Detailed Assessment Report 2017-2018 Construction Engineering Technology BS* As of: 10/08/2018 03:03 PM EDT

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

Mission / Purpose

The University of Southern Mississippi Construction Engineering Technology (CET) program is committed to producing graduates who possess the necessary skills to enter the A/E/C industry fully capable of performing entry-level tasks at the office and in the field. The graduates' critical thinking, discipline and work ethics will be such that a short period of training and work experience will allow them to move into managerial positions.

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

SLO 1: Create a construction project safety plan.

Graduates will have the ability to create a construction project safety plan upon graduation.

Related Measures

M 1: M1 (Direct): BCT 380 Final Project

The Spring 2017 BCT 380 (Construction Safety) course requires students to create a project specific safety plan based on construction documents provided by the course instructor.

Source of Evidence: Project, either individual or group

Target:

Using a rubric to evaluate each component of the submitted safety plan, a student's performance will be assessed as either unacceptable (below 60 points), poor (60-70 points or higher), acceptable (70 points or higher), or good (80 points or higher). The achievement target will have been met if 80 percent or more assessed students achieve an acceptable or good score.

Finding (2017-2018) - Target: Met

Fall 2017: On-campus: 82.6% (N=23) 19/23 on-campus students received a 70 or higher on the project. Online: 97.8% (N=46) 45/46 online students received a 70 or higher on the project.

M 2: M2: (Direct): BCT 400 Safety Project

The Spring 2017 BCT 400 (Senior Project) course is the capstone course for the Construction Engineering Technology degree. One of the projects required for the spring 2017 course is for students to submit a site- specific safety plan for a construction project.

Source of Evidence: Project, either individual or group

Target:

The achievement target will have been met if 80 percent or more assessed students achieve a 70% or better on the project.

Finding (2017-2018) - Target: Partially Met

Spring 2018: On-campus: 58% (N=12) 7/12 on campus students received a 70% or higher on the project. Online: 97% (N=36) 35/36 online students received a 70% or higher on the project.

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

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

BCT 400 Safety Plan

Established in Cycle: 2016-2017 Discuss an action plan with the Director of the School and the unit Coordinator(s) that involves content of prerequisite courses...

SLO 2: Create construction project cost estimates.

Students will be able to create construction project cost estimates upon graduation.

Related Measures

M 3: M1 (Direct): AEC 365 -Cost Estimate and Report

The Fall 2016 AEC 365 (Estimating 2) course is the second of two estimating courses required for the Construction Engineering Technology degree. Students create several estimates in this course with each one increasing in scope and complexity. Assignment three requires students to assemble a cost estimate and report.

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

Target:

The achievement target will have been met if 80 percent or more assessed students achieve a 70% or better on the assignment.

Finding (2017-2018) - Target: Met

Fall 2017: On-campus: 84% (N=25) 21/25 students received a 70% or higher on the assignment. Online: 81.5% (N=65) 53/65 students received a 70% or higher on the assignment.

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

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

AEC 365 Action Plan

Established in Cycle: 2016-2017

Change the course assignments from three to one (cost estimate and report), concentrating on the quality

of one assignment deliv...

M 4: M2 (Direct) BCT 400 Cost Estimate Project

The Spring 2017 BCT 400 (Senior Project) course is the capstone course for the Construction Engineering Technology degree. One of the projects required for the course is for students to submit a comprehensive cost estimate for a construction project.

Source of Evidence: Project, either individual or group

Target:

The achievement target will have been met if 80 percent or more assessed students achieve a 70% or better on the project.

Finding (2017-2018) - Target: Partially Met

Spring 2018: On-campus: 58% (N=12) 7/12 students received a 70% or higher on the project. Online: 97% (N=36) 35/36 online students received a 70% or higher on the project.

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

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

BCT 400 Cost Estimate Action Plan 2017-2018

Established in Cycle: 2017-2018

The BCT 400 course has not met SLO target for two cycles as related to students creating a construction project cost estimate. T...

SLO 3: Understand methods of project delivery.

