



415 North Charles Street Baltimore, MD 21201
+1.410.347.7700 www.abet.org

August 30, 2017

Ann Weaver Hart
President
1200 E University Blvd
Old Main - Room 200
Tucson, AZ 85721-0066

Dear Dr. Hart :

I am pleased to transmit to you the findings of the Engineering Accreditation Commission (EAC) of ABET with respect to the evaluation conducted for University of Arizona during 2016-2017. Each of ABET's Commissions is fully authorized to take the actions described in the accompanying letter under the policies of the ABET Board of Directors.

We are pleased that your institution has elected to participate in this accreditation process. This process, which is conducted by approximately 2,000 ABET volunteers from the professional community, is designed to advance and assure the quality of professional education. We look forward to our continuing shared efforts toward this common goal.

Sincerely,

Wayne R. Bergstrom
President

Enclosure: Commission letter and attachments



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August 30, 2017

Jeffrey B. Goldberg
Dean, College of Engineering
The University of Arizona
Civil Engineering Building, Suite 100
P.O. Box 210072
Tucson, AZ 85721-0072

Dear Dr. Goldberg :

The Engineering Accreditation Commission (EAC) of ABET recently held its 2017 Summer Meeting to act on the program evaluations conducted during 2016-2017. Each evaluation was summarized in a report to the Commission and was considered by the full Commission before a vote was taken on the accreditation action. The results of the evaluation for University of Arizona are included in the enclosed Summary of Accreditation Actions. The Final Statement to your institution that discusses the findings on which each action was based is also enclosed.

The policy of ABET is to grant accreditation for a limited number of years, not to exceed six, in all cases. The period of accreditation is not an indication of program quality. Any restriction of the period of accreditation is based upon conditions indicating that compliance with the applicable accreditation criteria must be strengthened. Continuation of accreditation beyond the time specified requires a reevaluation of the program at the request of the institution as noted in the accreditation action. ABET policy prohibits public disclosure of the period for which a program is accredited. For further guidance concerning the public release of accreditation information, please refer to Section II.A. of the 2016-2017 Accreditation Policy and Procedure Manual (available at www.abet.org).

A list of accredited programs is published annually by ABET. Information about ABET accredited programs at your institution will be listed in the forthcoming ABET Accreditation Yearbook and on the ABET web site (www.abet.org).

It is the obligation of the officer responsible for ABET accredited programs at your institution to notify ABET of any significant changes in program title, personnel, curriculum, or other factors which could affect the accreditation status of a program during the period of accreditation stated in Section II.H. of the 2016-2017 Accreditation Policy and Procedure Manual (available at www.abet.org).

ABET requires that each accredited program publicly state the program's educational objectives and student outcomes as well as publicly post annual student enrollment and graduation data as stated in Section II.A.6. of the Accreditation Policy and Procedure Manual (available at www.abet.org).

ABET will examine all newly accredited programs' websites within the next two weeks to ensure compliance.

Please note that appeals are allowed only in the case of Not to Accredite actions. Also, such appeals may be based only on the conditions stated in Section II.L. of the 2016-2017 Accreditation Policy and Procedure Manual (available at www.abet.org).

Sincerely,

A handwritten signature in blue ink that reads "John A. Orr". The signature is fluid and cursive, with the first name "John" being the most prominent.

John A. Orr, Chair

Engineering Accreditation Commission

Enclosure: Summary of Accreditation Action
Final Statement

cc: Ann Weaver Hart, President

James C. Baygents, Associate Dean for Academic Affairs

Lawrence M. Butkus, Visit Team Chair



8/30/2017

Engineering Accreditation Commission
Summary of Accreditation Actions
for the
2016-2017 Accreditation Cycle

University of Arizona
Tucson, AZ

Biomedical Engineering (BSBME)

Accredit to September 30, 2023. A request to ABET by January 31, 2022 will be required to initiate a reaccreditation evaluation visit. In preparation for the visit, a Self-Study Report must be submitted to ABET by July 01, 2022. The reaccreditation evaluation will be a comprehensive general review.

This is a newly accredited program. Please note that this accreditation action extends retroactively from October 01, 2014.

Aerospace Engineering (BSAE)
Biosystems Engineering (BSBE)
Chemical Engineering (BSChE)
Civil Engineering (BSCE)
Electrical and Computer Engineering (BSECE)
Engineering Management (BSEMgt)
Industrial Engineering (BSIE)
Materials Science and Engineering (BSMSE)
Mechanical Engineering (BSME)
Mining Engineering (BSMIE)
Optical Sciences and Engineering (BSOE)
Systems Engineering (BSSE)

Accredit to September 30, 2023. A request to ABET by January 31, 2022 will be required to initiate a reaccreditation evaluation visit. In preparation for the visit, a Self-Study Report must be submitted to ABET by July 01, 2022. The reaccreditation evaluation will be a comprehensive general review.

**ABET
ENGINEERING ACCREDITATION COMMISSION**

UNIVERSITY OF ARIZONA
Tucson, AZ

FINAL STATEMENT
Visit Dates: October 25-27, 2016
Accreditation Cycle Criteria: 2016-2017

Introduction and Discussion of Statement Construct

The Engineering Accreditation Commission (EAC) of ABET has evaluated the aerospace engineering, biomedical engineering, biosystems engineering, chemical engineering, civil engineering, electrical and computer engineering, engineering management, industrial engineering, materials science and engineering, mechanical engineering, mining engineering, optical sciences and engineering, and systems engineering programs of the University of Arizona. The biomedical engineering program was reviewed for initial accreditation.

This statement is the final summary of the EAC evaluation, at the institutional and engineering-program levels. The statement consists of two parts: the first addresses the institution and its overall engineering educational unit, and the second addresses the individual engineering programs. It is constructed in a format that allows the reader to discern both the original visit findings and subsequent progress made during due process.

A program's accreditation action is based upon the findings summarized in this statement. Actions depend on the program's range of compliance or non-compliance with the criteria. This range can be construed from the following terminology:

- **Deficiency:** A deficiency indicates that a criterion, policy, or procedure is not satisfied. Therefore, the program is not in compliance with the criterion, policy, or procedure.
- **Weakness:** A weakness indicates that a program lacks the strength of compliance with a criterion, policy, or procedure to ensure that the quality of the program will not be

compromised. Therefore, remedial action is required to strengthen compliance with the criterion, policy, or procedure prior to the next review.

- **Concern:** A concern indicates that a program currently satisfies a criterion, policy, or procedure; however, the potential exists for the situation to change such that the criterion, policy, or procedure may not be satisfied.
- **Observation:** An observation is a comment or suggestion that does not relate directly to the current accreditation action but is offered to assist the institution in its continuing efforts to improve its programs.

Information Received After the Visit

1. Seven-day response: Information was received in the seven-day response period relative to the aerospace engineering, biomedical engineering, biosystems engineering, engineering management, and mechanical engineering programs.
2. 30-day due-process response: Information was received in the 30-day due-process response period relative to the aerospace engineering, biomedical engineering, biosystems engineering, chemical engineering, civil engineering, electrical and computer engineering, engineering management, industrial engineering, materials science and engineering, mechanical engineering, mining engineering, optical sciences and engineering, and systems engineering programs.
3. Post 30-day due-process information: Information was received after the 30-day due-process response period relative to the aerospace engineering, biomedical engineering, mechanical engineering, and optical sciences and engineering programs.

Institutional Summary

The University of Arizona is a public institution founded in 1885 that enrolled more than 32,000 undergraduate and 9,000 graduate students in the 2015-16 academic year. The College of Engineering offers 12 programs and currently enrolls 2,849 undergraduate students supported by 158 faculty members. The college awarded 563 bachelor's degrees in the 2015-16 academic year. The programs in aerospace engineering, biosystems engineering, chemical engineering, civil

engineering, electrical and computer engineering, engineering management, industrial engineering, materials science and engineering, mechanical engineering, mining engineering, optical sciences and engineering, and systems engineering were previously accredited by the EAC of ABET. These twelve programs plus a new program in biomedical engineering were evaluated during this visit.

Support in the following areas was evaluated and found to be adequate: biology, chemistry, computer science, English, geosciences, physics, physiology, career services, enrollment management and student affairs, finance, information technology, library services, and teaching, learning, and assessment.

Institutional Strengths

1. University Libraries that support the College of Engineering provide a breadth of services, physical materials, and electronic resources to engineering students and faculty. Dedicated engineering library liaisons assist students with access to engineering-specific resources, intellectual discovery and innovation records, and training in information integration. Faculty services include assistance with materials identification, copyright use, and posting of course materials to Desire to Learn (D2L). These services improve the quality and effectiveness of engineering education across the college.
2. The commitment that the College of Engineering has made to supporting and retaining its students as opposed to culling them out during their time at the institution is exceptional. This support is evidenced by the college's focused and dynamic delivery of ENGR 102, Introduction to Engineering, to all intended majors and even to prospective high school students, and by a steady increase in engineering enrollment, retention, and student performance. These programs benefit not only the students, but also the profession by maximizing the high quality of young engineers graduating from the university.
3. ENGR 498A/B, Senior Design Project, in which eight programs participate, coupled with other program-specific capstone design experiences and with the college-wide Engineering Design Day reflect an uncommonly strong and innovative approach to providing students with a challenging, rewarding, and comprehensive culminating design experience. The college's efforts to engage with industry partners to sponsor projects, to use practicing engineers to

mentor design teams, and to foster a real-world yet enjoyable sense of competition greatly enhance the overall quality of the engineering programs and their graduates.

