



ARIZONA STATE UNIVERSITY

[Arizona State University](#)  
[Ira A. Fulton Schools of Engineering](#)  
[School of Sustainable Engineering and the Built Environment](#)  
[Del E. Webb School of Construction Programs](#)

Annual Progress Report  
Assessment of Student Learning for the Undergraduate Construction Management Program

Academic Year – 2013/14

Published September 12, 2014

The Construction Management program is accredited by the [American Council for Construction Education](#) (ACCE). This report fulfills the ACCE information requirement, Document 103, Section VIII – Relations with the General Public.

## **I. Institution Mission**

Arizona State University has developed a new model for the American research university, creating an institution that is committed to excellence, access and impact. Information the New American University initiative is available at <http://newamericanuniversity.asu.edu/>.

## **II. Program Academic Quality Plan**

The DEWSC recognizes the importance of a strong and continuous assessment of its academic quality and outcomes to realize its vision and mission. To accomplish this goal, the protocols and instruments presented here are managed and interpreted by the Assessment Committee. Reports resulting from this assessment are provided to the Program Chair and to the School's faculty. The Assessment Committee reports are publicly available and serve as the basis for assessing the DEWSC's quality and outcomes.

### **A. Program Mission - Educational Objective**

The School's Vision and Mission are critical for this assessment plan, since they convey the primary direction chosen by the faculty.

**Vision:** The DEWSC improves the quality of life through the global built environment.

**Mission:** Fulfill our leadership role by delivering excellence in construction education and research. Prepare our students, and enable our faculty and the construction industry, to advance the collaborative construction process and achieve sustainability in the built environment, thereby resulting in construction excellence.

### **B. Undergraduate Program Goals and Objectives**

#### **1. Excellence in Education**

##### **Objectives:**

- a. Provide students a solid theoretical education with equally solid practical knowledge and application to meet industry needs for now and the future.
- b. Promote critical thinking abilities and effective communication skills
- c. Prepare and inspire students to collaborate across educational and industry boundaries and lead in the execution of sustainable construction.

#### **2. Excellence in Research**

##### **Objectives:**

- a. Design and conduct impactful research which takes full advantage of existing and developing technologies, to meet current industry challenges and anticipate future needs.
- b. Discover and provide the knowledge required for social, political and regulatory advancements in the global built environment.
- c. Develop and implement the standards for collaborative processes in construction research education and practice.

#### **3. Excellence in Industry Collaboration**

##### **Objectives:**

- a. Collaborate with key stakeholders to align priorities for construction education and research.

- b. Partner with industry to promote construction as a professionally rewarding career choice for young women and men.
- c. Continuously enhance the mutual benefits and commitment of industry to the success of the DEWSC.

### **C. Program Outcomes and Assessment Process**

The process utilizes a variety of sources and multiple methods of obtaining data. This data is indicative of our performance and the achievement of our educational objectives and desired program outcomes. Sources and methods include the following:

#### **1. Student Course Effectiveness Evaluations**

Student course evaluations are web based evaluations administered by the Dean's Office for every course offered in the Ira A. Fulton Schools of Engineering. Students receive email reminders once the evaluations are launched. Students provide the majority of the feedback to questions on a Likert scale. There are several questions regarding the class and instructor that are narrative in form. Students have autonomy to answer as much as they like and submit. The faculty receives feedback from the course evaluations via a web interface two to three weeks after the courses have ended. Administrators, such as the Programs Chair, have access to all evaluations and have access to aggregated reports of all courses and instructors.

#### **2. Internship Evaluations**

One half of the student grade for the Field and Management internships is the evaluation from the internship sponsor. This questionnaire includes questions with a Likert scale for response. There is an option for narrative feedback at the bottom of the questionnaire.

#### **3. Graduating Student Report Card (GSRC)**

The GSRC is designed by the University Office of Evaluation and Educational Effectiveness (UOEEE) and administered by the Graduation Office. Every student that applies for graduation must first complete the lengthy questionnaire that covers questions about the institution down to the department level.

