ENGINEERING ACCREDITATION COMMISSION

Summary of Accreditation Actions

2019–2020 Accreditation Cycle

Northern Arizona University
Flagstaff, AZ, United States

Civil Engineering (BSE)
Environmental Engineering (BSE)
Mechanical Engineering (BSE)

Accredit to September 30, 2026. A request to ABET by January 31, 2025 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 1, 2025. The reaccreditation evaluation will be a comprehensive general review.

Electrical Engineering (BSE)

Accredit to September 30, 2022. A request to ABET by January 31, 2021 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 1, 2021. The reaccreditation evaluation will focus on these shortcomings. Please note that a visit is not required.

Computer Engineering (BS)

Accredit to September 30, 2022. A request to ABET by January 31, 2021 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 1, 2021. 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 May 1, 2019.

ABET

ENGINEERING ACCREDITATION COMMISSION

NORTHERN ARIZONA UNIVERSITY

FLAGSTAFF, AZ, UNITED STATES

FINAL STATEMENT OF ACCREDITATION

2019-20 ACCREDITATION CYCLE

NORTHERN ARIZONA UNIVERSITY

Flagstaff, AZ, United States

ABET ENGINEERING ACCREDITATION COMMISSION

FINAL STATEMENT

VISIT DATES: SEPTEMBER 22-24, 2019
ACCREDITATION CYCLE CRITERIA: 2019-2020

INTRODUCTION & DISCUSSION OF STATEMENT CONSTRUCT

The Engineering Accreditation Commission (EAC) of ABET has evaluated the Civil Engineering (BSE), Electrical Engineering (BSE), Environmental Engineering (BSE), Mechanical Engineering (BSE), and Computer Engineering (BS) programs at Northern Arizona University.

The statement that follows consists of two parts: the first addresses the institution and its overall educational unit, and the second addresses the individual programs.

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 REVIEW

- **Seven-Day Response** No information was received in the seven-day response period.

- **30-Day Due-Process Response** Information was received in the 30-day due-process response period relative to the Civil Engineering, Computer Engineering, Electrical Engineering, Environmental Engineering, and Mechanical Engineering programs.

- **Post-30-Day Due-Process Response** Information was received in the post-30-day due-process response period relative to the Civil Engineering, Computer Engineering, Electrical Engineering, Environmental Engineering, and Mechanical Engineering programs.

INSTITUTIONAL SUMMARY

Established in 1899, Northern Arizona University is a four-year public research university in Flagstaff, Arizona that offers over 200 different bachelor's, master's, and doctoral degrees. Degree programs are also accessible at 29 statewide locations and online. The university enrollment is approximately 29,400 students of which slightly more than 23,100 are enrolled at the Flagstaff Campus. There are approximately 1,180 full-time faculty members and over 4,900 total faculty and staff.

The College of Engineering, Informatics and Applied Sciences offers nine undergraduate degree programs in: Computer Science, Civil Engineering, Computer Engineering, Electrical Engineering, Environmental Engineering, and Mechanical Engineering. In fall 2019, the college had approximately 90 full-time faculty members and 2,660 undergraduate students. The college had 393 bachelor's graduates during the 2018-19 academic year.

The following units were reviewed and found to adequately support the engineering programs: mathematics, chemistry, physics, biology, library, admissions, registrar, career services, and academic success center.

Civil Engineering

BSE Program

Evaluated under EAC Program Criteria for
Civil and Similarly Named Engineering Programs

INTRODUCTION

The Civil Engineering (BSE) program is housed within the Department of Civil Engineering, Construction Management and Environmental Engineering. The curriculum is delivered by 16 full-time faculty members, one part-time faculty member, and six graduate teaching assistants. At the time of the visit, 261 students were enrolled in the program which produced 60 graduates during the 2018-19 academic year.

PROGRAM WEAKNESSES

1. **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. The program has a documented process that regularly assesses and evaluates student outcomes using multiple courses. Some assessed courses, however, include students from the civil engineering and environmental engineering programs as well as other engineering programs. Civil engineering students are not separately assessed. Assessments that include students not in the program can misrepresent the degree to which civil engineering students are attaining student outcomes. Thus, strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation describing a modified student outcome assessment process, implemented in fall 2019, that identifies the student's major associated with the assessment data for each artifact. The modified process isolates the assessment data by student cohort allowing student attainment levels to be analyzed. The documentation did not however demonstrate that the revised process has been implemented.

