



ANNUAL PROGRAM REPORT

College	Science
Department	Engineering
Program	M.S. Construction Management
Reporting for Academic Year	2019-2020
Last 5-Year Review	2017-18
Next 5-Year Review	2022-2023
Department Chair	Saeid Motavalli
Date Submitted	10/1/2020

SELF-STUDY (suggested length of 1-3 pages)

A. Five-Year Review Planning Goals

1. The new STEM designation for the program has the potential to attract international students after the pandemic comes under control.
2. *Faculty:* The faculty that support this program are also supporting the construction management program at the undergraduate level. The faculty are; Farzad Shahbodaghlou, Cristian Gaedicke, Reza Akhavian and Fadi Castronovo. Reza Akhavian is currently on a second-year leave of absence. He has joined San Diego State University and is unlikely to return after his leave. As such, we will request an additional faculty to replace Reza.
3. *Research:* The Construction Management faculty are active in research and have been successful in securing funds for their research. The faculty plan is to aggressively pursue funding opportunities, specifically in areas related to the advancement of construction/engineering education. Current activities include summer workshops on sustainability for cohorts of students from Chili to Summer STEM camp for high school students from Contra Costa County, Summer workshops for community college students and study abroad programs in Italy during summer.
4. *Equipment:* Through A2E2 annual funding and the normal refresh cycle of computers by IT and we are keeping the Construction Management/Engineering Management Laboratories current. During 2019-20 faculty received about \$20,000 for surveying equipment.
5. *Enrollment:* Student enrollment in MS in Construction Management program has stabilized in recent years. It now stands at around 56.

B. Progress Toward Five-Year Review Planning Goals

1. We successfully changed the program designation to STEM

3. Increased enrollment in combined graduate and undergraduate construction management programs to 204.

4. Planning to expand the surveying equipment this year..

5. Successfully held two major career fairs in 2019-20. More than 35 companies and 80 students attended these events.

B. Program Changes and Needs

Report on changes and emerging needs not already discussed above. Include any changes related to SB1440, significant events which have occurred or are imminent, program demand projections, notable changes in resources, retirement/new hires, curricular changes, honors received, etc., and their implications for attaining program goals. Organize your discussion using the following subheadings.

Overview: The Construction Management program started in the year 2009 and has been steadily growing to over 204 students. Since 2009, we have hired 4 faculty members for this program. The faculty hires include: Dr. Farzad Shahbodaghlou as Director and Graduate advisor in 2009, as well as Dr. Cristian Gaedicke in 2013, Dr. Reza Akhavian in 2015 and Dr. Fadi Castronovo in 2016. Reza Akhavian is currently on a leave of absence for the second year.

The M.S. faculty of Construction Management also serve the undergraduate program. We do anticipate hiring a new faculty in case Dr Reza Akhavian does not return from his leave.

Faculty: Since 2009, the year of the program inception, we have had four faculty hires in the construction management program. These faculty hires include: Dr. Farzad Shahbodaghlou as Director and Graduate advisor in 2009, as well as Dr. Cristian Gaedicke in 2013, Dr. Reza Akhavian in 2015 and Dr. Fadi Castronovo in 2016.

Staff: We have two full time staff for the School of Engineering, Mrs. Lisa Homstrom and Linh Nguyen. We also have a joint staff with the Departments of Physics.

Resources: The upgrade of the hardware in the engineering computer laboratory (VBT 223) was postponed as a result of the pandemic. We are heavily utilizing the Center for Engineering and Advanced Technologies center/laboratory, which we have been developing for the past three years. We intend to expand this center to train our students in the field of construction management/technology as well as conduct research with graduate students and collaborate with the industry.

Assessment: An extensive assessment process is in place for the Construction Management program. Sample results are provided in the following section.

SUMMARY OF ASSESSMENT (suggested length of 1-2 pages)

PROGRAM LEARNING OUTCOMES (PLOS)

Students graduating with a M.S. Construction Management degree from Cal State East Bay will be able to:		I.L.O Alignment
a	Understand and implement risk management, scheduling and estimating, building information modeling, high performance building assessment systems, and project delivery methods.	1,6
b	Use effective communication skills to solve practical construction problems, explain and defend the application of advanced construction practices associated with planning, staffing, scheduling and controlling construction projects.	2, 4
c	Plan and deliver a project meeting the desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, constructability, and sustainability.	2, 5
Assessment Plan repeats every three year		

Year 1: 2019-2020	
<i>1. Which PLO(s) to assess</i>	PLO a - Understand and implement risk management, scheduling and estimating, building information modeling, high performance building assessment systems, and project delivery methods. (ILO 1,6)
<i>2. Is it aligned to an ILO?</i>	Yes, ILO 1,6
<i>3. Sample (courses/# of students)</i>	CMGT 670 Construction Enterprise and Risk Management
<i>4. SLO from the course</i>	Analyze the different types of risk and assess their likelihood and impact; Evaluate the use of different quantitative analysis techniques such as Monte Carlo simulation to assess the overall effect of risk at a project and corporate level, thus facilitating decision making under uncertainty.

5. <i>Assessment indicators</i>	a-Midterm exam question; e- Final exam performance
6. <i>Assessment instrument</i>	Program rubric
7. <i>Time (which semester(s))</i>	a-Spring 2020
8. <i>Responsible person(s)</i>	a-Prof. Gaedicke
9. <i>Ways of reporting (how, to who)</i>	The results (quantitative and qualitative) will be reported by faculty to the department chair via completion of the course Faculty Self-Assessment form.
10. <i>Ways of closing the loop</i>	Interaction between chair, faculty and industry advisory board

Summary: This course is called Construction Enterprise and Risk Management. In this course, students are provided with the fundamentals of the risk management process in construction. The course provides the students with an evaluation of the roles and responsibilities of the parties involved in the risk management process, and demonstrates how to identify, prevent and mitigate potential impacts on the project execution and outcome. The course also discusses quantitative techniques for risk-based analysis in construction and decision-making process under uncertainty.