#### **4. Graduating Senior Exit Interview – Program Chair**

Every student that applies for graduation is asked to meet with the Programs Chair, either as a small group or individually, to discuss all aspects of the program. The Programs Chair takes notes and looks for emerging themes among the participant's comments and creates a report that is disseminated among the faculty and staff.

#### **5. Associate Construction Exam**

The Associate Constructor Exam is offered through the American Institute of Constructors is a comprehensive exam that tests the applicant's skill level on a full suite of construction management skill sets. This test is integrated into the PM II class with a course fee.

#### **6. DEWSC Graduating Senior Exit Questionnaire**

The Exit Questionnaire is designed by the DEWSC and is administered by the Programs Chair as part of the exit interview process. The Exit Questionnaire does not duplicate the GSRC, rather it collects data specific to the student experience in the DEWSC. The questionnaire has various inputs and concludes with two narrative

questions. Students have the option of making their response anonymous.

**7. Alumni Surveys**

The GSRC is designed and administered by the University Office of Evaluation and Educational Effectiveness (UOEEE). Alumni receive a survey 3 years after graduation.

**8. Construction Industry Advisory Council**

The IAC is an integral part of the evaluation process. Industry curriculum feedback has most recently taken the form of brainstorming meetings focused on the recruitment and marketing of the program. A curriculum committee has been instituted to examine the core course content and suggest improvement. Results will be developed into a summary and submitted to the Programs Chair.

**9. ACCE Accreditation Review**

A national peer review is made every six years by the ACCE which established national standards for construction education programs.

The surveys, data and summaries of the assessment instruments are available upon request.

The Programs Chair is the primary evaluator and is ultimately responsible for meeting the outcomes for the undergraduate program. Many of the assessments and outcomes are delegated to the program curriculum committee, which is comprised of five faculty members. The Programs Chair, in conjunction with the faculty and the Industry Advisory Council, establishes the educational objectives and program outcomes. The program unit, in coordination with other offices on campus, develops the instruments, review and the reports for course and programmatic improvements. All reports are submitted to the Programs Chair for final revision.

**D. Assessment results and implementation plan.**

**1. Summary of the 2013-14 Annual Assessment Report**

Overall the assessments indicates through data collected that students are pleased with the education provided and employers continue to support the construction management program through financial support and hiring of graduates.

- a. Student evaluations remain strong for core construction courses. Two construction concentration courses received low marks and were addressed by the Programs Chair.
- b. Student internship evaluations remain strong and consistent with previous summer performance metrics. Areas of weakness in evaluations consistently are in the areas of verbal and written communication. The DEWSC Curriculum Committee is examining avenues for intervention in the lower division courses to provide more opportunities for students to practice their oral and written communications.
- c. For those students that take the Associate Construction Exam, the pass rate is above the national average. We are continuing to strongly encourage our students to take the exam so they will have a check on their grasp of their construction knowledge.
- d. Student graduation satisfaction with the program remains very high.

- e. Alumni survey results expressed concerns about technical training though the response rate was not high enough to be statistically significant. The Programs Chair is working with OUEE to improve the response rate among construction alumni.
- f. The Del E. Webb School of Construction submitted their self-study and hosted a site review for ACCE. At the time of this report a formal renewal announcement was not available.

### III. Outcomes Results

Note: Undergraduate program related outcomes are identified in the Program Academic Quality Plan, which is in section III of this document.

