

Texas A&M University

Detailed Assessment Report

2017-2018 Construction Science, BS

As of: 5/09/2019 01:48 PM CENTRAL

(Includes those Action Plans with Budget Amounts marked *One-Time, Recurring, No Request.*)

Mission / Purpose

The Construction Science Department is dedicated to education, discovery, development and application of knowledge in the field of construction while fulfilling the land grant mission of Texas AM University and enhancing the economic development of the State of Texas. Our mission of providing the highest quality undergraduate and graduate programs is inseparable from our mission of developing new understanding through teaching, research and service. We prepare students to assume roles in leadership, responsibility, and service to society.

Goals

G 1: BS Construction Science Goal

The department will maintain a strong general, comprehensive, broad based undergraduate degree program, founded in construction fundamentals applicable to all sectors of the industry and responsive to the ever evolving industry and industry trends. Through its learning environment, the department will foster responsible, reflective, and respectful lifelong learners as demonstrated by achieving the learning outcomes as stated in the Departmental Strategic Plan.

Student Learning Outcomes/Objectives, with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 1: *Cycle 1: MMDA SLO 8

Students are able to analyze methods, material, and equipment used to construct projects: Cycle 1 _
Reported once every three years.

Relevant Associations:

General Education/Core Curriculum Associations

1 Master the depth of knowledge required for a degree

Strategic Plan Associations

- Texas A&M University
- 3 Enhance the Undergraduate Academic Experience.

Related Measures

M 1: Direct Assessment _ SLO 8

Direct assessment for SLO 8 will occur using a combination of assignments, and/or exams (in whole or in part) from COSC courses 254 (Construction Materials and Methods II), and 321 (Structural Systems I). The assessment instruments will be administered by course instructors in class to students as part of the regular course curriculum. Data reported will be class-level average performance on either the full assignment/exam or targeted questions. Data reported for targeted questions in COSC 254 are the percentage of students correctly answering targeted questions (scale of 100%: 0=incorrect 1=correct). Data for student assignment in COSC 321 are the class average of correct inclusion of necessary information in assignment. Attached rubric contains the points possible for each type of question and the points possible for each component of question type. Point deductions accrue as components are missed in each question type according to the system outlined in the rubric. Cycle 1 _ Reported once every three years.

Source of Evidence: Project, either individual or group

Connected Documents

Target:

Students cumulative average score for SLO 8 will be 70% or higher. In order to set a target score during initial data collection of new SLO data collection system and establishment of baseline date, 70% was deemed appropriate as minimum target as students must have a grade of "C" (70) or better in order to qualify for graduation from the program. Baseline data will be evaluated after at least 3 years' of data collection have occurred in order to determine if adjustment of new targets is warranted based on trend data and ,if so, the new appropriate minimum targets.

Finding (2017-2018) - Target: Not Met

Students Cumulative average scores for SLO 8 during the Fall 2017 and Spring 2018 semesters were 62.57 and 71.87, respectively. Therefore students cumulative SLO 8 average score for the 2017-18 academic year was 67.22, therefore the target of 70% or greater SLO average was not met. These results indicate a need for greater emphasis on the methods, material, and equipment used to construct projects in not only targeted courses, but also in other appropriate courses throughout the curriculum.

Related Action Plans (by Established cycle, then alpha):

For full information, see the *Details of Action Plans* section of this report.

SLO 8 Action Plan

Established in Cycle: 2016-2017

Based on the Direct Assessment average score (74.43) and Indirect Assessment mean score from the Senior Exit Survey (3.25) of st...

M 9: Senior Exit Survey _ Confidence

As an indirect assessment of the student learning outcomes, an exit survey will be administered to all COSC students immediately prior to their graduation, soliciting their opinions with respect to their educational experiences at TAMU. Students will be asked to indicate how confident they are in their ability to apply each of the student learning outcomes. Responses will utilize a four point Likert-type scale (4 = Very Confident; 3 = Confident; 2 = Somewhat Confident; 1 = Not Confident).