Students will be able to understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.

Related Measures

M 5: M1 (Direct): AEC 380-AIA-201 Test

The Fall 2016 AEC 380 (Specifications & Contract Documents) course includes content about the Construction Project Life Cycle and the roles and responsibilities of all entities and parties involved in the project. Week 6 covers Conditions of the Contract which includes a thorough review of the AIA-A201 document defining duties and responsibilities of all parties of the contract. Students complete a test assessing the content.

Source of Evidence: Writing exam to assure certain proficiency level

Target:

There are a total of 63 questions on the test. Each question is worth 1 point. Using the following grading scale, a student's performance will be assessed as either an F (0-37 points), D (38-43 points), C (44-50 points), B (51-56 points), A (57-63). The achievement target will have been met if 80 percent or more assessed students achieve a C or better.

Finding (2017-2018) - Target: Partially Met

Spring 2018: On-campus: 73.3% (N=15) 11/15 on-campus students received a 70% or better on the test. Online: 93.8% (N=65) 61/65 online students received a 70% or higher on the test.

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

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

AEC 380 AIA-A201 Test

Established in Cycle: 2017-2018

The on-campus section students achieved only 73.3% out of the targeted 80% minimum. The instructor of the course will review the...

M 6: M2 (Direct): BCT 174 Delivery Methods

The Fall 2016 BCT 174 (Construction Organization) course is an introductory course for the construction industry. In this course, students learn about different constituencies involved in the construction projects. In addition, they learn about different project delivery methods. In the course students are required to complete an assignment in which they compare 3 major types of project delivery and draw the organizational chart of each. Students also describe the relationship between major constituencies.

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

Target:

Using a Pass/Fail grading criteria, students either have all information correct or they fail the assignment. The achievement target will have been met if 80 percent or more assessed students achieve a "Pass."

Finding (2017-2018) - Target: Met

Fall 2017: On-campus: $94.\overline{7\%}$ (N=38) 36/38 of students received a 70% or higher on the assignment. Online: 82.6% (N=98) 81/98 of students received a 70% or higher on the assignment.

SLO 4: Utilize electronic-based technology.

Students will be able to utilize electronic-based technology to manage the AEC (Architecture/Engineering/Construction) process.

Related Measures

M 7: M1 (Direct): AEC 132 Final Project

The AEC 132 (Architectural Graphics) course is where students use AutoCAD to develop a partial set of working drawings (plans). The Final Project for the course is evaluated using a rubric developed to access the components of the submission.

Source of Evidence: Project, either individual or group

Target:

The achievement target will have been met if 80 percent or more assessed students achieve a 70% or better on the project.

Finding (2017-2018) - Target: Met Fall 2017: On-campus: 85% (N= 26) 22/26 of on-campus students received a 70% or higher on the project. Online: 80% (N=47) 38/47 of online students received a 70% or higher on the project.

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

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

AEC 132 Final Project

Established in Cycle: 2016-2017 The findings indicate that students need more support in the beginning of the semester because AEC 132 is deemed a "historically...

M 8: M2 (Direct): AEC 254 Estimating Assignment

The Fall 2016 AEC 254 (Estimating 1) course requires students to submit an assignment using OnScreen Takeoff software to estimate the quantity of concrete, CMU, and brick based on a set of drawings of a Coastal Wildlife Recovery Center. The assignment is scored based on 150 points total. A student earns the 150 points if they are successful in developing the estimate using the software and submit the assignment by the deadline.

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

Target:

A student's performance will be assessed as either unacceptable (below 90 points), poor (90-104 points), acceptable (105-119 points), or good (120-134 points) or excellent (135-150 points). The achievement target will have been met if 80 percent or more assessed students achieve an acceptable or better score.

Finding (2017-2018) - Target: Partially Met

Fall 2017: On-campus: 72.7% (N= 22) 16/22 of on-campus students received a 70% or higher on the assignment. Online: 90.6% (N= 43) 39/43 of online students received a 70% or higher on the assignment.