Institutional Observation

1. The Research Laboratory and Safety Services office is in the process of implementing a comprehensive system to assure the radiological, chemical, and biological safety of university faculty, staff and students and to ensure that the University of Arizona is in compliance with all required safety standards. The College is encouraged to make sure that all of its programs fully and actively participate in the implementation of this system as soon as possible.

Aerospace Engineering
BSAE Program

Program Criteria for Aerospace and Similarly Named Engineering Programs

Introduction

The aerospace engineering BSAE program prepares students for careers and advanced study in the analysis, design, and development of modern aircraft and spacecraft and related engineering fields. The program is one of two undergraduate engineering programs offered by the Department of Aerospace and Mechanical Engineering. The program currently enrolls 137 undergraduate students and is supported by 12 full-time and three adjunct faculty members as well as 15 administrative and technical staff. The program awarded 28 bachelor's degrees in 2015-16.

Program Strength

1. The program has dedicated project space for exclusive use by the student chapter of AIAA in support of strong student participation in AIAA. Students have used this space to design and build multiple air and rocket vehicles, some for competition and flight testing. This kind of support provides students at all levels the opportunity to be involved in hands-on design projects above and beyond curriculum requirements.

Program Deficiencies

1. Criterion 4. Continuous Improvement This criterion requires that a program regularly use appropriate, documented processes for assessing and evaluating the extent to which the student outcomes are being attained. It further requires that the results of these evaluations be systematically utilized as input for continuous improvement of the program. While some assessment data have sporadically been collected for some outcomes, the assessment and evaluation process is poorly documented, does not ensure that individual faculty-derived assessment and evaluation metrics are appropriate, does not regularly collect sufficient data to evaluate all outcomes, does not differentiate data between aerospace engineering students and non-aerospace engineering students, does not critically analyze the evaluation metrics collected, does not appropriately use evaluation results as input to improve the program, and

does not provide feedback to the faculty on the results of the process. Without regularly collecting appropriate data specific to the program as part of a regularly-used process for determining the extent to which the student outcomes are being achieved, the program cannot conclusively know whether the student outcomes are being attained. Further, without appropriate use of the evaluation results to improve the program, continuous improvement cannot be achieved. Therefore, the program is not in compliance with this criterion.

- Seven-day response: The EAC acknowledges receipt of information describing the program's processes to assess and evaluate the extent to which student outcomes are attained and to use that information as input for the program's continuous improvement process. This information will be considered during due process.
- The deficiency remains unresolved.
- 30-day due-process response: The EAC acknowledges receipt of documentation describing actions the program has taken to improve its continuous improvement processes. The program now uses a smaller set of courses to conduct assessments, differentiates between aerospace and non-aerospace engineering students and has established course evaluation committees and new evaluation and assessment forms, identified outcome coordinators, and improved several of its sub-processes. However, the program has not provided evidence to show that assessment data have been collected and evaluated to demonstrate that the program's revised processes are being systematically followed. Therefore, the program lacks strength of compliance with this criterion.
- The deficiency is now cited as a weakness.
- Post 30-day due-process information: The EAC acknowledges receipt of documentation demonstrating that the program has begun to collect assessment data, use it to evaluate the extent to which student outcomes are attained, and systematically use these evaluations as input for continuous improvement of the program. The program has initiated its new process by piloting it in two courses, AME220, Introduction to Aerospace Engineering, and AME320, Aerodynamics. Assessment data on three student outcomes for each course were collected, reviewed by course evaluation committees, and serve as the basis for

planned improvements in the courses. The program will continue to expand the use of this process in the future and to store the results in a structured system accessible by all faculty members.

- The weakness is resolved.
2. Criterion 5. Curriculum This criterion requires that the program include one year of a combination of college level mathematics and basic sciences (some with experimental experience) appropriate to the discipline. Basic sciences are defined as biological, chemical, and physical sciences. One year is defined as the lesser of 32 semester hours or one-fourth of the total credits required for graduation. Documentation reviewed shows that the program is one credit hour short of the required number of credits. By not meeting the minimum required credits of college level mathematics and basic sciences, the program is not in compliance with this criterion.
- 30-day due-process response: The EAC acknowledges receipt of documentation including a detailed syllabus for AME302, Numerical Methods, which demonstrates that the course focuses primarily on mathematics with little programming content and thus provides one additional credit of mathematics beyond that assessed during the on-campus visit. With the addition of this credit hour, the program's curriculum now meets the minimum requirement for credit hours in mathematics and basic science.
 - The deficiency is resolved.

Program Weaknesses

1. Criterion 2. Program Educational Objectives This criterion requires that a program have published program educational objectives that are consistent with the mission of the institution, the needs of the program's various constituencies, and these criteria. Program educational objectives are defined as broad statements that describe what graduates are expected to attain within a few years of graduation. Additionally, this criterion requires there to be a documented, systematically utilized, and effective process, involving program constituencies, for periodic review of the program educational objectives. The program's current educational objectives are not consistent with the EAC of ABET definition, focusing instead on the program's

preparation of the students for graduation. Further, while the program has reviewed its program educational objectives once in approximately three years, there is no evidence of a periodic review process. Furthermore, the completed review did not include all program constituencies, thus it was unclear that the program educational objectives remained consistent with the constituents' needs. Without appropriate educational objectives and a documented periodic review of those objectives ensuring that the objectives remain consistent with the needs of all constituents, graduate attainments may be inconsistent with the needs of the program's constituents. Thus, the program lacks strength of compliance with this criterion.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing actions the program has taken to revise its program educational objectives. The program has developed a new set of program educational objectives consistent with the EAC of ABET definition. The program has also redefined its constituencies so that they may all be involved in the periodic review of the program educational objectives. The new constituencies have reviewed and approved the new program educational objectives, and the program has adopted a systematic process for periodic review.
 - The weakness is resolved.
2. Accreditation Policy and Procedure Manual Section II.A.6 of the Accreditation Policy and Procedure Manual (APPM) states that each accredited program be specifically identified as accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> in institution catalogs and similar publications separate and distinct from any other programs or kinds of accreditation. Multiple references to the accreditation of the aerospace engineering program in numerous publications are inconsistent with each other, and many do not meet the requirements of the APPM. These inconsistencies and failure to properly describe the accreditation of the program reflect a lack of strength of compliance with the APPM.
- 30-day due-process response: The EAC acknowledges receipt of documentation describing changes and corrections the institution has made to its publications and websites. The result is a proper and consistent reference to the accreditation of the program that meets the requirements of the APPM.

- The weakness is resolved.

Program Concern

1. Criterion 1. Students This criterion requires that students be advised regarding curriculum matters and that the program have and enforce procedures to ensure and document that students who graduate meet all graduation requirements. The university's Academic Advisement Report software can automatically populate elective course categories based solely on the department in which a course is taught. This creates the potential for students to erroneously select courses to satisfy engineering or math or basic science elective requirements. For example, a student needing an engineering topics elective may mistakenly register for a math or sciences course. Additionally, new courses can be automatically classified as engineering courses without a program analyzing their content and specifically identifying them as such. While a process for advising students regarding curriculum matters exists, it may not prevent a student from improperly selecting elective courses. Thus, a potential exists for students to not meet graduation requirements and for this criterion to not be satisfied in the future.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing the institution's three-fold approach to ensuring that this criterion remains satisfied in the future. First, the institution will use its Academic Advisement Report software to add an attribute to courses which are comprised of engineering content to distinguish those courses from other courses that are merely offered by an engineering department. Second, program representatives implemented changes to the menu of courses that can qualify as suitable engineering electives. Third, the institution confirms its continued use of three-tiered scrutiny of each student's coursework as part of the degree check process that occurs at the program, college, and university levels.
- The concern is resolved.

Biomedical Engineering
BSBME Program

Program Criteria for Bioengineering, Biomedical, and Similarly Named Engineering Programs

Introduction

The biomedical engineering BSBME program is offered by the Department of Biomedical Engineering and was reviewed for initial accreditation. Definitive efforts to establish an undergraduate biomedical engineering program began in 2008. The curriculum offers four tracks (biomechanics, biomaterials/tissue engineering, technology and devices, and pre-health) with biomaterials/tissue engineering being the most often chosen. More than half of the program's students participate in the honors program. The program currently enrolls 181 undergraduate students supported by nine full-time faculty members, three of which were hired shortly before the campus visit. The program awarded 52 bachelor's degrees in 2015-16.

Program Strength

1. Despite being a young program, there exists an enviable and synergistic comradery among the students, staff, and faculty. Much of this enthusiasm for future promise is due to the contributions of past and current program leadership to foster rapid program successes, the quality of new faculty hires, and projected future resource support from college and university sources.