Source of Evidence: Student satisfaction survey at end of the program

Connected Document**Target:**

For each student learning outcome students' average score will be a minimum score of 2.51 or higher indicating students are, at minimum, "confident" applying individual student learning outcomes, as students graduating from the program should be confident applying the knowledge and skills gained from their degree program in their future careers.

Finding (2017-2018) - Target: Met

During the 2017/18 academic year, the Fall 2017 and Spring 2018 Senior Exit Survey had a total of 221 respondents. In Fall 2017, 102 students responded to the question: "As a result of your COSC degree program, how confident do you feel in your ability to analyze methods, materials, and equipment used to construct projects" with a mean score of 3.29. and 119 students responded to the same question in Spring 2018 with a mean score of 3.34. Therefore a total of 221 students responded to SLO 8 with an overall mean score of 3.31 (Confident), meeting the target of a minimum mean score of 2.51. The scale used was: Very Confident = 3.51 – 4.00; Confident = 2.51 – 3.50; Somewhat Confident = 1.51 – 2.50; Not Confident = 1.00 – 1.50.

SLO 2: *Cycle 1: MMDA SLO 20

Students understand the basic principles of mechanical, electrical, and piping systems: Cycle 1 _
Reported once every three years.

Relevant Associations:

General Education/Core Curriculum Associations

1 Master the depth of knowledge required for a degree

Strategic Plan Associations

- Texas A&M University
- 2 Strengthen our graduate programs.

Related Measures

M 2: Direct Assessment _ SLO 20

Direct assessment for SLO 20 will occur using a combination of exams (in whole or in part) from COSC courses 325 (MEP Systems in Construction I) and 326 (MEP Systems in Construction II). The assessment instruments will be administered by course instructors in class to students as part of the regular course curriculum. Data reported will be class-level average performance on either the full assignment/exam or targeted questions. Cycle 1 _ Reported once every three years.

Source of Evidence: Writing exam to assure certain proficiency level

Connected Document

Target:

Students cumulative average score for SLO 20 will be 70% or higher. In order to set a target score during initial data collection of new SLO data collection system and establishment of baseline date, 70% was deemed appropriate as minimum target as students must have a grade of "C" (70) or better in order to qualify for graduation from the program. Baseline data will be evaluated after at least 3 years' of data collection have occurred in order to determine if adjustment of new targets is warranted based on trend data and ,if so, the new appropriate minimum targets.

Finding (2017-2018) - Target: Met

Students Cumulative average scores for SLO 20 during the Fall 2017 and Spring 2018 semesters were 89.07 and 79.85, respectively - yielding a student cumulative SLO 20 average score for the 2017/18 academic year of 84.46. Therefore the target of 70% or greater SLO average was met. While there is room for improvement, student average performance on SLO 20 indicates students have an adequate foundation understanding of HVAC systems that may benefit from increased focus during classroom instruction.

Related Action Plans (by Established cycle, then alpha):

For full information, see the *Details of Action Plans* section of this report.

SLO 20 Action Plan

Established in Cycle: 2016-2017

Based on the Direct Assessment average score (86.93) and Indirect Assessment mean score from the Senior Exit Survey (2.77) of st...

M 9: Senior Exit Survey _ Confidence

As an indirect assessment of the student learning outcomes, an exit survey will be administered to all COSC students immediately prior to their graduation, soliciting their opinions with respect to their educational experiences at TAMU. Students will be asked to indicate how confident they are in their ability to apply each of the student learning outcomes. Responses will utilize a four point Likert-type scale (4 = Very Confident; 3 = Confident; 2 = Somewhat Confident; 1 = Not Confident).

Source of Evidence: Student satisfaction survey at end of the program

Connected Document

Target:

For each student learning outcome students' average score will be a minimum score of 2.51 or higher indicating students are, at minimum, "confident" applying individual student learning outcomes.

