

Department of Civil Engineering & Construction Management
College Of Engineering and Computer Science
California State University-Northridge
Northridge, Ca
Construction Management Program

PROGRAM PUBLIC INFORMATION

The department advertises the Construction Management Program in three ways:

- The program web site at <http://www.csun.edu/engineering-computer-science/civil-engineering-construction-management/construction-management-technology>
- Handouts that describe the program and the prerequisite requirements.(CM Flowchart and Course Catalog Description included in Chapter III of this report)
- A power point presentation that is updated to cover important information about the program

Under the direction of the Department Chair and in consultation with the Department Faculty, the Program Coordinator develops and/or oversees the development of all published materials.

The Construction Management Program uses a variety of sources to publish program information. Each source is designed to reach students at different points in their academic development. The Departments website can be accessed by anyone interested in the program, whether or not they are students at California State University Northridge. The website is used to inform the public not only about the program, but also about careers in Construction Management. The California State University Northridge General Catalog and the program specific department handouts are used by students attending California State University Northridge or those planning on attending.

Listed below are some of the many ways that the CM Program disseminates information to the public.

CSUN's Information Sessions – Throughout the year, the University organizes various annual information sessions that the CM Program participates in. Example programs are New Student Orientation in August, Transfer Student Information in August, and Open House sessions in April.

Advertisement in Community College Newspapers – the CM program advertises at the community colleges that feed students to CSUN.

TV Advertisements – Advertisement on cable channels that broadcast in the Los Angeles Area such as the SciFi Channel.

Advising Sessions – The Program Advisor meets with prospective students throughout the year to inform them of opportunities in the construction industry, to work with them in completing their prerequisites, and to advise them of the various resources available.

CM Program's Website – This website provides a variety of information about the program, its

prerequisites, and the industry at large.

CSUN General Catalog – the University catalog is organized to provide a comprehensive overview of the programs and courses offered at CSUN. The CM Program is represented in this catalog.

Department Handouts – A variety of handouts are utilized by the program to advertise and educate the public about the program and its requirements.

Direct Inquires – Often, individuals learn of the program by word of mouth. Typically, they will call or stop by the Department and will be given an advising appointment for the information they request.

Community College Advisors – The Department works closely with the community college advisors so students attending these schools are aware of opportunities in the construction industry. In addition, the Department works to insure that the community college advisors understand the current prerequisite requirements.

CSUN Advisors – Students who do not make a definite choice of a major when entering CSUN are designated undecided students. An advisor in the counseling center at the University level will assist them until they decide on a major. The Department would advise them if they contact the Department. Prerequisite requirements are clearly presented online in the CSUN course progress system and in the University's catalog.

QUALITY IMPROVEMENT PLAN

Introduction

The purpose of this section is to define the quality improvement process for the academic program of the Construction Management Program (CM) at California State University Northridge. The program is housed within the Civil Engineering and Construction Management Department. The Civil Engineering Program is accredited by the Accreditation Board for Engineering and Technology (ABET). Therefore, a continuous improvement process was designed with enough flexibility to be applicable to both programs.

An important element of an improvement process is to define a set of outcomes that can be evaluated with measurable performance. As explained below, the major outcomes which are evaluated are curriculum, courses, advising, and extracurricular contributions. Many of the components used for performance measurement have existed at California State University Northridge for some time. In particular, an annual assessment report is required by the University. However, that reporting mechanism does not necessarily include all the possible constituents of the process. The CSUN Construction Management Program Improvement Process (CMPPI) requires input from a wide range of sources including, but not limited to the Industry Liaison Council, faculty, students, employers and alumni. To ensure clear communication of goals and objectives, the role of each group in performance assessment will be discussed.

Background

The continuous improvement process starts with a clear focus on the vision and mission of the CM Program. This vision must have alignment with the Civil Engineering and Construction Management Department and the College of Engineering and Computer Science, whose visions are coordinated with the University vision and mission. The vision and mission will be defined in terms of educational objectives for the Program. Appropriate survey instruments and evaluation procedures are provided. In addition to education and curriculum issues, the role of the advising process will also be discussed.