Program Weaknesses

1. Criterion 2. Program Educational Objectives This criterion requires that a program have published program educational objectives that are consistent with the mission of the institution, needs of the program's various constituencies, and these criteria. Program educational objectives are defined as broad statements that describe what graduates are expected to attain within a few years of graduation. The program's current educational objectives are not consistent with the EAC of ABET definition, focusing instead on the program's preparation of the students for graduation. Without appropriate educational objectives, graduate attainments

may be inconsistent with the needs of the program's constituents. Thus, the program lacks strength of compliance with this criterion.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing actions the program has taken to revise its program educational objectives. The program has developed a new set of program educational objectives, consistent with the EAC of ABET definition, which have been reviewed by the program's faculty members and Undergraduate Studies Committee. However, the program did not provide evidence that the new objectives meet the needs of the rest of its constituencies to include program graduates, alumni, employers of the program's graduates, the City of Tucson, and the State of Arizona.
 - The weakness remains unresolved.
 - Post 30-day due-process information: The EAC acknowledges receipt of documentation in the form of the minutes of the May 1, 2017, meeting of the program's External Relations Committee and statement from the program chair that confirms that the program's revised program educational objectives have been fully vetted and endorsed by the program's constituencies.
 - The weakness is resolved.
2. Accreditation Policy and Procedure Manual Section II.A.6 of the Accreditation Policy and Procedure Manual (APPM) states that each accredited program be specifically identified as accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> in institution catalogs and similar publications separate and distinct from any other programs or kinds of accreditation. Multiple references to the accreditation of the biomedical engineering program in numerous publications are inconsistent with each other, and many do not meet the requirements of the APPM. These inconsistencies and failure to properly describe the accreditation of the program reflect a lack of strength of compliance with the APPM.
- 30-day due-process response: The EAC acknowledges receipt of documentation describing changes and corrections the institution has made to its publications and

websites. The result is a proper and consistent reference to the accreditation of the program that meets the requirements of the APPM.

- The weakness is resolved.

Program Concerns

1. Criterion 1. Students This criterion requires that students be advised regarding curriculum matters and that the program have and enforce procedures to ensure and document that students who graduate meet all graduation requirements. The university's Academic Advisement Report software can automatically populate elective course categories based solely on the department in which a course is taught. This creates the potential for students to erroneously select courses to satisfy engineering or math or basic science elective requirements. For example, a student needing an engineering topics elective may mistakenly register for a math or sciences course. Additionally, new courses can be automatically classified as engineering courses without a program analyzing their content and specifically identifying them as such. While a process for advising students regarding curriculum matters exists, it may not prevent a student from improperly selecting elective courses. Thus, a potential exists for students to not meet graduation requirements and for this criterion to not be satisfied in the future.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing the institution's three-fold approach to ensuring that this criterion remains satisfied in the future. First, the institution will use its Academic Advisement Report software to add an attribute to courses which are comprised of engineering content to distinguish those courses from other courses that are merely offered by an engineering department. Second, program representatives implemented changes to the menu of courses that can qualify as suitable engineering electives. Third, the institution confirms its continued use of three-tiered scrutiny of each student's coursework as part of the degree check process that occurs at the program, college, and university levels.

- The concern is resolved.

2. Criterion 5. Curriculum This criterion requires that students be prepared for engineering practice through a curriculum culminating in a major design experience based on the

knowledge and skills acquired in earlier coursework and incorporating appropriate engineering standards and multiple realistic constraints. Although there is evidence that projects in ENGR 498A/B, Senior Design Project, do incorporate appropriate engineering standards, neither the course description nor the course evaluation rubric require engineering standards to be incorporated into the design projects. Thus, the potential exists that students who take this course in the future will not be exposed to standards during their culminating design experience and that this criterion may not be satisfied.

- Seven-day response: The EAC acknowledges receipt of information correcting the Program Audit Summary on the E301 Program Audit Form which indicated that the Criterion 5 shortcoming was a weakness rather than a concern.
 - The concern remains unresolved.
 - 30-day due-process response: The EAC acknowledges receipt of documentation describing the program's incorporation of engineering standards into ENGR 498A/B, Senior Design Project. Specifically, the course's grading rubric now includes a graded section entitled "Application of Appropriate Engineering Standards" and provides evaluation criteria to be used in the grading of the course's Final Acceptance Review.
 - The concern is resolved.
3. Criterion 7. Facilities This criterion requires that classrooms, offices, laboratories and associated equipment be adequate to support attainment of the student outcomes and to provide an atmosphere conducive to learning. The continued growth of departmental undergraduate student enrollment, faculty numbers, and course offerings may require additional facilities/space beyond what is currently available and assigned. New facilities are anticipated and, if the program is assigned space in these facilities, the anticipated future space needs could be satisfied. These new facilities are not yet complete nor have space assignments been finalized. Should new space not become available there is the potential that future compliance with the criterion could be jeopardized.
- 30-day due-process response: The program did not provide a response to this shortcoming.

- The concern remains unresolved.

Biosystems Engineering
BSBE Program

Program Criteria for Biological and Similarly Named Engineering Programs

Introduction

The biosystems engineering BSBE program is offered by the Department of Agricultural and Biosystems Engineering, which reports administratively to the College of Agriculture and Life Sciences and programmatically to the College of Engineering. The program currently enrolls 56 undergraduate students supported by 14 full-time faculty members, one assistant Professor of Practice, one lecturer, and one professional staff member who advises students from their freshman year through graduation. The program awarded 20 bachelor's degrees in 2015-16.

Program Strengths

1. The program's faculty and staff involved with academic advising provide exceptional guidance. All students contacted expressed high praise for the quality of the advice given. These personal interactions help students complete their studies in a timely manner and prepares them for their desired career after graduation.
2. The program has an outstanding faculty that is committed to developing a high-quality undergraduate program. About 60 percent of faculty received prestigious awards for excellence in their research, teaching, and outreach activities. The high-quality program prepares students for careers after graduation.

Program Weaknesses

1. Criterion 2. Program Educational Objectives This criterion requires that a program have published program educational objectives that are consistent with the mission of the institution, needs of the program's various constituencies, and these criteria. Program educational objectives are defined as broad statements that describe what graduates are expected to attain within a few years of graduation. Some of the program's current educational objectives are not consistent with the EAC of ABET definition, focusing instead on the program's preparation of the students for graduation. Without appropriate educational objectives, graduate

attainments may be inconsistent with the needs of the program's constituents. Thus, the program lacks strength of compliance with this criterion.

- Seven-day response: The EAC acknowledges receipt of information correcting the Detailed Explanation of Shortcomings on the E301 Program Audit Form which indicated that this shortcoming was cited against Criterion 3 rather than against Criterion 2.
 - The weakness remains unresolved.
 - 30-day due-process response: The EAC acknowledges receipt of documentation describing actions the program has taken to revise its program educational objectives. The program has developed a new set of program educational objectives consistent with the EAC of ABET definition, and the programs constituents have reviewed and approved the new objectives.
 - The weakness is resolved.
2. Accreditation Policy and Procedure Manual Section II.A.6 of the Accreditation Policy and Procedure Manual (APPM) states that each accredited program be specifically identified as accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> in institution catalogs and similar publications separate and distinct from any other programs or kinds of accreditation. Multiple references to the accreditation of the biosystems engineering program in numerous publications are inconsistent with each other, and many do not meet the requirements of the APPM. These inconsistencies and failure to properly describe the accreditation of the program reflect a lack of strength of compliance with the APPM.
- 30-day due-process response: The EAC acknowledges receipt of documentation describing changes and corrections the institution has made to its publications and websites. The result is a proper and consistent reference to the accreditation of the program that meets the requirements of the APPM.
 - The weakness is resolved.

Program Concern

1. Criterion 1. Students This criterion requires that students be advised regarding curriculum matters and that the program have and enforce procedures to ensure and document that students who graduate meet all graduation requirements. The university's Academic Advisement Report software can automatically populate elective course categories based solely on the department in which a course is taught. This creates the potential for students to erroneously select courses to satisfy engineering or math or basic science elective requirements. For example, a student needing an engineering topics elective may mistakenly register for a math or sciences course. Additionally, new courses can be automatically classified as engineering courses without a program analyzing their content and specifically identifying them as such. While a process for advising students regarding curriculum matters exists, it may not prevent a student from improperly selecting elective courses. Thus, a potential exists for students to not meet graduation requirements and for this criterion to not be satisfied in the future.
 - 30-day due-process response: The EAC acknowledges receipt of documentation describing the institution's three-fold approach to ensuring that this criterion remains satisfied in the future. First, the institution will use its Academic Advisement Report software to add an attribute to courses which are comprised of engineering content to distinguish those courses from other courses that are merely offered by an engineering department. Second, program representatives implemented changes to the menu of courses that can qualify as suitable engineering electives. Third, the institution confirms its continued use of three-tiered scrutiny of each student's coursework as part of the degree check process that occurs at the program, college, and university levels.
 - The concern is resolved.

Chemical Engineering
BChE Program

Program Criteria for Chemical, Biochemical, Biomolecular, and Similarly Named Engineering Programs

Introduction

The chemical engineering BChE program is offered by the Department of Chemical and Environmental Engineering. The program currently enrolls 240 undergraduate students and is supported by 18 full-time faculty members and a professional staff member who advises students from their sophomore year through graduation. The program awarded 69 bachelor's degrees in 2015-16.

Program Strengths

1. Well over half of the program's students participate in undergraduate research experiences. This is an uncommonly high percentage compared to other institutions and provides exceptionally strong opportunities for students to gain practice in the concepts that they experience in the classroom setting.
2. The program's senior capstone design experience involves industrial and academic clients, is well run, strongly supported by the program, and nationally known. As such, it contributes greatly to the quality of the program and maximizes the probability that its graduates will excel in their future industrial and academic pursuits.