Finding (2017-2018) - Target: Met

During the 2017/18 academic year, the Fall 2017 and Spring 2018 Senior Exit Survey had a total of 221 respondents. In Fall 2017 102 students responded to the question: "As a result of your COSC degree program, how confident do you feel in your ability to understand the basic principles of mechanical, electrical, and piping systems?" with a mean score of 2.92. and 119 students responded to the same question in Spring 2018 with a mean score of 2.92 Therefore a total of 221 students responded to SLO 20 with an overall mean score of 2.92 (Confident), meeting the target of a minimum mean score of 2.51. The scale used was: Very Confident = 3.51 – 4.00; Confident = 2.51 – 3.50; Somewhat Confident = 1.51 – 2.50; Not Confident = 1.00 – 1.50.

Related Action Plans (by Established cycle, then alpha):

For full information, see the *Details of Action Plans* section of this report.

SLO 20 Action Plan

Established in Cycle: 2016-2017

Based on the Direct Assessment average score (86.93) and Indirect Assessment mean score from the Senior Exit Survey (2.77) of st...

SLO 3: Cycle 2: Project Admin. _ SLO 1

Students are able to create written communications appropriate to the construction discipline: Cycle 2 _ Reported once every three years.

Relevant Associations:**General Education/Core Curriculum Associations**

3 Communicate effectively

Strategic Plan Associations

- Texas A&M University
- 3 Enhance the Undergraduate Academic Experience.

Related Measures**M 3: Direct Assessment _ SLO 1**

Direct assessment will occur for SLO 1 using a combination of assignments (in whole or in part) from COSC courses 463 (Introduction to Construction Law), 440, 441, 442, 443, and/or 446 (Capstone), and 494 (Internship). The assessment instruments will be administered by course instructors in class to students as part of the regular course curriculum. Data reported will be class-level average performance on either the full assignment/exam or targeted questions. Cycle 2 _ Reported once every three years.

Source of Evidence: Written assignment(s), usually scored by a rubric

Target:

Students cumulative average score for SLO 1 will be 70% or higher. In order to set a target score during initial data collection of new SLO data collection system and establishment of baseline date, 70% was deemed appropriate as minimum target as students must have a grade of "C" (70) or better in order to qualify for graduation from the program. Baseline data will be evaluated after at least 3 years' of data collection have occurred in order to determine if adjustment of new targets is warranted based on trend data and, if so, the new appropriate minimum targets.

Finding (2017-2018) - Target: Not Reported This Cycle

SLO Not Reported this cycle.

Related Action Plans (by Established cycle, then alpha):

For full information, see the *Details of Action Plans* section of this report.

SLO 8 Action Plan

Established in Cycle: 2016-2017

Based on the Direct Assessment average score (74.43) and Indirect Assessment mean score from the Senior Exit Survey (3.25) of st...

M 9: Senior Exit Survey _ Confidence

As an indirect assessment of the student learning outcomes, an exit survey will be administered to all COSC students immediately prior to their graduation, soliciting their opinions with respect to their educational experiences at TAMU. Students will be asked to indicate how confident they are in their ability to apply each of the student learning outcomes. Responses will utilize a four point Likert-type scale (4 = Very Confident; 3 = Confident; 2 = Somewhat Confident; 1 = Not Confident).

Source of Evidence: Student satisfaction survey at end of the program

Connected Document

Target:

For each student learning outcome students' average score will be a minimum score of 2.51 or higher indicating students are, at minimum, "confident" applying individual student learning outcomes.

Finding (2017-2018) - Target: Not Reported This Cycle

SLO not reported this cycle.

SLO 4: Cycle 2: Project Admin _ SLO 2

Students are able to create oral presentations appropriate to the construction discipline: Cycle 2 _ Reported once every three years.

Relevant Associations:

General Education/Core Curriculum Associations

3 Communicate effectively

Strategic Plan Associations

- Texas A&M University
- 3 Enhance the Undergraduate Academic Experience.

