

Sustainable Development, MS

Requirements

The interdisciplinary Master of Science program in sustainable development requires a total of 30 s.h. of graduate credit to earn the degree without thesis. Students may choose to earn the degree with thesis. All students must maintain a UI cumulative grade-point average of at least 2.75.

With the approval of their faculty advisors, students develop a study plan that satisfies the requirements of their chosen curriculum. All students must successfully complete the core courses and take two analytical and methods courses plus elective coursework that focuses on one of the United Nations Sustainable Development Goals (UN SDGs).

The thesis option requires the completion of a project with a program partner (e.g., a community, nongovernmental organization, public agency, or private sector partner) and culminates in a required project portfolio. Students choosing the thesis option must register for SDG:6325 Thesis: Sustainable Development.

Some grants also require students to complete a responsible conduct of research or research ethics course (ENGR:7270 Engineering Ethics). Students should check with the program director to determine whether this requirement applies to them.

The MS in sustainable development requires the following coursework.

Core Courses

Course #	Title	Hours
All of these:		
SDG:4000/ SEES:4000	The United Nations Sustainable Development Goals: A Blueprint for a Sustainable Future	3
SDG:5100/ CEE:5151	Building Future Leaders in Sustainable Development	3
SDG:5225/ CEE:5225/ GRAD:5225	Communicating Data Through Stories	3
SDG:6000/ URP:6209	Sustainable Communities Lab I	3
SDG:6210/ URP:6210	Sustainable Communities Lab II	3

Analytical and Methods Courses

Students choose two courses (at least 6 s.h.) offered by supporting programs. The courses provide students with training in analytical competencies necessary for sustainable development, including spatial analysis, statistics, informatics, data management, and decision analysis.

Course #	Title	Hours
Two of these:		
CEE:5310/ IGPI:5311/URP:5310	Informatics for Sustainable Systems	3
CEE:5460	Water Quality and Flow	3

SEES:3050/ IGPI:3050	Geospatial Programming	3
SEES:3500/ IGPI:3500	Introduction to Environmental Remote Sensing	3
SEES:3520/ IGPI:3520	GIS for Environmental Applications	3
SEES:3540/ IGPI:3540	Geographic Visualization	3
SEES:4150/ GHS:4150/ IGPI:4150	Health and Environment: GIS Applications	3
SEES:4520/ IGPI:4520	GIS for Environmental Studies: Applications	3
SEES:4580/ IGPI:4581	Introduction to Geographic Databases	3
URP:6200/ PBAF:6200	Analytical Methods for Evidence-Based Policy	3
URP:6225/ PBAF:6225	Applied GIS for Planning and Policy Making	3
URP:6258/ PBAF:6258	Systems and Scenario Thinking	3

Electives

Students complete at least 9 s.h. in elective coursework structured around the 2030 Sustainable Development Goals (SDGs). Students are required to focus on one SDG and complete three courses in that specialization area to provide depth in one area.

Students completing a thesis are permitted to apply a maximum of 3 s.h. of SDG:6325 Thesis: Sustainable Development toward elective requirements but are not required to do so.

Affordable and Clean Energy

Course #	Title	Hours
CBE:3405	Green Chemical and Energy Technologies	3
CEE:5410	Politics and Economics of the Food, Energy, Water Nexus	3
CHEM:4760	Radiochemistry: Energy, Medicine, and the Environment	3
SEES:3780/ GHS:3780/ HIST:3240/ POLI:3431	U.S. Energy Policy in Global Context	3

Clean Water and Sanitation

Course #	Title	Hours
CEE:4102	Groundwater	3
CEE:4119	Hydrology	3
CEE:4150/CBE:4420	Environmental Chemistry	3
CEE:4385	Water Scarcity in Rural India	3
CEE:5350	Watershed Hydrology and Ecosystem Processes	3
CEE:5440	Foundations of Environmental Chemistry and Microbiology	3

CEE:5460	Water Quality and Flow	3
OEH:4240	Global Environmental Health	3

Climate Action

Course #	Title	Hours
CEE:4159/ CBE:4459/IGPI:4159	Air Pollution Control Technology	3
CEE:4180	Fundamentals of Atmospheric Science	3
SEES:3331	Human Dimensions of Climate	3
SEES:4470	Ecological Climatology	3
SEES:5800/ PBAF:5800/ URP:5800	Environmental Policy: Theory and Practice	3

Industry, Innovation, and Infrastructure

Course #	Title	Hours
SEES:3420	Sustainable and Green Building Concepts	3
URP:6202	Land Use Planning: Law and Practice	3
URP:6266/ PBAF:6266	Transportation, Urban Form, and Sustainability	3

Responsible Consumption and Production

Course #	Title	Hours
CEE:4158/ OEH:4920	Solid and Hazardous Wastes	3
GHS:3560	Global Garbage and Global Health	3
SEES:3090/ GHS:3070	Hungry Planet: Global Geographies of Food	3
SEES:4750/ URP:4750	Environmental Impact Analysis	3
SEES:4770/ AFAM:4770/ GHS:4770	Environmental Justice	3
URP:6256/ PBAF:6256	Environmental Policy	3

Sustainable Cities and Communities

Course #	Title	Hours
CEE:4107/CBE:4410	Sustainable Systems	3
SEES:3350	Urban Ecology	3
SEES:3400	Iowa Environmental Policy in Practice	3
SEES:3760/ GHS:3760	Hazards and Society	3
SEES:4210	Sustainability as a System Science	3
URP:6245/ PBAF:6245	Growth Management	3

The Biosphere (Life Below Water and Life on Land)

Course #	Title	Hours
CBE:3405	Green Chemical and Energy Technologies	3
CEE:5350	Watershed Hydrology and Ecosystem Processes	3
SEES:3020	Earth Surface Processes	3
SEES:3340	Ecosystem Services	3
SEES:4790	Applied Environmental Geology	3