TO: The Academic Senate

FROM: Committee on Instruction and Curriculum (CIC)

SUBJECT: 15-16 CIC 77: Revision request for M.S. Construction Management

PURPOSE: Information to the Academic Senate

ACTION REQUESTED: That the Senate accept the information that the revision request for M.S. Construction Management program has been approved by CIC.

BACKGROUND INFORMATION:
The Senate process for approving transformed degree programs for the semester calendar is defined by 14-15 CIC 36. The Graduate Programs Subcommittee unanimously approved the M.S. Construction Management program at its meeting on May 26 with the acknowledgement that some non-substantive changes may occur in the Catalog copy. The program was approved by consent of CIC per the policy on June 6, 2016. The proposal may be viewed within Curriculog; per the request of ExCom, a PDF attachment with information from Curriculog is provided.
Construction Management, M.S.

1. Semester Conversion Request for Approval of Revision of the Graduate Degree Program/Major

General Catalog Information

Please see the Guidelines for Master's Program Conversion

Select Shared Core unless otherwise instructed by APGS

Select SHARED CORE

- [ ] Program
- [x] Shared Core

First Year of Offering: Fall 2018

Effective Catalog: 2018-2019

Notes: If you want to move an existing degree program to online (i.e. 50% or more of the program can be completed online (a hybris course counts as .50 online), elevate an option to a degree, or change the degree type, please e-mail Donna Wiley, Interim Associate Vice President, Academic Programs and Graduate Studies; and copy Sarah Aubert, Catalog and Curriculum Specialist, Academic Programs and Graduate Studies; for additional instructions as soon as possible.

Department: Department of Engineering

Full and exact title of Major including degree earned:

Construction Management, M.S.

Has your program received transformation funding? [ ] Yes [ ] No

If the program received transformation funding, please summarize the transformative changes made:

We re-examined and transformed the Construction Management Master’s program, in accordance to the outcomes and guidelines established by our accrediting organization, the American Council for Construction Education (ACCE).

Our transformation seeks to implement Collaborative Learning Activities (Valdes-Vasquez and Clevenger, 2015) and enhance the collaboration skills that are increasingly necessary to succeed in today’s rapidly evolving, complex, and
multi-disciplinary construction workforce. As these skills are being called upon more explicitly in the construction industry and other higher education settings, need exists for a deeper understanding of how construction education can provide graduates with collaborative skills. However, classroom activities incorporating collaborations skills—communication, conflict resolution, decision-making, or problem solving—tend to be underrepresented in many construction classes.

The transformations we implemented are:

- Recent construction technologies and methods such as Building Information Modeling, Stochastic Project Risk Simulation, Advanced Computer tools for Scheduling, Advanced Computer tools for Estimating will be incorporated into the curriculum.

- Develop a clear roadmap between course outcomes and activities in courses, and mapping program outcomes to institutional learning outcomes.

- Students will be trained to become proficient in the Leadership in Energy and Environmental Design (LEED) green building assessment method. They will be encouraged to take and pass the LEED Green Associate exam. By emphasizing sustainability, our students will understand the full combination of environmental, social and economic impacts that green construction can offer.

- Safety activities and OSHA certification will be fully implemented in the curriculum. Hands-on projects will be implemented. Through this transformation, students will understand and become advocates for ethical and social implications of their work in the field.

- Incorporate communication/soft skills throughout the curriculum by requiring technical report writing, presentations, negotiation, conflict resolution, and team building activities.

Overall, we transformed over 60% of our quarter-based curriculum.
Department Information

The School of Engineering offers undergraduate degrees in Industrial Engineering, Computer Engineering and Construction Management, and graduate degrees in Engineering Management and Construction Management. Certificates in Quality, Project Management, Construction Planning and Control and Construction Administration are also offered. The School serves a diverse regional and international student population, and utilizes modern tools and laboratories for active learning and student engagement while emphasizing collaborative learning.

Program Description

The School of Engineering is offering a Master's of Science degree in Construction Management. This degree is targeted for working professionals who are in leadership/management positions in the construction industry or planning to advance their careers to manage large construction projects.

The goals of the Masters of Science degree in Construction Management are to prepare effective managers for large public and private construction projects, to prepare the workforce required for the state’s transportation infrastructure improvements, and to enable current and future engineers and other professionals to assume leadership roles in the construction industry.

