



Civil engineers are committed to sustainable practice,
and ASCE is helping to lead the way.

Certificate Course

Fundamentals of Sustainable Engineering

The American Society of Civil Engineers defines sustainability as a set of environmental, economic and social conditions in which all of society has the capacity and opportunity to maintain and improve its quality of life indefinitely without degrading the quantity, quality or the availability of natural economic and social resources.

ASCE's web-based course Fundamentals of Sustainable Engineering (FSE) introduces participants to sustainability principles and to the established body of knowledge, and thereby promotes sustainable civil engineering planning, design and implementation.

FSE is the first course in ASCE's program of continuing education for Professional Certification in Sustainable Engineering (PCSE).

Scope and Course Content

Sustainable engineering for infrastructure systems is concerned with their planning, design, construction, operation, maintenance, renovation and decommissioning (the complete, cradle-to-cradle, life cycle of infrastructure). Application of the principles of sustainable civil engineering during the planning, design and implementation phases of project development requires expert attention to safety, functionality, resilience, and to the economic, environmental and societal impacts that extend beyond the scope evaluated for professional registration.

FSE is a 17-module Web-based course, culminating with an online, written and multiple choice examination. Participants earn a certificate upon successful completion of this course.

Course Topics Include

- Transformational Projects.
- Trends and Issues Driving Sustainability
- Earth Systems
- The Five Capitals: Financial, Human, Natural, Produced, and Social Capitals
- Social Factors: The Community and Individual Behavior
- The Sustainability Quadrant
- Project Pathway and Performance
- Life Cycle Cost/Benefit Assessment
- Environmental Policies, Regulations and Innovation
- Developing and Delivering Sustainable Projects

Developers and Presenters

FSE was developed by the Professional Certification Subcommittee of ASCE's Committee on Sustainability with assistance from ASCE's staff in Continuing Education and in Engineering Programs. The developers/presenters are:

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