Status

The program weakness is unresolved.

Post-30-Day Due-Process Response

The EAC acknowledges the receipt of documentation describing the revisions in the assessment process implemented by the program beginning in the fall 2019 semester, resulting in data collected for the fall 2019 and spring 2020 semesters. The documentation demonstrates clear disaggregation of Civil Engineering program students from students of other majors. The revised assessment process now provides an indication of the degree to which students in the program are attaining each student outcome.

Status

The program weakness has been resolved.

2. **Criterion 8. Institutional Support**

This criterion requires that resources, including institutional services, financial support, and staff (both administrative and technical) provided to the program be adequate to meet program needs. The self-study report indicated that six professional academic advisors and a senior program coordinator are assigned to the college. However, students are frustrated with the quality of the academic advising being provided, including the lack of curriculum knowledge. Students complained that their assigned advisor changed frequently. Discussions with the senior program coordinator and program administrators confirmed significant turnover in advisors assigned to the programs, primarily due to salary issues. The high turnover rate has resulted in student academic advising that is inadequate to meet program needs. The strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation reporting that the institution has taken multiple steps toward promoting increased retention of the academic advisers. In November 2019, new and existing academic advisers received directed salary increases. An Advising Coordinator position was established and an adviser was promoted into a senior-level position; both of these positions are designed to provide additional leadership and mentoring responsibilities to junior advisers. Finally, to strengthen the communications between the advising team and the program, the Advising Coordinator is now a non-voting member on program curriculum committees. As these initiatives are relatively new, the program has not yet demonstrated that the corrective actions have reduced advising staff turnover and improved student advising experience.

Status

The program weakness is unresolved.

Post-30-Day Due-Process Response

The EAC acknowledges receipt of documentation reporting (1) advisor retention data for the past three academic years, and (2) results from a student satisfaction survey regarding their advising experiences. A significant improvement in advisor retention rate was achieved during the most recent academic year compared to the two previous years. Data were also presented showing that student satisfaction increased on a five-point scale for six academic advisors from a rating of 4.42 to 4.68. Although the program now appears to be compliant with this criterion, it is unclear whether these recent improvements will be sustained.

Status

The program weakness is now cited as a program concern.

3. **Program Criteria**

The program criteria for civil engineering programs require faculty teaching courses that are primarily design in content to be qualified to teach the subject matter by virtue of professional licensure or by education and design experience. The faculty member teaching CENE 450, Geotechnical Engineering II, indicated as a design course, did not have professional licensure and only minimal design experience in this practice area. No other instructors were assigned to teach any portions of the class. Courses taught by individuals without sufficient qualifications can adversely effect the educational experience of the students and may not ensure that the students are prepared to enter the practice of engineering. Thus, strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation that the normal course instructor of CENE 450, Geotechnical Engineering II, is teaching the course in spring 2020 and is expected to teach this course in the future. This instructor is a licensed professional engineer with industrial experience. The program will seek to hire additional tenure-track faculty members in the future with appropriate qualifications in geotechnical engineering design.

Status

The program weakness has been resolved.

Computer Engineering

BS Program

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

INTRODUCTION

The Computer Engineering (BS) program is housed within the School of Informatics, Computing, and Cyber Systems (SICCS). The program was established in 2018 and is currently being taught by 13 full-time faculty members. The program awarded 11 degrees in the inaugural graduating class of 2018-19. At the time of the visit, the program enrolled 78 students.

PROGRAM WEAKNESSES

1. **Criterion 5. Curriculum**

   This criterion requires that the curriculum include a culminating major engineering design experience that incorporates appropriate engineering standards and multiple constraints. The program was not able to demonstrate that all projects incorporated appropriate engineering standards and multiple constraints in the culminating design experience (EE 476C, Project Design Procedures, and EE 486C, Capstone Design). Without such experience, graduates may not be adequately prepared for engineering practice. Thus, strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation describing changes in the curriculum which modified content of the major design project to assure that engineering standards and multiple constraints are being considered. Revised course assignments, an added lecture, and a presentation by each project team detailing the standards and multiple constraints used in their capstone project have been added. As the revisions to the capstone experience were recently initiated, the program has not yet demonstrated that these requirements have been considered in the projects by the students.

