Online Ethics Center
FOR ENGINEERING AND SCIENCE

International, Interdisciplinary Education on Sustainable Infrastructure and Sustainable Cities: Key Concepts and Skills

Description

This paper describes an interdisciplinary education program offered to cohorts of graduate students from the United States, India, and China. Developed by an interdisciplinary team of university instructors from the three countries, the curriculum explores how the interaction of engineered infrastructures with social and natural systems shapes urban sustainability outcomes pertaining to resource management, environmental pollution, climate change, and public health.

Abstract

This paper describes an interdisciplinary education program offered to cohorts of graduate students from the United States, India, and China. Developed by an interdisciplinary team of university instructors from the three countries, the curriculum explores how the interaction of engineered infrastructures with social and natural systems shapes urban sustainability outcomes pertaining to resource management, environmental pollution, climate change, and public health. Five key concepts and skills form the foundation of the curriculum: (1) sustainable urban systems concepts; (2) interdisciplinary systems thinking and teamwork skills; (3) intercultural skills; (4) fieldwork, including community-based interactions; and (5)

knowledge of ethics in interdisciplinary and intercultural settings

The curriculum is designed for students from six disciplines: engineering, industrial ecology, environmental sciences and climatology, urban planning, public health, and public affairs. An innovative, hybrid lecture-plus-fieldwork format is delivered in several cities in each country, exposing the students to multiple cultures and diverse learning experiences.

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