**DEPARTMENT OF CONSTRUCTION SCIENCE**

**Head:** J. P. Horlen

**Graduate Coordinator:** B. Bigelow

The Master of Science in Construction Management program is an advanced curriculum focusing on research in areas related to construction management. Students will develop a specialization through theses and coursework in their fields of interest. The program is augmented with classes in business administration, engineering, architecture, and other support areas as appropriate for specialization development.

A minimum body of knowledge is required as a prerequisite of admission for students without an appropriate degree or substantial professional experience.

The program is 32 credit hours and requires a thesis.

Because of the important role of computing in the disciplines housed within the College of Architecture, all entering students are required to possess a portable, network-ready personal computer capable of running software appropriate to their academic program. No student will be denied admission to Texas A&M University based on inability to purchase a computer. Additional information is available on the College of Architecture website.

This program offers a dual master’s degree program with the graduate programs in Construction Management and in Land and Property Development that enables students to graduate with a Master of Science in Construction Management and a Master in Land and Property Development upon completion of the combined 68 credit hour (with thesis) core curriculum. A student must be admitted into both the graduate program in Construction Management and the graduate program in Land and Property Development before completion of this dual degree program.

**Faculty**

Bae, Junseo, Visiting Lecturer
Construction Science
MARC, Hanyang University, South Korea, 2011

Bigelow, Ben F, Assistant Professor
Construction Science
PHD, University of Colorado, 2014
MLA, Arizona State University, 2008

Bryant, John A, Associate Professor
Construction Science
PHD, Texas A&M University, 1995

Carlson, Kimberly A, Senior Lecturer
Construction Science
MARC, Texas A&M University, 2002

Choi, Kunhee, Associate Professor
Construction Science
PHD, University of California, Berkeley, 2008

Choudhury, Iftekharudd, Associate Professor
Construction Science
PHD, Texas A&M University, 1994

Daigneault, Melissa S, Visiting Lecturer
Construction Science
JD, Wake Forest University School of Law, 2003

Dixit, Manish K, Assistant Professor
Construction Science
PHD, Texas A&M University, 2013

Du, Jing, Assistant Professor
Construction Science
PHD, Michigan State University, 2012

Ellis, Debra R, Senior Lecturer
Construction Science
JD, Baylor University, 1993

Escamilla, Edelmiro E, Instructional Assistant Professor
Construction Science
PHD, Texas A&M University, 2011
MAR, Texas A&M University, 2002

Fernandez-Solis, Jose L, Associate Professor
Construction Science
PHD, Georgia Institute of Technology, 2006

Grisham, Ray F, Lecturer
Construction Science
JD, The University of Texas at Austin, 1972

Haque, Mohammed E, Professor
Construction Science
PHD, New Jersey Institute of Technology, 1995

Horlen, Joseph P, Associate Professor
Construction Science
JD, Baylor University, 1980

Kang, Ho-Yeong, Associate Professor
Construction Science
PHD, Texas A&M University, 2001

Lavy, Sarel, Associate Professor
Construction Science
PHD, Technion - Israel Institute of Technology, 2006

Nichols, John M, Associate Professor
Construction Science
PHD, University of Newcastle, Australia, 2002

Rodgers, William S, Clinical Professor
Construction Science
JD, Texas Tech University, 1978

Rybkowski, Zofia K, Associate Professor
Construction Science
PHD, University of California, Berkeley, 2009

Ryoo, Boong Y, Associate Professor
Construction Science
PHD, University of Wisconsin - Madison, 1995
Williamson, Kenneth C, Associate Professor  
Construction Science  
PHD, University of Oklahoma, 1994

Masters

- Master of Science in Construction Management (http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/architecture/construction-science/ms)

Courses

**COSC 620 Construction Company Operations**  
Credits 3. 3 Lecture Hours.  
Running a construction company; strategic planning; business planning; organizational theory; competitor analysis; risk management; financial analysis; human resources; management information systems; leadership; codes of ethics; best practices.