Status

The program weakness is unresolved.

Post-30-Day Due-Process Response

The EAC acknowledges receipt of documentation of incorporating engineering standards and multiple constraints into the major design project. Further, evidence of the implementation of engineering standards and multiple constraints were demonstrated in examples of spring 2020 student work, including capstone design reports.

Status

The program weakness has been resolved.

2. **Criterion 8. Institutional Support**

This criterion requires that resources, including institutional services, financial support, and staff (both administrative and technical) provided to the program be adequate to meet program needs. The self-study report indicated that six professional academic advisors and a senior program coordinator are assigned to the college. However, students are frustrated with the quality of the academic advising being provided, including the lack of curriculum knowledge. Students complained that their assigned advisor changed frequently. Discussions with the senior program coordinator and program administrators confirmed significant turnover in advisors assigned to the programs, primarily due to salary issues. The high turnover rate has resulted in student academic advising that is inadequate to meet program needs. The strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation reporting that the institution has taken multiple steps toward promoting increased retention of the academic advisers. In November 2019, new and existing academic advisers received directed salary increases. An Advising Coordinator position was established and an adviser was promoted into a senior-level position; both of these positions are designed to provide additional leadership and mentoring responsibilities to junior advisers. Finally, to strengthen the communications between the advising team and the program, the Advising Coordinator is now a non-voting member on program curriculum committees. As these initiatives are relatively new, the program has not yet demonstrated that the corrective actions have reduced advising staff turnover and improved student advising experience.

Status

The program weakness is unresolved.

Post-30-Day Due-Process Response

The EAC acknowledges receipt of documentation reporting (1) advisor retention data for the past three academic years, and (2) results from a student satisfaction survey regarding their advising experiences. A significant improvement in advisor retention rate was achieved during the most recent academic year compared to the two previous years. Data were also presented showing that student satisfaction increased on a five-point scale for six academic advisors from a rating of 4.42 to 4.68. Although the program now appears to be compliant with this criterion, it is unclear whether these recent improvements will be sustained.

Status

The program weakness is now cited as a program concern.

3. **Program Criteria**

The program criteria for computer engineering programs require that the curriculum include probability and statistics, including applications appropriate to the program name. The program was not able to demonstrate that required courses (STA 275, Statistical Analysis/CENE 225, Engineering Analysis) provided adequate applications of probability and statistics in the computer engineering context. EE 325, Engineering Analysis II, includes some computer engineering applications of probability & statistics but is not required for students transferring from Chongqing University in an international 3+1 program, therefore it is possible for some students to graduate without adequate knowledge of the application of probability and statistics to computer engineering problems. Thus, strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation describing the immediate addition of applied random theory in EE 348, Fundamentals of Signals and Systems, and EE 364, Fundamentals of Electromagnetics. However, these changes do not appear to have introduced sufficient coverage of probability and statistic topics specifically applied to computer engineering and were not demonstrated through examples of student work. The program indicates a long-term plan to develop a 300-level course on "Probability Theory and Stochastic Processes" which will be a required course for all students including internationals.

Status

The program weakness is unresolved.

Post-30-Day Due-Process Response

The EAC acknowledges the receipt of documentation that the planned replacement course has not yet been implemented.

Status

The program weakness is unresolved. In preparation for the next review, the EAC anticipates documented evidence that the curriculum includes probability and statistics, including applications appropriate to the Computer Engineering program.

Electrical Engineering

BSE Program

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

INTRODUCTION

The Electrical Engineering (BSE) program is housed within the School of Informatics, Computing, and Cyber Systems (SICCS). The program has 16 full-time faculty members. At the time of the visit, 255 students were enrolled in the program which produced 78 graduates during the 2018-19 academic year.

