



College	Science
Department	Engineering
Program	M.S. Construction Management
Reporting for Academic Year	2016-2017
Last 5-Year Review	1 <sup>st</sup> 5-year report since inception is in preparation
Next 5-Year Review	1 <sup>st</sup> 5-year report since inception is in preparation
Department Chair	Saeid Motavalli
Date Submitted	10/20/2017

ANNUAL PROGRAM REPORT

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

A. Five-Year Review Planning Goals

1. *Along with the rest of the university, we will be transitioning to a semester-based program in Fall of 2018. This will be a major change as the faculty in the program have been working during the past two years to transform the program. The new program would satisfy the university requirements as well as the ACCE (Accreditation Council for Construction Education) requirement. We have been approved for as a candidate for accreditation and have been working on our self study to submit. We have made changes to the curriculum, teaching methods and course requirements.  
In addition, we are proposing a new B.S. in Civil Engineering program. The Chancellor's Office has already approved the program to be added to the master plan and we have prepared the new program proposal to be submitted to the university. The civil engineering program will be a feeder program into the M.S. Construction program within the School of Engineering.*
2. *Faculty: The faculty that support this program are also supporting the construction management program at the undergraduate level. The faculty are; Farzad Shahbodaghlou (Director of the CMGT Program), Cristian Gaedicke, Reza Akhavian and Fadi Castronovo. We do not anticipate a need for new faculty for this program for the next 3 years.*
3. *Research: The Construction Management faculty are active in research and are being 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 workshop on sustainability for cohorts of students from Chili to summer STEM camp for high school students from Contra Costa County (Funded by industry for the 4<sup>th</sup> consecutive year in summer 2018) and several industry projects.*

4. *Laboratory Development: Room SCS 247, Materials Testing Laboratory, has been remodeled to a lab-lecture room with a capacity of 36. Flexible furniture suitable for active learning practices have been installed. In addition, for the past three years, space for an advanced technology laboratory/center in construction has been secured, new faculty in the field of technology hired and equipment acquired to develop a state-of-the-art facility to serve students, faculty research and collaboration with the industry.*
5. *Equipment: Through A2E2 annual funding and the normal refresh cycle of computers by IT and the support from College of Science we are creating new laboratories and keeping the Construction Management/Engineering Management Laboratories current. The new CEAT (Construction and Engineering Automation Technology) Center/Laboratory was equipped with around \$145,000 in cutting edge technology this year. This space which has been in planning for 3 years was equipped with additional funding in the previous three years.*
6. *Enrollment: Student enrollment in Construction Management program has increased steadily since its inception in Winter of 2009 from 6 students at the graduate level to a combined 180 students at both undergraduate and graduate levels in Fall of 2016. Student enrollment in Construction Management program has increased steadily over the past 8 years since its inception and stabilizing in the past 2 years.*

#### B. Progress Toward Five-Year Review Planning Goals

1. *Successfully transformed the curriculum to a semester-based program.*
2. *We have hired two new faculty in the past three years and don't anticipate needing additional faculty for this program for the next 3 years.*
3. *The remodeling of materials lab SSC 247 has been completed and it is used as lab/active learning classroom as well as the Surveying lab. In addition, for the past three years, space for an advanced technology laboratory/center in construction has been secured, new faculty in the field of technology hired and equipment acquired to develop a state-of-the-art facility to serve students, faculty research and collaboration with the industry. We intend to use this space to train our students in the field of construction management/technology as well as conduct research with graduate students and collaborate with the industry.*
4. *Enrollment in Construction Management has increased substantially over the past eight years since its inception and seems to be stabilizing in the past 2 year.*
5. *The transformed program credit requirement is in line with the quarter system requirements and is being finalized during the catalog review.*

#### C. 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, retirements/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 with the enrollment stabilizing in the past two years. Since 2009 we have hired 4 faculty members for this program. We are a candidate for accreditation by Accreditation Council for Construction Education and have been preparing our self-study in anticipation of a campus visit after transformation to Semester system.*

*The graduate faculty of Construction Management also serve the undergraduate program. We do not anticipate the need for new hires for the next 3 years.*

*Curriculum: The transformed curriculum is designed to include more active learning exercises and includes courses and material that are in line with the employment trends in construction management.*

*Students: Demand for Construction Management graduates are very strong, especially for domestic students.*

*Faculty: Since 2009, the year of the program inception, we have had 4 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 one full time staff for the School of Engineering, Mrs. Paula Trujillo and a laboratory technician, Mr. Brandon Xia. In addition, we have a part-time assistant for the office of the School of Engineering.*

*Resources: Software was upgraded for the engineering computer laboratory (VBT 223). We will also continue developing the CEAT center/laboratory which we have been developing for the past three years. This space which is utilized for an advanced technology laboratory/center in construction has been secured, new faculty in the field of technology hired and equipment acquired to develop a state-of-the-art facility to serve students, faculty research and collaboration with the industry. We intend to further develop this space 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) and their relation to ILOs

