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September 12, 2017

Tim Foster
President
Colorado Mesa University
1100 North Avenue
Grand Junction, CO 81501-3122

Dear President Foster :

I am pleased to transmit to you the findings of the Engineering Technology Accreditation Commission (ETAC) of ABET with respect to the evaluation conducted for Colorado Mesa University 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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September 12, 2017

Tim L Brower
Director
CU-Boulder/CO Mesa U. Partnership Program
2510 Foresight Circle
Archuleta Engineering Center
Grand Junction, CO 81505

Cynthia Pemberton
Vice President for Academic Affairs
Colorado Mesa University
1100 North Avenue
Grand Junction, CO 81501

Dear Drs. Brower & Pemberton :

The Engineering Technology Accreditation Commission (ETAC) 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 Colorado Mesa University 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 Accredit 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,



Kirk Lindstrom, Chair
Engineering Technology Accreditation Commission

Enclosure: Summary of Accreditation Action
Final Statement

cc: Tim Foster, President
Brigitte Sundermann
April Cheung, Visit Team Chair



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

Colorado Mesa University
Grand Junction, CO

Mechanical Engineering Technology (BSMET)

Accredit to September 30, 2019. A request to ABET by January 31, 2018 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, 2018. The reaccreditation evaluation will focus on these shortcomings. Please note that a visit is not required.

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

**ABET
ENGINEERING TECHNOLOGY ACCREDITATION COMMISSION**

FINAL GENERAL REVIEW STATEMENT

on

COLORADO MESA UNIVERSITY

Grand Junction, CO

Dates of Visit:

October 2-4, 2016

COLORADO MESA UNIVERSITY

The statement that follows consists of two parts: the first addresses the overall institution and its engineering technology operation, and the second addresses the individual engineering technology programs. Accreditation actions taken by ETAC of ABET will be based upon the findings summarized in this statement and will depend on the range of compliance or non-compliance with ABET criteria, policies, and procedures. The range can be construed from the following definitions for findings:

Strength: A program Strength is an exceptionally strong and effective practice or condition that stands above the norm and that has a positive effect on the program.

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 evaluation.

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 which does not relate directly to the accreditation action but is offered to assist the institution in its continuing efforts to improve its programs.

COLORADO MESA UNIVERSITY

Grand Junction, CO

INSTITUTIONAL FACTORS AFFECTING
THE ENGINEERING TECHNOLOGY UNIT

Introduction

The Engineering Technology Accreditation Commission (ETAC) of ABET has evaluated the Bachelor of Science in Mechanical Engineering Technology of Colorado Mesa University. The program was evaluated using the 2016-17 *Criteria for Accrediting Engineering Technology Programs* and the 2016-17 *Accreditation Policy and Procedure Manual*.

Colorado Mesa University (CMU), formerly known as Mesa State College, is located in Grand Junction, Colorado (approximately 240 miles west of the Denver metropolitan area). The institution has an enrollment of over 10,600 students with about 12 – 15% from outside Colorado and around 24% from underrepresented groups. Approximately a quarter of CMU's enrollment is non-traditional students and the university has a history of helping students complete degrees through remediation, convenient class times, advising and personal attention. Teaching rather than research has been the centerpiece of faculty efforts and CMU's mission. The institution has built a large number of buildings in recent years, including a new residence hall each year for the last eight years. Construction of a new engineering building has begun and it is expected to be occupied by the end of 2017. CMU's regional accreditation is from the Higher Learning Commission, most recently reaffirmed in 2013. CMU has not had a program accredited by

COLORADO MESA UNIVERSITY

ABET. However, the University of Colorado Boulder (UCB) and CMU entered into a partnership in February 2008 to deliver a mechanical engineering (ME) program in its entirety at CMU. The first two years of classes for the mechanical engineering degree, including seven lower-division engineering courses, are offered by CMU and taught by CMU faculty. The upper-division courses are delivered by UCB faculty at CMU facilities. This UCB mechanical engineering program received an initial ABET accreditation via the Engineering Accreditation Commission in 2013. The mechanical engineering technology program offered at CMU is being presented for initial accreditation.

PROGRAM EVALUATION

MECHANICAL ENGINEERING TECHNOLOGY

Baccalaureate Degree

Introduction

As described above, a partnership between University of Colorado Boulder (UCB) and CMU created a mechanical engineering (ME) program at CMU, although the degree is awarded by UCB. In order to provide an alternative pathway to becoming an engineer and to better serve the wide array of students entering the program at CMU, a mechanical engineering technology (MET) program was initiated by CMU in January 2010. The first two years of the ME and MET programs are essentially identical and are offered by CMU. At the end of the second year, students may apply to the UCB program or continue in the CMU MET program. These engineering education programs are the only ones offered on the western slope of Colorado. The MET program is delivered using a traditional, laboratory/lecture methodology, with a daytime schedule, using facilities at both the CMU main campus and the Archuleta Engineering Center (AEC), approximately three miles from the main campus. Typically, lower-division classes not requiring a laboratory are offered on the main campus. Most upper-division classes and classes requiring a laboratory are hosted by the AEC. The program has had 16 graduates since May 2013, with six of those graduates in May 2016. Employers of graduates include regional manufacturers (e.g., Capco, Inc.) and engineering firms (e.g., Lewis Engineering) along with energy companies like Grand Valley Power and Halliburton. The program educational objective is to prepare graduates with mechanical technical knowledge, problem solving skills, and implementation skills so that, within three years of graduation, they will have successfully

