Chemical Engineering BS

Mission and Vision for the CHE-BS Program and Connections to the TTU Mission

Start: 07/01/2017

End: 06/30/2018

Progress: Completed

Reporting Year: 2017-2018

Providing Department: Chemical Engineering BS

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Mission:

The Department of Chemical Engineering at Tennessee Technological University strives to develop the 21st Century Renaissance Engineer through development and implementation of novel learning environments anchored by the award-winning Renaissance Foundry Model. The foundation of this platform is rooted in the guidelines provided by the National Academy of Engineering's Vision for the Engineer of 2020. Educational protocols within the department are consistent with the mission and vision statements given below:

The **Mission** of the Department of Chemical Engineering is to prepare relevant and adaptive chemical engineers in state-of-the-art areas by emphasizing real-world problem solving and critical thinking skills. The **Vision** of the Department of Chemical Engineering is to be a recognized leader in chemical engineering education through excellence in teaching, research, and service.

The current program educational objectives stipulate that within roughly five years that our graduates will collectively exhibit the following traits:

- Be real-world problem solvers (RWPS): the graduates of our program will obtain positions such as plant process engineer, design engineer, group leader, production engineering, sales engineer.
- Be critical thinkers (CT): the graduates of our program will demonstrate that they consistently make informed decisions through a process wherein they utilize critical thinking skills.
- Have continued their formal education (CFE): our graduates will demonstrate that they have continued their education beyond the BS through some form of professional development (not necessarily leading to another degree) or will have graduated from a professional school with an MS, PhD, MD, JD or similar degree.
- Be working at the frontiers in ChE (FChE): graduates from our program will utilize and apply technologies such as biomaterials, nano- and micro-systems, multi-scale analysis, informatics, group dynamics, and multi-media.

These objectives are consistent with the TTU mission and vision.

Program Goal 1: Graduates Recognized as Real World Problem Solvers

Define Goal:

Program Goal 1: Be recognized as real-world problem solvers (RWPS): the graduates of our program will obtain positions such as plant process engineer, design engineer, group leader, production engineering, and sales engineer. RWPS – Real world problem solving as it relates to both design and experimentation has been addressed in the curriculum. Changes to our curriculum including the distributed lab integration have addressed both design and experimentation nicely. A “problem solving formalism” sequence was introduced early in the curriculum with an assessment strategy to establish a baseline from which we can assess progress later in the curriculum.

Intended Outcomes / Objectives:

The TTU Chemical Engineering BS curriculum is specifically designed to prepare students for either a professional career in the Southeastern US regional chemical process industries and/or simultaneously to prepare students who will choose to pursue graduate studies in engineering or other professional studies, e.g., medicine, law, business, pharmacy. Our overall Program Goals were redesigned throughout academic year 2007-2008. The redesign process involved use of faculty consensus management techniques, and multiple faculty meetings and retreats dedicated to discussion of the undergraduate curriculum. The feedback of our BOA and other constituencies was incorporated into this redesign process. The Program Goals are designed to guide curriculum development, to be measurable statements of purpose, and to advertise our curriculum intent to our constituency. Ultimately the intended outcome is that within roughly five to seven years after graduation, our graduates will satisfy four Program Goals (the first of which is listed above with the others provided in subsequent sections of this report) and 11 student learning outcomes (a-k).

Program Goal 2: Graduates Recognized as Critical Thinkers

Define Goal:

Program Goal 2: Be recognized as critical thinkers: the graduates of our program will demonstrate that they consistently make informed decisions through a process wherein they utilize critical thinking skills.

Intended Outcomes / Objectives:

Program Goal 3: Graduates Continuing Formal Education

Define Goal:

Program Goal 3: Continue their formal education: the graduates of our program will demonstrate that they have continued their education beyond the BS through some form of professional development (not necessarily leading to another degree) or will have graduated from a professional school with an MS, PhD, MD, JD or similar degree.

Intended Outcomes / Objectives:

Program Goal 4: Graduates Working at the Frontiers of Chemical Engineering

Define Goal:

Program Goal 4: Work at the frontiers in ChE: the graduates of our program will utilize and apply technologies such as bio materials, nano- and micro-systems, multi-scale analysis, informatics, group dynamics, and multi-media.