Program Weakness

1. Accreditation Policy and Procedure Manual Section II.A.6 of the Accreditation Policy and Procedure Manual (APPM) states that each accredited program be specifically identified as accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> in institution catalogs and similar publications separate and distinct from any other programs or kinds of accreditation. Multiple references to the accreditation of the chemical engineering program in numerous publications are inconsistent with each other, and many do not meet the

requirements of the APPM. These inconsistencies and failure to properly describe the accreditation of the program reflect a lack of strength of compliance with the APPM.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing changes and corrections the institution has made to its publications and websites. The result is a proper and consistent reference to the accreditation of the program that meets the requirements of the APPM.
- The weakness is resolved.

Program Concerns

1. Criterion 1. Students This criterion requires that students be advised regarding curriculum matters and that the program have and enforce procedures to ensure and document that students who graduate meet all graduation requirements. The university's Academic Advisement Report software can automatically populate elective course categories based solely on the department in which a course is taught. This creates the potential for students to erroneously select courses to satisfy engineering or math or basic science elective requirements. For example, a student needing an engineering topics elective may mistakenly register for a math or sciences course. Additionally, new courses can be automatically classified as engineering courses without a program analyzing their content and specifically identifying them as such. While a process for advising students regarding curriculum matters exists, it may not prevent a student from improperly selecting elective courses. Thus, a potential exists for students to not meet graduation requirements and for this criterion to not be satisfied in the future.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing the institution's three-fold approach to ensuring that this criterion remains satisfied in the future. First, the institution will use its Academic Advisement Report software to add an attribute to courses which are comprised of engineering content to distinguish those courses from other courses that are merely offered by an engineering department. Second, program representatives implemented changes to the menu of courses that can qualify as suitable engineering electives. Third, the institution confirms its

continued use of three-tiered scrutiny of each student's coursework as part of the degree check process that occurs at the program, college, and university levels.

- The concern is resolved.
2. Criterion 2. Program Educational Objectives This criterion requires a documented, systematically utilized, and effective process, involving program constituencies, for the periodic review of the program education objectives. Currently the periodicity of this review and the precise role of the Industrial Advisory Board within the review process are unclear. Thus, although a process for the review of program educational objectives is in place and utilized, the potential exists for the situation to change such that this criterion may not be satisfied in the future.
- 30-day due-process response: The EAC acknowledges receipt of documentation describing the program's recent use of its Industrial Advisory Board to review and approve revised program educational objectives. The program has also established a schedule by which the Industrial Advisory Board will review the program educational objectives at its annual meeting each spring.
 - The concern is resolved.

Civil Engineering
BSCE Program

Program Criteria for Civil and Similarly Named Engineering Programs

Introduction

The civil engineering BSCE program was established in 1904. The program provides emphases in transportation, structures, geotechnical, construction management, and water resources technical areas. The program currently enrolls 131 undergraduate students supported by 11 full-time faculty members including seven who are registered professional engineers, nine adjunct professors who are registered professional engineers, and five graduate teaching assistants. The program awarded 39 bachelor's degrees in 2015-16.

Program Strength

1. The program has several faculty members that have published textbooks that are widely used around the globe. This is a sign of a high level of scholarly activity and the commitment of the faculty to the educational mission of the program. Students benefit from the in-depth knowledge of the faculty.

Program Weaknesses

1. Criterion 4. Continuous Improvement The criterion requires that the program regularly use appropriate, documented processes for assessing and evaluating the extent to which the student outcomes are being attained. The results of these evaluations must be systematically utilized as input for the continuous improvement of the program. The program has a process for assessing and evaluating student outcome attainment. However, in situations where the results of the assessment process indicate that there is a need for improvement, the results are not being utilized to ensure that corrective actions are taken. Thus, strength of compliance with this criterion is lacking.
 - 30-day due-process response: The EAC acknowledges receipt of documentation describing significant documented revisions the program has made to its continuous improvement process. The program has taken steps to reduce an excessive number of

performance indicators, minimize ambiguity, and focus data collection on pertinent courses. The program provided evidence of implementation of this revised process during the fall semester and plans for executing the process during the spring semester and regularly thereafter. Finally, the program provided evidence of corrective actions taken based on the results of outcomes assessment.

- The weakness is resolved.
2. Accreditation Policy and Procedure Manual Section II.A.6 of the Accreditation Policy and Procedure Manual (APPM) states that each accredited program be specifically identified as accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> in institution catalogs and similar publications separate and distinct from any other programs or kinds of accreditation. In addition, Section II.G.6.b.(2) of the APPM requires that program evaluators review samples of displayed course materials including course syllabi, textbooks, example assignments and exams, and examples of student work, typically ranging from excellent through poor. Multiple references to the accreditation of the civil engineering program in numerous publications are inconsistent with each other, and many do not meet the requirements of the APPM. Further, most of the course files provided as display materials exhibited only course notes and limited additional content to enable an effective review. In those few courses where student work was displayed; the work was the effort of only one specific student. These issues, inconsistencies, and failure to properly describe the accreditation of the program reflect a lack of strength of compliance with the APPM.
- 30-day due-process response: The EAC acknowledges receipt of documentation describing changes and corrections the institution has made to its publications and websites. The result is a proper and consistent reference to the accreditation of the program that meets the requirements of the APPM. The program also stated that it will collect additional course materials and improve the organization of those materials to improve the effectiveness of future reviews. If the program fails to improve the extent and organization of course materials for the next evaluation, future compliance with this criterion may be jeopardized.
 - The weakness is now cited as a concern.

Program Concerns

1. Criterion 1. Students This criterion requires that students be advised regarding curriculum matters and that the program have and enforce procedures to ensure and document that students who graduate meet all graduation requirements. The university's Academic Advisement Report software can automatically populate elective course categories based solely on the department in which a course is taught. This creates the potential for students to erroneously select courses to satisfy engineering or math or basic science elective requirements. For example, a student needing an engineering topics elective may mistakenly register for a math or sciences course. Additionally, new courses can be automatically classified as engineering courses without a program analyzing their content and specifically identifying them as such. While a process for advising students regarding curriculum matters exists, it may not prevent a student from improperly selecting elective courses. Thus, a potential exists for students to not meet graduation requirements and for this criterion to not be satisfied in the future.
 - 30-day due-process response: The EAC acknowledges receipt of documentation describing the institution's three-fold approach to ensuring that this criterion remains satisfied in the future. First, the institution will use its Academic Advisement Report software to add an attribute to courses which are comprised of engineering content to distinguish those courses from other courses that are merely offered by an engineering department. Second, program representatives implemented changes to the menu of courses that can qualify as suitable engineering electives. Third, the institution confirms its continued use of three-tiered scrutiny of each student's coursework as part of the degree check process that occurs at the program, college, and university levels.
 - The concern is resolved.
2. Criterion 7. Facilities This criterion requires that classrooms, offices, laboratories, and associated equipment be adequate to support attainment of the student outcomes and to provide an atmosphere conducive to learning. This criterion also requires that modern tools, equipment, computing resources, and laboratories are available, accessible, and systematically maintained and upgraded. Some laboratory facilities that have not been refurbished for many years are in a deteriorated condition and barely provide an environment conducive to learning.

Further, some of the laboratory equipment is not being systematically upgraded. If this trend continues, the experience of future students could be compromised. Thus, a potential exists for this criterion to not be satisfied in the future.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing the program's concurrence with the identification of a shortcoming pertaining to this criterion. The program plans to request renewal funds from the university to improve the learning environment in its physical (geotechnical, hydraulics and materials) laboratories, but has not yet initiated any improvements.
- The concern remains unresolved.

Electrical and Computer Engineering
BSECE Program

Program Criteria for Electrical, Computer, Communications, Telecommunication(s), and
Similarly Named Engineering Programs

Introduction

The electrical and computer engineering BSECE program is administered by the electrical and computer engineering department. The electrical engineering program earned its first accreditation in 1936, while the computer engineering program earned accreditation in 1987. The two programs merged into a single program, electrical and computer engineering in 2009-10. The EAC extended accreditation to the new program in 2014, while permitting students in the former programs to complete their degrees. The program currently enrolls 380 undergraduate students supported by 32 full-time faculty members, four part-time faculty (1.3 FTE), four administrative personnel, and ten others in technical and service positions. The program awarded 86 bachelor's degrees in 2015-16.

Program Strengths

1. The format of having a single electrical and computer engineering program with two tracks has been well-received by the faculty, the students, and the program's External Advisory Board. The implementation of this approach has gone well and contributes to the strength of the overall program and to the quality of its graduates.
2. The mutual respect of faculty and students is outstanding and reflects an uncommon desire to pursue success in the classroom and laboratory environments as well as to prepare the program's students to achieve excellence following graduation.

Program Weakness

1. Accreditation Policy and Procedure Manual Section II.A.6 of the Accreditation Policy and Procedure Manual (APPM) states that each accredited program be specifically identified as accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> in institution catalogs and similar publications separate and distinct from any other programs or

kinds of accreditation. Multiple references to the accreditation of the electrical and computer engineering program in numerous publications are inconsistent with each other, and many do not meet the requirements of the APPM. These inconsistencies and failure to properly describe the accreditation of the program reflect a lack of strength of compliance with the APPM.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing changes and corrections the institution has made to its publications and websites. The result is a proper and consistent reference to the accreditation of the program that meets the requirements of the APPM.
- The weakness is resolved.