established themselves in a professional career in design, installation, operations, technical sales, or service functions in industry.

The Program Criteria for Mechanical Engineering Technology and Similarly Named Programs as published in the 2016-17 *Criteria for Accrediting Engineering Technology Programs* also were used to evaluate this program. Findings related to ABET criteria or policies and procedures are described below.

Program Weaknesses

1. Criteria: Criterion 8. Institutional Support states, “Institutional support and leadership must be adequate to ensure the quality and continuity of the program.” At the time of the self-study preparation and submission, program leadership and management was provided by a non-Colorado Mesa University employee. A rapidly evolving program leadership structure was reported at the time of the visit. An organizational chart of the new administrative reporting structure being implemented by the university was created and provided to the team on the second day of the site visit. This reporting structure and related position description indicated that a Coordinator of CMU Engineering Programs and Director of Western Colorado Community College (a division of CMU) Manufacturing Programs would be responsible for all CMU engineering education programs and faculty. This new position had been filled with an interim appointment and a process for an internal/external search for a replacement was outlined. During interviews with both regular and adjunct faculty, most faculty members were unable to identify their immediate supervisor. The selection and hiring of faculty adjuncts may become the responsibility of this new coordinator. Uncertainty of leadership and lack of full implementation is negatively impacting the continuity and stability of this popular, growing

degree program. The program is required to demonstrate that institutional support and leadership are adequate to ensure the quality and continuity of the program.

Due Process Response: The program provided an updated plan that further solidifies the program's status as an independent engineering department with its own leadership. A stand-alone department budget is currently under development and an approved plan will become live in July. The nomination of a department head has begun and will be determined spring 2017, targeting for this position to be filled by July 1, 2017. The program also provided the organizational chart for fall 2017 after the department head has been identified.

Status after Due Process: While the program is taking steps to resolve this finding, it remains a Weakness until the program demonstrate that institutional support and leadership are adequate to ensure the quality and continuity of the program.

Post 30-Day Due Process Response: The program has solidified its organization, the program's status as an independent engineering department and its department head have been identified. A new organization chart was provided.

Status: This finding is resolved.

2. Criteria: Criterion 8. Institutional Support states, "The resources available to the program must be sufficient to acquire, maintain, and operate infrastructures, facilities and equipment appropriate for the program, and to provide an environment in which student outcomes can be attained." The program has a one-third time laboratory technician but also receives support from a community college laboratory staff member working in a shared laboratory. The program has multiple laboratories in two different buildings. Student and faculty interviews provided evidence of student inability to access program laboratories to work on design projects and gain laboratory skills outside of regularly scheduled laboratory or class

meeting times. This lack of access was attributed to a lack of available qualified supervisory personnel. Students and staff reported that students work unsupervised on projects in a small auxiliary laboratory housing a variety of machine tools. The situation will grow worse as the program loses its community college laboratory support with the planned move to the main campus, where laboratories will be located on multiple floors. Lack of adequate technician support and student access are negatively impacting program's ability to deliver hands-on laboratory experiences and project work essential to this project-oriented, hands-on mechanical engineering technology degree. The program is required to demonstrate that the resources available to the program are sufficient to maintain, and operate infrastructures, facilities, and equipment appropriate for the program, and to provide an environment in which student outcomes can be attained.

Due Process Response: The program provided personnel support information that the half-time administrative support personnel, formerly shared with CU-Boulder has been renewed and this person is now reporting only to CMU. A new full-time laboratory technician/machinist position has been approved and a search for this person will begin in February 2017. This position will also be supported through increased student-assist funding. In the meantime, student assist funding has also increased by \$7,000 to cover the laboratories. This increased student-assist laboratory-monitoring fund will be used to increase laboratory oversight to students. In addition, ground-breaking for a new engineering building was held in September 6, 2016 with anticipated occupancy in January 2018.

Status after Due Process: While the program is taking steps to resolve this finding, it remains a Weakness until the program demonstrate that the resources available to the program are

sufficient to maintain, and operate infrastructures, facilities, and equipment appropriate for the program, and to provide an environment in which student outcomes can be attained.