One of the criteria for evaluating students was the semester group project, which asks students to 1) identify a project under construction, 2) obtain the base cost for the project, 3) identify four to six risks for the given project, 4) quantify the probability and impact for each of the identified risks, 5) run a Risk Assessment/analysis to evaluate the impact of the two risks on the project. How did the risks affect the project cost and schedule, and 6) discuss methods to mitigate those risks. A successful response requires both a written report and an oral presentation.

For this evaluation, the faculty only used the written component. The rubric for evaluation of the semester project indicated an average score of 87%.

Program improvement:

The results of this assessment will be discussed in the May Industry Advisory Board meeting and changes to the course and program will be implemented in the offering of this course and other courses.

Assessment Plans for Next Year

Year 2: 2020-2021	
1. Which PLO(s) to assess	6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions. (ILO 1 & 2)
2. Assessment activity	Final Project report and presentation
3. Assessment instrument	Program rubric
4. Sample (courses/# of students)	a-CMPE 321 Computer Architecture
5. Time (which semester(s))	a-Fall 2020
6. Responsible person(s)	a. Prof. Tandon
7. Ways of reporting (how, to who)	The results (quantitative and qualitative) will be reported by faculty to the department chair via completion of the course Faculty Self-Assessment form.
8. Ways of closing the loop	Interaction between chair, faculty and industrial advisory board

DISCUSSION OF PROGRAM DATA & RESOURCE REQUESTS

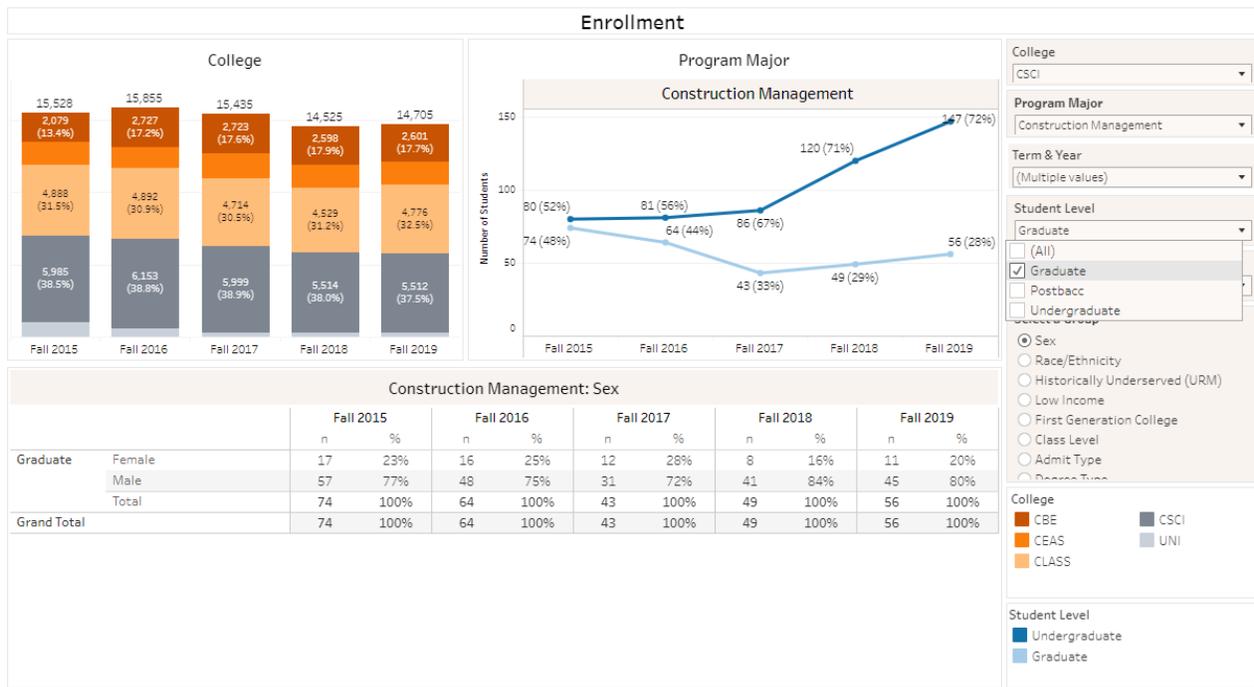
Discussion of Trends & Reflections

Notable Trends:

Summarize and discuss any notable trends occurring in your program over the past 3-5 years based on program statistics (1-2 paragraphs). You may include 1-2 pages of supplemental information as appendices to this report (e.g., graphs and tables).

The construction industry is continuing to grow and the job market for graduates is strong. The enrollment in this program has stabilized in recent years. We expect the growth to resume after the stabilization of the current pandemic and increase in international interest.

Reflections on Trends and Program Statistics:



(Source: Pioneer Data Warehouse) Page 1 of 1

Run Date:
10/1/2019

Program enrollment at the undergraduate level is growing. We have experienced a decline in enrollment in the MS program during the last couple of years. This could be in part due to the difficulties that international students have in acquiring a US visa. We anticipate that with STEM designation for the program in place, the growth of the MS program will resume.

Request for Resources (suggested length of 1 page)

Upkeep of the laboratory software and hardware, access to large computer lab/classes for some of the courses.

Request for Tenure-Track Hires:

It is unlikely that Dr. Akhavian would return to CSUEB after his second year of leave of absence. Therefore we are requesting a new tenure track position.