Program Concerns

1. Criterion 1. Students This criterion requires that students be advised regarding curriculum matters and that the program have and enforce procedures to ensure and document that students who graduate meet all graduation requirements. The university's Academic Advisement Report software can automatically populate elective course categories based solely on the department in which a course is taught. This creates the potential for students to erroneously select courses to satisfy engineering or math or basic science elective requirements. For example, a student needing an engineering topics elective may mistakenly register for a math or sciences course. Additionally, new courses can be automatically classified as engineering courses without a program analyzing their content and specifically identifying them as such. While a process for advising students regarding curriculum matters exists, it may not prevent a student from improperly selecting elective courses. Thus, a potential exists for students to not meet graduation requirements and for this criterion to not be satisfied in the future.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing the institution's three-fold approach to ensuring that this criterion remains satisfied in the future. First, the institution will use its Academic Advisement Report software to add an attribute to courses which are comprised of engineering content to distinguish those courses from other courses that are merely offered by an engineering department. Second, program representatives implemented changes to the menu of courses

that can qualify as suitable engineering electives. Third, the institution confirms its continued use of three-tiered scrutiny of each student's coursework as part of the degree check process that occurs at the program, college, and university levels.

- The concern is resolved.
2. Criterion 5. Curriculum This criterion requires that students be prepared for engineering practice through a curriculum culminating in a major design experience based on the knowledge and skills acquired in earlier coursework and incorporating appropriate engineering standards and multiple realistic constraints. Although there is evidence that projects in ENGR 498A/B, Senior Design Project, do incorporate appropriate engineering standards, neither the course description nor the course evaluation rubric require engineering standards to be incorporated into the design projects. Thus, the potential exists that students who take this course in the future will not be exposed to standards during their culminating design experience and that this criterion may not be satisfied.
- 30-day due-process response: The EAC acknowledges receipt of documentation describing the program's incorporation of engineering standards into ENGR 498A/B, Senior Design Project. Specifically, the course's grading rubric now includes a graded section entitled "Application of Appropriate Engineering Standards" and provides evaluation criteria to be used in the grading of the course's Final Acceptance Review.
 - The concern is resolved.

**Engineering Management
BSEMgt Program**

Program Criteria for Engineering Management and Similarly Named Engineering Programs

Introduction

The engineering management BSEMgt program is offered by the Department of Systems and Industrial Engineering and was first accredited in 2003. The program currently enrolls 74 undergraduate students and is supported by 12 full-time and 12 part-time faculty members. The program awarded 13 bachelor's degrees in 2015-16.

- Seven-day response: The EAC acknowledges receipt of information correcting the date of initial accreditation of the program.

Program Strengths

1. The options for the senior design sequence for the program include ENGR 498A/B, Senior Design Project, and the Eller College of Management's multi-disciplinary new venture sequence. While both sequences are noteworthy, the multi-disciplinary aspect is especially important in the practice of engineering management. Thus graduates of this program are particularly well prepared to set their employment goals, to impress potential employers, and to perform at a high level.
2. The program has assembled dynamic faculty with impressive expertise and management experience. The depth of industry experience, particularly at the executive level as engineering managers, creates a relevant and inspiring experience for the students in the program. This program strength supports student recruitment, student retention, and produces competitive graduates.

Program Weakness

1. Accreditation Policy and Procedure Manual Section II.A.6 of the Accreditation Policy and Procedure Manual (APPM) states that each accredited program be specifically identified as accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> in institution catalogs and similar publications separate and distinct from any other programs or

kinds of accreditation. Multiple references to the accreditation of the engineering management program in numerous publications are inconsistent with each other, and many do not meet the requirements of the APPM. These inconsistencies and failure to properly describe the accreditation of the program reflect a lack of strength of compliance with the APPM.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing changes and corrections the institution has made to its publications and websites. The result is a proper and consistent reference to the accreditation of the program that meets the requirements of the APPM.
- The weakness is resolved.

Program Concerns

1. Criterion 1. Students This criterion requires that students be advised regarding curriculum matters and that the program have and enforce procedures to ensure and document that students who graduate meet all graduation requirements. The university's Academic Advisement Report software can automatically populate elective course categories based solely on the department in which a course is taught. This creates the potential for students to erroneously select courses to satisfy engineering or math or basic science elective requirements. For example, a student needing an engineering topics elective may mistakenly register for a math or sciences course. Additionally, new courses can be automatically classified as engineering courses without a program analyzing their content and specifically identifying them as such. While a process for advising students regarding curriculum matters exists, it may not prevent a student from improperly selecting elective courses. Thus, a potential exists for students to not meet graduation requirements and for this criterion to not be satisfied in the future.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing the institution's three-fold approach to ensuring that this criterion remains satisfied in the future. First, the institution will use its Academic Advisement Report software to add an attribute to courses which are comprised of engineering content to distinguish those courses from other courses that are merely offered by an engineering department. Second, program representatives implemented changes to the menu of courses

that can qualify as suitable engineering electives. Third, the institution confirms its continued use of three-tiered scrutiny of each student's coursework as part of the degree check process that occurs at the program, college, and university levels.

- The concern is resolved.
2. Criterion 5. Curriculum This criterion requires that students be prepared for engineering practice through a curriculum culminating in a major design experience based on the knowledge and skills acquired in earlier coursework and incorporating appropriate engineering standards and multiple realistic constraints. Although there is evidence that projects in ENGR 498A/B, Senior Design Project, do incorporate appropriate engineering standards, neither the course description nor the course evaluation rubric require engineering standards to be incorporated into the design projects. Thus, the potential exists that students who take this course in the future will not be exposed to standards during their culminating design experience and that this criterion may not be satisfied.
- 30-day due-process response: The EAC acknowledges receipt of documentation describing the program's incorporation of engineering standards into ENGR 498A/B, Senior Design Project. Specifically, the course's grading rubric now includes a graded section entitled "Application of Appropriate Engineering Standards" and provides evaluation criteria to be used in the grading of the course's Final Acceptance Review.
 - The concern is resolved.

Industrial Engineering
BSIE Program

Program Criteria for Industrial and Similarly Named Engineering Programs

Introduction

The industrial engineering BSIE program is offered by the Department of Systems and Industrial Engineering. It was founded in 1972 and received its first ABET accreditation in 1981. The program currently enrolls 74 students and is supported by 12 full-time and 12 part-time faculty members. The program awarded 17 bachelor's degrees in 2015-16.

Program Strength

1. The students are engaged in the industrial engineering curriculum throughout all four years of study. The use of a sophomore colloquium helps to ensure student preparation, enhances their understanding of career opportunities, and promotes a spirit of comradery and cooperation across the program.

Program Weakness

1. Accreditation Policy and Procedure Manual Section II.A.6 of the Accreditation Policy and Procedure Manual (APPM) states that each accredited program be specifically identified as accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> in institution catalogs and similar publications separate and distinct from any other programs or kinds of accreditation. Multiple references to the accreditation of the industrial engineering program in numerous publications are inconsistent with each other, and many do not meet the requirements of the APPM. These inconsistencies and failure to properly describe the accreditation of the program reflect a lack of strength of compliance with the APPM.
 - 30-day due-process response: The EAC acknowledges receipt of documentation describing changes and corrections the institution has made to its publications and websites. The result is a proper and consistent reference to the accreditation of the program that meets the requirements of the APPM.

- The weakness is resolved.

Program Concerns

1. Criterion 1. Students This criterion requires that students be advised regarding curriculum matters and that the program have and enforce procedures to ensure and document that students who graduate meet all graduation requirements. The university's Academic Advisement Report software can automatically populate elective course categories based solely on the department in which a course is taught. This creates the potential for students to erroneously select courses to satisfy engineering or math or basic science elective requirements. For example, a student needing an engineering topics elective may mistakenly register for a math or sciences course. Additionally, new courses can be automatically classified as engineering courses without a program analyzing their content and specifically identifying them as such. While a process for advising students regarding curriculum matters exists, it may not prevent a student from improperly selecting elective courses. Thus, a potential exists for students to not meet graduation requirements and for this criterion to not be satisfied in the future.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing the institution's three-fold approach to ensuring that this criterion remains satisfied in the future. First, the institution will use its Academic Advisement Report software to add an attribute to courses which are comprised of engineering content to distinguish those courses from other courses that are merely offered by an engineering department. Second, program representatives implemented changes to the menu of courses that can qualify as suitable engineering electives. Third, the institution confirms its continued use of three-tiered scrutiny of each student's coursework as part of the degree check process that occurs at the program, college, and university levels.

- The concern is resolved.

2. Criterion 5. Curriculum This criterion requires that students be prepared for engineering practice through a curriculum culminating in a major design experience based on the knowledge and skills acquired in earlier coursework and incorporating appropriate engineering standards and multiple realistic constraints. Although there is evidence that projects in ENGR

498A/B, Senior Design Project, do incorporate appropriate engineering standards, neither the course description nor the course evaluation rubric require engineering standards to be incorporated into the design projects. Thus, the potential exists that students who take this course in the future will not be exposed to standards during their culminating design experience and that this criterion may not be satisfied.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing the program's incorporation of engineering standards into ENGR 498A/B, Senior Design Project. Specifically, the course's grading rubric now includes a graded section entitled "Application of Appropriate Engineering Standards" and provides evaluation criteria to be used in the grading of the course's Final Acceptance Review.
- The concern is resolved.