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.	1,3,6
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.	3, 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.	6

Program Learning Outcome(S) Assessed

The following PLO for the **Construction Management Master’s Program** were assessed during the 2016-17 Academic Year:

(1) Year 1-2016- 2019	(2)
<i>1. Which PLO(s) to assess</i>	(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.
<i>2. Assessment indicators</i>	a- Midterm exam question
<i>3. Sample (courses/# of students)</i>	a-CMGT 6800
<i>4. Time (which quarter(s))</i>	a-Fall 2016
<i>5. Responsible person(s)</i>	a-Prof. Akhavian
<i>6. Ways of reporting (how, to who)</i>	The results will be reported by faculty to the Department Chair via completion of the course Faculty Self-Assessment form.
<i>7. Ways of closing the loop</i>	Interaction between chair, faculty and industry advisory board

**Summary of Assessment Results:** Outcome C was assessed in CMGT 6800 – Construction Safety, using the course midterm exam. The exam was designed to assess students’ understanding of the key safety and health measures, plans, and improvement tools. The exam focuses on Occupational Safety and Health Administration (OSHA) regulations and standards as well as the National Institute of Occupational Safety and Health (NIOSH) research findings.

As part of the exam students are expected to:

1. Identify differences between safety and health.
2. Determine roles and responsibilities of different parties in construction with regards to safety.
3. Identify components of OSHA inspection procedure.
4. Indicate importance of accident investigation.
5. Evaluate company safety culture.
6. Determine the direct and indirect cost of accidents.
7. Determine incidence rate (IR) and days of restricted work activity or job transfer (DART) according to the procedures established by OSHA.

19 out 24 students (80%) achieved 80% or higher in the exam.

#### Assessment Plans for Next Year

Assessment Plan	
<i>1. Which SLO(s) to assess</i>	SLO a - Understand and implement risk management, scheduling and estimating, building information modeling, high performance building assessment systems, and project delivery methods.
<i>2. Assessment indicators</i>	a-Midterm exam question; e- Final exam performance
<i>3. Sample (courses/# of students)</i>	a-CMGT 6500
<i>4. Time (which quarter(s))</i>	a-Winter 2018
<i>5. Responsible person(s)</i>	a-Prof. Castronovo
<i>6. Ways of reporting (how, to who)</i>	The results will be reported by faculty to the department chair via completion of the

	course Faculty Self-Assessment form.
7. Ways of closing the loop	Interaction between chair, faculty and industry advisory board

**DISCUSSION OF PROGRAM DATA & RESOURCE REQUESTS**

*Each program should provide a one-page discussion of the program data available through CAPR. This discussion should include an analysis of trends and areas of concern. Programs should also include in this discussion requests for additional resources including space and tenure-track hires. Resource requests must be supported by reference to CAPR data only. Requests for tenure-track hires should indicate the area and rank that the program is requesting to hire. If a program is not requesting resources in that year, indicate that no resources are requested.*

Discussion of Trends & Reflections

Although we tried to use the provided data for enrollment in construction management program, it appears that the student enrollment data does not reflect the actual data. Therefore, we used the enrollment numbers from Pioneer Data Warehouse which is summarized in the table below,

Student Headcount by Program

Program	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016
M.S. CMGT	59	56	87	99	90
B.S. CMGT	40	62	71	90	91

According to the data above, program enrollments are stabilizing around 180-200 student majors over the past couple of years. The four tenure-track faculty members supporting the B.S. and M.S. programs are expected to be the main faculty for a soon to be proposed B.S. in Civil Engineering Program. The CSUEB Construction Management Program is the only program of its kind in the Bay Area. The closest undergraduate program is at Sacramento State University and there are no similar Master’s program in Northern California.

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).*

1. We are preparing the self-study documentation for accreditation by Accreditation Council for Construction Education (ACCE). We are already approved to the candidate status for accreditation.
2. We have offered an exclusive bi-annual Career Day/Job fair for CMGT students starting in 2012. The first event was attended by 1 construction company and 14 students and since it has grown to 15 companies and between 40 -50 students participating.

3. We have developed the CEAT Center/Laboratory space to train our students, conduct research and collaborate with the construction industry in order to distinguish our program as a leader in the area of technology-integrated construction.
4. We have prepared a proposal for a Civil Engineering Program to be submitted to the University for review and approval. We have already received approval for the program to be added to the University Masterplan.

Reflections on Trends and Program Statistics:

*Provide your reflections on the trends discussed above and statistics and supplemental information presented in this report.*

*We anticipate that by starting a Civil Engineering Program the statistics for the School of Engineering will improve.*

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:

*No request is made for any tenure-track position for the CMGT Program at this time.*

Request for Other Resources