EM 523 Sustainable Construction Materials and Methods

In a few decades, the relationship between the environment and resources may seem almost as obvious as the connection we see today between human rights, democracy and peace - Wangari Maathai (1940 - 2011), environmental activist, first African woman to receive the Nobel Peace Prize in 2004)

As global populations increase, so too will the need for accommodation. However, current mainstream building methods are unsustainable, producing large amounts of CO2 both during construction and throughout a building’s life. Thankfully, sustainability is becoming a priority for developers, and with many exciting innovations happening in the construction industry, sustainably addressing global accommodation needs seems possible.

The Sustainable Construction Research Group’s main research area is Sustainable Construction, which deals with construction technologies and materials, construction rehabilitation and durability and construction project management. The main objectives are focused on obtaining a better understanding of the different factors affecting sustainable construction and developing means and ways to contribute to the sustainability of the construction industry.

The Online Education Guide to Majors in Construction Management states professionals in the industry are increasingly turning to online college courses in construction management while they work, in order to gain hands-on experience and theoretical knowledge at the same time. Your studies can begin with a focus on specific trade areas such as building code enforcement, power technology, or electrical work. Online degree programs can include courses in project control and development, site planning, design, construction methods, construction materials, value analysis, cost estimating, scheduling, contract administration, accounting, business and financial management, building codes and standards, inspection procedures, engineering and architectural sciences, mathematics, statistics, and information technology. Experts predict that the construction management industry could grow by 16 percent from 2006 to 2016, which is several percentage points above the national average for all other industries.

Stanford Universities, the Sustainable Design & Construction degree program (SDC-X), prepares students for careers in planning, designing, building, and operating sustainable buildings and infrastructure to maximize their lifecycle economic value, their net contribution to environmental functions and services, and their social equity.

The SDC-X subprogram offers courses in: project finance; lifecycle assessment; sustainable multidisciplinary, multi-stakeholder planning and design processes; green architecture; performance-based structural design; building energy systems; renewable power generation and smart electrical grids; water supply; wastewater treatment; transportation development; and sustainable construction materials and processes. Classes on cutting-edge information technology, sensor networks embedded in intelligent buildings and infrastructure, strategy, economics, entrepreneurship and organization design for new businesses, and corporate or governmental initiatives aimed at enhancing the sustainability of buildings and infrastructure round out the subprogram.

This subprogram is intended for students with undergraduate degrees in architecture, engineering, science, construction management, economics or business who wish to pursue careers that enhance the sustainability of the built environment.

Employers of past SDC graduates include: architectural and engineering design firms, constructors, design-build firms and developers focused on delivering green buildings and
infrastructure; energy and sustainability consultants; facility management or sustainability departments within large companies; clean-tech startups, and clean-tech venture funds.