Related Measures

M 4: Direct Assessment _ SLO 2

Direct assessment will occur for SLO 2 using a combination of assignment and project (in whole or in part) from COSC courses 353 (Construction Project Management) and 440, 441, 442, 443, and/or 446 (Capstone). The assessment instruments will be administered by course instructors in class to students as part of the regular course curriculum. Data reported will be class-level average performance on either the full assignment/exam or targeted questions. Cycle 2 _ Reported once every three years.

Source of Evidence: Presentation, either individual or group

Target:

Students cumulative average score for SLO 2 will be 70% or higher. In order to set a target score during initial data collection of new SLO data collection system and establishment of baseline date, 70% was deemed appropriate as minimum target as students must have a grade of "C" (70) or better in order to qualify for graduation from the program. Baseline data will be evaluated after at least 3 years' of data collection have occurred in order to determine if adjustment of new targets is warranted based on trend data and ,if so, the new appropriate minimum targets.

Finding (2017-2018) - Target: Not Reported This Cycle

SLO Not Reported this cycle.

M 9: Senior Exit Survey _ Confidence

As an indirect assessment of the student learning outcomes, an exit survey will be administered to all COSC students immediately prior to their graduation, soliciting their opinions with respect to their educational experiences at TAMU. Students will be asked to indicate how confident they are in their ability to apply each of the student learning outcomes. Responses will utilize a four point Likert-type scale (4 = Very Confident; 3 = Confident; 2 = Somewhat Confident; 1 = Not Confident).

Source of Evidence: Student satisfaction survey at end of the program

Connected Document

Target:

For each student learning outcome students' average score will be a minimum score of 2.51 or higher indicating students are, at minimum, "confident" applying individual student learning outcomes.

Finding (2017-2018) - Target: Not Reported This Cycle

SLO not reported this cycle.

SLO 5: Cycle 2: Project Admin. - SLO 6

Students are able to analyze professional decisions based on ethical principles: Cycle 2 _ Reported once every three years.

Relevant Associations:

General Education/Core Curriculum Associations

- 4 Practice personal and social responsibility
- 5 Demonstrate social, cultural, and global competence
- 6 Prepare to engage in lifelong learning

Strategic Plan Associations

- Texas A&M University
- 3 Enhance the Undergraduate Academic Experience.

Related Measures

M 5: Direct Assessment _ SLO 6

Direct assessment will occur for SLO 6 using a combination of assignments (in whole or in part) from COSC courses 381 (Professional Ethics in Construction) and 463 (Introduction to Construction Law). The assessment instruments will be administered by course instructors in class to students as part of the regular course curriculum. Data reported will be class-level average performance on either the full assignment/exam or targeted questions. Cycle 2 _ Reported once every three years.

Source of Evidence: Academic direct measure of learning - other

Target:

Students cumulative average score for SLO 6 will be 70% or higher. In order to set a target score during initial data collection of new SLO data collection system and establishment of baseline date, 70% was deemed appropriate as minimum target as students must have a grade of "C" (70) or better in order to qualify for graduation from the program. Baseline data will be evaluated after at least 3 years' of data collection have occurred in order to determine if adjustment of new targets is warranted based on trend data and ,if so, the new appropriate minimum targets.

Finding (2017-2018) - Target: Not Reported This Cycle

SLO Not Reported this cycle.

M 9: Senior Exit Survey _ Confidence

As an indirect assessment of the student learning outcomes, an exit survey will be administered to all COSC students immediately prior to their graduation, soliciting their opinions with respect to their educational experiences at TAMU. Students will be asked to indicate how confident they are in their ability to apply each of the student learning outcomes. Responses will utilize a four point Likert-type scale (4 = Very Confident; 3 = Confident; 2 = Somewhat Confident; 1 = Not Confident).

Source of Evidence: Student satisfaction survey at end of the program

Target:

For each student learning outcome students' average score will be a minimum score of 2.51 or higher indicating students are, at minimum, "confident" applying individual student learning outcomes.

Finding (2017-2018) - Target: Not Reported This Cycle

SLO not reported this cycle.