- 1. Measures used for Outcomes:
  - a. Student Course Effectiveness Evaluations – Direct Measure
  - b. Internship Evaluations – Direct Measure
  - c. Graduating Student Report Card (GSRC) – Indirect Measure
  - d. Graduating Senior Exit Interview – Programs Chair – Indirect Measure
  - e. Associate Construction Exam – Direct Measure
  - f. DEWSC Graduating Senior Exit Questionnaire – Indirect Measure
  - g. Alumni Surveys – Direct Measure
  - h. Construction Industry Advisory Council – Indirect Measure
  - i. ACCE Accreditation Review – Direct Measure

#### A. Student Course Effectiveness Evaluations

Semester	Avg All Levels	Avg 100 Level	Avg 200 Level	Avg 300 Level	Avg 400 Level
Fall 2013	4.18	4.28	4.3	4.25	3.88
Spring 2014	4.25	4.39	4.18	4.12	4.3

#### B. Summer 2013 Internship Sponsor Evaluation Results:

Q1 – Q15 are student performance metrics on a scale of 1 to 6, where 1 is unacceptable and 6 is outstanding. SG is the suggested grade on a scale of 1 to 4 where 4 is an A grade. A copy of the student internship evaluation form is available upon request.

Question	AVG CON 296	AVG CON 484	AVG TOTAL
Q1	5.54	5.76	5.65
Q2	5.47	5.56	5.51
Q3	5.34	5.40	5.37
Q4	5.63	5.65	5.64
Q5	5.44	5.40	5.42

Q6	5.22	5.38	5.30
Q7	5.17	5.26	5.22
Q8	5.21	5.19	5.20
Q9	5.3	5.47	5.39
Q10	5.3	5.37	5.24
Q11	5.14	5.19	5.16
Q12	5.28	5.29	5.29
Q13	5.47	5.57	5.52
Q14	5.43	5.67	5.55
Q15	5.48	5.59	5.54
SG	3.94	4.03	3.98

Most common narrative comments from sponsors:

1. Student needs to learn how to manage time more efficiently and prioritize duties
2. Student needs to be more assertive.
3. Slow down and work on quality not quantity.
4. Excellent work, just needs more experience.

**C. Graduate Student Report Card (GSRC)**

The full results of the 2012-2013 AY GSRC is too large for this report. A copy of the full reports is available upon request.

**GRSC 2010-2013 Student Program Satisfaction**

<b>Overall academic experience in your major</b>		
	2010-2013	2012-2013
Very Satisfied	33%	34%
Satisfied	60%	59%
Dissatisfied	6%	6%
Very Dissatisfied	1%	0%

Overall student satisfaction remains strong for the program and advising.

**D. Graduating Senior Exit Interview**

**Briefly describe your experience at ASU. Do you feel that your experience here and education were worthwhile?**

In general the experience that our students have is overwhelmingly positive. They enjoyed the relationships with faculty, faculty associates, and advising staff and were glad to have been a part of the DEWSC program at ASU. The opportunity to interact with industry and to have industry present in classes was particularly positive. Internships and the Associated Schools of Construction Student Competition continue to receive positive comments. A couple of issues

continue to be mentioned—specifically the seemingly repetitive lectures content in some classes, such as project delivery, and some of the same guest lectures in a couple of classes.

**What changes would you make to improve the DEWSC for next year?**

Several themes emerged in the discussion as summarized below. Many of these issues have and are being addressed.

- Development of a capstone course
- Evening hours for Teaching Assistants.
- Need to restructure the soils class
- More focus on Blueprint reading
- More hands on work in class and less lecture
- Add P6 to the scheduling class
- Add more construction administration (RFI's, change orders, permitting)

**E. DEWSC Graduating Senior Exit Questionnaire**

The following tables are key summaries of the DEWSC Graduating Senior Exit Questionnaire for the 2013-14 academic year.

**Respondents Job Placement or Advanced Degrees**

Semester	Percent Placed	N
Fall 2013	88%	6
Spring 2014	100%	12

**Finding a Job – Total Students**

	Percent	N
Easy	57%	4
Somewhat Difficult		
Moderately Difficult	14%	1
Difficult	29%	2
Extremely Difficult		

**Starting Salary**

	Percent	N
No Offer Yet	7%	1
Less than \$30K	7%	1
\$45K – \$49.9K		
\$50K – 54.9K	27%	4
\$55K – 59.9K	20%	3
\$60K – 64.9K	7%	1
Greater than \$65K	33%	5

**F. Alumni Survey**

Results from the three year alumni surveys are as lengthy as the graduating senior report card. Complete results are available upon request.

