

Graduate Certificate in Sustainable Technology & Management



Interdisciplinary Program

The Certificate in Sustainable Technology & Management (CSTM) is an interdisciplinary program that helps managers, engineers, and organizations meet the business and engineering imperatives of sustainable development in a globalizing and increasingly competitive economy.

Students will be presented with metrics and skill sets that will enhance the development of sustainable technologies, entrepreneurship, and organizational strategy. The net benefit? Reduced risks and costs and

increased competitive advantages through strategic alliances, scenario planning, and resource management.

This joint effort between three schools integrates two areas of specialty into one certificate. CSTM has two tracks: Sustainable Engineering and Organizational Strategies. It is also one of five certificate programs of the joint MBA program for Technologists, Scientists, and Engineers.

Upon successful completion, students receive an academic certificate from ASU and will be able to use the CSTM professional designation.

“an interdisciplinary program that helps managers, engineers, and organizations meet the business and engineering imperatives of sustainable development in a globalizing and increasingly competitive economy”



Partner Organizations

What type of organizations partner with the CSTM Program? Those who realize that future leaders will need to meet the demands of a globalizing economy, rapid urbanization, technological advancements, and changing regulations.

Whether sending their employees through the program, presenting real-life case studies, or providing guidance, we appreciate the support of the Intel Corporation, Ford Motor Company, Pfizer Inc., Raytheon, General Dynamics, TRW, CEMEX, City of Phoenix, Salt River Project, Arizona Public Service, US Army, Green Ideas, Motorola, Maricopa County, US Department of Commerce, Merkel Composites, Shea Homes, ARCADIS, and many others.



Members of the Sustainable Technology and Management Program with executives of the Ford Motor Company at their worldwide headquarters. CSTM students recently presented Ford with an outline for a sustainable products strategy.

The Certificate

The certificate provides technologists, scientists, and engineers (and those who manage them) with a new set of skills crucial to addressing the economic, social, and environmental imperatives of an increasingly competitive global economy, and designing, manufacturing, and managing technology systems under such circumstances, with a focus on the requirements and imperatives of sustainability.

This skill set includes providing professionals with an understanding of how rapidly changing social, environmental, and economic challenges will impact their professions. The program will present these challenges through case studies, text readings, invited international speakers, and

group projects that encourage team solutions to complex ethical, managerial, legal, and economic issues.

Learning outcomes will include understanding the range of issues faced by managers, engineers, and technologists; understanding trends in economic, technological, and organizational development; and developing the skills and abilities to assess the economic, environmental, social, legal and ethical issues that are critical to designing, manufacturing, operating, and managing the technological systems of the modern world.

Course	Required	Elective
Introduction to Sustainability & Organizational Strategies	Both Programs	
Sustainable Manufacturing	Both Programs	
Supply Chain		X
Water Policy & Management		X
Sustainable Infrastructure		X
Sustainable Transportation Systems		X
Earth Systems Engineering	Sust. Eng.	Org. Strategies
Sustainable Energy		X
Entrepreneurship / Firm Intrapreneurship	Org. Strategies	Sust. Eng.
CAPSTONE PROJECT	Both Programs	

A total of 5 courses (15 credit hours) is required for completion. Although courses are shared between two tracks, Organizational Strategies and Sustainable Engineering each have their own set of core and elective requirements. Students will work with a faculty advisor to assign the appropriate elective requirements.

Admission Criteria

Students must have a bachelor's or master's degree from a regionally-accredited institution with a cumulative grade point average of 3.0 or higher, or be currently admitted to a graduate degree program at ASU. Preference will be given to students with degrees in business, engineering, the sciences, or public policy. Applicants must submit a personal statement describing their background and interest in the program. Students are encouraged to apply to the certificate program before completing more than 6 credit hours of the required courses for the certificate (taken while admitted either as a degree or a non-degree-seeking student). The certificate program is responsible for verifying all admissions-related information and credentials for students applying to the certificate program while admitted to ASU as non-degree-seeking students. All students must provide 2 letters of recommendation.



Program Co-Directors

Jay Golden, PhD, SCPM, REA

Golden is an Assistant Professor in the School of Sustainability and the Director of the National Center of Excellence on SMART Innovations at ASU and a member of the Global Institute of Sustainability. He holds a PhD in sustainable engineering from the University of Cambridge as part of the Cambridge—MIT Institute, a joint university program.

He also holds a MPhil in Environmental Engineering and Sustainable Development from the same institutions. Golden received an Organizational Mastery of Project Management from Stanford and holds a BA in management. He has held senior sales and operations management positions in Fortune 500 companies and founded his own engineering consultancy that expanded to six states and two countries. He serves as special advisor on sustainable technologies to various governments and industry, and was recently appointed to the UN Life Cycle Management Program.



Dr. Golden



Dr. Allenby

Braden R. Allenby, PhD, JD

Allenby is a Professor of Civil & Environmental Engineering and of Law at ASU, having left from his previous position as the Environment, Health and Safety Vice President for AT&T in 2004.