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

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

AEC 254 Use of Technology

Established in Cycle: 2017-2018 Only 72.7% of on-campus AEC 254 students achieved the target related to technology use on an assignment in the course.

SLO 5: Increase Hattiesburg on-campus enrollment by 10%

Increase Hattiesburg on-campus enrollment by ten percent.

Related Measures

M 9: IR Enrollment Data

The Construction Engineering Technology program desires to increase the Hattiesburg campus student enrollment by ten percent. The data will be collected in the Fall semester from the Office of Institutional Research.

Source of Evidence: Existing data

Target:

The target will be met if the enrollment for the Hattiesburg on-campus Construction Engineering Technology majors increases by ten percent from Fall 2016 to Fall 2017.

Finding (2017-2018) - Target: Not Met

Official data from the University of Southern Mississippi office of Institutional Research acquired on September 17, 2018: Fall 2017- on-campus Construction Engineering Technology majors enrollment was 127 students. Fall 2018 -on-campus Construction Engineering Technology majors enrollment was 113. This is a decline of 14 students.

Connected Document

CET Official Enrollment Fall 2018

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

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

Actively Recruit On-Campus Students

Established in Cycle: 2016-2017

The faculty and staff of the School of Construction will attend and host at minimum three (3) recruiting events that target incr...

SLO 6: Employer's are satisfied with intern's performance.

Construction Engineering Technology students are required to complete an internship consisting of 400 contact hours as part of their degree requirements.

Related Measures

M 10: (Indirect) Employer Survey

Construction Engineering Technology students are required to complete an internship as part of their degree requirements. At the end of the internship, their supervisor completes an evaluation of the intern's performance as related to his/her assigned tasks during the internship. The Supervisor's Evaluation form consists of 7 questions which have 1-3 point rating options for response. The ratings include: 1=below average; 2=average; and 3=good.

Source of Evidence: Employer survey, incl. perceptions of the program

Target:

The achievement target will have been met if 80 percent or more assessed students achieve a two (2= average) or higher rating based on the average of the responses to the 7 questions on the evaluation form.

Finding (2017-2018) - Target: Met

Fall 2017: On-Campus: 100% (N=2) 2/2 on-campus students received a 2=average or higher rating. Online: 100% (N=14) 14/14 students received a 2=average or higher rating. Spring 2018: On-Campus-No students enrolled classified as on-campus; Online 100% (N=14) 14/14 students received a 2=average or higher rating. Summer 2018: Section H001: Online: 94% (N=32) 30/32 students received a 2=average or higher rating Section H002: Online: 92% (N=13) 12/13 students received a 2=average or higher rating

Actively Recruit On-Campus Students

The faculty and staff of the School of Construction will attend and host at minimum three (3) recruiting events that target increasing enrollment on-campus Construction Engineering Technology majors.

Established in Cycle: 2016-2017 Implementation Status: In-Progress

Priority: High

Relationships (Measure | Outcome/Objective):

Measure: IR Enrollment Data | Outcome/Objective: Increase Hattiesburg on-campus enrollment by 10%.

Implementation Description: The School of Construction hosted a spring 2017 "Craft of Construction' day where high school and community college students visited our Hattiesburg campus. We plan to host this event again next spring. We will also look for opportunities to attend community college and high school career days. **Projected Completion Date:** 08/2018

Responsible Person/Group: Coordinator of Construction Engineering Technology, Student Advancement Administrator and faculty in the program.

AEC 132 Final Project

The findings indicate that students need more support in the beginning of the semester because AEC 132 is deemed a "historically difficult course" by the university based on the four academic years of data compiled by the Institutional Research for courses in which 33% of students received a grade of D,F, or W. The instructor of the course will provide more tutorials (available in Canvas) and outside of class assistance to students to better prepare students who are challenged in completing the project.

Established in Cycle: 2016-2017 Implementation Status: In-Progress

Priority: High

Relationships (Measure | Outcome/Objective):

Measure: M1 (Direct): AEC 132 Final Project | Outcome/Objective: Utilize electronic-based technology.

