

CCS Program Elective Courses

Elective Focus Areas (minimum of 6 credits)

Potential focal areas and potential electives are included below. Classes can be mixed to accommodate student career interests. Electives **are not limited** to the classes outlined in this page. You can browse the [course catalog](#) for topics more relevant to your field of interest.

Special Topics

- MEA 591: Interdisciplinary: [Innovation in the Blue Economy](#)
- PRT 550: Human Behavior and the Environment
- PSC 550: Fundamentals of Citizen Science and Other Participatory Research Methods
- COM 566/798: Seminar in Crisis Communication
- NR 572/595: Environmental Justice Theory and Applications

Disaster Resilient Policy, Engineering and Design [Certificate](#)

- LAR 552: Survey of Natural Hazards and Disasters (3 credits-taught each Fall)
- LAR 607: Natural Hazards, Disasters and Climate Change Adaptation Lecture Series (1 credit-taught each Spring)
- LAR 554: Disaster Resilient Policy, Engineering and Design (3 credits-taught each Spring).

Geographic Information Systems

[GIS Certificate](#): 12 credit hours including GIS 510, GIS 520 and 6 elective credits.

- [GIS 512: Introduction to Remote Sensing \(GIS Certificate Elective; Fall and Spring\)](#)
- [GIS 515: Cartographic Design \(GIS Certificate Elective; Fall and Spring\)](#)
- [GIS 520: Spatial problem solving \(GIS Certificate requirement\)](#)
- [GIS 609: Geospatial Forum \(GIS Certificate requirement\)](#)

Environmental Assessment

EA Certificate: 12 credit hours including credits below and GIS 510.

- EA 501: Environmental Stressors (3 hours)
- EA 502: Environmental Risk Assessment (3 hours)
- EA 503: Environmental Exposure Assessment (3 hours)
- EA 504: Environmental Monitoring and Analysis (3 hours)
- EA 505: Environmental Assessment Law & Policy or PS 536: Global Environmental Law and Policy

Renewable Energy

- EA 520: Renewable Energy Policy and Economics (3 hours)
- EA 521: Fundamentals of Renewable Energy Site Assessment (3 hours)
- EA 522: Photovoltaic Design and Assessment (3 hours)
- EA 523: Assessment of Renewable Energy Storage Systems (3 hours)

Environmental Policy

- EA 505: Environmental Assessment Law & Policy
- PA 550: Environmental Policy
- CE 578: Energy and Climate
- BAE 528: Biomass to Renewable Energy Processes
- PS 536: Global Environmental Law and Policy
- NR 572/595: Environmental Justice Theory and Applications

Climate Science Communication

- COM 538: Risk Communication
- COM 562: Communication and Social Change
- COM 525: Group/Team Communication
- COM 546: Nonprofit Marketing and Public Relations
- PA 513: Public Organization Behavior
- CRD 703: Communication Networks
- ENG 508: Usability studies for Technical Communication

Climate and Conservation Biology

- FOR 531: Wildland Fire Science
- AEC 561: Conservation Biology
- EA 502: Environmental Risk Assessment
- FOR 575: Advanced Terrestrial Ecosystem Biology
- FW 730: Ethics in Fisheries and Wildlife Sciences

Climate and Water Resources

- AEC 519: Freshwater Ecology
- NR 520: Watershed and Wetlands Hydrology
- MEA 540: Principles of Physical Oceanography
- MEA 549: Principles of Biological Oceanography
- BAE 572: Irrigation and Drainage
- BAE 576: Watershed Monitoring and Assessment
- NR 571: Current Issues in Natural Resource Policy (Seminar)
- MEA 750: Marine Benthic Ecology

Risk Management

The [Institute for Risk Management and Insurance Innovation](#) (IRMII) at UNC-Chapel Hill offers a series of four courses in support of their [minor in Risk Management](#). The courses are available to first-year graduate students wishing to apply knowledge of natural hazards in a financial context. Students at NCSU can enroll in courses at UNC and easily transfer the credits under the [NCSU Inter-Institutional exchange program](#).

- DATA/ENEC/ENVR 540: Introduction to Risk Management and Insurance (3 credits)
- DATA/ENEC/ENVR 541: Natural Hazards and Financial Risk (3 credits)
- DATA/ENEC/ENVR 542: Insurance: Balancing Risk and Return (1.5 credits)
- DATA/ENEC/ENVR 543: Risk, Data Science and AI (3 credits)