Materials Science and Engineering
BSMSE Program

Program Criteria for Materials, Metallurgical, Ceramics, and Similarly Named Engineering Programs

Introduction

The materials science and engineering BSMSE program is offered by the Department of Materials Science and Engineering. The program currently enrolls 62 students and is supported by 12 full-time faculty members and two professional staff members. The program awarded 34 bachelor's degrees in 2015-16.

Program Strengths

1. The program's breadth of unique elective classes such as MSE 257A, Materials Science of Art and Archaeological Objects, provides students expanded opportunities to explore a wide range of materials science and engineering topics. As a result, students find many courses to suit their interests and are well prepared for positions in graduate school or in industry.
2. Through creative use of facility space and extra-curricular social events, the program fosters an environment conducive to collaboration and teamwork among students and to creating strong relationships between students and faculty. These relationships better prepare students for careers after graduation.

Program Weakness

1. Accreditation Policy and Procedure Manual Section II.A.6 of the Accreditation Policy and Procedure Manual (APPM) states that each accredited program be specifically identified as accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> in institution catalogs and similar publications separate and distinct from any other programs or kinds of accreditation. Multiple references to the accreditation of the materials science and engineering program in numerous publications are inconsistent with each other, and many do not meet the requirements of the APPM. These inconsistencies and failure to properly describe the accreditation of the program reflect a lack of strength of compliance with the APPM.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing changes and corrections the institution has made to its publications and websites. The result is a proper and consistent reference to the accreditation of the program that meets the requirements of the APPM.
- The weakness is resolved.

Program Concerns

1. Criterion 1. Students This criterion requires that students be advised regarding curriculum matters and that the program have and enforce procedures to ensure and document that students who graduate meet all graduation requirements. The university's Academic Advisement Report software can automatically populate elective course categories based solely on the department in which a course is taught. This creates the potential for students to erroneously select courses to satisfy engineering or math or basic science elective requirements. For example, a student needing an engineering topics elective may mistakenly register for a math or sciences course. Additionally, new courses can be automatically classified as engineering courses without a program analyzing their content and specifically identifying them as such. While a process for advising students regarding curriculum matters exists, it may not prevent a student from improperly selecting elective courses. Thus, a potential exists for students to not meet graduation requirements and for this criterion to not be satisfied in the future.
 - 30-day due-process response: The EAC acknowledges receipt of documentation describing the institution's three-fold approach to ensuring that this criterion remains satisfied in the future. First, the institution will use its Academic Advisement Report software to add an attribute to courses which are comprised of engineering content to distinguish those courses from other courses that are merely offered by an engineering department. Second, program representatives implemented changes to the menu of courses that can qualify as suitable engineering electives. Third, the institution confirms its continued use of three-tiered scrutiny of each student's coursework as part of the degree check process that occurs at the program, college, and university levels.
 - The concern is resolved.

2. Criterion 5. Curriculum This criterion requires that students be prepared for engineering practice through a curriculum culminating in a major design experience based on the knowledge and skills acquired in earlier coursework and incorporating appropriate engineering standards and multiple realistic constraints. Although there is evidence that projects in ENGR 498A/B, Senior Design Project, do incorporate appropriate engineering standards, neither the course description nor the course evaluation rubric require engineering standards to be incorporated into the design projects. Thus, the potential exists that students who take this course in the future will not be exposed to standards during their culminating design experience and that this criterion may not be satisfied.
- 30-day due-process response: The EAC acknowledges receipt of documentation describing the program's incorporation of engineering standards into ENGR 498A/B, Senior Design Project. Specifically, the course's grading rubric now includes a graded section entitled "Application of Appropriate Engineering Standards" and provides evaluation criteria to be used in the grading of the course's Final Acceptance Review.
 - The concern is resolved.
3. Criterion 7. Facilities This criterion requires that modern tools, equipment, computing resources, and laboratories are available, accessible, and systematically maintained and upgraded. Observation, interviews with students and faculty, and reports from the program's Industrial Advisory Board and others indicate that the availability and accessibility of modern equipment that is appropriate to the discipline is limited. Further, while all current students have been trained on and have used modern equipment in certain elective classes, students do not use this equipment in required classes. Because it is possible for students to go through the program without accessing modern equipment appropriate to the discipline, future compliance with this criterion may be jeopardized.
- 30-day due-process response: The EAC acknowledges receipt of documentation describing a financial request made by the College of Engineering to the institution for funds to improve core departmental laboratory courses and plans to raise financial resources via philanthropy to support the acquisition of modern analytical equipment. Plans call for the acquisition of a scanning electron microscope, a differential scanning

calorimeter, and a thermal gravimetric analyzer. However, none of this equipment has been purchased and, therefore, students have not yet been able to use it.

- The concern remains unresolved.

Mechanical Engineering
BSME Program

Program Criteria for Mechanical and Similarly Named Engineering Programs

Introduction

The mechanical engineering BSME program is one of the largest undergraduate programs in the College of Engineering. It is one of two undergraduate engineering programs offered by the Department of Aerospace and Mechanical Engineering. The program currently enrolls 434 undergraduate students and is supported by 23 full-time faculty members. The program awarded 110 bachelor's degrees in 2015-16.

Program Deficiencies

1. Criterion 4. Continuous Improvement This criterion requires that a program regularly use appropriate, documented processes for assessing and evaluating the extent to which the student outcomes are being attained. It further requires that the results of these evaluations be systematically utilized as input for continuous improvement of the program. While some assessment data have sporadically been collected for some outcomes, the assessment and evaluation process is poorly documented, does not ensure that individual faculty-derived assessment and evaluation metrics are appropriate, does not regularly collect sufficient data to evaluate all outcomes, does not differentiate data between mechanical engineering students and non-mechanical engineering students, does not critically analyze the evaluation metrics collected, does not appropriately use evaluation results as input to improve the program, and does not provide feedback to the faculty on the results of the process. Without regularly collecting appropriate data specific to the program as part of a regularly-used process for determining the extent to which the student outcomes are being achieved, the program cannot conclusively know whether the student outcomes are being attained. Further, without appropriate use of the evaluation results to improve the program, continuous improvement cannot be achieved. Thus, the program is not in compliance with this criterion.
 - Seven-day response: The EAC acknowledges receipt of information describing the program's processes to assess and evaluate the extent to which student outcomes are

attained and to use that information as input for the program's continuous improvement process. This information will be considered during due process.

- The deficiency remains unresolved.
- 30-day due-process response: The EAC acknowledges receipt of documentation describing actions the program has taken to improve its continuous improvement processes. The program now uses a smaller set of courses to conduct assessments, differentiates between mechanical and non-mechanical engineering students and has established course evaluation committees and new evaluation and assessment forms, identified outcome coordinators, and improved several of its sub-processes. However, the program has not provided evidence to show that assessment data have been collected and evaluated to demonstrate that the program's revised processes are being systematically followed. Therefore, the program lacks strength of compliance with this criterion.
- The deficiency is now cited as a weakness.
- Post 30-day due-process information: The EAC acknowledges receipt of documentation demonstrating that the program has begun to collect assessment data, use it to evaluate the extent to which student outcomes are attained, and systematically use these evaluations as input for continuous improvement of the program. The program has initiated its new process by piloting it in two courses, AME432, Heat Transfer, and AME498B, Cross-Disciplinary Design II. Assessment data on multiple student outcomes for each course were collected, reviewed by course evaluation committees, and serve as the basis for planned improvements in the courses. Because AME498B is an interdisciplinary course, the program also provided documentation demonstrating how assessment data for students from multiple majors are separated and evaluated on a program-specific basis. The program will continue to expand the use of this process in the future and to store the results in a structured system accessible by all faculty members.
- The weakness is resolved.

2. Criterion 5. Curriculum This criterion requires the program include one year of a combination of college level mathematics and basic sciences (some with experimental experience) appropriate to the discipline. Basic sciences are defined as biological, chemical, and physical sciences. One year is defined as the lesser of 32 semester hours (or equivalent) or one-fourth of the total credits required for graduation. This criterion also requires that students be prepared for engineering practice through a curriculum culminating in a major design experience based on the knowledge and skills acquired in earlier coursework and incorporating appropriate engineering standards and multiple realistic constraints. The current curriculum uses five courses with engineering course designations and engineering faculty as instructors to provide the minimum required credit hours in math and basic science. Review of the course syllabi and materials determined that two of the courses are appropriate to meet the requirement while three were not since they primarily focused on learning software packages. Additionally, review of the submitted transcripts of recent graduates identified one graduate who was two credit hours short of the required number of math and basic science credits. As a result, the current curriculum is two credit hours short of meeting the minimum math and science content. Further, while there is evidence that projects in ENGR 498A/B, Senior Design Project, do incorporate appropriate engineering standards, neither the course description nor the course evaluation rubric require engineering standards to be incorporated into the design projects which creates the potential that this requirement may be overlooked. The program therefore is not in compliance with this criterion.

- 30-day due-process response: The EAC acknowledges receipt of documentation including a detailed syllabus for AME302, Numerical Methods, which demonstrates that the course focuses primarily on mathematics with little programming content and thus provides one additional credit of mathematics beyond that assessed during the on-campus visit. In addition, the program now requires students to take a technical elective containing at least one more mathematics or basic science credit hour. The addition of these two credit hours means that the program's curriculum now meets the minimum requirement for credit hours in math and basic science. The EAC also acknowledges receipt of documentation describing the program's incorporation of engineering standards into ENGR 498A/B, Senior Design Project. Specifically, the course's grading rubric now includes a graded

section entitled “Application of Appropriate Engineering Standards” and provides evaluation criteria to be used in the grading of the course’s Final Acceptance Review.