Implementation Description: Continue to monitor the findings.

Projected Completion Date: 07/2018

Responsible Person/Group: Coordinator of program, instructor of record

AEC 365 Action Plan

Change the course assignments from three to one (cost estimate and report), concentrating on the quality of one assignment deliverable.

Established in Cycle: 2016-2017 Implementation Status: In-Progress Priority: High

Relationships (Measure | Outcome/Objective):

Measure: M1 (Direct): AEC 365 -Cost Estimate and Report | Outcome/Objective: Create construction project cost estimates.

Projected Completion Date: 07/2018

Responsible Person/Group: Coordinators of CET and AET programs and instructor of record

BCT 400 Cost Estimate Plan

Discuss an action plan with the Director of the School and the unit Coordinator(s) that involves content of prerequisite courses: The Senior Capstone course, BCT 400, is intended for students to show evidence of competencies, not to attain the competencies during the course.

Established in Cycle: 2016-2017

Implementation Status: In-Progress

Priority: High

Implementation Description: Some changes have been made in prerequisite offerings and are strictly enforced. Projected Completion Date: 07/2018

Responsible Person/Group: AET and CET director , coordinators, and instructor of record

BCT 400 Safety Plan

Discuss an action plan with the Director of the School and the unit Coordinator(s) that involves content of prerequisite courses: The Senior Capstone course, BCT 400, is intended for students to show evidence of competencies, not to attain the competencies during the course.

Established in Cycle: 2016-2017 Implementation Status: In-Progress Priority: High

Relationships (Measure | Outcome/Objective):

Measure: M2: (Direct): BCT 400 Safety Project | Outcome/Objective: Create a construction project safety plan.

Projected Completion Date: 07/2019

AEC 254 Use of Technology

Only 72.7% of on-campus AEC 254 students achieved the target related to technology use on an assignment in the course.

Established in Cycle: 2017-2018 Implementation Status: Planned Priority: High

Relationships (Measure | Outcome/Objective):

Measure: M2 (Direct): AEC 254 Estimating Assignment | Outcome/Objective: Utilize electronic-based technology.

Implementation Description: The instructor of the course will spend more time showing students how to use the software in order to successfully complete the assignment. Tutors may also be made available for those students

needing extra help. **Projected Completion Date:** 07/2019 **Responsible Person/Group:** Instructor of course and coordinator of program

AEC 380 AIA-A201 Test

The on-campus section students achieved only 73.3% out of the targeted 80% minimum. The instructor of the course will review the questions missed and provide additional emphasis on students fully understanding the content contained in those questions to assist in improving the outcomes.

Established in Cycle: 2017-2018 Implementation Status: Planned Priority: High

Relationships (Measure | Outcome/Objective):

Measure: M1 (Direct): AEC 380-AIA-201 Test | Outcome/Objective: Understand methods of project delivery.

Projected Completion Date: 08/2019

Responsible Person/Group: instructor of course

BCT 400 Cost Estimate Action Plan 2017-2018

The BCT 400 course has not met SLO target for two cycles as related to students creating a construction project cost estimate. The program coordinator and course instructor have had discussions about reducing the scope of the project in order for students to be successful in the future. Further discussion will take place to identify additional measures that need to be taken.

Established in Cycle: 2017-2018 Implementation Status: Planned Priority: High

Relationships (Measure | Outcome/Objective):

Measure: M2 (Direct) BCT 400 Cost Estimate Project | Outcome/Objective: Create construction project cost estimates.

Projected Completion Date: 01/2019 Responsible Person/Group: Course instructor and program coordinator

Analysis Questions and Analysis Answers

What specifically did your assessments show regarding proven strengths or progress you made on outcomes/objectives?

Construction Engineering Technology students met or surpassed the learning outcomes target in several areas of the degree. Both online and on-campus students are able to create a site-specific safety plan for a project (BCT 380), create construction project cost estimates (AEC 365), understand methods of project delivery (BCT 174), and utilize electronic-based technology (AEC 132). All internship employers are satisfied with our student intern's performance during the required 300 contact hour internship our students typically participate in during the summer of their junior year of studies.