Intended Outcomes / Objectives:

Student Learning Outcome "a"

Define Goal:

An ability to apply knowledge of mathematics, science, and engineering

Intended Outcomes / Objectives:

The department's articulation matrix for ABET is followed to help ensure student learning outcomes are assessed throughout the curriculum. This applies for each of the program's 11 student learning outcomes.

Student Learning Outcome "b"

Define Goal:

An ability to design and conduct experiments, as well as to analyze and interpret data

Intended Outcomes / Objectives:

Student Learning Outcome "c"

Define Goal:

An ability to design a system, component, or process to meet desired needs

Intended Outcomes / Objectives:

Student Learning Outcome "d"

Define Goal:

An ability to function on multi-disciplinary teams

Intended Outcomes / Objectives:

Student Learning Outcome "e"

Define Goal:

An ability to identify, formulate, and solve engineering problems

Intended Outcomes / Objectives:

Student Learning Outcome "f"

Define Goal:

An understanding of professional and ethical responsibility

Intended Outcomes / Objectives:

Student Learning Outcome "g"

Define Goal:

An ability to communicate effectively

Intended Outcomes / Objectives:

Student Learning Outcome "h"

Define Goal:

The broader education necessary to understand the impact of engineering solutions in global and societal context

Intended Outcomes / Objectives:

Student Learning Outcome "i"

Define Goal:

A recognition of the need for, and an ability to engage in life-long learning

Intended Outcomes / Objectives:

Student Learning Outcome "j"

Define Goal:

A knowledge of contemporary issues

Intended Outcomes / Objectives:

Student Learning Outcome "k"

Define Goal:

An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Intended Outcomes / Objectives:

Assessment Mapping to Program Goals and Student Learning Outcomes

Goal/ Outcome/ Objective: Program Goals 1-4 and Student Learning Outcomes a-k

Type of Tool: Other

Frequency of Assessment: N/A

Assessment Methods:

Attached is the mapping of the assessments used to the CHE BS Program Goals and Student Learning Outcomes. The rationale for this mapping is discussed in each "assessment item" section.

Attached Files

Mapping of Assessments to Goals and Outcomes BS Program 2018 and Earlier.pdf

Assessment: Alumni Survey

Goal/ Outcome/ Objective: Program Goals 1-4

Type of Tool: Survey

Frequency of Assessment: Once every three years

Assessment Methods:

Alumni Surveys: These surveys have been typically sent out to graduates of the TTU CHE program on a 3 year cycle but have not been administered for several years now. The strategy of survey collection is currently being reviewed in an attempt to achieve a more effective response rate. Similar in nature to the employer surveys (see below), the alumni surveys previously contained questions directly related to the attainment of Program Educational Goals and Student Learning Outcomes. Written comments were also collected and coded as strengths or weaknesses and discussed in faculty meetings. The results were shared with the Undergraduate Program Coordinator for potential improvement actions.

Assessment: Capstone Design Outcomes and External Project -- CHE 4410 and CHE 4420

Goal/ Outcome/ Objective: Student Learning Outcomes a-k

Type of Tool: Capstone Project

Frequency of Assessment: Annually

Assessment Methods:

External Review of Senior (Capstone) Design Projects: (Senior Year, Spring Semester) Student Learning Outcomes a-k. The capstone process design sequence includes two, three-credit hour courses taken during the senior year. The first semester course focuses on equipment sizing, and the second semester course leverages student knowledge as teams of students work on a project of interest that is led by various faculty in the department. External evaluators are used for assessing the quality of the Senior Design Projects and providing feedback on the capstone design course, and by extension of the ChE Program at large. The evaluators ask questions of the team members and provide feedback on the technical quality of the projects and oral/poster presentations using an established ABET-criteria based rubric. The external evaluations are provided to the instructor who summarizes the feedback to the faculty for implementation of improvement as necessary.

Assessment: Capstone Lab Outcomes and External Project --CHE 4240

Goal/ Outcome/ Objective: Student Learning Outcomes a-k

Type of Tool: Capstone Project

Frequency of Assessment: Annually

Assessment Methods:

Capstone Lab and External Project Assessments: (Annually) - ChE 4240. Student Learning Outcomes a-k. Each year, the Capstone Lab student team projects are assessed by both the instructor and (periodically) by invited judges that provide an overall assessment of the relevance and practicality of the different projects.