SLO 6: Cycle 2: Project Admin. _ SLO 9

Students are able to apply construction management skills as a member of a multi-disciplinary team: Cycle 2 _ Reported once every three years.

Relevant Associations:**General Education/Core Curriculum Associations**

7 Work collaboratively

Strategic Plan Associations

- Texas A&M University
- 3 Enhance the Undergraduate Academic Experience.

Related Measures**M 6: Direct Assessment _ SLO 9**

Direct assessment will occur for SLO 9 using a combination of assignments and/or project (in whole or in part) from COSC courses 494 (Internship) and 440, 441, 442, 443, and/or 446 (Capstone). The assessment instruments will be administered by course instructors in class to students as part of the regular course curriculum. Data reported will be class-level average performance on either the full assignment/exam or targeted questions. Cycle 2 _ Reported once every three years.

Source of Evidence: Academic direct measure of learning - other

Target:

Students cumulative average score for SLO 9 will be 70% or higher.

Finding (2017-2018) - Target: Not Reported This Cycle

SLO Not Reported this cycle.

M 9: Senior Exit Survey _ Confidence

As an indirect assessment of the student learning outcomes, an exit survey will be administered to all COSC students immediately prior to their graduation, soliciting their opinions with respect to their educational experiences at TAMU. Students will be asked to indicate how confident they are in their ability to apply each of the student learning outcomes. Responses will utilize a four point Likert-type scale (4 = Very Confident; 3 = Confident; 2 = Somewhat Confident; 1 = Not Confident).

Source of Evidence: Student satisfaction survey at end of the program

Connected Document**Target:**

For each student learning outcome students' average score will be a minimum score of 2.51 or higher indicating students are, at minimum, "confident" applying individual student learning outcomes.

Finding (2017-2018) - Target: Not Reported This Cycle

SLO not reported this cycle.

SLO 7: Cycle 3: Project Controls _ SLO 5

Students are able to create construction project schedules: Cycle 3 _ Reported once every three years.

Relevant Associations:

General Education/Core Curriculum Associations

2 Demonstrate critical thinking

Strategic Plan Associations

- Texas A&M University
- 3 Enhance the Undergraduate Academic Experience.

Related Measures

M 7: Direct Assessment _ SLO 5

Direct assessment will occur for SLO 5 using a combination of assignment and project (in whole or in part) from COSC courses 475 (Construction Project Planning) and 440, 441, 442, 443, and/or 446 (Capstone). The assessment instruments will be administered by course instructors in class to students as part of the regular course curriculum. Data reported will be class-level average performance on either the full assignment/exam or targeted questions. Cycle 3 _ Reported once every three years.

Source of Evidence: Project, either individual or group

Target:

Students cumulative average score for SLO 5 will be 70% or higher. In order to set a target score during initial data collection of new SLO data collection system and establishment of baseline date, 70% was deemed appropriate as minimum target as students must have a grade of "C" (70) or better in order to qualify for graduation from the program. Baseline data will be evaluated after at least 3 years' of data collection have occurred in order to determine if adjustment of new targets is warranted based on trend data and ,if so, the new appropriate minimum targets.

Finding (2017-2018) - Target: Not Reported This Cycle

SLO Not Reported this cycle.

M 9: Senior Exit Survey _ Confidence

As an indirect assessment of the student learning outcomes, an exit survey will be administered to all COSC students immediately prior to their graduation, soliciting their opinions with respect to their educational experiences at TAMU. Students will be asked to indicate how confident they are in their ability to apply each of the student learning outcomes. Responses will utilize a four point Likert-type scale (4 = Very Confident; 3 = Confident; 2 = Somewhat Confident; 1 = Not Confident).

Source of Evidence: Student satisfaction survey at end of the program

Connected Document

Target:

For each student learning outcome students' average score will be a minimum score of 2.51 or higher indicating students are, at minimum, "confident" applying individual student learning outcomes.