Overall experience		
	2009-10 (n=30)	2012-13 (n=5)
Excellent	31%	53%
Good	54%	37%
Poor	12%	5%
Very Poor	4%	5%

Overall approval of their experience with the DEWSC and ASU remains consistent with the GSRC results.

**G. Construction Industry Advisory Council**

The IAC serves as an indirect measure of our progress by providing feedback on curriculum changes and direction of the program. Recent discussions with the IAC and its Executive Board included business additions to the curriculum and more emphasis on recruiting to increase the student population. Two ad hoc committees are now working on reviewing and the core construction by the end of 2014. The recruiting committee has been working diligently to hire a recruiter to assist with the program growth.

**H. American Institute of Constructors – CQE Level 1 Exam**

Student performance for the level 1 exam is unclear. Participation remains low due to the exam not being integrated into a course outcome nor required for graduation. The number of student graduates

**I. ACCE Accreditation Review**

The Del E. Webb School of Construction is preparing for an ACCE accreditation submission in fall 2014 and will have a site visit in spring of 2015. Evaluation metrics will be posted in the 2015 Annual Progress Report.

**J. Implementation and Modifications**

With the new curriculum instituted to meet ACCE accreditation requirements, an additional two (2) business courses were added to make a total of 18 hours of business courses that will be taught by the W. P Carey School of Business.

The program revised the math requirement still meeting ACCE requirements by changing from a calculus based math course to pre-calculus as the DEWSC is management oriented and less engineering. The addition of the business class necessitated reducing the hours for the strengths of materials and statics classes, concentrating on the basic concepts to prepare them for the structures class.



To make the mechanical construction class more hands on as we have moved into our new facility, the class is going to a lecture/lab format with a new instructor that has a great deal of industrial experience.

As the construction industry moves to a more virtual environment with the addition of BIM, we have expanded our instruction in this area by introducing BIM in the Working Drawing class as well as revising the format of the PM 1 class to be mostly BIM focus, both software and process.

With the cessation of the Concrete Industry Management program within DEWSC, we did not want to lose the concrete content. A laboratory course in Concrete Material was submitted to the university as a science lab course and was approved for implementation in Fall 2015. This will allow our students to take their 2<sup>nd</sup> science lab course in the School and obtain a background in concrete materials.

#### IV. Student Achievement

##### A. Student Employment Numbers from 2010 – 2013

The following data was submitted through the ASU Graduating Senior Report Card, which is filled out when students apply for graduation. We noted the disparity between what was reported through the ASU Survey and the DEWSC Graduating Questionnaire.

Type of Employer	Graduates
Construction or construction management firm	74
Material or equipment supplier	0
Owner (utility, R.R., etc.)	4
Design or development	1
Other	1
Continuing education	26
Non-construction employment	1
Seeking employment	5
No information	5
<b>Total</b>	<b>112</b>

##### 1. Gross annual salary range reported through the GSRC from 2010 – 2013

Salary Range	Overall (n=53)
\$100,000 or more	2%

\$80,000 - \$99,999	2%
\$60,000 - \$79,999	32%
\$45,000 - \$59,999	49%
\$35,000 - \$44,999	9%
\$25,000 - \$34,999	2%
\$15,000 - \$24,999	4%
\$0 - \$14,999	0%