Mission and Vision Statements

University Mission Statement

The University Mission Statement, as posted in the 2014-2015 Catalog, states:

California State University, Northridge exists to enable students to realize their educational goals. The University's first priority is to promote the welfare and intellectual progress of students. To fulfill this mission, we design programs and activities to help students develop the academic competencies, professional skills and critical values of learned persons who live in a democratic society, an interdependent world and a technological age; we seek to foster a rigorous and contemporary understanding of the liberal arts, sciences and professional disciplines, and we believe in the following values:

1. **Commitment to Teaching, Scholarship, and Active Learning:** We demonstrate excellence in teaching. We honor and reward high performance in learning, teaching, scholarship, research, service and creative activity. Because the quality of our academic programs is central to our mission, we encourage intellectual curiosity and protect the multiple expressions of academic freedom.
2. **Commitment to Excellence:** We set the highest standards for ourselves in all of our actions and activities and support the professional development of faculty, staff and administrators. We assess our performance so that every area of University life will be continually improved and renewed. We recognize and reward our efforts of greatest distinction and through them provide state and national leadership.
3. **Respect for All People:** We aspire to behave as an inclusive, cooperative community. Our behaviors, policies and programs affirm the worth and personal dignity of every member of the University community and contribute to a campus climate of civility, collegiality, tolerance and reasoned debate.
4. **Alliances With the Community:** We seek partnerships with local schools, community colleges, businesses, government and social agencies to advance the educational, intellectual, artistic, civic, cultural and economic aspirations of our surrounding communities.
5. **Encouragement of Innovation, Experimentation and Creativity:** We seek to provide an environment conducive to innovation, experimentation and creativity. We encourage all members of our community to take intellectual and creative risks and to embrace changes that will enhance the fulfillment of the University's mission.

University Vision Statement

California State University, Northridge, is inspired by the belief that our commitment to educational opportunity, inclusion and excellence will extend the promise of America to succeeding generations. Our graduates will be the vanguard of leaders for this century—committed to sustaining a democracy in which diverse people share in the rights and responsibilities of citizenship, proficient in applying technology to wise purposes, and dedicated to securing a humane world community and sustaining the bounty of the earth.

As an institution of higher learning,

- We will be a high performing, model university in which student achievement levels are among the highest of peer universities;
- We will create a community of shared values in which faculty, students, staff, administrators and alumni will experience personal satisfaction and pride in our collective achievements;
- We will be the first choice for university applicants who seek a rigorous, collaborative teaching/learning experience in a technologically rich environment;
- We will be the leader in enhancing the educational, cultural and economic resources of our region; and
- We will receive local and national recognition for our distinctive achievements in teaching, learning, scholarship, and service.

College of Engineering and Computer Science Mission Statement

The College of Engineering and Computer Science seeks to be a recognized center for excellence for baccalaureate and masters education in computer science and in engineering. The College provides a quality education for its students. It is also a partner in the professional communities of computer science and engineering and provides an essential link between students' education and professional practice.

Civil Engineering and Construction Management Department Mission Statement

To provide our students with a sound basic civil engineering education and to prepare them for entry into the professional practice of civil engineering, as well as to inculcate in them a recognition that civil engineering is a people serving profession. In keeping with these goals, we aim to develop in them an understanding that a successful professional career is one that addresses the needs of society and requires a lifetime of learning and leadership.

Construction Management Program Mission Statement

The Construction Management Program helps students develop the skills and knowledge needed to successfully complete construction projects on time and within budget, adhering to construction standards and safety guidelines. Graduates will have sufficient knowledge and skills to find employment in commercial, design build, heavy civil and residential applications of the construction industry.

