

# **Quality Improvement Plan**

Construction Management Program  
Del E. Webb School of Construction  
School of Sustainable Development and the Built Environment  
Ira A. Fulton Schools of Engineering  
Arizona State University  
Fall 2017, Minor Revisions Fall 2018

## **1.0 Program Vision**

The Del E. Webb School of Construction improves the quality of life through the global built environment.

## **2.0 Program Mission Statement**

The CM degree program mission is to take a construction industry leadership role in education and research by preparing students, enabling faculty, and facilitating industry to advance the collaborative construction process and achieve sustainability in the built environment.

## **3.0 Strategic Plan**

The purpose of this strategic plan is to outline the systematic and sustained efforts needed to enable the degree program to fulfil its mission.

### **3.1 Goals to Achieve Program Mission**

The following goals are intended to guide the direction of the Del E. Webb School of Construction (DEWSC) in meeting its mission. DEWSC will aim to:

- A. Recruit and retain outstanding faculty and faculty associates to provide the curriculum required to provide a curriculum that is solid in both theoretical and practical knowledge.
- B. Improve the capstone course by involving members of industry, integrating actual projects, and working across the other disciplines within the School of Sustainable Engineering and the Built Environment (SSEBE).
- C. Continue industry review of the curriculum and course content through the Industry Advisory Council.
- D. Encourage students to participate in construction related competitions to expand their experiential learning.
- E. Grow the membership of student organizations to include over 90 percent of DEWSC students.
- F. Increase the student pass rate of the American Institute of Constructor's exam to the national average.
- G. Increase the number of students taking a national credential exam, such as the LEED GA exam, to expand and measure professional readiness in the area of

- sustainable construction.
- H. Continue to place 100% of students within 9 months of graduation.
  - I. Expand the Eminent Scholar program to increase exposure of the faculty, students, and industry to unique ideas and encourage a diverse pursuit of knowledge.
  - J. Bridge the gap between faculty scholarly work and its application in the industry environment through joint proposals and industry sponsored projects.
  - K. Sponsor lectures by outstanding industry leaders for students.
  - L. Expand undergraduate and graduate enrollment by 25% by 2022. Such growth would necessitate the addition of at least two additional faculty members.
  - M. Enhance the effectiveness of faculty by encouraging and supporting professional development in technical areas as well as teaching.
  - N. Earn national awards of excellence for the program and program faculty.

### **3.2 Review of Resources and External Factors**

The status of the degree program shall be reviewed annually by the faculty during the first DEWSC faculty meeting of each academic year. Available resources and support, as well as external factors affecting the program shall be considered.

The status of the degree program shall be reviewed annually by of the Industrial Advisory Council. Available resources and support, as well as external factors affecting the program shall be considered.

### **3.3 Updating of the Strategic Plan**

The strategic plan shall be reviewed and updated every five years. Input from faculty, industrial advisory board, and the students through student groups will be considered during the review and updating of the strategic plan.

## **4.0 Program Assessment Plan**

The intent of the assessment plan is to create the framework to provide evidence of the program's effectiveness in preparing student practitioners.

### **4.1 Program Mission Statement**

As stated in Section 2.0, the mission statement is:

The CM degree program mission is to take a construction industry leadership role in education and research by preparing students, enabling faculty, and facilitating industry to advance the collaborative construction process and achieve sustainability in the built environment.

## **4.2 Degree Program Objectives**

In order to meet its mission and goals as outlined in the strategic plan, the construction management program will produce graduates that shall be able to:

1. *Create written communications appropriate to the construction discipline.*
2. *Create oral presentations appropriate to the construction discipline.*
3. *Create a construction project safety plan.*
4. *Create construction project cost estimates.*
5. *Create construction project schedules.*
6. *Analyze professional decisions based on ethical principles.*
7. *Analyze construction documents for planning and management of construction processes.*
8. *Analyze methods, materials, and equipment used to construct projects.*
9. *Apply construction management skills as a member of a multidisciplinary team.*
10. *Apply electronic-based technology to manage the construction process.*
11. *Apply basic surveying techniques for construction layout and control.*
12. *Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.*
13. *Understand construction risk management.*
14. *Understand construction accounting and cost control.*
15. *Understand construction quality assurance and control.*
16. *Understand construction project control processes.*
17. *Understand the legal implications of contract, common, and regulatory law to manage a construction project.*
18. *Understand the basic principles of sustainable construction.*
19. *Understand the basic principles of structural behavior.*
20. *Understand the basic principles of mechanical, electrical and piping systems.*

Since these are the same as the Student Learning Outcomes that are assessed, the assessment of the SLOs functions as the assessment of the Program Objectives.