- The deficiency is resolved.

Program Weaknesses

1. Criterion 2. Program Educational Objectives This criterion requires that a program have published program educational objectives that are consistent with the mission of the institution, the needs of the program’s various constituencies, and these criteria. Program educational objectives are defined as broad statements that describe what graduates are expected to attain within a few years of graduation. Additionally, this criterion requires there to be a documented, systematically utilized, and effective process, involving program constituencies, for periodic review of the program educational objectives. The program’s current educational objectives are not consistent with the EAC of ABET definition, focusing instead on the program’s preparation of the students for graduation. Further, while the program has reviewed its program educational objectives once in approximately three years, there is no evidence of a periodic review process. Furthermore, the completed review did not include all program constituencies, thus it was unclear that the program educational objectives remained consistent with the constituents’ needs. Without appropriate educational objectives and a documented periodic review of those objectives ensuring that the objectives remain consistent with the needs of all constituents, graduate attainments may be inconsistent with the needs of the program’s constituents. Thus, the program lacks strength of compliance with this criterion.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing actions the program has taken to revise its program educational objectives. The program has developed a new set of program educational objectives consistent with the EAC of ABET definition. The program has also redefined its constituencies so that they may all be involved in the periodic review reviewing the program educational objectives. The new constituencies have reviewed and approved the new program educational objectives, and the program has adopted a systematic process for periodic review.
- The weakness is resolved.

2. Accreditation Policy and Procedure Manual Section II.A.6 of the Accreditation Policy and Procedure Manual (APPM) states that each accredited program be specifically identified as accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> in institution catalogs and similar publications separate and distinct from any other programs or kinds of accreditation. Multiple references to the accreditation of the mechanical engineering program in numerous publications are inconsistent with each other, and many do not meet the requirements of the APPM. These inconsistencies and failure to properly describe the accreditation of the program reflect a lack of strength of compliance with the APPM.
 - 30-day due-process response: The EAC acknowledges receipt of documentation describing changes and corrections the institution has made to its publications and websites. The result is a proper and consistent reference to the accreditation of the program that meets the requirements of the APPM.
 - The weakness is resolved.

Program Concerns

1. Criterion 1. Students This criterion requires that students be advised regarding curriculum matters and that the program have and enforce procedures to ensure and document that students who graduate meet all graduation requirements. The university's Academic Advisement Report software can automatically populate elective course categories based solely on the department in which a course is taught. This creates the potential for students to erroneously select courses to satisfy engineering or math or basic science elective requirements. For example, a student needing an engineering topics elective may mistakenly register for a math or sciences course. Additionally, new courses can be automatically classified as engineering courses without a program analyzing their content and specifically identifying them as such. While a process for advising students regarding curriculum matters exists, it may not prevent a student from improperly selecting elective courses. Thus, a potential exists for students to not meet graduation requirements and for this criterion to not be satisfied in the future.
 - 30-day due-process response: The EAC acknowledges receipt of documentation describing the institution's three-fold approach to ensuring that this criterion remains

satisfied in the future. First, the institution will use its Academic Advisement Report software to add an attribute to courses which are comprised of engineering content to distinguish those courses from other courses that are merely offered by an engineering department. Second, program representatives implemented changes to the menu of courses that can qualify as suitable engineering electives. Third, the institution confirms its continued use of three-tiered scrutiny of each student's coursework as part of the degree check process that occurs at the program, college, and university levels.

- The concern is resolved.
2. Criterion 7. Facilities This criterion requires that laboratories and associated equipment be adequate to support attainment of the student outcomes and provide an atmosphere conducive to learning. Additionally, it requires that modern tools, equipment, and laboratories appropriate to the program be available, accessible, and systematically maintained and upgraded to enable students to attain the student outcomes and to support program needs. Some of the upper level mechanical laboratories have very limited numbers of experimental workstations, and some of the mechanical testing equipment has not been updated in many years. Students indicated that additional equipment in the upper level laboratories could facilitate better hands-on opportunities and improve support to several student groups that participate in design competitions. Although it appears that the criterion is currently satisfied, there is the potential that laboratory facilities may degrade so that future compliance with the criterion may be jeopardized, especially with continued growth in program enrollment.
- 30-day due-process response: The program did not provide a response to this shortcoming.
 - The concern remains unresolved.

Mining Engineering
BSMIE Program

Program Criteria for Mining and Similarly Named Engineering Programs

Introduction

The mining engineering BSMIE program is the oldest engineering program at the University of Arizona, dating from its formal opening in October 1891. The program currently enrolls 74 undergraduate students supported by ten full-time faculty members, one professor of practice, three adjunct faculty members, and one professional staff member. Additional adjuncts are used as necessary to enhance program content. The program awarded 32 bachelor's degrees in 2015-16.

Program Strengths

1. The program is organized around four tracks: mine operations, geomechanics, sustainable resource development, and mineral processing. The structure of these tracks provides an opportunity for students to focus their studies beyond that available through traditional technical electives and to enhance the laboratory experience. Given that the program is the only one within the College of Engineering eligible for a tuition reduction under the Western Interstate Commission for Higher Education (WICHE) Western Undergraduate Exchange (WUE), these tracks serve the needs of students and specialized needs of the mining industry throughout the western United States.
2. The program has a unique laboratory resource in the San Xavier Experimental Mine located 25 miles south of the University. The 90-acre facility has a classroom/training building, a recently-upgraded hoist house, and underground drifts on three levels. The mine provides a unique opportunity for both research and undergraduate laboratory work in an underground mine without the constraints of an active mining operation. Starting with the regulatory-required underground new miner training taught at the facility, the mine is exceptionally integrated as a laboratory into the program curriculum.

Program Weakness

1. Accreditation Policy and Procedure Manual Section II.A.6 of the Accreditation Policy and Procedure Manual (APPM) states that each accredited program be specifically identified as accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> in institution catalogs and similar publications separate and distinct from any other programs or kinds of accreditation. Multiple references to the accreditation of the mining engineering program in numerous publications are inconsistent with each other, and many do not meet the requirements of the APPM. These inconsistencies and failure to properly describe the accreditation of the program reflect a lack of strength of compliance with the APPM.
 - 30-day due-process response: The EAC acknowledges receipt of documentation describing changes and corrections the institution has made to its publications and websites. The result is a proper and consistent reference to the accreditation of the program that meets the requirements of the APPM.
 - The weakness is resolved.

Program Concerns

1. Criterion 1. Students This criterion requires that students be advised regarding curriculum matters and that the program have and enforce procedures to ensure and document that students who graduate meet all graduation requirements. The university's Academic Advisement Report software can automatically populate elective course categories based solely on the department in which a course is taught. This creates the potential for students to erroneously select courses to satisfy engineering or math or basic science elective requirements. For example, a student needing an engineering topics elective may mistakenly register for a math or sciences course. Additionally, new courses can be automatically classified as engineering courses without a program analyzing their content and specifically identifying them as such. While a process for advising students regarding curriculum matters exists, it may not prevent a student from improperly selecting elective courses. Thus, a potential exists for students to not meet graduation requirements and for this criterion to not be satisfied in the future.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing the institution's three-fold approach to ensuring that this criterion remains satisfied in the future. First, the institution will use its Academic Advisement Report software to add an attribute to courses which are comprised of engineering content to distinguish those courses from other courses that are merely offered by an engineering department. Second, program representatives implemented changes to the menu of courses that can qualify as suitable engineering electives. Third, the institution confirms its continued use of three-tiered scrutiny of each student's coursework as part of the degree check process that occurs at the program, college, and university levels.
 - The concern is resolved.
2. Criterion 6. Faculty This criterion requires that the program demonstrate that the faculty members are of sufficient number and have the competencies to cover all of the curricular areas of the program. The mine design sequence is currently covered only by one faculty member and by adjunct instructors on an as-needed and as-available basis. Since this sequence is a critical component of the curriculum and forms the basis for the four program tracks and the capstone design experience, should faculty resources be insufficient to provide adequate and stable coverage the program could be negatively impacted in the future. Thus, the potential exists such that the criterion may not be satisfied in the future.
- 30-day due-process response: The EAC acknowledges receipt of documentation indicating that the program acknowledges this shortcoming and that it plans to maintain a sufficient number of faculty members that have expertise in mine design. However, no specific corrective action has been taken.
 - The concern remains unresolved.

Program Observation

1. The historical departmental structure has resulted in two members of the supporting faculty under the administration of the Material Science and Engineering Department while primarily supporting the mining program. While this structure does not appear to impact the

undergraduate student outcomes, it does appear to hamper the full utilization of available resources and potential course content development and expansion within the program.

Optical Sciences and Engineering
BSOE Program

Optical, Photonic, and Similarly Named Engineering Programs

Introduction

The optical sciences and engineering BSOE program is offered by the College of Engineering but administered by the College of Optical Sciences. This undergraduate program has four main tracks in the following areas: optics, optoelectronics, optical materials and opto-mechanics. The program currently enrolls 101 undergraduate students and is supported by 32 faculty members and a number of staff. The program awarded 26 bachelor's degrees in 2015-16 academic.