Finding (2017-2018) - Target: Not Reported This Cycle

SLO not reported this cycle.

SLO 8: Cycle 3: Project Controls _ SLO 10

Students are able to apply electronic-based technology to manage the construction process: Cycle 3 _ Reported once every three years.

Relevant Associations:

General Education/Core Curriculum Associations

2 Demonstrate critical thinking

Strategic Plan Associations

- Texas A&M University
- 3 Enhance the Undergraduate Academic Experience.

Related Measures

M 8: Direct Assessment _ SLO 10

Direct assessment will occur for SLO 10 using a combination of assignments (in whole or in part) from COSC courses 275 (Estimating I), 375 (Estimating II), and 475 (Construction Project Planning). The assessment instruments will be administered by course instructors in class to students as part of the regular course curriculum. Data reported will be class-level average performance on either the full assignment/exam or targeted questions. Cycle 3 _ Reported once every three years.
Source of Evidence: Academic direct measure of learning - other

Target:

Students cumulative average score for SLO 10 will be 70% or higher. In order to set a target score during initial data collection of new SLO data collection system and establishment of baseline date, 70% was deemed appropriate as minimum target as students must have a grade of "C" (70) or better in order to qualify for graduation from the program. Baseline data will be evaluated after at least 3 years' of data collection have occurred in order to determine if adjustment of new targets is warranted based on trend data and ,if so, the new appropriate minimum targets.

Finding (2017-2018) - Target: Not Reported This Cycle

SLO Not Reported this cycle.

M 9: Senior Exit Survey _ Confidence

As an indirect assessment of the student learning outcomes, an exit survey will be administered to all COSC students immediately prior to their graduation, soliciting their opinions with respect to their educational experiences at TAMU. Students will be asked to indicate how confident they are in their ability to apply each of the student learning outcomes. Responses will utilize a four point Likert-type scale (4 = Very Confident; 3 = Confident; 2 = Somewhat Confident; 1 = Not Confident).

Source of Evidence: Student satisfaction survey at end of the program

Connected Document

Target:

For each student learning outcome students' average score will be a minimum score of 2.51 or higher indicating students are, at minimum, "confident" applying individual student learning outcomes.

Finding (2017-2018) - Target: Not Reported This Cycle

SLO not reported this cycle.

Details of Action Plans for This Cycle (by Established cycle, then alpha)

Increase overall enrollment of undergraduate program

The Department of Construction Science plans to increase the overall enrollment of our undergraduate program, with particular emphasis on underrepresented populations. The department plans to recruit at community colleges in south Texas and major metropolitan areas. Recent surveys conducted by the department have revealed that most students in our program did not know about the Construction Science degree before they were accepted into Texas A&M University. In order to inform prospective students about our department, we will also be meeting with Education Services Centers Regions and high school counselors across the state of Texas.

Established in Cycle: 2011-2012

Implementation Status: Finished

Priority: High

Undergraduate Competition Teams

The Undergraduate Committee is aware that the goal was not completely met and is meeting regularly and diligently working to develop a workable solution.

Established in Cycle: 2012-2013

Implementation Status: Finished

Priority: High

Implementation Description: During the 2013-2014 academic year two of our three teams placed and the third team advanced to the final round of competition.

Review, Revise, Align Student Learning Outcomes

Student Learning Outcomes (SLO) for all required construction science courses will be reviewed, revised, and aligned with the American Council for Construction Education (ACCE) and Texas A&M University student learning outcomes. ACCE (our accrediting body) increased their SLO's from 13 to 21 in 2014. The goal of the department is to show the correlation between ACCE, Texas A&M University, and Construction Science Department SLO's. All syllabi for our department will be revised to reflect new SLO's and will be used beginning in the fall of 2014.

Established in Cycle: 2013-2014

Implementation Status: Finished

Priority: High

Projected Completion Date: 06/2015

Responsible Person/Group: Undergraduate Program Coordinator, Undergraduate Instruction Committee

Introduce and Implement Good Writing Skills

Based on our findings in the capstone courses, we will focus on introducing and implementing good writing skills in other courses within our curriculum, specifically COSC 175 - Construction Graphics and COSC 463 - Intro to Construction Law. Industry consistently states students need to improve their writing skills.

