EXTREME ULTRAVIOLET AND OPTICAL SCIENCE AND TECHNOLOGY GRADUATE INTERDISCIPLINARY STUDIES PROGRAM

Coordinated by a Faculty Advisory Board and the Department of Electrical and Computer Engineering (https://www.engr.colostate.edu/ece/) in the Walter Scott, Jr. College of Engineering (https://www.engr.colostate.edu/).

The Extreme Ultraviolet and Optical Science and Technology Graduate Interdisciplinary Studies program is designed to serve individuals who are seeking to gain knowledge and experience in the generation and applications of coherent extreme ultraviolet or soft x-ray light. This type of light holds great potential in applications in nanotechnology, nanoelectronics, photochemistry, material science, and biology. While, in the past, the use of coherent EUV light required a trip to a national facility, new developments in compact sources make it widely available. The objective of the program is to provide scientists or engineers many of the fundamentals required to generate or proficiently make use of this portion of the electromagnetic spectrum.

This interdisciplinary studies program is inherently interdisciplinary, including lasers, optical, plasma, material, chemical and biological sciences, and engineering. With its NSF Center for Extreme Ultraviolet Science and Technology (https://euverc.colostate.edu/), a partnership among four core institutions, CSU has unique expertise in this area.

The program is open to graduate students and professionals who hold a B.S. degree in engineering, physics, chemistry, biology, mathematics, or other scientific discipline.

The program requires a total of fifteen credits comprising six core credits and nine electives. The six core credits are two very fundamental courses any graduate student with a background in hard sciences and engineering could master. This, coupled with the fact that graduate students in any discipline are not held to undergraduate prerequisite courses, make this interdisciplinary studies program widely accessible. Elective credits are tailored to the candidate's interests from the major the student pursues. Within these, a course in another discipline outside the major of the candidate must be included.

Students interested in graduate work should refer to the Graduate and Professional Bulletin (https://catalog.colostate.edu/general-catalog/graduate-bulletin/).

Requirements Effective Fall 2008

Additional coursework may be required due to prerequisites.

Code	Title	Credits
Core Courses		
ECE 504	Physical Optics	3
ECE 650	Extreme Ultraviolet and Soft X-Ray Radiation	3
Elective Courses		
Select 9 credits from the following:		9
BC 511	Structural Biology I	
BC 565	Molecular Regulation of Cell Function	
BC 611	Structural Biology II	
CHEM 532	Advanced Chemical Analysis II	
CHEM 563A	Physical Methods in Inorganic Chemistry: Group Theory	
CHEM 571A	Quantum Chemistry: Foundations	
CHEM 571B	Quantum Chemistry: Electronic Structure	
CHEM 773	Atomic and Molecular Spectroscopy	
ECE 503	Ultrafast Optics	
ECE 505	Nanostructures Fundamentals and Applications	
ECE 506	Optical Interferometry and Laser Metrology	
ECE 507	Plasma Physics and Applications	
ECE 546	Laser Fundamentals and Devices	
MATH 560	Linear Algebra	
PH 451	Introductory Quantum Mechanics I	
PH 452	Introductory Quantum Mechanics II	
PH 521	Introduction to Lasers	
PH 522	Introductory Laser Laboratory	
PH 572	Mathematical Methods for Physics II	
PH 641	Electromagnetism I	
PH 642	Electromagnetism II	
PH 651	Quantum Mechanics I	
PH 652	Quantum Mechanics II	
Program Total Credits:		**15**

Requirements for All Graduate Degrees

For more information, please visit Requirements for All Graduate Degrees (https://catalog.colostate.edu/general-catalog/graduate-bulletin/graduate-study/procedures-requirements-all-degrees/) in the Graduate and Professional Bulletin (https://catalog.colostate.edu/general-catalog/graduate-bulletin/).

Summary of Procedures for the Master's and Doctoral Degrees

NOTE: Each semester the Graduate School publishes a schedule of deadlines. Deadlines are available on the Graduate School website (https://graduateschool.colostate.edu/deadline-dates/). Students should consult this schedule whenever they approach important steps in their careers.

Forms (https://graduateschool.colostate.edu/forms/) are available online.

Step	Due Date
1. Application for admission (online)	Six months before first registration
2. Diagnostic examination when required	Before first registration
3. Appointment of advisor	Before first registration
4. Selection of graduate committee	Before the time of fourth regular semester registration

5. Filing of program of study (GS Form 6)	Before the time of fourth regular semester registration
6. Preliminary examination (Ph.D. and PD)	Two terms prior to final examination
7. Report of preliminary examination (GS Form 16) - (Ph.D. and PD)	Within two working days after results are known
8. Changes in committee (GS Form 9A)	When change is made
9. Application for Graduation (GS Form 25)	Refer to published deadlines from the Graduate School Website
9a. Reapplication for Graduation (online)	Failure to graduate requires Reapplication for Graduation (online) for the next time term for which you are applying
10. Submit thesis or dissertation to committee	At least two weeks prior to the examination or at the discretion of the graduate committee
11. Final examination	Refer to published deadlines from the Graduate School Website
12. Report of final examination (GS Form 24)	Within two working days after results are known; refer to published deadlines from the Graduate School website
13. Submit a signed Thesis/ Dissertation Submission Form (GS Form 30) to the Graduate School and Submit the Survey of Earned Doctorates (Ph.D. only) prior to submitting the electronic thesis/ dissertation	Refer to published deadlines from the Graduate School website.
14. Submit the thesis/dissertation electronically	Refer to published deadlines from the Graduate School website
15. Graduation	Ceremony information is available from the Graduate School website