

**Annual Assessment and Public
Information Dissemination
Report for Construction
Management**

Academic Year (AY) 2016-2017



**Missouri State University
Construction Management
Public Information Dissemination
As Required for ACCE Standard Section VIII**

I. Program Goals and Objectives

The Department of Technology & Construction Management has developed a comprehensive plan to achieve the academic and non-academic goals as embodied in program outcomes, student learning outcomes, course learning objectives, and strategic plan goals and objectives. At a program level, a student, upon completion of this degree program, will be able to:

- PLO #1. Demonstrate the application of oral, written, and graphic communication skills to present data/information and support decision making. (*Technical Communication*)
- PLO #2. Demonstrate the effective utilization of discipline specific technical knowledge and skills. (*Technology*)
- PLO #3. Utilize critical thinking, math, statistics, and science skills for problem solving. (*Application of Math and Scientific Principles*)
- PLO #4. Demonstrate leadership, participation, and problem solving skills in a team environment. (*Teamwork*)
- PLO #5. Utilize applied management topics to manage, control, and improve corporate environments. (*Applied Management*)
- PLO #6. Demonstrate knowledge of safety, ethics, non-discrimination, and diversity in the workplace. (*Professional Responsibility*)

These program outcomes are embodied throughout the twenty student learning outcomes designated by ACCE and adopted by the program. These student learning outcomes are:

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

Lastly, the strategic plan for the Technology and Construction Management department operationalizes select strategies and action plans to assure the program learning outcomes and student learning outcomes are met. The goals that summarize this strategic plan are:

- TCM Goal 1: Achieve academic excellence in departmental programs
- TCM Goal 2: Attract and retain quantity and quality of students
- TCM Goal 3: Strengthen community and industry engagement
- TCM Goal 4: Enhance the research environment of the Department
- TCM Goal 5: Support and promote faculty development

II. Program admission requirements

Students may declare the construction management major any time prior to completing 75 credit hours. After declaring construction management as their major and upon obtaining a passing grade in either MTH 261 or MTH 287, students are admitted into the degree program upon completion of the application to a degree program form.

III. Program Assessment Measures

The construction management program collects and analyzes data from ten assessment measures as outlined below. These measures, their frequency, and their relationship to the department goals and program outcomes are also indicated below.

Instrument Number	Instrument	Direct Indirect	Program Level Course Level SLO Level	Where\when Implemented	Frequency	Feedback	Implementation of Changes	Goals (Strategic Plan) and Program Outcomes
1	Senior Exit Examination	D	C,S	Completed in capstone course by all students	Fall and Spring	Summary and objective specific feedback supplied to all faculty	Faculty adjust courses and evaluate questions under direction of assessment committee	Goal 1 Program Outcomes 2,3,6
2	Capstone Course	D	P	Presentation and paper completed by all students in senior capstone course	Fall and Spring	Results are summarized by course faculty and discussed at end of semester meeting	Weaknesses are identified by grading matrix and a strategy is discussed at fall faculty retreat to correct deficiencies	Goal 1 Program Outcomes 1-6
3	Course Folders	D	C, S	All course folders are to be current at end of academic year, placed in departmental office, with Instructor Course Evaluations completed	Spring	Folders are reviewed by department head and department assessment committee with feedback provided to faculty	Department head and curriculum committee formally request course changes and monitor for corrections	Goal 1

4	Advisory Board Course Review	D	C, S	All courses folders are evaluated by advisory board curriculum subcommittee. In 2015 four courses were evaluated.	5-Year Rotation, 4 SLOs per year	Advisory council provides feedback using feedback form	Department head reviews suggestions individually with impacted faculty and corrective strategy is formulated	Goal 1
5	Strategic Plan Progress Review	D	P	Week before Fall classes at departmental planning meeting	Fall Faculty Planning Session	Department as a whole reviews progress toward goals.	Department head monitors and adjusts plan as needed in consultation with faculty	Goals 1-5
6	Course Evaluations	I	C	Completed by all students in every course	Fall and Spring	Compiled by university. Feedback provided to individual faculty and department head	Faculty discuss changes to address concerns with department head and monitor for improvements	Goal 1
7	Senior Exit Surveys	I	P, S	Completed prior to exit interview by all graduating seniors	Fall and Spring	Department Head compiles results which are discussed with faculty	Department Head discusses feedback with faculty to determine if a problem exists and corrective strategy is formulated	Goal 1
8	Senior Exit Interview	I	P, C	Completed by all graduating seniors, conducted by department head	Fall and Spring	Department Head summarized feedback which is discussed in general with all faculty and when needed with specific faculty	Department Head discusses feedback with faculty to determine if a problem exists and a corrective strategy is formulated and monitored.	Goal 1
9	Alumni Surveys	I	P, S	Completed by all alumni from prior five years	Every Four Years	Department Head compiles results which are discussed at fall planning session	Department Head discusses feedback with faculty to determine if a problem exists and corrective strategy is formulated and monitored.	Goal 1
10	Employer Survey	I	P, S	Completed by employers hiring graduates from prior five years	Every Four years	Department Head compiles results which are discussed at fall planning session	Department Head discusses feedback with faculty to determine if a problem exists and corrective strategy is formulated /monitored.	Goal 1

IV. Information Obtained from Assessment Measures

A. *Senior Exit Exams*

The senior exit exam is administered as the final exam in the required capstone course – TCM 499, Senior Project. The instrument provides a measures of student learning outcomes at the analyze, apply and understand level. It is a compilation of all the standardized examination questions administered at the course level and provides feedback to the faculty on student performance. While these measures do not form the basis of whether corrective action is required at the course level, they do provide an invaluable longitudinal look at student progress and knowledge retention. For fall 2016, the mean score on the senior exit exam was 56.2% and for spring 2017, the mean score was 56.9%.

B. *Capstone Course*

Spring 2017

For the spring semester, the project was small wood framed classroom expansion on five separate elementary school grounds. Estimates, schedule and approach to construction activities were strengths of the semester.

Construction operation weaknesses were associated with site staffing, site logistics and construction noise impacts to school operations. Similar to fall 2016.

The general conditions portion of the estimate, bond and insurance rates continues to be weak. Additionally, meeting the contract requirements for site staffing was either missed or was over staffed.

As with previous semesters, PowerPoint slide development for presentations in large rooms continues to be an issue: text size being too small, graphs that are too cluttered and poor color selection for good text and background contrast.

Executive summary, site safety and estimate summary sections of the project reports have improved. Cost control and quality control sections continue to be weak or overly generic.