Established in Cycle: 2014-2015

Implementation Status: In-Progress

Priority: High

Implementation Description: There are embedded writing assignments in COSC 175 which includes essay, business letter, and resume and in COSC 463 which includes business letter, essay and outlining. Students writing skills are also emphasized and assessed in the required internship course (COSC 494.)

Sustainability and Ethics Emphasis

The target of a minimum evaluation of 70% in each of area of competence was only Partially Met for the two objectives Sustainability and Ethics and Social Responsibility, indicating a greater need for programmatic emphasis for each objective. In order to increase student understanding and awareness of both Sustainability and Ethics and Social Responsibility as applied in the construction field, during faculty Course Group review of the objectives Sustainability and Ethics and Social Responsibility the Department of Construction Science will identify the most appropriate places for increased emphasis on sustainability and social responsibility and ethics education in our program. Individual faculty will implement any changes deemed appropriate that have been approved by the Course Group and Department Head.

Established in Cycle: 2015-2016

Implementation Status: Finished

Priority: High

SLO 20 Action Plan

Based on the Direct Assessment average score (86.93) and Indirect Assessment mean score from the Senior Exit Survey (2.77) of students' ability to understand the basic principles of mechanical, electrical, and piping systems, greater emphasis will be placed on helping students make the connection between the material and its practical application - this may be accomplished through increased use of problem solving, examples, and real-world scenarios. Because many students no longer come from construction backgrounds with pre-existing knowledge/familiarity of concept application, the increased emphasis between content and practical application in addition to increased use of teaching practices such as problem-solving, examples, and real-world scenarios should enhance and reinforce student understanding of the material and its application.

Established in Cycle: 2016-2017

Implementation Status: In-Progress

Priority: Low

Relationships (Measure | Outcome/Objective):

- **Measure:** Direct Assessment _ SLO 20 | **Outcome/Objective:** *Cycle 1: MMDA SLO 20
- **Measure:** Senior Exit Survey _ Confidence | **Outcome/Objective:** *Cycle 1: MMDA SLO 20

SLO 8 Action Plan

Based on the Direct Assessment average score (74.43) and Indirect Assessment mean score from the Senior Exit Survey (3.25) of students' ability to analyze methods, materials, and equipment used to construct projects, greater emphasis will be placed on helping students make the connection between the material and its application and factors that influence it - this may be accomplished through increased use of problem solving, examples, and real-world scenarios. Because many students no longer come from construction backgrounds with pre-existing knowledge/familiarity of concept application, the increased emphasis between content and practical application in addition to increased use of teaching practices such as problem-solving, examples, and real-world scenarios should enhance and reinforce student understanding of the material and its application.

Established in Cycle: 2016-2017

Implementation Status: In-Progress

Priority: High

Relationships (Measure | Outcome/Objective):

- **Measure:** Direct Assessment _ SLO 1 | **Outcome/Objective:** Cycle 2: Project Admin. _ SLO 1
- **Measure:** Direct Assessment _ SLO 8 | **Outcome/Objective:** *Cycle 1: MMDA SLO 8

Implementation Description: instructor provided increased real-world examples in course

Materials, Methods, and Equipment

Students Cumulative average scores for SLO 8 during the Fall 2017 and Spring 2018 semesters were 62.57 and 71.87, respectively. Therefore students cumulative SLO 8 average score for the 2017-18 academic year was 67.22, therefore the target of 70% or greater SLO average was not met. Further, the cumulative score for AY 2017/18 a 7.21 point drop from the cumulative score for AY 2016/17 of 74.43. These results indicate a need for greater emphasis on the methods, material, and equipment used to construct projects in not only targeted courses, but also in other appropriate courses throughout the curriculum. The course instructors in the Construction Materials and Methods courses (COSC 253 & 254) were changed for the Fall 2018 semester to introduce different teaching styles, personal work experience and real-world examples, in order to provide enriched course content to help students successfully connect content matter with application.