PROGRAM WEAKNESSES

1. **Criterion 5. Curriculum**

   This criterion requires that the curriculum must include a culminating major engineering design experience that incorporates appropriate engineering standards and multiple constraints. The program was not able to demonstrate that all culminating design projects incorporated appropriate engineering standards and multiple constraints. Without such experience in their major design projects, graduates of the program may not be adequately prepared for engineering practice. Thus, strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation describing changes in the curriculum to modify the major design project to assure adequate coverage of engineering standards and multiple constraints. Revised course assignments, an added lecture, and a presentation by each project team detailing the standards and multiple constraints used in their capstone project have been added. As the revisions to the capstone experience were recently initiated, the program has not yet demonstrated that these requirements have been considered in the projects by the students.

Status

The program weakness is unresolved.

Post-30-Day Due-Process Response

The EAC acknowledges receipt of documentation of incorporating engineering standards and multiple constraints into the major design project. Further, evidence of the implementation of engineering standards and multiple constraints were demonstrated in examples of spring 2020 student work, including capstone design reports.

Status

The program weakness has been resolved.

2. **Criterion 8. Institutional Support**

This criterion requires that resources, including institutional services, financial support, and staff (both administrative and technical) provided to the program be adequate to meet program needs. The self-study report indicated that six professional academic advisors and a senior program coordinator are assigned to the college. However, students are frustrated with the quality of the academic advising being provided, including the lack of curriculum knowledge. Students complained that their assigned advisor changed frequently. Discussions with the senior program coordinator and program administrators confirmed significant turnover in advisors assigned to the programs, primarily due to salary issues. The high turnover rate has resulted in student academic advising that is inadequate to meet program needs. The strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation reporting that the institution has taken multiple steps toward promoting increased retention of the academic advisers. In November 2019, new and existing academic advisers received directed salary increases. An Advising Coordinator position was established and an adviser was promoted into a senior-level position; both of these positions are designed to provide additional leadership and mentoring responsibilities to junior advisers. Finally, to strengthen the communications between the advising team and the program, the Advising Coordinator is now a non-voting member on program curriculum committees. As these initiatives are relatively new, the program has not yet demonstrated that the corrective actions have reduced advising staff turnover and improved student advising experience.

Status

The program weakness is unresolved.

Post-30-Day Due-Process Response

The EAC acknowledges receipt of documentation reporting (1) advisor retention data for the past three academic years, and (2) results from a student satisfaction survey regarding their advising experiences. A significant improvement in advisor retention rate was achieved during the most recent academic year compared to the two previous years. Data were also presented showing that student satisfaction increased on a five-point scale for six academic advisors from a rating of 4.42 to 4.68. Although the program now appears to be compliant with this criterion, it is unclear whether these recent improvements will be sustained.

Status

The program weakness is now cited as a program concern.

3. **Program Criteria**

The program criteria for electrical engineering programs requires that the curriculum must include probability and statistics, including applications appropriate to the program name. The program was not able to demonstrate that required courses (STA 275, Statistical Analysis/CENE 225, Engineering Analysis) provided adequate applications of probability and statistics in the electrical engineering context. EE 325, Engineering Analysis II, includes some electrical engineering applications of probability & statistics but is not required for students transferring from Chongqing University in an international 3+1 program, therefore it is possible for some students to graduate without adequate knowledge of the application of probability and statistics to electrical engineering problems. Thus, strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation describing the immediate addition of applied random theory in EE 348, Fundamentals of Signals and Systems, and EE 364, Fundamentals of Electromagnetics. However, these changes do not appear to have introduced sufficient coverage of probability and statistic topics specifically applied to electrical engineering and were not demonstrated through examples of student work. The program indicates a long-term plan to develop a 300-level course on "Probability Theory and Stochastic Processes" which will be a required course for all students including internationals.

Status

The program weakness is unresolved.

Post-30-Day Due-Process Response

The EAC acknowledges the submission of documentation that the planned replacement course

has not yet been implemented.

Status

The program weakness is unresolved. In preparation for the next review, the EAC anticipates documented evidence that the curriculum includes probability and statistics, including applications appropriate to the Electrical Engineering program.

