Applied Climate Science and Energy Technologies, Certificate

Requirements

The undergraduate Certificate in Applied Climate Science and Energy Technologies (ACSET) requires 18 s.h. of credit. Students must maintain a grade-point average of at least 2.00 in coursework for the certificate. Up to 6 s.h. of transfer credit may be applied to the certificate. A maximum of 9 s.h. of coursework used to satisfy requirements for a major, a minor, or another certificate may be applied toward this certificate.

The certificate may be earned by any student admitted to the University of Iowa who is not concurrently enrolled in a UI graduate or professional degree program. Undergraduate to Graduate (U2G) students may earn the certificate when the undergraduate classification is primary.

Students should consult with the ACSET coordinator about their intent to earn the certificate and are encouraged to work with their academic advisor and the ACSET coordinator to develop an individual plan of study that complements their degree program and career interests. Due to the interdisciplinary nature of the certificate, students should pay close attention to prerequisites and other requirements that must be completed prior to enrolling in certificate courses.

The undergraduate Certificate in Applied Climate Science and Energy Technologies requires the following coursework.

Core Course

Course #	Title	Hours
This course:		
CBE:2050/CEE:2050	Severe and Unusual Weather	3

Energy Technology and Climate Impacts/Solutions Courses

Students complete at least one course with an emphasis on energy technology and climate impacts/solutions.

Course #	Title	Hours
At least one of these:		
CBE:2030	Energy and Society	3
CBE:2040	Environment, Energy, and Climate Change	3
CBE:3405	Green Chemical and Energy Technologies	3
CEE:4180	Fundamentals of Atmospheric Science	3

Analytical, Statistical, and Applied Courses

Students complete at least two analytical, statistical, and applied courses with a focus on climate, atmospheric, and energy systems.

Course #	Title	Hours
At least two of these:		
CBE:3020	Applied Statistics for Chemical and Natural Resources Engineering	3
CBE:3405	Green Chemical and Energy Technologies	3
CBE:4410/CEE:4107	Sustainable Systems	3
CBE:4459/ CEE:4159/IGPI:4159	Air Pollution Control Technology	3
CBE:4460	Process and Design for Satellites and Environmental Sensors	3
CBE:5410	Electrochemical Engineering	3
CBE:5412	Atmospheric Modeling	3
CBE:5415/IGPI:5415	Satellite Image Processing and Remote Sensing of Atmosphere	3
CBE:5417/IGPI:5417	Physical Meteorology and Atmospheric Radiative Transfer	3
CBE:5425/CEE:5115	Atmospheric Chemistry and Physics	3
CEE:4180	Fundamentals of Atmospheric Science	3
CEE:5310/ IGPI:5311/URP:5310	Informatics for Sustainable Systems	3
CEE:5410	Politics and Economics of the Food, Energy, Water Nexus	3
CHEM:4873	Atmospheric and Environmental Chemistry	3
ECE:5630	Sustainable Energy Conversion	3
ISE:5520	Renewable Energy	3
ME:4048	Energy Systems Design	4

Electives

Course #	Title	Hours
At least two of these:		
BAIS:3200	Database Management	3
BAIS:3500	Data Mining	3
BAIS:4150	Business Analytics and Information Systems Capstone	3
CPH:1600	Public Health Science: Inquiry and Investigation in Public Health	3
CPH:2200	Climageddon: Understanding Climate Change and Associated Impacts on Health	3
CPH:2220	Building a Healthier Tomorrow: Public Health Methods to Minimize Disease and Pollutant Exposures	3
CPH:4200	Agriculture, Food Systems, and Sustainability	3
ECON:3625/ URP:3135	Environmental and Natural Resource Economics	3

EES:2020/ ENVS:2020	Earth's Climate System	3
EES:4720	Paleoclimatology	3
ENGR:2730	Computers in Engineering	3
GEOG:2050	Foundations of GIS	4
GEOG:2310/ EES:2310	Introduction to Climatology	3
MKTG:4250	Marketing and Sustainability	3
Additional courses from the "Energy Technology and Climate Impacts/Solutions Courses" list		
Additional courses from the "Analytical, Statistical, and Applied Courses" list		