime after work or on the weekend
- Attending a selection of courses in person at the Fort Collins campus or our South Metro Denver location

Delivery
Online; select courses have in-person attendance options

Credits
72 credits

Tuition
$995 per credit
Financial aid and military discount are available

Time Frame
Varies based on intensity of study and previous coursework

Degree Awarded
Doctor of Philosophy in Systems Engineering

Offered By
The College of Engineering

Learn More
online.colostate.edu/degrees/systems-engineering-phd

Transforming today’s electric power system into an intelligent network capable of generating, distributing, and consuming power anywhere within the system based on clean energy sources, realtime information, and market-driven transactions is a daunting engineering task. Colorado State University’s Systems Engineering program addresses the challenges of designing and building such complex engineered systems.

Dr. Sunil Cherian
President and CEO, Spirae, Inc.
MINIMUM ADMISSION REQUIREMENTS

- B.S. degree from a regionally-accredited institution in engineering, mathematics, or a science discipline with a GPA of 3.0 or greater
- Calculus III (MATH 261 Calculus for Physical Scientists III or equivalent)
- Basic Statistics (STAT 301 or equivalent)
- GRE test scores are required if all previous degrees were conferred by an institution outside of the U.S
- A faculty advisor must be secured before admittance. It is also the responsibility of applicants to establish rapport with faculty in a professional manner once all application materials have been submitted.

COMPLETION REQUIREMENTS

- A minimum of 72 credits must be completed
  - Ph.D. – 42 credits needed (applicable master’s earned with at least 30 credits)
    - 18 course credits required
    - Dissertation (24 cr.)
  - Ph.D. – 72 credits needed (no applicable master level degree earned)
    - 39 course credits required
    - Dissertation (33 cr.)
- A maximum of 6 credit hours at the 400 level is permitted. The remaining credits must be at the 500 level or above. For a listing of technical electives, contact the systems engineering advisor sys_engr_info@engr.colostate.edu. Additionally, any course from the core courses list, if not taken as part of your required core credits, can be taken as technical electives.

Curriculum

Core courses

Students with applicable master level degree – select 18 credits
Students without applicable master level degree – select 21 credits

- CIS 600 – Information Technology and Project Management (3 cr.)
- CIS 670 – Advanced IT Project Management (3 cr.)
- MECH 501 – Engineering Project Management and Program Management (3 cr.)
- ENGR 567 – Systems Engineering Architecture – Systems Engineering Architecture (3 cr.)
- ECE 568 – Electrical Energy Generation Systems (3 cr.)
- ECE 621 – Energy Storage for Electrical Power Systems (3 cr.)
- ECE 622 – Energy Networks and Power Distribution Grids (3 cr.)
- ENGR 510 – Engineering Optimization: Methods and Applications (3 cr.)
- ENGR 520 – Engineering Decision Support/Expert Systems (3 cr.)
- MECH 513 – Simulation Modeling and Experimentation (3 cr.)
- ENGR 532 – Dynamics of Complex Engineering Systems (3 cr.)

Technical Electives

Students with applicable master level degree: no technical electives required.
Students without applicable master level degree – a maximum of 6 credit hours at the 400 level is permitted. The remaining credits must be at the 500 level or above.

Dissertation

Students with applicable master level degree – 24 credits
Students without applicable master level degree – 33 credits

- ENGR 799 – Dissertation (1-18 cr.)

Dissertation credits can be completed throughout multiple semesters.