Fall 2016

The semester project was an elementary school expansion and remodel. The project was located in a small remote town in Washington. Considering the level of difficulty associated with working in an existing space, the estimates, schedules and general approaches to construction were strengths of the student groups.

The main weakness for construction operations were items that would be expected of students without experience in school remodel. Items that were generally not understood by the student groups, included coordination of access to the school environment, demolition of hazardous materials adjacent to school occupied space and construction noise impacts to school operations.

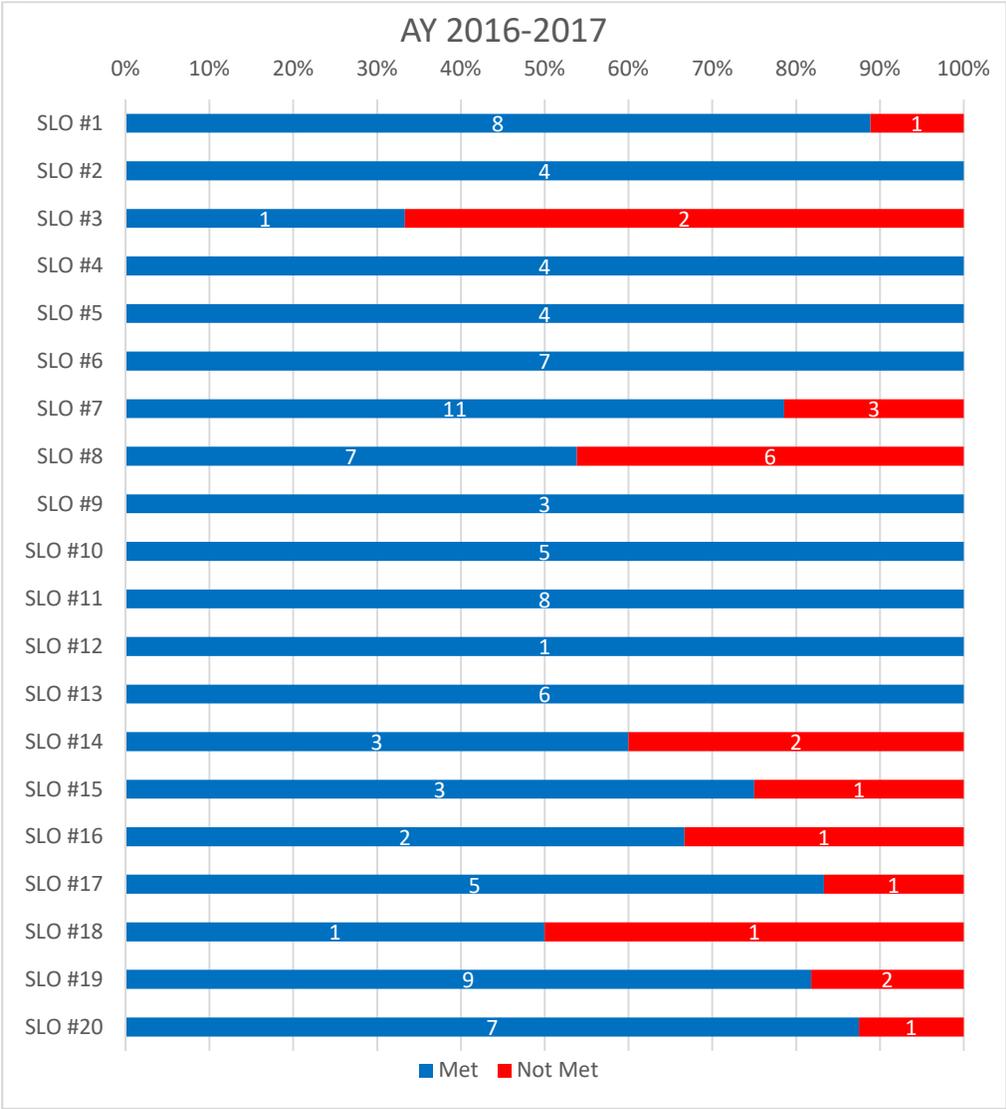
The understanding of the pay process was much better than in previous semesters; however, general conditions portion of the estimate continues to be weak. Additionally, bond rates and insurance cost were much higher than they should been.

As with previous semesters, PowerPoint slide development for presentations in large rooms continues to be an issue throughout the early part of the semester: text size being too small, graphs that are too cluttered and poor color selection for good text and background contrast.

Project reports have improved. Executive summary, site safety and estimate summary sections were solid. Cost control and quality control sections continue to be weak or overly general.

C. Course Folders

Course folders were collected and updated with syllabi, instructor course evaluation forms, and representative work samples for all major assignments/exams. As the majority of student learning outcomes have multiple direct measures, the chart below shows the number of direct measures that were above and below the target level of 70% as detailed in the Assessment Implementation Plan.



D. Advisory Board Course Review

During AY 2016-2017, the Construction Management Advisory Board (CMAB) reviewed four courses in accordance with the Advisory Board Course/SLO Review Schedule published in Appendix K of the ACCE Self-Study.

In fall 2016, the CMAB Curriculum Subcommittee reviewed TCM 223 – Surveying and TCM 494 – Professional Internship. For both courses comments were generally very positive and encouraging as to the level and adequacy of coverage for each course learning objective/student learning outcome. Specific feedback for each course is summarized below:

- TCM 223 - Surveying
 - Feedback was excellent for the course including the variety of material and the depth of its coverage
 - Suggestions from CMAB curriculum reviewers included:
 - Spending more (proposed doubling) time on building layout
 - Inviting outside speakers to class more
 - Keep newer technologies in the lab component
- TCM 494 – Professional Internship
 - Overall, the course and its outcomes is widely supported by CMAB
 - Suggestions included adopting an electronic journal/log instead of paper-based options and soliciting feedback from students on where they felt they needed more preparation before taking an internship

In spring 2017, the CMAB Curriculum Subcommittee reviewed TCM 226 – Construction Project Administration and TCM 318 – Structures. A summary of the feedback for each course is listed below:

- TCM 226 – Construction Project Administration
 - In General: 4 comments (122 words); Improve: 5 comments (129 words); Sustain: 3 comments (48 words)
 - Reviewers comments reflected there is far too much to teach in a semester, but everything cannot be #1
 - Noteworthy comments:
 - “There are at least 3 years worth of material that could be covered in this course”
 - “Include a project planning introduction—not dependent on software & scheduling, but on the basics of management and project planning”
- TCM 318 – Structures
 - In General: 2 comments (177 words); Improve: 22 comments (520 words); Sustain: 2 comments (41 words)
 - A technical, necessary course, gives students insights into complexities of building design
 - Noteworthy comments:
 - The depth to which this course goes into engineering calculations is rather impressive”
 - “Have a formwork supplier (i.e., Peri or Doka) visit or do a demonstration as part of lecture 9.”