**COSC 621 Advanced Project Management**  
Credits 3. 3 Lecture Hours.  
Theoretical, practical, and strategic development in the management of contemporary construction projects; advanced techniques used in scheduling and evaluating progress in construction project control; exploration of state-of-the-art management principles and practices, and development of additional insights.  
Prerequisite: COSC 603 or COSC 475.

**COSC 622 Construction Economics**  
Credits 3. 3 Lecture Hours.  
Foundation in Life Cycle Cost Analysis computation within the context of current issues in environmental sustainability and evidence-based thinking; lean construction as a strategy to overcome the hurdle of first cost.

**COSC 631 Advanced Productivity and Lean**  
Credits 3. 3 Lecture Hours.  
Introduction to lean history, concepts and methods; deduction of basic training modules in lean project delivery; application of lean management in construction projects.

**COSC 642 Construction Information Technology**  
Credits 3. 3 Lecture Hours.  
Exploration of emerging technologies for the construction industry including hardware and software systems such as BIM, RFID, Wireless/Mobile, information systems, construction specific programs, and information strategy planning; using information strategy planning by owners and contractors to effectively enhance the management of business entities and projects in construction.

**COSC 644 Advanced Construction Systems**  
Credits 3. 3 Lecture Hours.  
Theoretical, practical, and strategic development in contemporary construction systems; exploration of state-of-the-art innovations in environmental control systems, structural principles and practices; integration of innovations with information technologies, and development of additional insights.

**COSC 650 Advanced Construction Visualization**  
Credits 3. 3 Lecture Hours.  
Introduction to the theory and application of 3-D computer models in the design/build construction process; creation, positioning in 3-D space, and linking of building components to a database record; creation of a wide range of construction related information useful in controlling project quality.

**COSC 663 Sustainable Construction**  
Credits 3. 3 Lecture Hours.  
Contribution of materials and methods to meeting the needs of the present without compromising the ability of future generations to meet their own needs; overview of international, national and local programs promoting sustainable construction; characteristics of the components of successful sustainable construction projects; theories and practices through case studies.

**COSC 670 Facilities Asset Management**  
Credits 3. 3 Lecture Hours.  
Fundamentals of facility asset management and property management including concepts, theories, and principles of design, construction, accounting, finance, and management of the built environment; an overview of a project throughout its entire life cycle from various perspectives including the owner, users, designers, constructors and facility management personnel.

**COSC 681 Seminar**  
Credit 1. 1 Lecture Hour.  
Discussion and review of degree requirements, career opportunities, and current research activities in construction management.  
Prerequisite: Graduate classification.

**COSC 684 Professional Internship**  
Credits 3 to 6. 3 to 3 Other Hours.  
Approximately 400-600 hours with a construction or construction-related company that exposes the student to construction-related activities; an initial report, monthly progress reports, a final report, and a final completion letter are required.  
Prerequisites: Graduate classification; approval of graduate coordinator; approval of internship coordinator.

**COSC 685 Directed Studies**  
Credits 1 to 6. 1 to 6 Other Hours.  
Individual problems in the area of building construction involving the application of theory and practice.  
Prerequisite: Approval of instructor.

**COSC 689 Special Topics in...**  
Credits 1 to 4. 1 to 4 Lecture Hours.  
Selected topics in an identified field of construction management. May be repeated for credit.  
Prerequisite: Approval of instructor.

**COSC 690 Theory of Research in Construction Management**  
Credits 3. 3 Lecture Hours.  
Introduction to research, research tools, proposal writing and research methods; emphasis on research planning and design, conducting a comprehensive review of literature, quantitative and qualitative research methodologies, defining research problems in construction science, and the development of research proposals.  
Prerequisite: STAT 651 or concurrent enrollment.

**COSC 691 Research**  
Credits 1 to 23. 1 to 23 Other Hours.  
Research for thesis.  
Prerequisites: COSC 690 or concurrent enrollment; approval of graduate coordinator.
COSC 693 Professional Study

Credits 1 to 6. 1 to 6 Other Hours.

Approved professional study of project undertaken as terminal requirement for Master of Science, non-thesis option. Preparation of a record of study summarizing the rationale, procedure and results of the completed study. May be repeated for credit.

Prerequisite: COSC 690 or concurrent enrollment; approval of graduate coordinator.