Program Strengths

1. The College of Optical Sciences has a world-renowned reputation in the optics and photonics community based on the high caliber of its education and research programs. Therefore, graduates are provided with an excellent foundation and are in high demand for industry, research, and academic positions.
2. The facilities housed within the College of Optical Sciences are unique and state-of-the-art in the optical and photonics field, such as the large optic fabrication and opto-mechanical capabilities. This provides the students with an exceptional experience for hands on experiences in laboratories and undergraduate research experiences.

Program Weaknesses

1. Criterion 2. Program Educational Objectives This criterion requires that a program have published program educational objectives that are consistent with the mission of the institution, needs of the program's various constituencies, and these criteria. Program educational objectives are defined as broad statements that describe what graduates are expected to attain within a few years of graduation. Some of the program's current educational objectives are not consistent with the EAC of ABET definition, focusing instead on the program's preparation of the students for graduation. Without appropriate educational objectives, graduate

attainments may be inconsistent with the needs of the program's constituents. Thus, the program lacks strength of compliance with this criterion.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing actions the program has taken to revise its program educational objectives. The program has developed a new set of program educational objectives consistent with the EAC of ABET definition, and the program's constituents have reviewed and approved the new objectives.

- The weakness is resolved.

2. Criterion 4. Continuous Improvement This criterion requires that the program regularly use appropriate, documented processes for assessing and evaluating the extent to which the student outcomes are being attained. It further requires that the results of these evaluations be systematically utilized as input for the continuous improvement of the program. While the program has a process for assessing student outcomes, including individual course-derived student outcome assessments, there is limited use of the results for continuous improvement. Once a course has been completed, the assessment and evaluation of related data is primarily left to the instructor. Assessment is inconsistent and results are not systematically used as input to the continuous improvement process. Thus, the program lacks strength of compliance with this criterion.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing the program's plans for regular review using a special committee. The committee plans to meet at least twice per semester, and faculty members will be required to complete and submit a course review form at the end of each semester. The committee will analyze the information collected from these forms and systematically assess it so improvements can be intentionally implemented. A formal process will document the procedures, assessment results, and meeting discussions. However, this process will not begin until after the spring semester of 2017.

- The weakness remains unresolved.

- Post 30-day due-process information: The EAC acknowledges receipt of documentation demonstrating that the program has established a new Assessment Committee. This committee and the Undergraduate Curriculum Committee have begun to execute the program's plans described in its due process response. Data have been collected from course evaluations and from input from the program's constituencies. Analysis and evaluation of this data has led to the creation of two new courses (OPTI205, Optics of Photography and Videography and OPTI100H, What is Light?), the re-sequencing of a third (OPTI310, Physical Optics), and a syllabus revision in a fourth (OPTI406, Radiometry, Sources, and Detectors). The information provided by the program confirms that it is now regularly gathering and evaluating assessment data to be considered as part of a process of continuous improvement.
 - The weakness is resolved.
3. Accreditation Policy and Procedure Manual Section II.A.6 of the Accreditation Policy and Procedure Manual (APPM) states that each accredited program be specifically identified as accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> in institution catalogs and similar publications separate and distinct from any other programs or kinds of accreditation. Multiple references to the accreditation of the optical sciences and engineering program in numerous publications are inconsistent with each other, and many do not meet the requirements of the APPM. These inconsistencies and failure to properly describe the accreditation of the program reflect a lack of strength of compliance with the APPM.
- 30-day due-process response: The EAC acknowledges receipt of documentation describing changes and corrections the institution has made to its publications and websites. The result is a proper and consistent reference to the accreditation of the program that meets the requirements of the APPM.
 - The weakness is resolved.

Program Concerns

1. Criterion 1. Students This criterion requires that students be advised regarding curriculum matters and that the program have and enforce procedures to ensure and document that students

who graduate meet all graduation requirements. The university's Academic Advisement Report software can automatically populate elective course categories based solely on the department in which a course is taught. This creates the potential for students to erroneously select courses to satisfy engineering or math or basic science elective requirements. For example, a student needing an engineering topics elective may mistakenly register for a math or sciences course. Additionally, new courses can be automatically classified as engineering courses without a program analyzing their content and specifically identifying them as such. While a process for advising students regarding curriculum matters exists, it may not prevent a student from improperly selecting elective courses. Thus, a potential exists for students to not meet graduation requirements and for this criterion to not be satisfied in the future.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing the institution's three-fold approach to ensuring that this criterion remains satisfied in the future. First, the institution will use its Academic Advisement Report software to add an attribute to courses which are comprised of engineering content to distinguish those courses from other courses that are merely offered by an engineering department. Second, program representatives implemented changes to the menu of courses that can qualify as suitable engineering electives. Third, the institution confirms its continued use of three-tiered scrutiny of each student's coursework as part of the degree check process that occurs at the program, college, and university levels.
 - The concern is resolved.
2. Criterion 5. Curriculum This criterion requires that students be prepared for engineering practice through a curriculum culminating in a major design experience based on the knowledge and skills acquired in earlier coursework and incorporating appropriate engineering standards and multiple realistic constraints. Although there is evidence that projects in ENGR 498A/B, Senior Design Project, do incorporate appropriate engineering standards, neither the course description nor the course evaluation rubric require engineering standards to be incorporated into the design projects. Thus, the potential exists that students who take this course in the future will not be exposed to standards during their culminating design experience and that this criterion may not be satisfied.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing the program's incorporation of engineering standards into ENGR 498A/B, Senior Design Project. Specifically, the course's grading rubric now includes a graded section entitled "Application of Appropriate Engineering Standards" and provides evaluation criteria to be used in the grading of the course's Final Acceptance Review.
- The concern is resolved.

Systems Engineering
BSSE Program

Program Criteria for Systems and Similarly Named Engineering Programs

Introduction

The systems engineering BSSE program is offered by the Department of Systems and Industrial Engineering. The program currently enrolls 89 undergraduate students and is supported by 12 full-time and 12 part-time faculty members. The program awarded 36 bachelor's degrees in 2015-16 academic.

Program Strengths

1. The program has an outstanding faculty that is committed to developing a high-quality undergraduate program. The adjunct faculty all come from industry with extensive experience in systems engineering, bringing practical applications into the classroom. These practical applications better prepare students for their careers after graduation.
2. The Industry Advisory Committee not only supports the administration and faculty with strategic planning, continuous improvement, recruitment, and projects; but it also supports the student body through mentorship and internships, thus better preparing students.

Program Weakness

1. Accreditation Policy and Procedure Manual Section II.A.6 of the Accreditation Policy and Procedure Manual (APPM) states that each accredited program be specifically identified as accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> in institution catalogs and similar publications separate and distinct from any other programs or kinds of accreditation. Multiple references to the accreditation of the systems engineering program in numerous publications are inconsistent with each other, and many do not meet the requirements of the APPM. These inconsistencies and failure to properly describe the accreditation of the program reflect a lack of strength of compliance with the APPM.

- 30-day due-process response: The EAC acknowledges receipt of documentation describing changes and corrections the institution has made to its publications and websites. The result is a proper and consistent reference to the accreditation of the program that meets the requirements of the APPM.
- The weakness is resolved.

Program Concerns

1. Criterion 1. Students This criterion requires that students be advised regarding curriculum matters and that the program have and enforce procedures to ensure and document that students who graduate meet all graduation requirements. The university's Academic Advisement Report software can automatically populate elective course categories based solely on the department in which a course is taught. This creates the potential for students to erroneously select courses to satisfy engineering or math or basic science elective requirements. For example, a student needing an engineering topics elective may mistakenly register for a math or sciences course. Additionally, new courses can be automatically classified as engineering courses without a program analyzing their content and specifically identifying them as such. While a process for advising students regarding curriculum matters exists, it may not prevent a student from improperly selecting elective courses. Thus, a potential exists for students to not meet graduation requirements and for this criterion to not be satisfied in the future.
 - 30-day due-process response: The EAC acknowledges receipt of documentation describing the institution's three-fold approach to ensuring that this criterion remains satisfied in the future. First, the institution will use its Academic Advisement Report software to add an attribute to courses which are comprised of engineering content to distinguish those courses from other courses that are merely offered by an engineering department. Second, program representatives implemented changes to the menu of courses that can qualify as suitable engineering electives. Third, the institution confirms its continued use of three-tiered scrutiny of each student's coursework as part of the degree check process that occurs at the program, college, and university levels.
 - The concern is resolved.

2. Criterion 5. Curriculum This criterion requires that students be prepared for engineering practice through a curriculum culminating in a major design experience based on the knowledge and skills acquired in earlier coursework and incorporating appropriate engineering standards and multiple realistic constraints. Although there is evidence that projects in ENGR 498A/B, Senior Design Project, do incorporate appropriate engineering standards, neither the course description nor the course evaluation rubric require engineering standards to be incorporated into the design projects. Thus, the potential exists that students who take this course in the future will not be exposed to standards during their culminating design experience and that this criterion may not be satisfied.
 - 30-day due-process response: The EAC acknowledges receipt of documentation describing the program's incorporation of engineering standards into ENGR 498A/B, Senior Design Project. Specifically, the course's grading rubric now includes a graded section entitled "Application of Appropriate Engineering Standards" and provides evaluation criteria to be used in the grading of the course's Final Acceptance Review.
 - The concern is resolved.

Program Observation

1. A significant number of students expressed interest in being able to take more courses via distance education so they could pursue internships or co-op jobs without delaying graduation significantly. Having such access could encourage students to obtain more practical experience before graduation, making them more competitive in the job market upon graduation.