E. Strategic Plan Progress Reviews

Goals and objectives of the department and the construction management degree program are listed below. Strategies are indicated under each related objective with yearly updates as applicable.

Goal 1: Achieve Academic Excellence in Departmental Programs

Departmental Objectives:

- 1.1 Encourage and support accreditation of departmental programs
 - 1.1.1 ACCE re-accreditation 2016

- 1.2 CM - Improve the facilities used by CM students to better promote student success and recruitment
 - 1.2.1 Explore options for using existing and/or new building designated funding for renovation or an addition to Kemper Hall (May 2020)
 - 1.2.2 Update Kemper 207 to have key card access (May 2016)
 - May 2016: A request for the key card reader will be put in for a planned summer 2016 installation.
 - August 2016: Key card reader successfully installed
- 1.3 CM - Strengthen oral and written communication skills in CM courses
 - 1.3.1 Develop exercises in at least five CM courses that have students write significant papers or give significant presentations where detailed feedback is returned to students (May 2016)
 - August 2016: Completed; TCM 499, 494, 454, 320, and 226 have significant papers where detailed feedback is returned to students.
- 1.4 CM - Infuse a multidisciplinary perspective across the curriculum
 - 1.4.1 Increase the opportunities for CM, FM, and ID students to work together on cross-disciplinary projects. (May 2017)
 - August 2017: FM program was deleted. ID students are still highly integrated in CM courses and look to make more contributions/interactions in upcoming ASC competition teams.
- 1.5 CM - Obtain feedback on how we can improve the quality of graduates.
 - 1.5.1 Survey advisory board members and primary employers every four (4) years to determine their level of satisfaction with quality of CM student and their level of preparation. (AY 2015-16)
 - August 2016: Completed in fall 2015, Results of all surveys analyzed as part of annual retreat in August 2016
 - 1.5.2 Every two years, survey CM graduates who have been in the workforce for at least one (1) year regarding their satisfaction with their academic preparation from the program. (AY 2015-16)
 - August 2016: Completed in fall 2015, Results of all surveys analyzed as part of annual retreat in August 2016
 - 1.5.3 Survey graduating seniors every semester regarding their satisfaction with their academic preparation from the program. (ongoing)
 - December 2015: Converted to online survey
 - August 2016: Completed all surveys and analyzed as part of annual retreat in August 2016
 - August 2017: Completed in each semester this academic year. Results were discussed in August 2017 CM retreat

Goal 2: Grow enrollment – attract and retain quantity and quality of students

Departmental Objectives:

- 2.1 Develop and maintain a departmental website that effectively helps with student recruitment
 - 2.1.1 Form TCM website development committee (Callahan, fall 2015)
 - August 2015: Committee formed; maintenance program delegated to individual program coordinators
- 2.2 Develop and strengthen relationships with community colleges (articulation agreement with East Central C.C. in progress fall 2015, MET program)
 - August 2017: Contact made with State Fair Community College, an ACCE 2-year program, to begin articulation agreement process
- 2.3 Develop and maintain printed material

- 2.3.1 Select a departmental folder and have a supply available to hold departmental literature for recruiting and informational purposes (Callahan and staff, August 2015)
 - August 2015: Completed 1000 folders
- 2.4 Strengthen relations with MSU Admissions and Advising
 - March 2016: Met with university advisors for non-declared majors
 - August 2017: Target Kathy J. Davis, Director, Academic Advisement Center, on featured major posters for AY 17-18

Construction Management Program Objectives:

- 2.1 CM - Attract and retain high potential students
 - 2.1.1 Implement student recruitment and retention plan (with student input) by August 2017.
 - August 2017: met with Melissa Price on possible recruiting idea in summer – need more effort and action; investigate living-learning communities; complete by August 2018
 - 2.1.2 Participate in four major recruiting events (ongoing)
 - August 2016: iBuild, Bearfest, MBU, and Industrial Arts Competition (MBU and Bearfest Village complete – December 2015) (iBuild and Industrial Arts Competition – May 2016)
 - August 2017: Build My Future, Bearfest, Industrial Arts Competition, and MoACTE teachers conference on campus; majors fair; FanFest
 - 2.1.3 Implement a scholarship program for incoming students (August 2019)
 - 2.1.4 Continue to investigate and develop long-term recruitment strategies
 - 2.1.4.1 PLTW (May 2016)
 - August 2016: not complete; Move to May 2019
 - 2.1.4.2 CTCs (May 2017)
 - August 2017: Hosted MoACTE teachers on campus to make them aware of program and its opportunities. Small turnout, but future potential should be investigated in the recruitment and retention plan.
 - 2.1.4.3 Specific high schools, etc. (May 2020)
 - 2.1.5 Grow number of endowed student scholarships.
 - August 2017: Bailey scholarship received and recognized; continue efforts moving into AY 2017-18
 - 2.1.6 Investigate MSU's "crowd funding" tool as a way to develop a Construction Club endowed scholarship fund (May 2016) -Move to May 2017
 - August 2017: Attended MSU Foundation workshops on crowdfunding; after meeting with foundation staff, recommend this effort remain "on tap" when right effort arises; Continue investigation into May 2020
- 2.2 CM - Offer programs and opportunities that stimulate interest and grow the CM program
 - 2.2.1 Increase student extracurricular involvement in student organizations (ongoing)
 - August 2016: Tracking began fall 2015; compare year-over-year numbers ongoing as part of annual retreat in August 2016
 - August 2017: During annual retreat analysis, realized that tracking was not as detailed in AY 2016-2017; Need to investigate better options to collect data by May 2018
 - 2.2.2 Investigate the possibility of adding course offerings to increase concentration areas (May 2018)

Goal 3: Strengthen Community and Industry Engagement

Departmental Objectives:

- 3.1 Strengthen advisory boards and promote advisory board coverage of all programs
 - 3.1.1 CM Advisory Board (ongoing, Callahan and CM faculty)
 - 3.1.2 MET Advisory Board (form by June 2016, Callahan and MET faculty) - Ongoing: Spring 2016: A list of corporate targets has been generated.
- 3.2 Increase industry participation in the career fair and other means of recruiting for all TCM programs (ongoing): Career Fair 2014 – 28 companies, 2015 – 40 companies, 2016 – 37 companies
- 3.3 Support the University's Public Affairs Mission by leading and participating in community engagement and/or service events