**B. Student Awards**

1. None

**C. Student Scholarships distributed during the 2013-2014 Academic Year**

Scholarship Name	Awards	Award Amount
Achen-Gardner Mike Kolling Scholarship	1	\$1,500
Advancing Women in Construction	12	\$12,000
AGC Student Chapter	3	\$7,900
Ames Family Scholarship	4	\$13,484
Andrew Hanneman	2	\$5,212
Arlo Richardson Scholarship	2	\$5,366
ASPE/David Clifton Memorial	1	\$2,725
Bechtel Corporation	2	\$8,000
Ben C Griggs Memorial	1	\$3,218
C & N Obannon-construction	1	\$486
Carl And Jean Wolcott	1	\$426
Del E. Webb Construction Scholarship	6	\$19,472
CFMA / Joseph J Quigley	1	\$3,779
Daniel Mardian Sr.	1	\$3,060
Del E. Webb Finance	2	\$4,916
Del E. Webb Foundation Women	1	\$3,764
Del E. Webb Foundation	2	\$3,614
Del E. Webb Memorial	2	\$6,450
DeTommaso Scholarship	2	\$4,068
D.L.Withers Scholarship	1	\$2,370
Dr. Sandra L. Weber Memorial	2	\$1,194
FNF Construction Award	1	\$1,202
Frank Chandler Memorial	2	\$2,258
James Fann Memorial	1	\$2,134
Jan Bennett Scholarship	2	\$2,494
Jason Mc Elroy Memorial	1	\$2,233

Jerry King Memorial	1	\$841
Jim Bebout Memorial	1	\$1,001
John G Colton Construction	1	\$3,854
Kitchell Contractors	1	\$4,340
CIIC Scholarship	9	\$17,000
Opus West Scholarship	1	\$2,553
Penta Building Group	3	\$15,000
Pulte Home Corporation	1	\$2,228
R. Glen Schoeffler Memorial	1	\$903
Robert H Johnson Scholarship	4	\$11,753
Robert J Wheeler	3	\$7,864
Ron Pratte Memorial	1	\$1,047
SMECA Scholarship	1	\$5,000
Southwest Patrons	2	\$4,000
Terry Bourland Scholarship	1	\$1,298
The Beavers Scholarship	2	\$4,521
Vinnell Foundation	4	\$8,000
<b>Total</b>	<b>94</b>	<b>\$214,528</b>

**V. Program Admission Requirements 2013-14 Academic Year**

Admissions Website: [www.asu.edu/admissions](http://www.asu.edu/admissions)

Advancing to upper-division courses: the faculty have identified a set of critical requirements in the first four semesters of each program where performance in these critical requirements is a key component in progressing in the chosen major. These critical requirements include a set of courses and performance levels required in those courses and are outlined on the major maps.

Change of major: students interested in changing their major to one of the majors within the Ira A. Fulton Schools of Engineering must meet the Fulton School admission requirements for transfer students. Change of major is not guaranteed, and students interested in changing majors are encouraged to make an appointment with an advisor in the program of interest to discuss the probability of success and to develop a plan of action to ensure successful advancement to upper-division courses.

Change of Major: Students interested in changing their major to one of the majors within the Ira A. Fulton Schools of Engineering must meet the admission requirements for transfer students. Note that the GPA requirement for change of major is calculated using all coursework (ASU + transfer GPA).

a. First Time Freshman

Minimum 1140 SAT combined math and verbal or minimum 24 ACT combined score;  
or

3.00 minimum Arizona Board of Regents (ABOR) GPA; or class ranking in top 25 percent of high school class. No high school math or science competency deficiencies.

- b. Transfer students with less than 24 college credit hours

Satisfy the Freshman admission requirements. Minimum transfer GPA of 3.00 for less than 24 transfer hours.

- c. Transfer students with 24 or more college credit hours.

Transfer Students with 24 or more college credit hours must meet EITHER the Primary Criteria OR the Secondary Criteria (not both)

- i. Primary Criteria - Minimum transfer GPA of 3.00 for 24 or more transfer hours, and No high school math or science competency deficiencies (if Undergraduate Admissions requires submission of a high school transcript).
- ii. Secondary Criteria - Minimum transfer GPA of 2.75 for 24 or more transfer hours, and Minimum GPA of 2.75 in all critical courses for Terms 1 and 2 (see Major Map for critical courses). No high school math or science competency deficiencies (if Undergraduate Admissions requires submission of a high school transcript).