Post 30-Day Due Process response: The program provided job announcement of the laboratory technician position. This position is expected to be filled in the fall 2017 semester. During the spring 2017 semester, laboratories were monitored by student assistants in the weekday afternoon, and one student was hired to assist with laboratory maintenance.

Status: While the program is taking steps to resolve this finding, it remains a Weakness until the program demonstrate that the resources available to the program are sufficient to maintain, and operate infrastructures, facilities, and equipment appropriate for the program, and to provide an environment in which student outcomes can be attained.

Program Concerns

1. Criteria: Criterion 4. Continuous Improvement states, “The program must regularly use appropriate, documented processes for assessing and evaluating the extent to which the student outcomes are being attained.” The 2016-17 *Criteria for Accrediting Engineering Technology Programs* also defines student outcomes as the skills, knowledge, and behaviors “students are expected to know and be able to do by the time of graduation.” A well-designed system for the collection and evaluation of assessment data related to attainment of student outcomes has been implemented and running for multiple years. Following accepted practices for an appropriate assessment process, the program has triangulated student outcome attainment by using three assessment tools for each student outcome. However, two of the three assessment tools typically being used for assessing student outcomes are a senior exit survey and an employer survey. The employer survey has been deployed in an ad-hoc manner due to the limited number of graduates

and has been completed up to two years after graduation. The senior exit survey asks students their perception of their attainment of student outcomes. Without sufficient use of appropriate direct measurement for evaluating the MET student outcomes, the program may be unable to determine whether students are actually attaining student outcomes. This finding remains a Concern until program demonstrates its assessment tools are timely and appropriate, i.e., used before or at the time of graduation and provide direct evidence of student knowledge, to determine attainment of student outcomes.

Due Process Response: The program indicated that faculty members have agreed to add an additional direct assessment to each outcome in the fall 2017 semester.

Status after Due Process: While the program is taking steps to resolve this finding, it remains a Concern until the program demonstrates its assessment tools are timely and appropriate to determine attainment of student outcomes.

2. Criteria: Criterion 6. Faculty states, “The competence of faculty members must be demonstrated by such factors as education, professional credentials and certifications, professional experience, ongoing professional development, contributions to the discipline, teaching effectiveness, and communication skills. Collectively, the faculty must have the breadth and depth to cover all curricular areas of the program. The faculty serving in the program must be of sufficient number to maintain continuity, stability, oversight, student interaction, and advising.” Commensurate with Colorado Mesa University’s mission as a teaching institution, faculty members are assigned a full teaching load (four courses per term with multiple preparations per term). In addition, mechanical engineering technology (MET) faculty advise students, with some faculty advising 50-90 students (all lower division students are MET students, even those students expecting to transition to the University of Colorado

Boulder's mechanical engineering program co-located at the CMU campus). Currently, UCB faculty are advising MET students as a courtesy, but some faculty reported that they were not the most qualified to advise MET students on the later years of the MET program. The new faculty member hired by CMU, starting the week before the ETAC visit, addresses short-term needs, but the program will continue to rely on the hiring of adjunct faculty due to the number of classes that must be taught to allow students to progress through the program in a timely manner. Student interviews indicated that adjunct faculty has been of variable quality in the MET program and in the mathematics and science courses. Some faculty adjuncts have only a B.S. degree, with one reported to have had no more than a two-year degree. The Higher Learning Commission (HLC) has an emphasis on a graduate degree being the minimum standard for adjuncts. Evidence indicated that some adjuncts are unwilling to teach CMU classes as opposed to UCB classes due to a pay disparity between the two employers. Faculty loads will increase as the program continues to grow. Thus, the program's faculty numbers and qualifications may not be sufficient to adequately support a program of study that fosters the attainment of student outcomes. This finding remains a Concern until the program demonstrates that the faculty members serving in the program have the breadth and depth to cover all curricular areas of the program and are of sufficient number to maintain program continuity, stability, oversight, student interaction, and advising.

Due Process Response: The program reported that students will be divided into three groups which allows support of student advisement to be shared by CMU faculty members, the Interim Coordinator, and CU-Builder faculty members. CU-Boulder (Junior and Senior) ME students will be advised by the CU-Boulder faculty and the CU Engineering Director. Although CU-Boulder faculty members are not contractually expected to advise students, they have agreed to

look into the possibility of this method as a permanent method. Freshman and sophomore students will be shared among faculty members with a 40-50 student-advising load. The program also reported that all faculty members are to be evaluated annually in their new evaluation process. Faculty members not meeting the standard will not be employed beyond the 2016-2017 academic year. The program also provided faculty members' vitae information and courses they teach for the fall 2016 and spring 2017 semesters. If faculty members have not earned a minimum of 18 graduate-level credit hours, their qualification must be approved by tested experience. If the faculty member's qualification rests solely on the tested experience, they are approved only for the level of the courses they teach.

Status after Due Process: This finding is resolved.