CONSTRUCTION PROJECT MANAGEMENT CERTIFICATE
COURSE DESCRIPTIONS

CVEN 5236 - Project Management Systems [REQUIRED]
This course explores the fundamentals of the International Standard supported by the Project Management institute's (PMI) Project Management Body of Knowledge. Using a range of case studies and project work, the course prepares students for PMI's Certified Associate in Project Management (CAPM) or Project Management Professional (PMP) Certification tests.

CVEN 5237 - Advanced Topics in Project Management [REQUIRED]
This course builds on the International Standard in Project Management from PMI's PMBOK and uses project experience and case studies to build experience and introduce advanced concepts in completing projects. Emphasis is put on sustainability in global projects to create healthy, environmentally sensitive communities. Partnerships with local and global partners add value.

CVEN 5087 - Engineering Contracts
This course introduces the laws of contracts that are typically encountered by practicing engineers. Topics include the laws of contracts; contract statements, plans and specifications, general conditions of a contract, agency, partnerships, corporations, torts, real property, water rights, intellectual property and ethics. Course includes various case studies.

CVEN 5232 - Construction Planning and Control
This course presents knowledge and techniques used in planning and controlling of construction projects, including basics of construction planning, bar chart, network scheduling, uncertainty in scheduling, limited resources scheduling, resource leveling, line of balance, time-cost tradeoff analysis, cash flow analysis, integrated time-cost control, and value engineering. Students will work on a semester-long project to apply the skills learned.

CVEN 5233 - Construction Cost Estimating
This course presents the application of scientific principles to rough and detailed cost estimating; bid document preparation; quantity take off; concepts and statistical measurements of the factors involved in direct costs, overhead costs, cost markups and profits; and computerized estimating. Students will gain knowledge about quantity take offs and construction cost estimating through lectures, exercises, group activities, and guest speakers, and will complete an actual project cost estimate.

CVEN 5234 - Sustainable Construction
This course serves as an introduction to major components and technologies used in sustainable design and construction to create healthy, environmentally sensitive built environments. Content focuses on construction processes, renewable energy systems, healthy buildings, natural and cultural resources, and traditional as well as cutting-edge building strategies.

CVEN 5235 - Advanced Construction Engineering
This course includes a high-level overview of construction engineering management including organizations involved, current approaches and industry challenges. The course investigates construction accounting, estimating and managing earthwork, temporary construction and others.

CVEN 5238 - Construction Leadership
This course is an integrated architecture, engineering and construction business course that brings together executives, principals and managers to discuss current industry topics and provides students an opportunity to apply management and leadership principles to case study projects. This course also serves as part of the Integrated Construction, Management and Leadership Certificate.

CVEN 5800/IWKS 4930 - Construction, Business and Innovation
This course provides an introduction to opportunities related to innovation, business and entrepreneurialism in professional building and construction engineering practice. Students will gain knowledge about effective creative skills and practices related to design and construction through active learning using state-of-the-art technologies.