Program Objectives

The program objectives for the Construction Management Program are:

The CSUN undergraduate Construction Management Program should prepare students for lifelong careers in the construction industry that will allow them to make productive contributions to the construction field and society, and to find job satisfaction. To accomplish this overall goal, graduates of this program should have the following accomplishments during the first few years following graduation:

1. Demonstrate managerial skills to organize and control construction projects from conception to closeout.
2. Establish a record of effective application of undergraduate educational tools to accomplish tasks assigned in the workplace.
3. Develop leadership capabilities through practical application and team building techniques.
4. Present a sense of exploration and the ability to maintain lifelong learning in the areas of emerging constructions methods and management technologies.
5. Provide evidence of strong communication skills and delivery.

Student Learning Outcomes

Graduates of the Bachelor of Science in Construction Management Program at California State

University, Northridge will have the following learning outcomes:

- a. an ability to demonstrate an appropriate mastery of the knowledge, techniques, skills, and modern tools of their disciplines
- b. an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology
- c. an ability to conduct, analyze, and interpret experiments and apply experimental results to improve processes
- d. an ability to apply creativity in the design of systems, components, or processes appropriate to program objectives
- e. an ability to function effectively on teams
- f. an ability to identify, analyze, and solve technical problems
- g. an ability to communicate effectively
- h. an ability to recognize the need for, and possess the ability to pursue lifelong learning
- i. an ability to understand professional, ethical, and social responsibilities
- j. an ability to recognize contemporary professional, societal, and global issues and awareness of and respect for diversity
- k. a commitment to quality, timeliness and continuous improvement
- l. knowledge of construction contracts, documents, specifications and codes
- m. knowledge of construction methods and materials
- n. knowledge of construction surveying
- o. knowledge of statics and strength of materials
- p. knowledge of material quantity and cost estimates of projects
- q. knowledge of productivity software to solve technical problems
- r. knowledge of construction accounting and economics
- s. an ability to utilize modern instruments, methods and techniques
- t. knowledge of construction law and ethics
- u. knowledge of soils, and foundations
- v. knowledge of scheduling and project management
- w. knowledge of construction safety

Relationship between Program Objectives, Students Learning Outcomes, and Areas of Knowledge

Figure 1: Relationship between Outcomes, Objective, and Areas of Knowledge

<i>Student Learning Outcomes</i>	<i>Program Objectives</i>	<i>Areas of Knowledge</i>
an ability to demonstrate an appropriate mastery of the knowledge, techniques skills and modern tools of their disciplines	1	5
an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology	2	2, 4
an ability to conduct, analyze, and interpret experiments and apply experimental results to improve processes	4	5.2
an ability to apply creativity in the design of systems, components, or processes appropriate to program objectives	3	4.1, 4.2
function effectively on teams	3	5.6
an ability to identify, analyze, and solve technical problems	2	5.1, 5.2, 5.6
an ability to communicate effectively	5	1.1
an ability to recognize the need for and possess the ability to pursue lifelong learning	4	5.6
an ability to understand professional, ethical, and social responsibilities	3	1.2
an ability to recognize contemporary professional, societal, and global issues and awareness of and respect for diversity	4	1.2, 5.4
an ability to have a commitment to quality, timeliness and continuous improvement	4	5.2, 5.6
knowledge of construction contracts, documents, specifications and codes	1	4.21, 5.4
knowledge of construction methods and materials	1	4.3
knowledge of construction surveying	1	4.5
knowledge of statics and strength of materials	2	4.11, 4.21
knowledge of material quantity and cost estimates of projects	1	4.4, 5.1
knowledge of productivity software to solve technical problems	4	5.17, 5.67
knowledge of construction accounting and economics	1	3, 5.3
an ability to utilize modern instruments, methods and techniques	4	4.3
knowledge of construction law and ethics	1	1.2, 5.4
knowledge of soils, and foundations	2	4.1
knowledge of scheduling and project management	1	5.2, 5.6
knowledge of construction safety	1	5.5

Figure 1 was developed to present the relationship of the student learning outcomes to program objectives and ACCE areas of knowledge.

