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August 12, 2016

Leroy Morishita
President
California State University, East Bay
25800 Carlos Bee Blvd.
Hayward, CA 94542

Dear Mr. Morishita :

I am pleased to transmit to you the findings of the Engineering Accreditation Commission (EAC) of ABET with respect to the evaluation conducted for California State University, East Bay during 2015-2016. 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,

Lawrence Jones
President

Enclosure: Commission letter and attachments



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August 12, 2016

Michael Leung
Dean, College of Science
California State University, East Bay
25800 Carlos Bee Boulevard
Hayward, CA 94542

Dear Dr. Leung :

The Engineering Accreditation Commission (EAC) of ABET recently held its 2016 Summer Meeting to act on the program evaluations conducted during 2015-2016. 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 California State University, East Bay 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 2015-2016 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 2015-2016 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 Accredited actions. Also, such appeals may be based only on the conditions stated in Section II.L. of the 2015-2016 Accreditation Policy and Procedure Manual (available at www.abet.org).

Sincerely,

A handwritten signature in black ink that reads "Sarah A. Rajala" followed by a horizontal flourish.

Sarah A. Rajala, Chair

Engineering Accreditation Commission

Enclosure: Summary of Accreditation Action
Final Statement

cc: Leroy Morishita, President

Saeid Motavalli, Chair, School of Engineering

Ellen Weber Stevens, Visit Team Chair



8/12/2016

Engineering Accreditation Commission
Summary of Accreditation Actions
for the
2015-2016 Accreditation Cycle

California State University, East Bay
Hayward, CA

Computer Engineering (BS) (B.S.)

Accredit to September 30, 2022. A request to ABET by January 31, 2021 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, 2021. 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, 2013.

Industrial Engineering (BS)

Accredit to September 30, 2018. A request to ABET by January 31, 2017 will be required to initiate a reaccreditation report evaluation. A report describing the actions taken to correct shortcomings identified in the attached final statement must be submitted to ABET by July 01, 2017. The reaccreditation evaluation will focus on these shortcomings. Please note that a visit is not required.



ABET

Engineering Accreditation Commission

Final Statement of Accreditation
to

California State University, East Bay
Hayward, CA

2015-2016 Accreditation Cycle

ABET
ENGINEERING ACCREDITATION COMMISSION

CALIFORNIA STATE UNIVERSITY, EAST BAY
Hayward, CA

FINAL STATEMENT
Visit Dates: October 11-13, 2015
Accreditation Cycle Criteria: 2015-2016

Introduction & Discussion of Statement Construct

The Engineering Accreditation Commission (EAC) of ABET has evaluated the computer engineering and industrial engineering programs of California State University, East Bay.

This statement is the final summary of the EAC evaluation, at the institutional and engineering-program levels. It includes information received during due process, along with information submitted with the seven-day response. This 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.

California State University, East Bay is part of the California State University system and is composed of four colleges. The School of Engineering is housed within the College of Science and offers two engineering programs, computer engineering and industrial engineering. The school has 255 undergraduate students, eight full-time faculty members, one lecturer, and two faculty members with joint appointments. The school had 14 graduates in the 2014-15 academic year. Faculty members are active in the scholarship of teaching and research. Students are largely in-state students and a substantial fraction of students transfer in from local community colleges.

The following units were reviewed and found to adequately support the engineering programs: mathematics, physics, chemistry, library, statistics, and career services.

Institutional Strength

1. The institution has been very proactive in recognizing the academic needs of its diverse student population as well as the needs of local employers and of the community in general. University administrative and academic units have close ties and extensive interaction with local industry, community leaders, and the public school system. The College of Science and School of Engineering are very active in STEM outreach to local elementary and secondary schools, recognizing that adequate preparation is vital to student success.

Institutional Observation

1. The two engineering programs, along with a construction management program, are housed in the School of Engineering, under the direction of the chair of engineering. Each program has a faculty member designated as the lead, but program finances, assessment, advisory boards, and administrative functions are highly commingled.

Computer Engineering
BS Program

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

Introduction

The computer engineering BS program is administered by the School of Engineering. It was initiated in fall quarter 2007. At the time of the visit the program had 102 students (71 full-time and 31 part-time) and three full-time faculty members. Cross-listed courses in engineering topics and computer science are taught by other full-time School of Engineering and computer science faculty. The program had seven graduates in the 2014-15 academic year. The program is being evaluated for initial accreditation by the EAC.

