University of Massachusetts Amherst

BUILDING AND CONSTRUCTION TECHNOLOGY

THE FIELD

Educating leaders in the field of sustainable design and construction of the built environment is the core mission of the building and construction technology (BCT) program. Green building is a rapidly emerging field that is an essential tool in efforts to mitigate and adapt to climate change, improve air and water quality, enhance urban biodiversity, and conserve natural resources. These steps are needed to maximize both economic and environmental performance in built environments. Despite the cyclical nature of the construction industry, demand for graduates of the BCT bachelor of science degree program is strong in both the residential housing and the commercial building sectors. Graduates of the BCT program take on leadership roles through their understanding of this technically complex field. Students participate in coursework covering science, technology, business, and design to support the basis for advancing their careers. The design, construction, and in-service use of residential and commercial buildings are complex, and BCT students are offered exceptionally varied instruction to cover the necessary elements of sustainable design and construction.

Graduates of BCT are involved in virtually every aspect of the built environment: construction management, sustainable building planning, engineered wood design, building energy performance evaluation, building products distribution, and research and development. They assure the materials and systems used in our buildings are best suited to the needs of each project in terms of safety, efficiency, sustainability, and cost effectiveness. It is the integration of technical understanding with general business acumen that makes graduates of the building and construction technology program uniquely desirable to employers.

A minor in building and construction technology is available.

THE MAJOR

In addition to university General Education requirements, the curriculum in the building and construction technology major builds upon a foundation of introductory mathematics, physical science, and computer literacy.

BCT requirements include courses in built environment, building materials technology, construction methods, building systems, building energy conservation, computer-aided design, structural design, business, and construction management. The remainder of each student's program includes electives in areas such as green building, engineering, or business, according to the individual's career objectives and chosen curriculum option. The functioning student organization is the University of Massachusetts Student Chapter of the National Association of Home Builders. Students frequently continue to advanced study at the master's or doctoral level or accept employment immediately.

HONORS

Students may pursue honors opportunities within the major. Contact the honors coordinator, Ho-Sung Kim (413-545-1970, kimhs@umass.edu), for more information.

STUDY ABROAD

Majors are encouraged to study abroad if it supports their academic and career goals. Students should contact the International Programs Office (413-545-2710, umass.edu/ipo) and work closely with their academic advisor to choose the appropriate courses in preparation.

CAREER OPPORTUNITIES

Graduates of the BCT program have risen to the highest professional levels in the building construction industry. Specific occupations cover a broad range of professional categories, including construction management, sustainable building planning, engineered wood design, building energy performance evaluation, and building products distribution. Salaries compare favorably with other scientific and business professions. Opportunities for advancement are excellent. The employment demand for women and men in this broad field far exceeds the number of graduates.

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(CONTINUED)

COLLEGE OF NATURAL SCIENCES

The College of Natural Sciences unites the life, environmental, computational, and physical sciences on campus. Students take advantage of a range of inquiry-based classroom and laboratory experiences, hands-on undergraduate research opportunities, multidisciplinary and cross-departmental education and research initiatives, and a variety of science student organizations. In addition, they are encouraged to develop strong written and oral communication skills, as well as leadership and problem-solving abilities.

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