Assessment: ChE External Advisory Board (BOA)

Goal/ Outcome/ Objective: Program Goals 1-4

Type of Tool: Advisory Board

Frequency of Assessment: Annually

Assessment Methods:

ChE External Advisory Board (BOA): (Annually) The ChE External Advisory Board (BOA) consists of approximately 8-10 members, selected primarily from employers of our students and other related industries. The main purpose of this board is an advisory one; it is not intended as a fund-raising mechanism. Specifically, the board provides input and feedback on various curricular and accreditation matters (ABET, SACS, THEC Graduate Program Review). Some BOA members also regularly serve as External Evaluators for the Senior Design Projects. Key selected items identified by the BOA are then discussed among faculty including the Undergraduate Program Coordinator for potential actions for improvement.

Assessment: Co-Op Performance Assessment

Goal/ Outcome/ Objective: Student Learning Outcomes a, d-k

Type of Tool: Checklist
Survey

Frequency of Assessment: Typically once at the end of each semester

Assessment Methods:

Co-Op Report Assessment: (Semi-annually or annually). The Department uses the evaluation summaries that are directly provided by the student supervisor at the co-op site to learn about important student competencies. Reports are reviewed by the Chair and or the Designee Faculty to extract valuable feedback.

Assessment: Course-Level Assessments of Selected Courses

Goal/ Outcome/ Objective: Student Learning Outcomes a-k

Type of Tool: Annual Unit Report
Other

Frequency of Assessment: Annually (dependent on course offering schedule)

Assessment Methods:

Course Level Assessments: (Annually, dependent on course offering schedule). The Department uses selected courses (nine in total) to learn about student performance at the different levels of the curriculum through the completion of what are referred to as "Course Level Assessment and Improvement Reports" (or CLACIR's for short). CLACIR's are completed for every term that the course is taught, and an overview summary is completed for the course every third year. Those summaries are used to continuously improve the courses and the curriculum as a whole and are discussed with the faculty and appropriate corrective action taken. These courses along with their mapping to the Student Learning Outcomes are listed in the attached table. The "M" and "m" designations refer to what are considered "Major" and "minor" assessment criteria.

Attached Files
articulationmatrix (2017-18M).doc

Assessment: Critical thinking Assessment Test (CAT) and Course Rubrics

Goal/ Outcome/ Objective: Program Goal 2 and Student Learning Outcomes a-c, e, and k

Type of Tool: Other

Frequency of Assessment: As needed to demonstrate effectiveness of new courses and course changes (only done occasionally)

Assessment Methods:

Critical thinking Assessment Test (CAT) and Course Rubrics: Critical thinking skills are assessed directly or indirectly using a variety of rubrics developed by the faculty for use in evaluating student projects in multiple courses within the program, particularly the transfer science courses (heat transfer, fluid mechanics, and mass transfer) as well as process design. In addition, the faculty is engaged in educational research in these and other courses under IRB approval in which the Critical thinking Assessment Test (CAT) is utilized in a pre-post fashion (i.e., beginning of a semester and end of a semester).

Assessment: Employer Survey

Goal/ Outcome/ Objective: Program Goals 1-4

Type of Tool: Survey

Frequency of Assessment: Once every three years

Assessment Methods:

Employer Surveys: These surveys have been typically sent out on a three year cycle to employers of the TTU CHE graduates but have not been administered for several years now. The strategy of survey collection is currently being reviewed in an attempt to achieve a more effective response rate. Similar in nature to the alumni surveys (see above), the employer surveys previously contained questions directly related to the attainment of Program Educational Goals and Student Learning Outcomes. Written comments were also collected and coded as strengths or weaknesses and discussed in faculty meetings. The results were shared with the Department for potential improvement actions.

Assessment: FE Exam Results

Goal/ Outcome/ Objective: Student Learning Outcomes a-c, e, f, and k

Type of Tool: Certification Exam

Frequency of Assessment: Annually

Assessment Methods:

FE Exam: (Annually) While not a complete assessment tool in itself, the Fundamentals of Engineering (FE) exam provides an objective, nationally- normalized testing of certain engineering, math, and science topics, as well as the ability to analyze, formulate, and solve engineering problems. Consequently, the FE exam can be a useful measure of Student Learning Outcomes of the program. Results are analyzed and feedback is provided to the faculty for improvement actions.