What specifically did your assessments show regarding any outcomes/objectives that will require continued attention?

There are several areas in which our online students are achieving the target but our on-campus students are not achieving the target. The courses in which our on-campus students are not meeting the target include: Senior Capstone (BCT 400) safety plan, Senior Capstone (BCT 400) project cost estimate, Specifications & Contract Documents (AEC 380) project delivery methods, and Estimating 1 (AEC 254) utilization of electronic-based technology. The percentage of on-campus students meeting the targets for these four classes have all dropped from the results in the 2016-2017 assessment cycle. This decline in achieving the target may be partially contributed to the change in which semester major semester) which in some cases caused a two-semester time span between a prerequisite course and subsequent major course.

Annual Report Section Responses

Program Summary.

Summarize highlights of the past year for this particular academic program. Provide context to an outside reviewer.

The Construction Engineering Technology (CET) degree program has around 373 majors (113 on-campus; 258 online) and only 7 faculty teaching courses in both Construction and Architecture Engineering Technology (around 83 majors). This results in about 456 students being taught by 7 faculty (or a 1:65 faculty to student ratio). 66% of the coursework is shared (both Construction and Architecture students must complete as part of the 120 credits required to receive the B.S.) for these two degrees. Construction Engineering Technology is accredited by ETAC-ABET (Engineering Technology Accrediting Commission-Accreditation Board of Engineering Technology) and ACCE (American Council for Construction Education). The CET program is offered both on the Hattiesburg campus and fully online. The CET program has a very active student organization, Student Constructors. This organization meets bi-monthly, has a facebook page, and performs several community outreach projects each semester as well as participating in campus activities (e.g., intramural sports, student organization recruiting booth, move-in day...). Student leaders from this organization invite industry and alumni leaders to speak at the bi-monthly meetings. Student Constructors also host the "Craft of Construction Lecture Series." The lecture series invited two exceptional individuals to speak during the last academic year. On November 9, 2017, Mr. Richard Bekesh, AIA, and CEO of Spring Engineering, Inc. in Tampa, Florida presented for the Lecture Series. Mr. Bekesh is a graduate from the Architecture Engineering Technology program and spoke on, "You don't know what you don't know... until you know it." Dr. Barbara Jackson, Director of Burns School of Real Estate and Construction Management, at the University of Denver, Dr. Jackson is a leader and expert in Design-Build, integrated project leadership and delivery, and interdisciplinary collaboration. Her presentation topic was "Design-Build and Beyond." Based on data acquired for the College of Science & Technology Degree Auditor, there were a total of 53 (Fall 2017 = 12 online & 10 oncampus; Spring 2018 = 15 online & 13 on-campus; Summer 2018 = 3 online) Construction Engineering Technology students graduating in AY 2017-2018. In the Spring 2018 semester we revived our national honor society for construction, Sigma Lambda Chi. Sigma Lambda Chi had been inactive for several years. The induction ceremony was held on April 6, 2018 on the USM Hattiesburg campus at the Ogletree House. There were 11 students and 4 honorary members (2 faculty, 1 staff, and 1 industry professional) inducted that evening. More than 50 people attended this event. Our CET program