Construction Management Program Objectives:

- 3.1 CM - Improve and enhance communications with alumni, the CM community, and friends and supporters of the program
 - 3.1.1 Increase the number of alumni participating in the annual golf tournament (ongoing) (24 companies (primarily alumni players) participated in the May 2016 tournament – largest to date)
 - 3.1.2 Hold at least one alumni event each year (alumni gala or other???)
 - o February 2016: alumni event at men's basketball game
 - o February 2017: alumni event at men's basketball game
 - 3.1.3 Explore ways to regularly communicate with alumni (social media, newsletters, etc.) (May 2016)
 - o August 2016:(social media efforts and newsletters continue; efforts will continue and due date on this activity should extend potentially 2 years to coincide with work of advisory board on alumni relations)
 - o August 2017: First newsletter published in Spring 2017; publication to be a twice per year event assisted by CMAB
- 3.2 CM - Grow and develop CM advisory board
 - 3.2.1 Increase membership in advisory board by one (1) company each year (ongoing)
 - o August 2016: Completed – 3 companies added
 - o August 2017: Completed – 1 company added
 - 3.2.2 Implement sub-committees to the advisory board to spread the workload and maintain engagement throughout the year (May 2017)
 - o August 2017: Completed – Bylaws changed and four (4) new subcommittees very active
 - 3.2.3 Institute a young alumni track for recent graduates to become involved (May 2017)
 - o August 2017: Completed – one subcommittee of CMAB dedicated to this effort; continue to 2020
 - 3.2.4 Review advisory board bylaws (May 2016) (A very productive spring advisory board has begun review of bylaws in coordination with strategic planning efforts for the board. Final draft of revised bylaws should be voted upon in May 2017.)
 - o August 2017: Completed – Bylaws changed and approved
 - 3.2.5 Encourage CM advisory board member(s) to participate in ACCE activities (December 2015)
 - o August 2017: Completed – CMAB president attended ACCE IAB event in February
- 3.3 CM - Support MSU's Public Affairs Mission
 - 3.3.1 Host Boy Scout Merit Badge University
 - o August 2015: Completed 2014
 - o August 2016: Completed 2015

- **August 2017: Completed 2016**
 - 3.3.2 Periodically undertake major public affairs project (May 2017)
 - **August 2017: no significant project identified; continue to May 2018**
 - 3.3.3 Engage faculty and students in community service by targeting 3 different activities each year (ongoing)
 - **August 2015:** Adopt-a-street, food bank, SCA Chicken BBQ, (Completed adopt-a-street, SCA Chicken BBQ, Sammy's Window, and Operation Christmas Child
 - **August 2016:** ramp build, pinewood derby build day; Gen Next Bass Bash events; SCA chicken BBQ and Pig Roast
 - **August 2017: Operation Christmas child, pinewood derby build day; Gen Next Bass Bash events; SCA chicken BBQ and Pig Roast; Bass Pro Marathon**
- 3.4 CM - Grow the reputation of the CM program through professional engagement
 - 3.4.1 Encourage faculty to hold regional, national, and international officer positions within professional organizations (ongoing)
 - **August 2016:** Gebken held Board positions with ASC and Sigma Lambda Chi; Mehany elected to research committee vice-chair; Behzadan served as ASCE CIMS committee secretary and ASCE JCEM special editor on quantitative methods)
 - **August 2017: Gebken held Board positions with ASC and Sigma Lambda Chi; Mehany served on ASC committee; Behzadan served on ASCE Journal boards**
 - 3.4.2 Develop Missouri Construction Hall of Fame and induct first group (May 2020)
- 3.5 CM – Increase student success in job placement
 - 3.5.1 Increase the number of employers participating in the Career Fair from prior year. (ongoing): 2014 – 28 companies, 2015 – 40 companies; **2016 – 37 companies;**
 - 3.5.2 Investigate the possibility of holding an additional spring career fair event (with student input). (December 2015)
 - **August 2016:** 10 construction companies and approximately 50 students attended the all-university career fair event in the spring semester. This event will be encouraged for both employers and students as hiring trends continue upward.
 - **August 2017: Students and companies were again encouraged to attend the spring all-university career fair. Accurate data on company and student attendance was not collected; improve for AY17-18.**
 - 3.5.3 Increase student participation in the Career Fair from prior year. (ongoing): 2014 – 84, 2015 – 110; **2016 – data not collected**
 - 3.5.4 Personally visit 2 employers each year who either do not or have not recently recruited at MSU in an attempt to grow number of employers on campus. (ongoing)
 - **August 2016-** Visited Murphy Mechanical and Clayco on our spring field trip. Also visited Gold's Mechanical and SECO offices in town
 - **August 2017 – Visited Hoar Construction, Walsh, and Alberici during spring field trip**

Goal 4: Enhance the research environment of the program

Departmental Objectives:

- 4.1 All TCM tenured or tenure track faculty members maintain SA status as required by the College of Business

- 4.1.1 Promote collaborative writing/multiple authorships within the department
 - 4.1.1.1 Schedule departmental meeting to discuss collaborative research (Callahan, October 2015)
- 4.1.2 Promote collaborative writing across multiple disciplines/institutions
- 4.2 Develop a research focus area that could support participation from all TCM programs
- 4.3 Reposition C-PRIME to strengthen its platform for supporting externally funded research
 - 4.3.1 Redefine C-PRIME's mission by May 2016 after assessing current and new faculty members' strengths and interests. Update: Dr. Behzadan appointed C-PRIME director spring 2016. Initial thoughts on new vision presented to faculty May 2016.