Program Weaknesses

1. Criterion 1. Students This criterion requires that student progress be monitored to foster success in attaining student outcomes, thereby enabling graduates to attain program educational objectives. It further requires that the program have and enforce policies for accepting both new and transfer students, awarding appropriate academic credit for courses taken at other institutions and that the program have and enforce procedures to ensure and document that students who graduate meet all graduation requirements. Delays of up to one year were noted in evaluating and posting transfer credits to student records. A lack of timely information concerning transfer credits and degree progress may compromise student progress, monitoring of student progress, and auditing of graduation requirements. Tracking the completion of major courses is done within the school, and the chair manually checks for completion of program requirements in the last quarter before graduation. This contributes to the potential that problems with a student's plan of study may not be discovered in a timely manner. This may result in last-minute course substitutions or graduation delays, which may

compromise student progress, enforcement of graduation requirements, and/or attainment of student outcomes. Strength of compliance with this criterion is lacking.

- 30-day due-process response: The EAC acknowledges receipt of documentation indicating that an automated system for tracking student progress, accessible to both the student and advisor, has been implemented. The system also automates posting of transfer credits from institutions with articulation agreements, and evaluation of transfer credit for fall 2015 incoming students was completed by the end of the semester.
- The weakness is resolved.

2. Criterion 2. Program Educational Objectives This criterion requires that there be a documented, systematically utilized, and effective process, involving program constituencies, for the periodic review of program educational objectives that ensures they remain consistent with the institutional mission, the program's constituents' needs, and the engineering accreditation criteria. The program's Industrial Advisory Board was involved in the determination of the program educational objectives in January of 2008, but the program educational objectives have not been reviewed in a process involving program constituencies since that time. Without periodic review of the program educational objectives that involves the program's constituents, constituent needs may not be addressed. Thus, strength of compliance with this criterion is lacking.

- 30-day due-process response: The EAC acknowledges receipt of documentation stating that a process has been put in place in which program educational objectives have been reviewed during Industrial Advisory Board meetings and that the board includes representatives of program constituents including students, alumni and employers. The board was convened in spring 2016 to conduct a review, and minutes of the meeting were provided.
- The weakness is resolved.

3. 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. Assessment data are collected by instructors within individual courses, but the evaluation of the data is primarily focused on attainment of student outcomes in a course. A process for aggregating data across courses to obtain the assessment scores was not documented. While steps were taken to improve the program, the program did not provide evidence that the assessment scores were systematically used as input for the continuous improvement of the program. Strength of compliance with this criterion is lacking.

- Seven-day response: The EAC acknowledges receipt of documentation concerning assessment and continuous improvement activities. This information will be considered in due process.
- The weakness remains unresolved.
- 30-day due-process response: No additional information was received during the due process period. Information received with the seven-day response included citation of information in the self-study and descriptions of assessment of specific performance indicators, but details relating how the specific assessments were combined to form a judgment regarding overall attainment of each outcome were lacking. Modifications to courses focused on the performance indicators were cited, but details of an evaluation of the impact on overall attainment of the target outcome were not provided.
- The weakness remains.
- Post 30-day due-process information: The EAC acknowledges receipt of additional documentation of the outcomes assessment and evaluation process in place, specifically regarding the use of the performance indicators to develop a conclusion regarding the extent to which each student outcome is attained and what factors trigger a need for corrective action. Results of an additional assessment/evaluation cycle were submitted, to provide supporting evidence that the process was followed and that the results were used as input for the improvement of the program.

- The weakness is resolved.

Program Concern

1. Criterion 6. Faculty This criterion requires the program to demonstrate that the faculty members are of sufficient number and they have the competencies to cover all of the curricular areas of the program. It further states that there must be sufficient faculty to accommodate adequate levels of student-faculty interaction, student advising and counseling, university service activities, professional development, and interactions with industrial and professional practitioners, as well as employers of students. Student enrollment in the program has grown rapidly in recent years, increasing from 19 to 58 to 102 students over three years. The local demand by industry for computer engineers and the limited access to other computer engineering programs in the region are expected to foster continued growth. Although present levels of student-faculty interaction are adequate, maintaining this with increasing numbers of students will put pressure on faculty time available for the range of activities mentioned in this criterion. Therefore, future compliance with this criterion may be jeopardized.

- 30-day due process response: The program did not provide a response to this shortcoming.
- The concern remains unresolved.

Industrial Engineering
BS Program

Program Criteria for Industrial and Similarly Named Engineering Programs

Introduction

The industrial engineering BS program is administered in the School of Engineering. The program has 115 students, four full-time faculty members, and two faculty members with joint appointments. The program had five graduates in the 2014-15 academic year. Faculty members also serve 135 graduate students in an engineering management MS program. There has been a steady increase in enrollment over the last six years in both programs.