PROGRAM CONCERN

Criterion 7. Facilities

This criterion requires, in part, that equipment 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. Equipment was observed to fail in an upper division electrical engineering lab. Student discussions indicated that equipment failures frequently occur in the lower level electrical engineering laboratories as well. Students indicated that the equipment failure prevented or delayed the completion of laboratory experiments. Although students are currently receiving an adequate laboratory experience, continued issues with equipment failure could jeopardize the students' ability to attain the required student outcomes. Thus, the potential exists that the criterion may not be satisfied in the future.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation detailing a plan to provide funds for equipment repair and new equipment purchases. The plan involves the identification of equipment in need of repair and equipment needs for the future. The program did not demonstrate that the plan for equipment repair and new equipment purchases has been implemented.

Status

The program concern is unresolved.

Post-30-Day Due-Process Response

The EAC acknowledges the receipt of additional documentation indicating the plan to replace some of the aging equipment with 'take home kits'. Take-home kits do not completely replicate the laboratory experience provided by standard laboratory equipment. As a result, student needs may not be met and future compliance with the criteria may be jeopardized.

Status

The program concern is unresolved.

Environmental Engineering

BSE Program

Evaluated under EAC Program Criteria for
Environmental and Similarly Named Engineering Programs

INTRODUCTION

The Environmental Engineering (BSE) program is housed within the Department of Civil Engineering, Construction Management and Environmental Engineering. The program has four full-time, tenured and tenure-track faculty members, and three and one-half, non-tenure-track faculty members. At the time of the visit, 143 students were enrolled in the program which produced 32 graduates during the 2018-19 academic year.

PROGRAM WEAKNESSES

1. **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. The program has a documented process that regularly assesses and evaluates student outcomes using multiple courses. Some assessed courses, however, include students from the civil engineering and environmental engineering programs as well as other engineering programs. Environmental engineering students are not separately assessed. Assessments that include students not in the program can misrepresent the degree to which environmental engineering students are attaining student outcomes. Thus, strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation describing a modified student outcome assessment process implemented in fall 2019 that identifies the student's major associated with the assessment data for each artifact. The modified process isolates the assessment data by student cohort allowing student attainment levels to be analyzed. The documentation did not however demonstrate that the revised process has been implemented.

Status

The program weakness is unresolved.

Post-30-Day Due-Process Response

The EAC acknowledges the receipt of documentation describing the revisions in the assessment process implemented by the program beginning in the fall 2019 semester, resulting in data collected for the fall 2019 and spring 2020 semesters. The documentation demonstrates clear disaggregation of Environmental Engineering program students from students of other majors. The revised assessment process now provides an indication of the degree to which students in the program are attaining each student outcome.

Status

The program weakness has been resolved.

2. **Criterion 8. Institutional Support**

This criterion requires that resources, including institutional services, financial support, and staff (both administrative and technical) provided to the program be adequate to meet program needs. The self-study report indicated that six professional academic advisors and a senior program coordinator are assigned to the college. However, students are frustrated with the quality of the academic advising being provided, including the lack of curriculum knowledge. Students complained that their assigned advisor changed frequently. Discussions with the senior program coordinator and program administrators confirmed significant turnover in advisors assigned to the programs, primarily due to salary issues. The high turnover rate has resulted in student academic advising that is inadequate to meet program needs. The strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation reporting that the institution has taken multiple steps toward promoting increased retention of the academic advisers. In November 2019, new and existing academic advisers received directed salary increases. An Advising Coordinator position was established and an adviser was promoted into a senior-level position; both of these positions are designed to provide additional leadership and mentoring responsibilities to junior advisers. Finally, to strengthen the communications between the advising team and the program, the Advising Coordinator is now a non-voting member on program curriculum committees. As these initiatives are relatively new, the program has not yet demonstrated that the corrective actions have reduced advising staff turnover and improved student advising experience.

Status

The program weakness is unresolved.

Post-30-Day Due-Process Response

The EAC acknowledges receipt of documentation reporting (1) advisor retention data for the past three academic years, and (2) results from a student satisfaction survey regarding their advising experiences. A significant improvement in advisor retention rate was achieved during the most recent academic year compared to the two previous years. Data were also presented showing that student satisfaction increased on a five-point scale for six academic advisors from a rating of 4.42 to 4.68. Although the program now appears to be compliant with this criterion, it is unclear whether these recent improvements will be sustained.