Figure 1 reveals the relationship between these three main aspects of satisfying the mission of the CM program. To clarify these relationships, the objectives and contents of each course were linked to the ACCE's area of knowledge as shown in Appendix B. ACCE areas of knowledge are measured based on students' performance on quizzes, exams, presentations, and projects. Each time areas of knowledge are fulfilled, it shows that the curriculum has been successful in ensuring that student learning outcomes and program objectives have been met.

Construction Management Program Strategic Plan 2015-2020

This document provides the Strategic Plan 2015-2020 for the Construction Management Program (CM) hosted in the Department of the Civil Engineering and Construction Management (CECM) at California State University Northridge (CSUN). The Plan development started during Spring Semester 2014 and was completed in the beginning of the Fall Semester 2014 by engaging all constituencies (faculty, students, Industry Liaison Council members, alumni, and employers of graduates) through oral conversations, e-mails, and meetings. The developed Plan is not a set-in-stone document. It will be continuously reviewed, modified, and updated annually by the CECM Department with input from all constituencies. During the development process, the Department analyzed its strengths, weaknesses, opportunities, and threats. The Plan is divided into the following sections:

1. Vision
2. Mission
3. Goals /Actions

Vision

The Construction Management Program is an educational unit dedicated to students' success.

Mission

The Construction Management Program helps students develop the skills and knowledge needed to successfully complete construction projects on time and within budget, adhering to construction standards and safety guidelines. Graduates will have sufficient knowledge and skills to find employment in commercial, design build, heavy civil and residential applications of the construction industry.

Goals and Actions

The Strategic Plan consists of four goals that articulate how the CM Program will improve the achievement of its mission. These goals set the Program's future direction and establish priorities to guide resource allocation. To make sure that the program stays on course, a number of strategies have been developed to demonstrate how each goal is accomplished. In addition, each strategy is refined into a series of specific action items that can be measured over a period of time. These goals are:

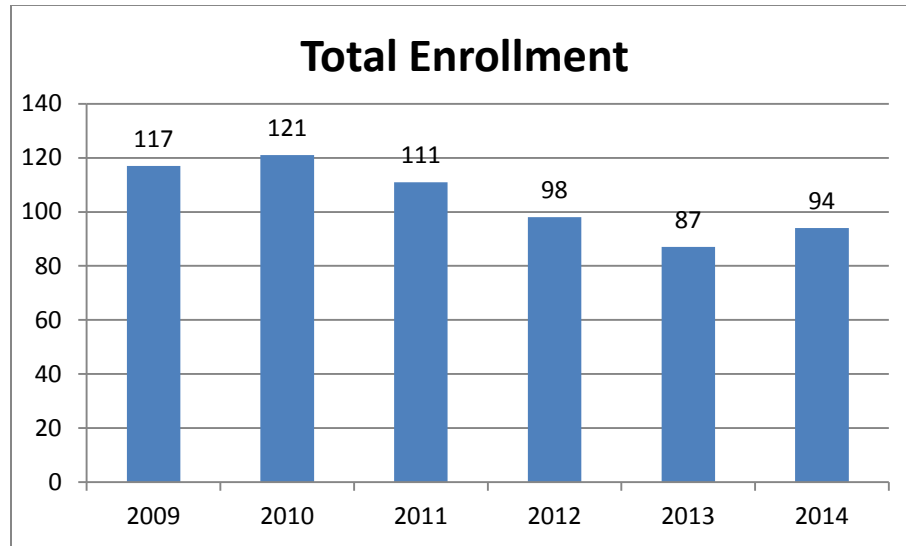
1. Strengthening the CM Undergraduate Program
2. Implementation of Certificate Program
3. Establishing CM Graduate Degree
4. Strengthening Ties with the Construction Industry

The following paragraphs describe the strategies and action items to accomplish these goals.

Goal No. 1: Strengthening the CM Undergraduate Program

Since the development of the undergraduate construction program in 2005, the number of students in the CM Program has increased from six students at its inception to 121 students in 2010.