continues to experience growth in the online student enrollment. Several faculty have completed Quality Matters (QM) courses (Cewe-Malloy, Kemp, and Zhang) and two faculty are now QM certified reviewers (Kemp & Zhang). Because our CET program is offered online we value the training received and will implement things learned and best practices in designing our online courses. In March 2018 two faculty passed the Associate DBIA certification exam (Shalabi & Kemp). All of these accomplishments support our efforts to engage our students and delivery a high-quality program. We continue to participate in recruiting events. The 2nd Annual Craft of Construction & Design Day event held on March 27, 2018 was even more successful than the first event in 2017. We had over 196 high school & community college students, counselors, advisors, and instructors, and 15 industry representatives attend. Administrators and program coordinators, faculty, program alumni, and student representatives provided information and a memorable day to those attending. Our Sigma Lambda Chi student members will be participating in recruiting visits to regional high schools and community colleges. We also attended the Skills USA event in Louisville, Kentucky to recruit High School and Community College students for our programs. Two other recruiting events we participated in were Pathways to Possibilities held in Biloxi, Mississippi and Pathway to Careers held in Jackson, Mississippi. The Industry Advisory Council (IAC) for the Construction and Architecture programs continues to grow in number and represents the many diverse sectors of the construction industry. Our IAC Executive Committee developed revised By-Laws, hosted meetings for the IAC in the fall & spring semesters, served as mentors, industry partners, and guest speakers for faculty and courses, attended American Council for Construction Education national meetings & workshops, gave feedback on curriculum matters, provided financial support for scholarships and School needs, and offered our students internships.

Connected Documents

Craft of Construction and Design Day Info Dr Barbara Jackson Flyer Richard Bekesh Flyer Sigma Lambda Chi Flyer

Continuous Improvement Initiatives.

Any department-level or program-level action plans for improvement that are not necessarily tied to a specific student learning outcome or program objective should be described in this field.

The Construction Engineering Technology program coordinator has developed the template faculty teaching in the program use for reporting course assessment results. The template is delivered to faculty in the form of a survey the faculty member completes at the end of each semester for all classes he/she taught. The Student Learning Outcomes (SLO) required by our accrediting bodies are part of the template and faculty merely select the appropriate SLO (as determined by all faculty during our Spring 2017 retreat) from the list provided. The template has been used for two semesters and is a "work in progress" because with each semester it is discovered that an improvement may be made to the template. The coordinator of the program reviews the results after the semester's data has been submitted and conducts meetings with individual faculty or program faculty groups to discuss what we may do to improve outcomes where needed. A copy of the results submitted by faculty is included as an attachment to this section of the report.

Connected Documents

Fall 2017 AEC-BCT Course Assessment Survey Results Spring 2018 Course Assessment

Closing the Loop.

Summarize the results of previous action plan implementation. Provide evidence of improvement based on analysis of the results.

The 2016-2017 AY action plans were implemented with the following results: 1. BCT 400 Safety Plan- The coordinator and instructor of BCT 400 discussed the possible changes that could be made in the course to improve SLO results. Students take the BCT 380 course in the fall of their junior year and do not take BCT 400 until spring of senior year. This results in a two year gap between courses. The instructor of BCT 400 provided students with materials to refresh their understanding of the components of a safety plan. The on-campus student SLO findings dropped from 60% to 58% while the online student SLO findings improved from 82% to 97%. Further planning needs to be done to determine possible other actions that may be taken. 2. AEC 465 Cost Estimate Project- The reduction of number of projects and more individual help for students who are struggling had positive results. The on-campus student SLO findings improved from 57% to 84% and online student SLO findings improved from 55% to 81.5%. The action plan was successful and will continue to be implemented and monitored. 3. AEC 132 Final Project- The instructor of the course prepared tutorials and provided additional one-on-one time for students challenged in completing the project. This action plan was successful as evidenced by on-campus student SLO findings of 52% (in Fall 2016) and online student SLO findings of 63% and 71% (Summer & Fall 2016) improving to on-campus 85% and online 80%. The plan will continue to be implemented and monitored. 4. Increase On-Campus Enrollment by 10%- Based on the official enrollment data provided by the Office of Institutional Research, the on-campus enrollment numbers declined from 127 students in Fall 2017 to 113 students in Fall 2018. This may partially be contributed to the new policy established by the program of on-campus students not being able to enroll in online courses unless their is a scheduling conflict caused by when the School offers major courses and this conflict will negatively impact a student's graduation date. Some on-campus students who are employed full time have officially changes their campus from Hattiesburg on-campus to online so they may enroll in online classes which are better suited to their work schedules. The honor society for construction, Sigma Lambda Chi, students will be visiting local high schools to recruit for the on-campus program.

Connected Document

CET Official Enrollment Fall 2018