Construction Management Program Objectives:

- 4.1 CM - Increase the amount of funded research
 - 4.1.1 Increase the number of co-authored papers by faculty members (ongoing) – Mehany, Gebken – 1 journal, 1 conference; Behzadan – 2 journal articles, 4 conference papers – May 2016
 - 4.1.2 Secure \$250,000 funding for grants or research projects by May 2020
 - o August 2016: Completed - Dr. Behzadan - Approximately \$300,000 from NSF grants
 - 4.1.3 Enhance relationships with potential funding agencies (May 2018)
- 4.2 CM - Develop resources needed to facilitate research
 - 4.2.1 Increase student involvement in research by involving 5 undergraduate students in research projects by May 2018
 - 4.2.2 Acquire additional research equipment
 - o August 2016: 3-D Laser Scanner in May 2016
 - o August 2017: VR headset acquired by Dr. Behzadan; Mechanical equipment received for MEP lab and possible research; continue into 2018

Goal 5: Support and Promote Faculty Development

Departmental Objectives:

- 5.1 Develop faculty members who are current and engaged in their academic areas
 - 5.1.1 Fund and encourage participation in professional organizations, conferences, and other professional endeavors
 - 5.1.2 Encourage faculty members to pursue leadership roles in regional and national professional organizations (goal: at least 1 faculty member from each program in a regional or national office, position, or committee by May 2017)
- 5.2 Implement faculty mentoring and development program
 - 5.2.1 Assign newly hired faculty a mentor within one month of hire
 - 5.2.2 Provide opportunities /resources for faculty internships and short courses
 - 5.2.2.1 Present Information to the TCM faculty relating to the ACG faculty internship and other opportunities (Dr. Mehany, August 2015)

Construction Management Program Objectives:

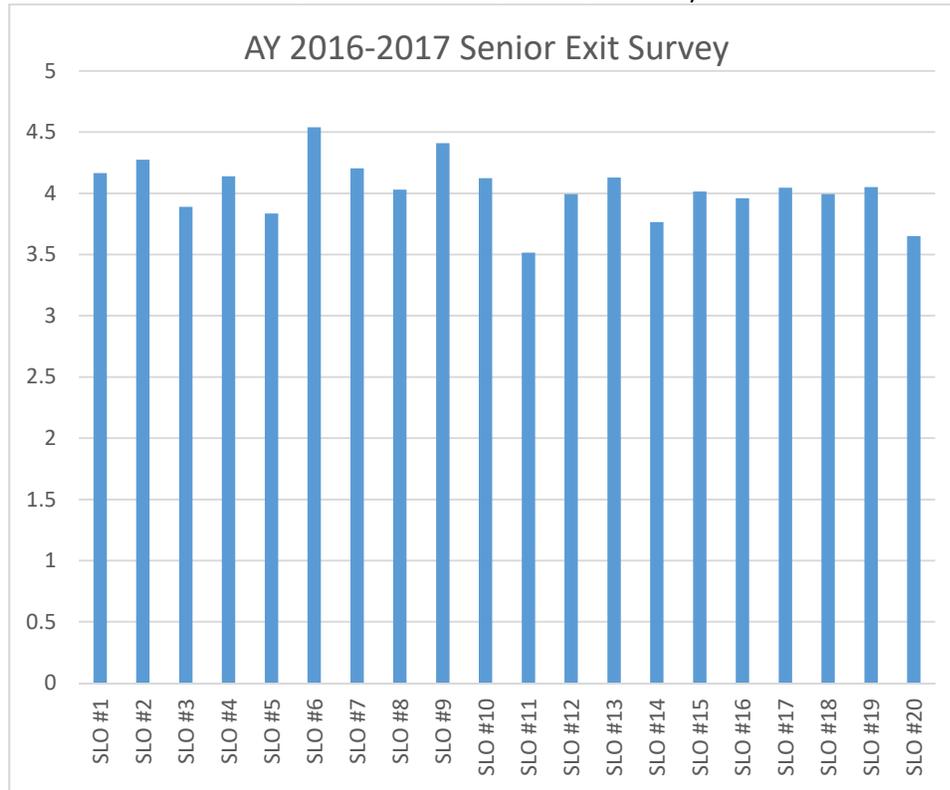
- 5.1 CM - Grow Endowed chairs for faculty
 - 5.1.1 Seek funding for new endowed professorship (May 2020)

F. Course Evaluations

For AY 2016-2017, the mean and median student evaluation of teaching score for CM courses was 4.23/5.00. The standard deviation for the same time period was 0.46 points. The mean student evaluation of teaching score for the Technology and Construction Management department was 4.24/5.00.

G. *Senior Exit Surveys*

Each semester, graduating seniors are asked to complete a survey that assesses their perceived level of preparedness across each of the 20 student learning outcomes. In addition, this instrument also collects information about the courses and/or individuals who most contributed to these outcomes and job placement information. For AY 2016-2017, the mean perceived level of preparedness for all SLOs was 4.04/5.00 with a standard deviation of 0.26 points. The figure below shows the distribution of scores for the senior exit surveys.



H. *Senior Exit Interview*

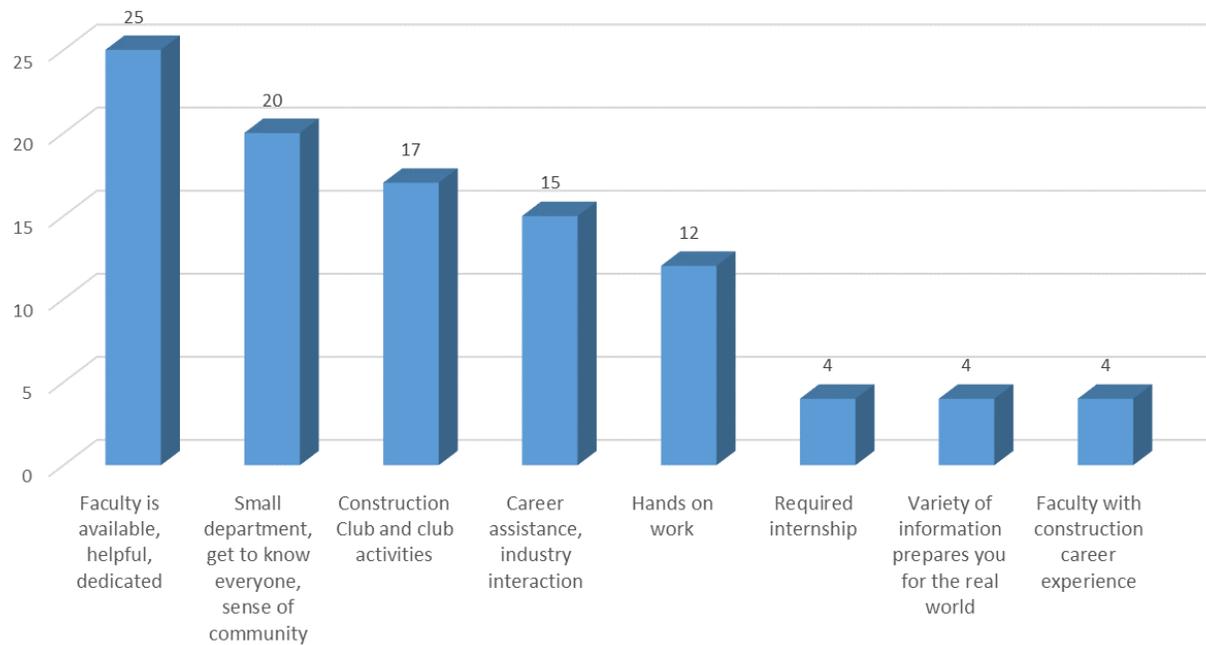
In addition to the senior exit survey, graduating senior also individually sit down for exit interviews with the department head each semester. The questions asked during the exit included the following:

1. What did you like best about the Department and program (besides courses)?
2. What do we need to do better/improve (besides courses)?
3. What courses did you learn the most in or like the best?
4. What courses do we need to improve?