With the economic recession of 2008, the enrollment number decreased to 87 students in 2013. With the economic recovery and the increase in construction projects, the demand for CM graduates is expected to rise. As such, with the increase in demand and proper recruiting, the program is looking to increase the enrollment by 30% in the next five years.



To strengthen the CM undergraduate program, the following actions are to be taken:

Action 1: The CM Program will continue to participate in every recruiting activity organized by the College of Engineering and the University. In addition, the Program will visit local community colleges that are major feeders to CSUN to recruit students.

Action 2: The CM Program will continue to conduct outreach to K-12 and provide presentations in local high schools to make students aware of the construction management field of study.

Action 3: The CM Program will continue to strengthen the curriculum by reviewing and adjust it to serve the ever-changing needs of the industry better.

Action 4: The CM Program will continue enhancing assessment pedagogies to organically measure/assess/ adjust the course materials in the construction management program.

Action 5: The CM Program will continue enhancing the rubrics to facilitate the measurement of achievement of outcomes.

Action 6: The CM Program will continue the strong relationship between students and their academic advisor. We believe that a strong relationship between them will ultimately improve retention and increase graduation rate. By 2020, the benchmark to success is that the six-year graduation rate (for first time freshmen) reaches 60% compared to the current rate of 45%, and the three-year graduation rate (for transfer students) reaches 80% compared by to the current rate of 65%.

Goal No. 2: Implementation of Certificate Program

With the increase of the demand of project management education, the CM Program developed a certificate program in project management to be offered under Tseng College of Graduate, International, and Midcareer Education. The Tseng College creates and delivers innovative programs that provide access to CSUN's distinguished scholarship and teaching for midcareer professionals,

regional employers, international students and the community. The college specializes in developing graduate-degree and certificate programs that prepare midcareer adults for advancement in rapidly growing fields. To implement certificate programs, the following actions need to be taken:

Action 1: The CM Program will continue to offer the Public Private Partnership set of courses (CM601, CM602, and CM603) to institutions such as Caltrans and Los Angeles Metro.

Action 2: The CM Program will work towards preparation of additional courses geared towards working professionals to make them more familiar with the latest trends in construction management.

Goal No. 3: Establishing CM Graduate Degree

With the expansion of the construction industry, the need for a graduate degree in Construction Management increases from professionals with or without an undergraduate degree in Construction Management. Graduate programs prepare future thinkers, researchers, and educators, which are important for the sustainability of the construction education in the nation. To establish a CM graduate degree, the following actions need to be taken:

Action 1: The CM Program will investigate the potential offering of a Master's degree program in construction management based on a modular system with Tseng College.

Action 2: The CM Program will work with Tseng College to explore the possibilities to offer a Master's degree as a self-funded program.

Action 3: The CM Program will work on establishing the groundwork for a regular state funded Master's program in the Civil Engineering and Construction Management Department.

Action 4: The CM Program will work on hiring of at least one additional full time faculty member in the construction management program.

Action 5: The CM Program will work on a seamless progression from the existing undergraduate program to the future graduate program.

Goal No. 4: Strengthening Ties with the Construction Industry

The CM Program has received strong support from the construction industry for many years. The Industry Liaison Council (ILC), which consists of employers and industry professionals, meets on a regular basis to discuss a wide range of topics on construction degree programs. Members of ILC also review syllabi, program objectives, and outcomes. The construction industry contributes to the Program in monetary ways such as scholarships and an annual golf tournament, and non-monetary ways such as guest lectures and site visits. However, to continue improving the construction programs at CSUN, the ties with the construction industry have to be even stronger. To achieve this goal, the following actions need to be taken:

Action 1: Improve students' readiness for working in the construction industry by encouraging ILC board members to offer yearly internships to students in the CM program.

Action 2: Incorporate more industry-related activities in the classroom such as lab experiments, site visits, and guest lectures.

Action 3: Continuation of industry support to sustain growth by expanding education infrastructure and resources.

The strategic plan was approved by the department and the ILC in September 2014