Assessment: Student Senior Survey/Chair Debriefing of Students

Goal/ Outcome/ Objective: Student Learning Outcomes a-k

Type of Tool: Survey
Other

Frequency of Assessment: Annually

Assessment Methods:

Student Senior Survey and Chair Debriefing: (Annually) These items provide the opportunity for student feedback (anonymously) or directly to the Chair on the different aspects of the program, including ChE curriculum, and the students' experiences while at TTU. In addition, a number of (survey or direct) questions are directly related to specific Program Goals and Student Learning Outcomes. Items identified for action are discussed with faculty.

Results (for Critical Thinking)

Goal/Objective/Outcome Number: Program Goal 2 and Student Learning Outcomes a-c, e, and k

Results:

Critical Thinking: Students did not take the Critical thinking Assessment Test (CAT) during this reporting period, but students were assessed directly or indirectly via project rubrics used throughout the curriculum.

Attachments:

Results (from Alumni and Employer Surveys)

Goal/Objective/Outcome Number: Program Goals 1-4

Results:

Alumni and Employer Surveys: These surveys have been typically sent out on a three year cycle to alumni and employers of the TTU CHE graduates but have not been administered for several years now. Due to the lengthy nature of these surveys, few responses were received. The strategy of survey collection is currently being reviewed in an attempt to achieve a more effective response rate.

Attachments:

Results (from Board of Advisors' Meetings)

Goal/Objective/Outcome Number: Program Goals 1-4

Results:

CHE Board of Advisors (BOA) Feedback: The BOA meetings are held annually, typically in the Spring. The BOA generally documents its findings in the form of an Executive Summary. Their findings regarding student success and satisfaction are reported there. Recommendations are used specifically as feedback into the program's curricular change process; however, such are rarely made by the BOA. Broader programmatic issues are typically identified by the BOA and are used to influence elements, including but not limited to faculty numbers and institutional support.

Attachments:

Results (from Co-Op Performance Assessments)

Goal/Objective/Outcome Number: Program Goal 1 and Student Learning Outcomes d-j

Results:

Co-Op Performance Assessments: The Co-Op survey includes 12 questions which map to Student Learning Outcomes d-j (Note: Data has been collected for the 2017-18 reporting period but not yet analyzed). The results of these surveys which consist of responses from employers for co-op student internships from spring 2008 to spring 2017 (refer to the 2016-17 report) are largely unremarkable. Survey questions are ranked on a 1 (lowest) to 5 (highest) scale. Our rubric is that no student receives a score lower than 3. On average (as shown in the attached file), scores are between 4 and 5 for most students with an occasional lower score. We conclude that co-op employers are satisfied with our students' performance across the board. Similarly, co-op final reports are 100% approved by the co-op supervisors. At this time, the survey that is used is a College-developed co-op survey that does not include questions related to knowledge (a), experimentation (b), design (c) and tools (k). Since most co-op students are sophomores and juniors, it seems that omitting questions related to experimentation and design might be logical. For a detailed mapping of the survey skills assessed to the Student Learning Outcomes d-j, please see the table below:

Items Assessed on Co-Op Employer Survey

Survey Item	Skills Assessed

a	Efficiently manage their assigned duties and responsibilities
b	Demonstrate the ability to work independently
c	Demonstrate a commitment to professional development
d	Participate in activities that serve the profession and/or public
1	Work effectively with other employees
2	Identify, formulate and solve engineering problems
3	Understand professional and ethical responsibilities
4	Produce effective written communications
5	Deliver effective oral presentations
6	Understand the global/societal impact of engineering
7	Recognize the need for and engaging in life-long learning
8	Understanding contemporary engineering issues
RO	Relationship with Others
AL	Ability to Learn
OP	Overall Performance

Attachments:

Results (from Design and Capstone Experiences and Other Example Course Level Assessments)

Goal/Objective/Outcome Number: Student Learning Outcome a-k

Results:

Results from Course Level Assessments and Curriculum Improvement Reports (CLACIRs):

CHE 2020 (Intro to Chemical and Biological Engineering Analysis II)

Target rubric value: 70%
Overall Class Average Performance: 90% (This percentage indicates that the class average performance was well above target rubric.)

No concerns were noted by the course instructor for the most recent iteration of the course. As there were no noted concerns, there were no recommendations by the course instructor for the most recent iteration of the course.