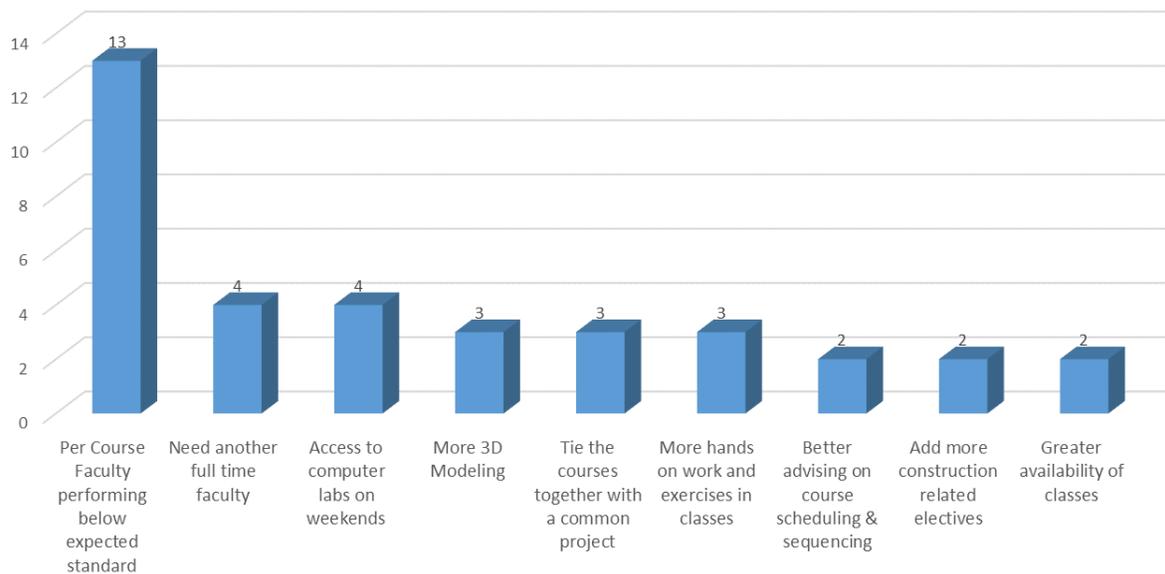
Pareto charts for the top responses from these interviews are presented below for the entire academic year.

Fall 2016/Spring 2017

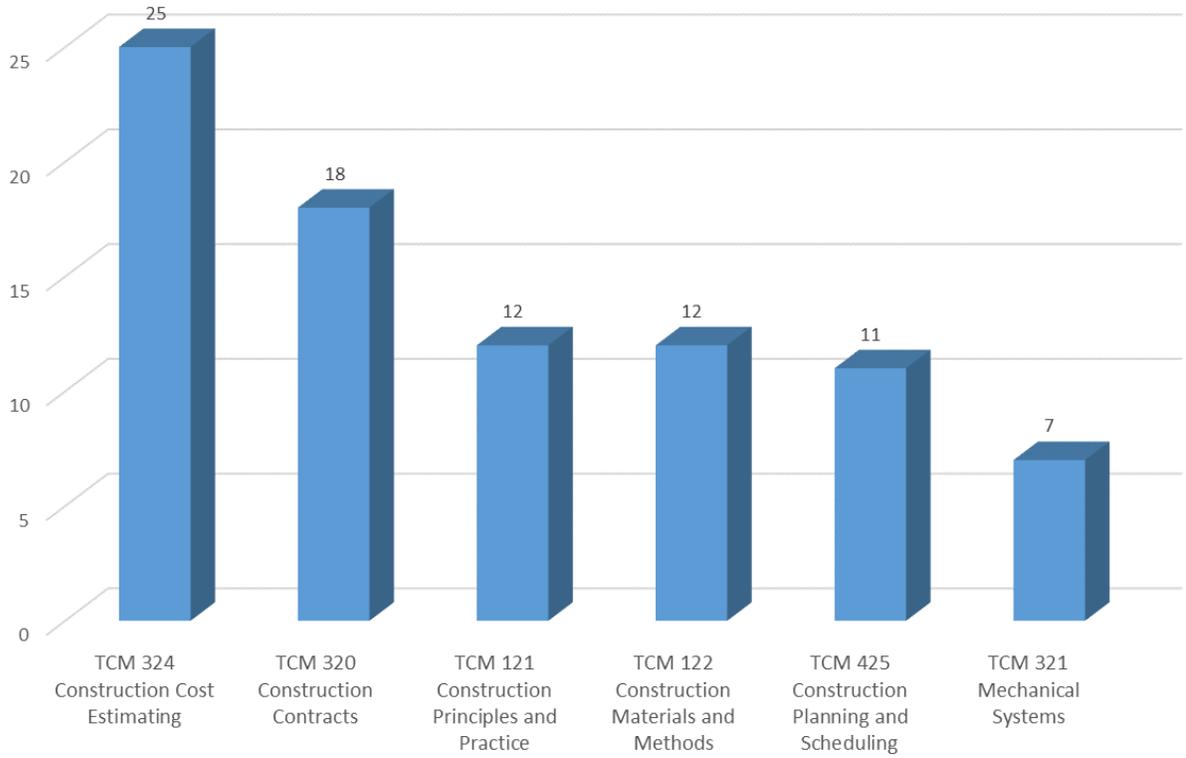
What did you like best about the Department and Program (besides courses)?



