Depletion of fossil fuels. Global warming. Water scarcity. Loss of biodiversity. Modern environmental challenges like these impact both developed and developing nations, and they are compounded by an ever-expanding global population. The world needs innovative leaders who can help solve these complex problems and develop an environmentally responsible framework to meet basic human needs such as mobility, shelter, sustenance, communication, and recreation.

SNRE Sustainable Systems graduates are equipped to become these leaders through an interdisciplinary curriculum that focuses on systems thinking and a sound understanding of ecological principles, the capabilities of technology, and the mechanisms that reshape economic and social progress. Drawing on the diverse and acclaimed expertise of faculty within SNRE and across the University of Michigan, many Sustainable Systems courses are cross-listed with the Stephen M. Ross School of Business and the College of Engineering, and much of our research is done in tandem with the Center for Sustainable Systems and the Erb Institute for Global Sustainable Enterprise for a truly collaborative educational experience.

“"The best thing about the Sustainable Systems track is the flexibility to study the specific system you are most passionate about changing. For me, that is the energy sector. At SNRE, I am taking classes in multiple disciplines across campus, giving me a well-rounded understanding on technical, financial, and policy levels.”

— Shreyas Vangala, Sustainable Systems student track leader
CURRICULUM

You will gain expertise in systems-analysis techniques with a wide range of applications, including renewable energy, water infrastructure, green construction and sustainable mobility. In your coursework, you will examine sustainability by studying global and regional environmental impacts, materials and energy flows, social values and equity issues, and consumption patterns and sufficiency.

You also will develop the critical skills of systems thinking and systems-dynamics modeling and apply them to the challenges of global environmental and social change. Lifecycle assessment, risk-benefit analysis, environmental economics, energy analysis, design for environment, carbon-emissions modeling and spatial analysis are among the analytical tools and skills taught.

Management training in environmental strategy, organizational change and conflict resolution, ethics, stakeholder engagement and scenario analysis round out your skill set. For example, you will deepen your understanding of institutions that govern energy use and explore ways in which government policy has succeeded, or failed, in order to address the need for renewable energy and other sustainable development challenges.

Course sampling:
- Urban Sustainability
- Renewable Electricity and the Grid
- Industrial Ecology
- Behavior and the Environment
- Environmental Risk Assessment
- Water Resource Policy

VISIT SNRE.UMICH.EDU FOR MORE INFORMATION

CAREERS

Sustainability Systems graduates pursue careers in the government, private, and nonprofit sectors, often obtaining leadership roles in engineering and product development, management consulting, and strategic and sustainability planning. They work toward systems improvements including transportation efficiency, green buildings, fuel management, public utility analysis and regulation, and renewable energy.

TOP 10 EMPLOYERS
- Black & Veatch
- Boeing
- Deloitte
- DTE Energy
- Ford
- ICF International
- Pacific Gas & Electric
- Rocky Mountain Institute
- SunEdison
- U.S. Department of Energy

FACULTY

Jose Alfaro
Joe Arvai
Rosina Bierbaum
Jim Diana
Andy Hoffman
Jeremiah Johnson
Greg Keoleian
Tom Lyon
Shelie Miller
Michael Moore
Joshua Newell
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