CHE 3010 (Thermodynamics of Chemical Processes)

Target rubric value: 80%
Overall Class Average Performance: 90% (This percentage indicates that the class average performance was above target rubric.)

Due to large classroom sizes, some students seemed disengaged and disinterested in course topics. However, discussion hours were provided to promote student engagement and active discussion. The course instructor noted that within these discussion hours, the same students showing disinterest in the course were very active and engaged in discussion. The course instructor recommends keeping the discussion hours to continue promoting student engagement in course topics. He also suggests the inclusion of a course project.

CHE 3111 (Transfer Science I: Conduction, Radiation, Diffusion)

Target rubric value: 70%
Overall Class Average Performance: 75% (This percentage indicates that the class average performance was above target rubric.)

As students met the target rubric within each category of assessment, the course instructor noted no concerns in the most recent iteration. To achieve an even higher percentage of students meeting the target rubric for the course, the course instructor recommends a more organized method of tracking the assessment for the Major and Minor Criteria for the course.

CHE 3121 (Transfer Science II: Fluid Mechanics)

Target rubric value: 70%
Overall Class Average Performance: 86% (This percentage indicates that the class average performance was above target rubric.)

Despite a relatively high overall class average performance percentage, the course instructor noted exams to be a point of lower student performance. To achieve an even higher percentage of students meeting the target rubric for the course, the course instructor recommends a more organized method of tracking the assessment for the Major and Minor Criteria for the course.

CHE 4210 (Chemical Reaction Engineering)

Target rubric value: 70%
Overall Class Average Performance: 83% (This percentage indicates that the class average performance was above target rubric.)

The course instructor noted student deficiencies with respect to designing, executing and reporting on laboratory experiments as well as with student ability to execute a literature review. In order to address the noted concerns, the course instructor indicated a need for an improved integration of the laboratory and related resources to allow students to draw a more tangible connection to course concepts.

CHE 4240 (Chemical Engineering Capstone Laboratory)

Target rubric value: 70%
Overall Class Average Performance: 90% (This percentage indicates that the class average performance was well above target rubric.)

No concerns were noted by the course instructor in the most recent iteration of the course. As there were no noted concerns by the course instructor in the most recent iteration of the course, no remediation was proposed.

CHE 4410 (Chemical Engineering Process Design I)

Target rubric value: 70%
Overall Class Average Performance: 95% (This percentage indicates that the class average performance was well above target rubric.)

No concerns were noted by the course instructor in the most recent iteration of the course. The recommended course changes from the previous term that the course was offered seem to have had a positive influence on student performance. As there were no noted concerns by the course instructor in the most recent iteration of the course, no remediation was proposed.

CHE 4420 (Chemical Engineering Process Design II)

Target rubric value: 70%
Overall Class Average Performance: 87% (This percentage indicates that the class average performance was well above target rubric.)

Individual student performance seems to suggest student deficiencies in important fundamental concepts, and the course instructor notes that the heavy emphasis on teamwork may be causing students to become too dependent on team performance. To address the suggested deficiencies in fundamental engineering concepts, the course instructor proposes a review of the grading policy to return some emphasis to individual student performance.

CHE 4910 (Professionalism and Ethics in CHE) / CHE 1020 (Products, Process and Ethics)

Target rubric value: 70%

Overall Class Average Performance: Fall 2017: 93% and Spring 2018: 92% (These percentages indicate that the class average performance was well above target rubric.)

No concerns were noted by the course instructor in the Fall 2017 iteration of the course. In Spring 2018, the course instructor noted that the student cohort seemed to disregard the seriousness of the course topics as the class is associated with only one credit hour. In addition to the course's minimal credit hours awarded, the course experienced a drastic increase in enrollment, resulting in a large class size wherein students could easily become disengaged. As there were no noted concerns by the course instructor, no remediation was proposed following the Fall 2017 iteration of the course. To address the concerns of the Spring 2018 iteration of the course, the course instructor suggested implementing multiple course sections to decrease the class size and increase student engagement within the sections. Additionally, the course instructor recommended future focus on the student cohort's behavior with regards to the importance of the course topics.