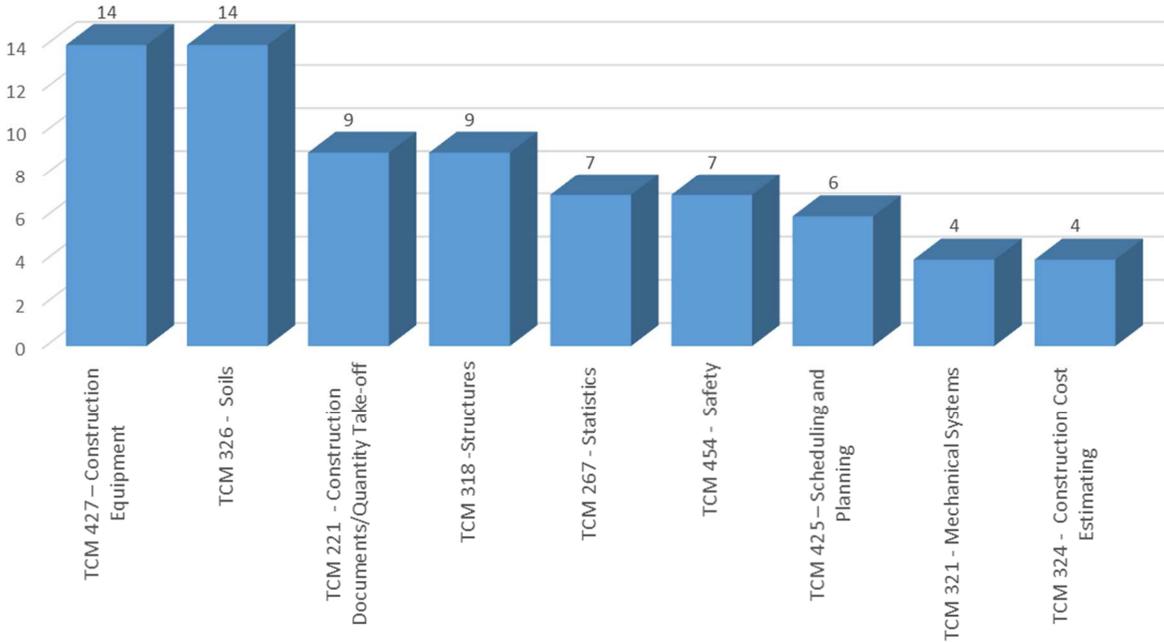
What do we need to do better/improve (besides courses)?



What courses did you learn the most in or like the best?

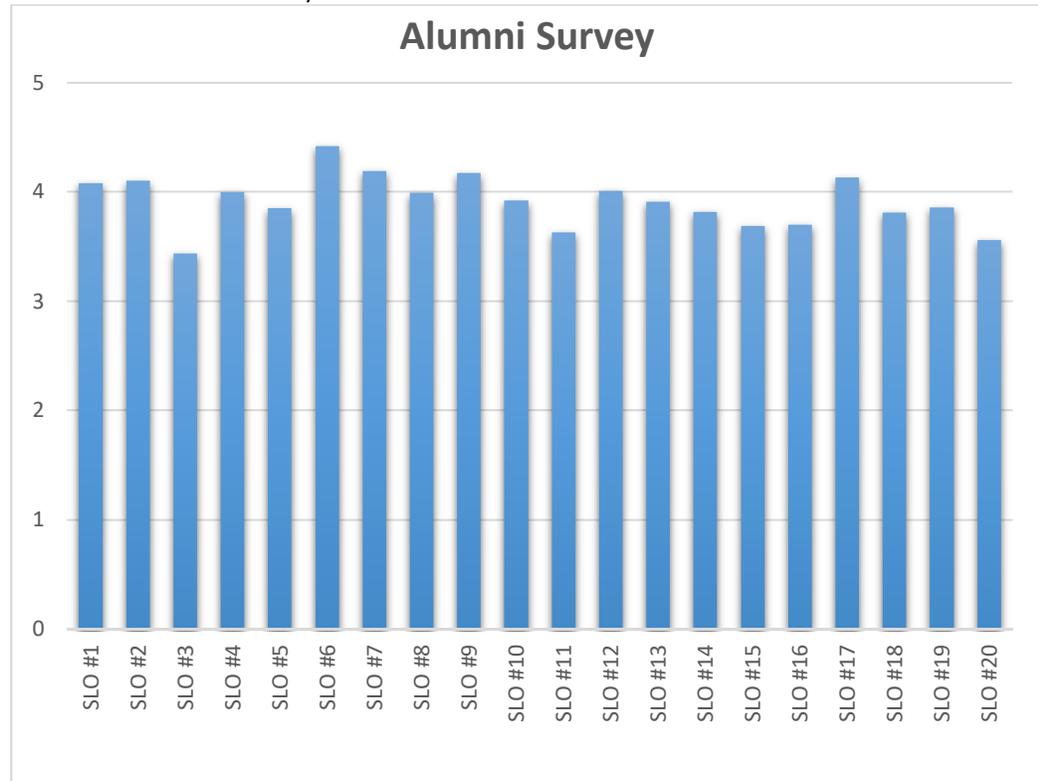


What courses do we need to improve?