This program is different from other construction management programs as it is based on a well-balanced curriculum covering various aspects of the construction management profession. Special attention is given to working professionals with classes offered at times convenient for the students. Students will take required courses in legal and environmental issues in construction, advanced technology, project planning and control, cost estimating, financial and risk management issues. Also issues in construction safety and current trends in construction industry will be discussed. Students will also have a broad choice of electives from courses in construction management, engineering, business, or other graduate courses with department approval.

Career Opportunities

With the expected increase in large construction work, in part stemming from the increase in public spending on California’s transportation infrastructure improvement, there is considerable demand for individuals who can technically and scientifically manage large construction projects. Also, there are increasing opportunities from the local and regional high tech sector for expansion and new construction projects. The construction industry, as a whole, is one of the largest industries in the nation with a great need for skilled project managers. Sample jobs are construction manager, site manager and others.

Admission Requirements
The M.S. in Construction Management is open to individuals planning a career or advancing their career in the construction industry, and who have:

1. A baccalaureate degree from an accredited university with a minimum overall GPA of 2.5 (4.0 basis) in their undergraduate work,
2. Relevant work or academic experience, and
3. College Algebra and Trigonometry or equivalent level math courses.

In addition to the University Graduate and Post-baccalaureate Application, all applicants should submit to the department:

1. Personal statement explaining their reasons for wanting to pursue the M.S. in Construction Management degree,
2. A resume detailing their professional and academic achievements, and
3. Two letters of recommendation.

Admission to the University and admission to the M.S. in Construction Management degree program are separate steps.

For international students, check with CSUEB Center for International Education (CIE) for further requirements. In addition, proficiency in English language is required for all students to whom English is not their native language.

Student Standing and Progress Toward the Degree

There are three categories of student status which reflect student progress toward the degree: “Conditionally Classified Graduate” student, “Classified Graduate” student, and “Advancement to Candidacy” student.

1. Students achieve “Conditionally Classified Graduate” status when they have been admitted to the M.S. in Construction Management degree program, but have not yet completed the prerequisites for “Classified Graduate” status in the M.S. in Construction Management.
2. Students achieve “Classified Graduate” status when they have satisfied the University Writing Skills Requirement and completed all program prerequisites. For information on meeting the University Writing Skills Requirement, see the Testing Office website at www.csueastbay.edu/testing or call (510) 885-3661.
3. Students are advanced to Candidacy when they have completed the required courses with a 3.0 or better GPA.

Note: Students who fail to maintain progress by falling below a 3.0 GPA in their graduate courses for two or more consecutive quarters will be academically
disqualified from the university.

Program Learning Outcomes

1. Apply critical thinking and creativity to Construction Management problems
2. Evaluate problems and develop effective problem solving and decision making
3. Effectively communicate orally and in writing
4. Apply information and communication technology
5. Understand the principles of leadership in business and management
6. Analyze current issues in construction
7. Evaluate projects and implement complex project decision making and associated risk management
8. Apply professional ethics including application to situations and choices
9. Evaluate advanced construction management practices
10. Apply Research Methods to solve complex construction problems

Degree Requirements

The M.S. degree program in Construction Management requires completion of 36 semester units distributed among required courses, elective courses, and the project or comprehensive exam. Of these units, at least 27 units must be completed in residence (transfer units are limited to 9 semester units); at least 30 units must be in courses in the 600 series. No course numbered 100 to 299 (or equivalent if taken elsewhere) may be used as part of the 36-unit graduate degree program.

No more than 3 units of Independent Study (CMGT 690) may be counted toward the 36 units required for the degree. Project credit may not exceed 3 units.

A grade point average of 3.0 must be maintained in all 36-semester units taken to satisfy the degree requirements. All graduate degree requirements must be completed within five (5) years.

Please read before completing Major Requirements Section

Instructions:

1. Start with the View Curriculum Courses icon directly beneath the Major Requirements field. Select the Add Courses button to enter each individual course that will be used in your Major Program. (Optional: Include the Course Units in the
Course Title (name) field for ease of review by campus committees.

2. Next select the View Curriculum Schema icon (to the left of the Curriculum Courses icon). Select Add Core to build the headers and requirements for your catalog page (i.e. add headers for Prerequisites, Core Requirements, Electives, Capstone.) Please include total units in core headers.