Attachments:

Results (from FE Exam)

Goal/Objective/Outcome Number: Student Learning Outcomes a-k

Results:

FE Exam: Because Professional Engineering (PE) is not emphasized by the chemical engineering community at large, neither academic (research) nor industrial, only a small number of CHE students self-select to take the FE exam. Further, licensure as a PE is seldom required by employers in CHE-related industries. The results obtained by the Department suggest that our students typically pass the FE Exam at a rate below the "ABET Comparator" data provided by the testing agency. Specific student identifiers are not provided, and thus pass rate data cannot be correlated to student GPA, for example. In the Department, we have chosen not to make the exam a requirement and do not teach a preparatory course or review. Students who elect to take the exam also elect their own study regimen. FE Exam statistics for the 2017/2018 reporting period are provided in the table below and represent an overall 17% pass rate of TTU CHE students. Given the small number of students self-selecting to take this exam, it is difficult to place statistical significance on the use of these data as a basis for improvements in the CHE department's student learning outcomes.

FE Exam Statistics for TTU CHE Students/Graduates			
Fall 2017	**No. Taken**	**No. Passed**	**Pass (%)**
Enrolled	1	0	0%
ABET Comparator	552	392	71%
Graduated	3	0	0%
ABET Comparator	186	135	73%
Spring 2018	**No. Taken**	**No. Passed**	**Pass (%)**
Enrolled	1	1	100%
ABET Comparator	1030	777	75%
Graduated	1	0	0%
ABET Comparator	198	150	76%

Attachments:

Results (from Student Survey and Chair Debriefing)

Goal/Objective/Outcome Number: Student Learning Outcomes a-k

Results:

Student Surveys and Chair Debriefings: Student surveys were administered on the typical 3-year cycle during the previous reporting period. Thus, no new results are presented for that item here. From feedback during Chair debriefings and from conversations with the BOA, the Department formed a committee to review the capstone lab experience, and a new strategy was implemented. A new full professor was assigned with full responsibility to implement this strategy in the capstone lab experience. Feedback and review of this experience indicated a high acceptance by the students of the course, and the course instructor has adjusted and suggested potential modifications with the Faculty for further implementation of this strategy. Mentoring experiences indicated in the previous reporting cycle were implemented, reviewed, and assessed with Faculty who were interested in participating in this opportunity. The feedback indicates a positive impact.

Attachments:

Faculty Studies and Pedagogical Strategies of New and More Effective Learning Approaches

Goal/Objective/Outcome Number: Student Learning Outcomes a-k

Program Changes and Actions due to Results:

The process of transitioning the process analysis course sequence and the ethics course as reported on in the previous year's report was on-going.

Link to Assessment:

These changes were initiated per findings related to course level assessments of student learning outcomes within the curriculum.

Link to 'Tech Tomorrow' Strategic Plan: Efficiency and Effectiveness
Programs, Certificates, and Training

Responsible Roles:

Monitoring of Retention and Diversity

Goal/Objective/Outcome Number: N/A

Program Changes and Actions due to Results:

Monitoring of Retention and Diversity: Statistics regarding such items as student retention and demographics are monitored. These statistics are also considered to be key indicators of the department's ABET-driven continuous improvement efforts but are not used as metrics to guide change.

The ChE department (effective Fall 2017) has nine full-time faculty including the Chair. Five of these faculty are female. This diverse faculty team energetically and enthusiastically works with a diverse student group. Per results from the TTU Office of Institutional Research, the CHE-BS enrollment over the last several years has hovered in the 25-30% range for female enrollment and includes students from multiple locations throughout TN and beyond including from other countries.

For first-time freshmen students majoring in CHE starting in the Fall 2016, the "first fall" to "first spring" retention rate was 87.5% (56 students retained in the program out of 64 total students entering the program) while the "first fall" to "second fall" retention rate was 62.5%. Source: "Retention Rates for First-Time Freshmen by Program: Fall 2016 Cohort" [Office of Institutional Research, March 16, 2018]

Link to Assessment:

N/A

Link to 'Tech Tomorrow' Strategic Plan: Diverse Faculty and Staff
Diversity
Efficiency and Effectiveness
Programs, Certificates, and Training

Responsible Roles:

New Improvement to Assessment Plan Item

Improvements to Assessment Plan:

The assessment plan was largely unchanged from previous years' reports. However, the way via which the student learning outcomes are assessed is being reconsidered to ensure the program is in compliance with new ABET student learning outcome criteria that will become effective for the 2019-20 academic year. Further, the approach regarding administration of the Alumni and Employer surveys is being reconsidered.