## **4.3 Program Learning Outcomes**

The program learning outcomes are the same as the American Council for Construction Education (ACCE) Student Learning Outcomes.

Upon graduation from the DEWSC construction management program, a graduate shall be able to:

1. *Create written communications appropriate to the construction discipline.*
2. *Create oral presentations appropriate to the construction discipline.*

- 3. Create a construction project safety plan.*
- 4. Create construction project cost estimates.*
- 5. Create construction project schedules.*
- 6. Analyze professional decisions based on ethical principles.*
- 7. Analyze construction documents for planning and management of construction processes.*
- 8. Analyze methods, materials, and equipment used to construct projects.*
- 9. Apply construction management skills as a member of a multidisciplinary team.*
- 10. Apply electronic-based technology to manage the construction process.*
- 11. Apply basic surveying techniques for construction layout and control.*
- 12. Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.*
- 13. Understand construction risk management.*
- 14. Understand construction accounting and cost control.*
- 15. Understand construction quality assurance and control.*
- 16. Understand construction project control processes.*
- 17. Understand the legal implications of contract, common, and regulatory law to manage a construction project.*
- 18. Understand the basic principles of sustainable construction.*
- 19. Understand the basic principles of structural behavior.*
- 20. Understand the basic principles of mechanical, electrical and piping systems.*

#### **4.4 Assessment Tools**

Each SLO from section 4.3 will be evaluated with at least one direct and one indirect assessment tool. It is anticipated that after a few cycles of assessing and evaluating, these assessment tools will remain the same from year to year.

The direct assessment tool will be a whole or part of an assignment or examination that is part of a course grade. If a group project is used, group member involvement will be assessed.

The indirect measure will be a student exit survey, given to graduating seniors. Each SLO will be measured on a 1 – 7 scale.

#### **4.5 Performance Criteria**

The minimum performance criteria for each direct assessment shall be 70% of the students attaining a 70%.

The minimum performance criteria for each indirect assessment shall be a 5.0 on a 1 to 7 scale.

#### **4.6 Evaluation Methodology**

Individual faculty will collect the data for the direct assessment measures they are assigned. In May of each academic year, they will provide this data (from both semesters) to the Program Chair.

The Program Chair will analyze the direct assessment data. The Program Chair will also collect and analyze the indirect senior exit surveys. The compiled direct and indirect assessment analysis will be sent to the faculty.

Each faculty member assigned to a direct assessment measure will recommend an action to improve student performance, or if the performance criteria is met, the faculty member will recommend ways to ensure continued compliance. These recommendations will be compiled by the Program Chair, and approved at the first Fall semester faculty meeting and Fall Industry Advisory Council meeting.

#### **4.7 Review of the Assessment Plan**

The assessment plan shall be reviewed annually by the faculty during the first Fall semester faculty meeting. Appropriateness of the objectives, outcomes, assessment tools, performance criteria, and evaluation methodology shall all be examined by the faculty.

#### **4.8 Updating of the Assessment Plan**

The assessment plan shall be reviewed and updated every five years. Input from faculty, industrial advisory board, and the students through student groups will be considered during the review and updating of the assessment plan, especially regarding the formulation of the Student Learning Outcomes (SLOs).

### **5.0 Program Assessment Implementation Plan**

This assessment implementation plan is intended to ensure that the program is making progress on achieving its mission, objectives, and learning outcomes.

#### **5.1 Assessment Cycle**

Direct and indirect assessment tools will be administered each year for each SLO. The data will be collected for each SLO by the assigned faculty member. All SLO assessments will be discussed at the first Fall faculty meeting of each academic year.

## **5.2 Analysis of Data Collected**

The analysis of the SLO assessment data will be conducted by the Program Chair when compiling the data from each faculty member. Discussion and evaluation of the analysis will occur by the faculty at the first Fall faculty meeting of each academic year.

## **5.3 Changes Implemented**

Changes implemented by the DEWSC faculty will be recorded and kept by the Program Chair.

## **5.4 Documentation of Results, Analysis, and Changes Implemented**

Results of the assessment tools, analysis of the data, and changes implemented as a result of the assessment evaluation will be compiled by the Program Chair, and placed on the DEWSC website as part of the ACCE Public Disclosures document. A summary of actions taken for poor performance will be kept for at least 5 years.

## **5.5 Review of the Assessment Implementation Plan**

The assessment implementation plan and appropriateness of the process shall be reviewed annually by the faculty during the first Fall faculty meeting of each Academic year.

## **5.6 Updating of the Assessment Implementation Plan**

The assessment implementation plan shall be reviewed and updated every five years. Input from faculty, industrial advisory board, and the students through student groups will be considered during the review and updating of the assessment plan, especially regarding the appropriateness of the direct assessment tools being used.