3. (If you have a concentration(s), add a core titled Concentrations and list only the total concentration units. You do not need to list each individual concentration.)

4. Preview your catalog chapter by selecting the Preview Curriculum icon.

<table>
<thead>
<tr>
<th>Major Requirements*</th>
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### Core Courses (27 Units)

- CMGT 610 BIM and Advanced Technologies
- CMGT 620 Legal Issues in Construction Management
- CMGT 630 Environmental Issues and Sustainable Construction
- CMGT 650 Construction Project Management, Planning, and Scheduling
- CMGT 660 Cost Accounting, Control and Reporting in Construction
- CMGT 680 Construction Safety and Health
- CMGT 685 Current Issues in Construction Management
- CMGT 670 Construction Enterprise and Risk Management
- CMGT 640 Cost Estimating for Construction Management

### Electives (6 units)

Students completing the capstone must take 6 elective units. Those who elect to take the comprehensive exam need to take an additional third elective (a total of 9 elective units) with the comprehensive exam to satisfy the graduation requirement.

Electives can be chosen from other graduate programs with departmental approval.

- CMGT 697 Issues in Construction Management
- CMGT 690 Independent Study
- CMGT 675 Temporary Structures in Construction

### Capstone (3 units)

To complete a capstone project, students enroll in CMGT 689 or CMGT
690 (3 units). The Applied Research Project, CMGT 689, is a capstone course based on the coursework completed for the degree and is accompanied by a written document. CMGT 689 is an individual research project where a faculty member from the department supervises the student’s work. One bound copy of the written component of the project is required by the department.

Grades of “RP” (Report in Progress) may be given for CMGT 688 or CMGT 689 if the project is not completed at the end of the quarter. The “RP” grade must be removed within one year or it will become an “F.”

Students who elect to take the comprehensive exam cannot take CMGT 688 or CMGT 689, but have to complete an additional 3 unit elective.

CMGT 688 Applied Research in Construction Management
CMGT 689 Project (3) or Comprehensive Exam + extra 3 unit elective at graduate level subjected to departmental approval

To revise an existing concentration (formerly option) or create a new concentration, select form 1a. Semester Conversion Request for Approval of New or Revised Graduate Concentration.

**Total Units Required**

<table>
<thead>
<tr>
<th>Quarter Based Program:</th>
<th>Semester Based Program:</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>36</td>
</tr>
</tbody>
</table>

**Any additional major information**

- **Is this major approved as an online degree program?**
  - Yes
  - No

- **If no, is there any pathway in the revised degree**
  - Yes
  - No
<table>
<thead>
<tr>
<th>that is more than 50% online?</th>
<th>N/A</th>
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<tbody>
<tr>
<td>Resource implications of the proposed revision, if any:</td>
<td>N/A</td>
</tr>
<tr>
<td>Relationship of Revised Program to requirements for teaching credentials, accreditation, and/or licensing, if any:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Consultation with other affected departments and programs:**

- **The following department(s) has (have) been consulted and raised no objections:**
  All affected academic departments and programs at CSUEB were consulted and there were no objections.

- **The following department(s) has (have) been consulted and raised concerns:**
Attachments

Please scroll to the top of this form and select the *Files* icon to attach the following documents to your proposal:

- Master's Degree Roadmap
- Curriculum Map 1 - PLOs to Courses
- Curriculum Map 2 - PLOs to ILOs
- Five Year Assessment Plan

Did you attach your Curriculum Maps, Five Year Assessment Plan or other supporting documents to this proposal?*

- [ ] Yes
- [ ] No

Catalog Item Types

<table>
<thead>
<tr>
<th>Degree Type*</th>
<th>Master of Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Type*</td>
<td>Master</td>
</tr>
</tbody>
</table>
Attachments for Construction Management, M.S.

- Construction Management MS - mast-degree-roadmap.xlsx (uploaded by Sandi Jones, 2/3/2016 1:15 pm)
- Construction Management MS curr-map-1 Course to PLO 010615.docx (uploaded by Sandi Jones, 2/3/2016 1:15 pm)
- Construction Mgmt MS curr-map-2.docx (uploaded by Sandi Jones, 2/3/2016 1:16 pm)
- Construction Management - five-year-plan with updated PLOs 01062015.docx (uploaded by Sandi Jones, 2/4/2016 9:40 am)