Established in Cycle: 2017-2018

Implementation Status: Planned

Priority: High

Analysis Questions and Analysis Answers

Consider the Findings and the Action Plan(s) established this cycle. How did the program/unit identify these next steps for action? Why does the program/unit believe this Action Plan(s) should improve future assessment results?

Academic Year (AY) 2017/18 is the second year in which a new COSC Undergraduate Assessment Plan was implemented. The new assessment plan contains new Outcomes/Objectives; Measures; and Findings which are now aligned with the COSC degree program's accrediting body the American Council for Construction Education (ACCE) Student Learning Outcomes. The Assessment Plan follows a three-year cycle, therefore not all objectives are assessed every year. Cycle 1 containing SLOs #8 and 20 will be the only SLOs reported during the 2017/18 WEAVE assessment cycle. Materials, Methods, and Equipment: Planned. Although the indirect assessment from the Senior Exit Survey target was met in both AY2016/17 (3.25) and AY2017/18 (2.92), the direct assessment average score in AY2017/18 decreased from the average score of 74.43 in AY2016/17 to only 67.22 not meeting the direct assessment target of 70%. These results indicate the department needs greater emphasis on the methods, material, and equipment used to construct projects in not only targeted courses, but also in other appropriate courses throughout the curriculum. The change in course instructors for the Construction Materials and Methods courses (COSC 253 & 254) should provide students with different teaching styles/approaches than were implemented in previous years. The fresh perspective of the new instructors, who are primarily from industry, should also provide students with an enriched content containing personal work experience and real-world examples to encourage student connections of course content to practical application promoting greater understanding and retention.

***CRITICAL* Provide an update for completed or ongoing action plans from the previous year(s). Discuss any successes, challenges, and/or obstacles the program/unit has experienced while implementing the Action Plan(s). Address whether or not the program/unit has seen any improvement in assessment results for the targeted Outcome(s) the Action Plan(s) were designed to address and why the action plan may/may not have resulted in improvements.**

The SLO 8 and 20 action plans were identified by faculty members of the course group with responsibility of teaching those courses with primary emphasis on the targeted SLOs. Because many students no longer come from construction backgrounds with pre-existing knowledge/familiarity of concept application, the increased emphasis between content and practical application in addition to increased use of teaching practices such as problem-solving, examples, and real-world scenarios should enhance and reinforce student understanding of the material and its application. Introduce and Implement Good Writing Skills – In Progress: There are embedded writing assignments in COSC 175 which includes essay, business letter, and resume and in COSC 463 which includes business letter, essay and outlining. Students writing skills are also emphasized and

assessed in the required internship course (COSC 494.) SLO 8 Action Plan – In Progress: Although the indirect assessment from the Senior Exit Survey target was met in both AY2016/17 (3.25) and AY2017/18 (2.92), the direct assessment average score in AY2017/18 decreased from the average score of 74.43 in AY2016/17 to only 67.22 not meeting the direct assessment target of 70%. These results indicate the department needs even greater emphasis on helping students make the connection between the material and its practical application - this may be accomplished through increased use of problem solving, examples, and real-world scenarios. - SLO 20 Action Plan – In Progress: The target has been met during AY 2017/18 and AY 2018/19 with Direct Assessment average scores (AY2016/17 of 86.93) and (AY 2017/18 of 84.66) and Indirect Assessment mean scores from the Senior Exit Survey (AY2016/17 of 2.77) and (AY 2017/18 of 2.92) of students' ability to understand the basic principles of mechanical, electrical, and piping systems. Due to the decrease in direct assessment scores from AY2016/17 to AY2017/18, the department will continue to place emphasis on helping students make the connection between the material and its practical application - this may be accomplished through increased use of problem solving, examples, and real-world scenarios.