Status

The program weakness is now cited as a program concern.

3. **Program Criteria**

The program criteria for environmental engineering programs require that the curriculum prepare students to apply knowledge of an earth science. The program fulfills the earth science requirement by two required engineering courses: CENE 330, Air Quality Engineering, and CENE 282, Environmental Engineering Lab II. Course materials from these two courses demonstrated insufficient coverage of an earth science. Thus, strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation indicating that the program has added a earth science course requirement to the curriculum. The course requirement can be met by taking one of two courses (GLG 115, Climate Change, or GLG 365, Fundamentals of Weather and Climate Change). The program did not demonstrate that this curriculum change has been implemented.

Status

The program weakness is unresolved.

Post-30-Day Due-Process Response

The EAC acknowledges the receipt of documentation indicating that the proposed curriculum change to meet the earth science requirement has been implemented. The on-line AY 2020-21 Catalog for the program includes the requirement for all Environmental Engineering students to take either ENV/GLG 115, Climate Change, or GSP 365, Fundamentals of Weather and Climate

Change.

Status

The program weakness has been resolved.

Mechanical Engineering

BSE Program

Evaluated under EAC Program Criteria for
Mechanical and Similarly Named Engineering Programs

INTRODUCTION

The Mechanical Engineering (BSE) program is housed within the Department of Mechanical Engineering. The program has 18 full-time faculty members. At the time of the visit, 774 students were enrolled in the program which produced 185 graduates during the 2018-19 academic year.

PROGRAM WEAKNESSES

1. **Criterion 5. Curriculum**

   This criterion requires that the curriculum must include a culminating major engineering design experience that incorporates appropriate engineering standards and multiple constraints. The program was not able to demonstrate that all culminating design projects incorporated appropriate engineering standards. Without such experience in their major design projects, graduates of the program may not be adequately prepared for engineering practice. Thus, strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation indicating that two sections were added to the final capstone design report specifically addressing standards, codes and regulations as well as risks and trade-off analysis. The change, implemented in fall 2019, was demonstrated by two capstone design reports that included the two added sections. Appropriate engineering standards are now being incorporated in the culminating design projects.

Status

The program weakness has been resolved.

2. **Criterion 8. Institutional Support**

   This criterion requires that resources, including institutional services, financial support, and staff (both administrative and technical) provided to the program be adequate to meet program needs. The self-study report indicated that six professional academic advisors and a senior program coordinator are assigned to the college. However, students are frustrated with the quality of the academic advising being provided, including the lack of curriculum knowledge.

Students complained that their assigned advisor changed frequently. Discussions with the senior program coordinator and program administrators confirmed significant turnover in advisors assigned to the programs, primarily due to salary issues. The high turnover rate has resulted in student academic advising that is inadequate to meet program needs. The strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation reporting that the institution has taken multiple steps toward promoting increased retention of the academic advisers. In November 2019, new and existing academic advisers received directed salary increases. An Advising Coordinator position was established and an adviser was promoted into a senior-level position; both of these positions are designed to provide additional leadership and mentoring responsibilities to junior advisers. Finally, to strengthen the communications between the advising team and the program, the Advising Coordinator is now a non- voting member on program curriculum committees. As these initiatives are relatively new, the program has not yet demonstrated that the corrective actions have reduced advising staff turnover and improved student advising experience.

Status

The program weakness is unresolved.

Post-30-Day Due-Process Response

The EAC acknowledges receipt of documentation reporting (1) advisor retention data for the past three academic years, and (2) results from a student satisfaction survey regarding their advising experiences. A significant improvement in advisor retention rate was achieved during the most recent academic year compared to the two previous years. Data were also presented showing that student satisfaction increased on a five-point scale for six academic advisors from a rating of 4.42 to 4.68. Although the program now appears to be compliant with this criterion, it is unclear whether these recent improvements will be sustained.

Status

The program weakness is now cited as a program concern.