Allenby received his BA from Yale in 1972, his JD from the U of Virginia Law School in 1978, his MA in economics from the U of Virginia in 1979, his MA in environmental sciences from Rutgers in 1989, and his PhD in environmental sciences from Rutgers in 1992.

He is President of the International Society for Industrial Ecology; Chair of the AAAS Committee on Science, Engineering, and Public Policy; a Batten Fellow in Residence at the U of Virginia's Darden Graduate School of Business Administration; and a Fellow of the Royal Society for the Arts, Manufactures & Commerce. From 1995 to 1997, he was Director for Energy and Environmental Systems at Lawrence Livermore National Laboratory and, from 1991 to 1992 was the J. Herbert Holloman Fellow at the National Academy of Engineering in Washington, DC.

Areas of expertise include design for environment, industrial ecology, telework and netcentric organizations, and earth-systems engineering and management.

"Sustainable Development is a growing global business imperative that incorporates economic, environmental, and social considerations into daily business activities"

Program Faculty

David Pijawka, PhD, Professor - School of Planning

John C. Crittenden, PhD, PE., NAE

Presidential Professor of Civil & Environmental Engineering

James Hershauer DBA, Ford Dealership Professor of Management

Dan Shunk, PhD, Avnet Chair of Supply Network Integration,
Department of Industrial Engineering

Kamil Kaloush, PhD, PE., Civil & Environmental Engineering

Patrick Phelan, PhD, Mechanical & Aerospace Engineering

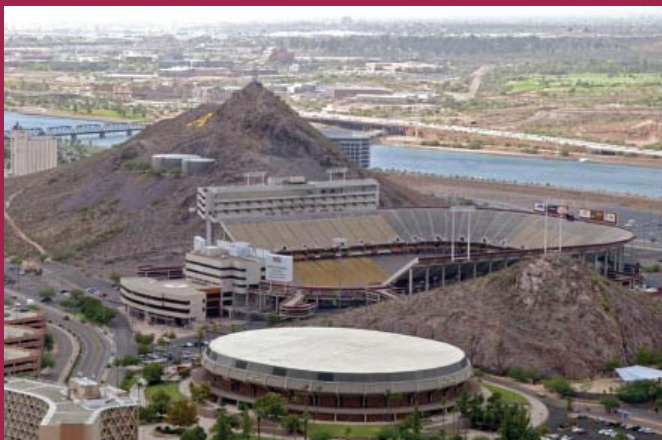
James Holway, PhD, Global Institute of Sustainability

Thomas Duening, PhD, Entrepreneurial Programs Office
Plus internationally recognized leaders from Government and Industry



Quick Facts

- ASU Tempe is the largest campus in the U.S. with 51,612 students.
- Since 1992, only Harvard and Yale have had more students selected for USA Today's ranking of the nation's top 20 undergraduates.
- ASU ranks fourth nationally among public schools—and 12th overall—in the number of enrolled National Merit Scholars.
- ASU has 1,732 freshmen in the top 10% of their high school class, more than Harvard, Yale, Princeton, or Stanford.
- ASU is the fourth-highest producer of Fulbright awards to study abroad of all US colleges and universities.



Contact

**Graduate Certificate in Sustainable
Technology & Management**
Global Institute of Sustainability
Phone: 480-965-9301
Fax: 480-965-8087
E-mail: rod.groff@asu.edu

Arizona State University Partner Schools

GLOBAL INSTITUTE of SUSTAINABILITY

ARIZONA STATE UNIVERSITY

Global Institute of Sustainability

catalyzes and advances interdisciplinary research on environmental, economic and social sustainability, especially as it relates to urban areas. The Institute brings together scientists, social scientists, engineers, and government and industry leaders to share knowledge and develop solutions to real-world problems. A new School of Sustainability is slated to open in 2007, offering a new model for interdisciplinary education in the 21st century.

Ira A. FULTON school of engineering

ARIZONA STATE UNIVERSITY

Ira A. Fulton School of Engineering

provides undergraduate and graduate programs in engineering, computer science, and construction, offering the knowledge and skills that students need to succeed in a technically oriented career. Ranked 41st in the nation for undergraduate and 47th for graduate programs—with five graduate majors in the top 30—by US News & World Report, the School operates in a trans-disciplinary, entrepreneurial environment that produces a creative, highly educated workforce. The Fulton School also advances technical knowledge, driving sustainable growth and improved quality of life in communities.

W. P. CAREY

SCHOOL of BUSINESS

ARIZONA STATE UNIVERSITY

W. P. Carey School of Business

is one of the nation's largest business schools, with 190 faculty members and over 1,400 graduate and 2,400 upperdivision undergraduate students. The school is internationally recognized for its leadership in supply-chain management and services marketing and is highly regarded for the research productivity of its faculty. The school is ranked 26th nationally for its undergraduate program and 31st for the W. P. Carey MBA.