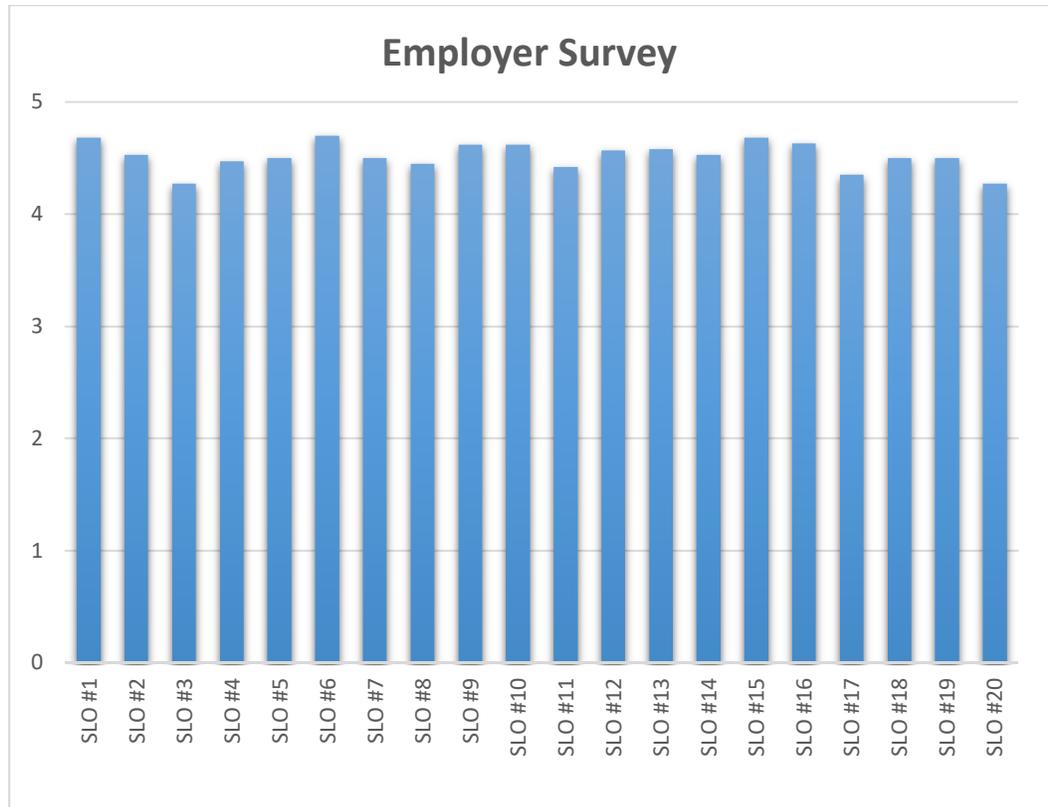
I. *Alumni Survey*

Every four years, recent alumni are asked to complete a survey that assesses their perceived level of preparedness across each of the 20 student learning outcomes. In addition, this instrument also collects information about the overall satisfaction with their undergraduate experience, perceived department strengths/weaknesses, and contact information. In the most recent cycle (AY 2015-2016), the mean perceived level of preparedness for all SLOs was 3.92/5.00 with a standard deviation of 0.24 points. The figure below shows the distribution of scores for the alumni survey.



J. *Employer Survey*

Every four years, employers are asked to complete a survey that assesses their level of satisfaction with the preparedness of Missouri State University construction management graduates across each of the 20 student learning outcomes. In addition, this instrument also collects information about the overall likelihood to continue to hire graduates from the MSU CM program, the perceived department strengths/weaknesses, and contact information. In the most recent cycle (AY 2015-2016), the mean level of satisfaction for employers across all SLOs was 4.52/5.00 with a standard deviation of 0.12 points. The figure below shows the distribution of scores for the employer survey.



V. Actions Taken as a result of assessment data collected

The construction management faculty met in September 2017 to discuss the findings of the AY 2016-2017 assessment cycle. All ten measures identified in the ACCE self-study were reviewed and discussed. Overall, the CM program appears to be meeting the majority of student and program learning outcomes. Course-level corrective actions are taken anytime a single direct measure fall below the 70% target level detailed in the Assessment Implementation Plan. The CM course binders contain the instructor course evaluation and improvement plan forms where these actions are documented and tracked.

For the AY2016-2017 cycle, the faculty first investigated the areas of concern from the AY2015-2016 cycle. These were: 1) a gap larger than 1.0 between the perception of graduating seniors and employers with respect to ACCE SLO #11 (Apply basic surveying techniques for construction layout and control; 2) SLO #19 having more direct measures fail to meet rather than meet the 70% target level; and 3) the computer labs in Kemper Hall. Based upon the current data, it appears that each of the concerns has either been alleviated or is on course to make significant improvements. The gap between graduating seniors and employers on SLO #11 is now less than 1.0 due to an improvement in student perceptions about the quality of the TCM 223 course. SLO #19 currently has nine (9) of its eleven (11) measures meeting the 70% pass level. Finally, the computer lab's card reader and software/OS updates have significantly improved student and faculty perceptions on Kemper's computing resources. Work still needs to be done on updating the printing capabilities in both Kemper 105 and Kemper 207.

New areas of concern identified during the September 2017 review include two (2) areas. First, both SLO #3 (Create a construction project safety plan) and SLO #18 (Understand the basic principles of sustainable construction) has equal or more direct measures fail to meet rather than meet the 70% target level. Action plans to correct this low performances are indicated in each

course notebook that correlates to student learning outcomes #3 and #18. The faculty will closely monitor the next cycle to see if there are any trends.

The second new area of concerns was the overwhelming dissatisfaction with the per-course instructors. Corrective actions will be to invest more time mentoring our two “new” faculty members to make them comfortable and effective in the classroom. While one of the two new hires is currently only a visiting faculty member, regular classroom observations and a concentrated effort on recruiting faculty who want to stay at Missouri State University for an extended period of time must be improved.

Overall, the construction management faculty are encouraged by the continued growth and development of the program. Improvements within the CMAB and positive industry growth are all signs that the program will continue its success in the coming years.

VI. Student Achievement

A. *Awards and Accomplishments*

2017 – Graduate student Khandakar Rashid received an Outstanding Oral Presentation Award at the MSU Interdisciplinary Graduate Research Forum

2017 – Mr. Jacob Nelson receives ASC Excellence in Teaching Award

2017 – Three students received regional scholarship awards from the Kansas City Builder’s Association

2017 – The MEP Club was awarded multiple grants from ASHRAE and MCA for its student competition teams and the MEP lab equipment

2016 – CM student Sergio Lescano was a finalist for the National Intern of the Year Award which included a \$4,000 scholarship. It should be noted that Sergio’s employer was an MSU CM Advisory Board member.

2016 – At the Associated Schools of Construction Region 4 Competition, the heavy/civil construction team placed first, the commercial team placed 2nd, and the specialty teams placed 2nd and 3rd.

B. *Student scholarships*

The department and local industry annually awards in excess of \$23,000 to CM students. On average another \$8,000 has been received by CM students on a regional or national level by CM students. The list of local scholarships, awards, and annual award amounts are listed below.

Scholarships	Amount
Arvin Gimble Award	\$ 2,000
Arvin Gimble Award	\$ 2,000
Builders Association	\$ 3,000
Doyle Kemper	\$ 1,000
Greater Ozarks	\$ 500
Mo Concrete	\$ 500
Orin Robinson	\$ 1,000
Robert and Louise Eggleston	\$ 2,500
Robert Dock	\$ 500
Roger Killian	\$ 1,000
SCA	\$ 3,500
Shank	\$ 1,000
Strong	\$ 500

TCM	\$ 1,000
Ted Smith	\$ 1,000
Walton: John May Scholarship	\$ 1,000
EFCO	\$ 1,000
Total	\$ 23,000

VII. Rate and Types of Employment of Graduates

A. *Student employment numbers for graduates during AY 2016-2017 including starting salary information.*

Type of Employer	No. of Graduates
Commercial GC	28
Specialty Contractor	1
Residential Contractor	1
Industrial Contractor	1
Heavy/Civil Contractor	4
Other	
Total	35

The average starting salary for CM graduates with a position in a related field during AY 2016-2017 was \$54,914.

VIII. Data to support qualitative claims made by the program