Program Weaknesses

1. Criterion 1. Students This criterion requires that student progress be monitored to foster success in attaining student outcomes, thereby enabling graduates to attain program educational objectives. It further requires that the program have and enforce policies for accepting both new and transfer students, awarding appropriate academic credit for courses taken at other institutions and that the program have and enforce procedures to ensure and document that students who graduate meet all graduation requirements. Delays of up to one year were noted in evaluating and posting transfer credits to student records. A lack of timely information concerning transfer credits and degree progress may compromise student progress, monitoring of student progress, and auditing of graduation requirements. Tracking the completion of major courses is done within the school, and the chair manually checks for completion of program requirements in the last quarter before graduation. This contributes to the potential that problems with a student's plan of study may not be discovered in a timely manner. This may result in last-minute course substitutions or graduation delays, which may compromise student progress, enforcement of graduation requirements, and/or attainment of student outcomes. Strength of compliance with this criterion is lacking.

- 30-day due-process response: The EAC acknowledges receipt of documentation indicating that an automated system for tracking student progress, accessible to both the student and advisor, has been implemented. The system also automates posting of transfer credits from institutions with articulation agreements, and evaluation of transfer credit for fall 2015 incoming students was completed by the end of the semester.
 - The weakness is resolved.
2. Criterion 2. Program Educational Objectives This criterion requires that there be a documented, systematically utilized, and effective process, involving program constituencies, for the periodic review of program educational objectives that ensures they remain consistent with the institutional mission, the program's constituents' needs, and the engineering accreditation criteria. The program's Industrial Advisory Board was involved in the determination of the program educational objectives in January of 2008, but the program educational objectives have not been reviewed in a process involving program constituencies since that time. Without periodic review of the program educational objectives that involves the program's constituents, constituent needs may not be addressed. Thus, strength of compliance with this criterion is lacking.
- 30-day due-process response: The EAC acknowledges receipt of documentation stating that a process has been put in place in which program educational objectives have been reviewed during Industrial Advisory Board meetings and that the board includes representatives of program constituents including students, alumni and employers. The board was convened in spring 2016 to conduct a review, and minutes of the meeting were provided.
 - The weakness is resolved.
3. 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.

Assessment data are collected by instructors within individual courses, but the evaluation of the data is primarily focused on attainment of student outcomes in a course. A process for aggregating data across courses to obtain the assessment scores was not documented. While steps were taken to improve the program, the program did not provide evidence that the assessment scores were systematically used as input for the continuous improvement of the program. Strength of compliance with this criterion is lacking.

- 30-day due-process response: The program did not provide a response to this shortcoming
- The weakness remains.
- Post 30-day due-process information: The EAC acknowledges receipt of additional documentation of the outcomes assessment and evaluation process in place, specifically regarding the use of the performance indicators to develop a conclusion regarding the extent to which each student outcome is attained and what factors trigger a need for corrective action. Results of an additional assessment/evaluation cycle were submitted, to provide supporting evidence that the process was followed and that the results were used as input for the improvement of the program.
- The weakness is resolved.

4. Criterion 5. Curriculum This criterion states that students must be prepared for engineering practice through a curriculum culminating in a major design experience based on the knowledge and skills acquired in earlier course work and incorporating appropriate engineering standards and multiple realistic constraints. Several design projects were provided as part of the display materials. Other than financial analysis to address cost constraints, the reports did not contain documentation indicating that other constraints were considered. The faculty member who supervises the major design experience indicated that students discuss constraints and standards in their project meetings, but do not document the discussion; this could not be substantiated with the students. Thus based on available

evidence, it appears that the major design experience does not routinely incorporate multiple realistic constraints. Hence, strength of compliance with this criterion is lacking.

- Seven-day response: The EAC acknowledges receipt of documentation concerning constraints incorporated in major design projects. This information will be considered in due process.
- The weakness remains unresolved.
- 30-day due-process response: No additional information was received during the due process period. Information received with the seven-day response included excerpts from major design projects highlighting additional factors, other than financial, that students were charged with considering in the project. However, documentation of how these considerations were incorporated into the design process or used to compare alternatives is lacking.
- The weakness remains.
- Post 30-day due-process information: The EAC acknowledges receipt of additional documentation, consisting of major design reports for the previous semester. While the student projects cited constraints in the reports, some projects incorrectly identified constraints and thus did not incorporate multiple realistic constraints appropriately. For example, some projects identified logistical challenges the team faced in completing the project as a constraint.
- The weakness is unresolved and will be a focus of the next review. In preparation for this review, the EAC anticipates documentation providing evidence that multiple realistic constraints were appropriately incorporated in the major design projects.

Program Observation

1. The School of Engineering indicated that it plans to open a search for an additional faculty member to support the BS and MS programs overseen by program faculty.

