



ENGINEERING ACCREDITATION COMMISSION

Summary of Accreditation Actions

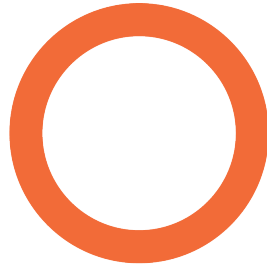
2019–2020 Accreditation Cycle

Hasanuddin University
Makassar, South Sulawesi, Indonesia

Civil Engineering (B.Eng)
Electrical Engineering (B.Eng)

Accredit to September 30, 2022. A request to ABET by January 31, 2021 will be required to initiate a reaccreditation evaluation visit during Fall, 2021. In preparation for the visit, 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.

These are newly accredited programs. Please note that this accreditation action extends retroactively from October 1, 2018.



ABET

ENGINEERING ACCREDITATION COMMISSION

HASANUDDIN UNIVERSITY

MAKASSAR, SOUTH SULAWESI, INDONESIA

FINAL STATEMENT OF ACCREDITATION

2019-20 ACCREDITATION CYCLE

HASANUDDIN UNIVERSITY

Makassar, South Sulawesi, Indonesia

ABET ENGINEERING ACCREDITATION COMMISSION

FINAL STATEMENT

VISIT DATES: OCTOBER 23-25, 2019

ACCREDITATION CYCLE CRITERIA: 2019-2020

INTRODUCTION & DISCUSSION OF STATEMENT CONSTRUCT

The Engineering Accreditation Commission (EAC) of ABET has evaluated the Civil Engineering (B.Eng), and Electrical Engineering (B.Eng) programs at Hasanuddin University for initial accreditation.

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 and Electrical Engineering programs.

INSTITUTIONAL SUMMARY

Hasanuddin University is one of the largest autonomous universities in Indonesia. It is located in Makassar, the capital of South Sulawesi province. The university was established in 1956. The Faculty of Engineering is one of 15 faculties and schools of the university. It was established in 1960 and currently offers 13 undergraduate degree programs. The first engineering graduates from the faculty were in 1968. In fall 2019, the faculty had 4,448 degree-bound students, 233 full-time faculty members, and 132 adjuncts, instructors, and technical staff. The faculty had 631 graduates during 2018-19 academic year. The Civil Engineering and Electrical Engineering programs were evaluated during this visit.

Programs in mathematics, physics, chemistry, humanities, and environmental engineering were found to provide adequate support to the reviewed engineering programs.

Civil Engineering

B.Eng Program

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

INTRODUCTION

The Civil Engineering (B.Eng) program was established in 1960. The first degree was awarded in September 1968. In fall 2019, the program had 38 full-time faculty members of whom 26 have doctoral degrees with specialties in civil engineering, including geotechnical engineering, structural engineering, transportation engineering, construction management, and water resources engineering. The program was also supported by 14 staff members. In fall 2019, the program had a total of 564 students. The program awarded 113 bachelor's degrees in the 2018-19 academic year. The program is being reviewed for initial accreditation.

PROGRAM WEAKNESS

Criterion 4. Continuous Improvement

This criterion requires that the program must 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. In fall 2018, the institution implemented a university-wide outcome-based assessment process. The program presented an assessment plan in which the seven student outcomes were mapped to courses in the curriculum, but the course instructional materials and student work did not always support the student outcomes identified to be assessed in the course. In addition, documentation of the materials and student work used to assess the level to which student outcomes were attained was incomplete. The assessment results were submitted to the university quality assurance office, but the use of the results as input to the continuous improvement of the program was not documented. Thus, the strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation detailing recent actions taken, including setting up a new evaluation committee, changing instructional material in some courses, adding additional tutorial sessions, and involving a practicing engineer in a design course. The revised process is still tentative and preliminary. Although some actions have been initiated, the review process and all assessment tools have not yet been fully developed and implemented. Thus, the strength of compliance with this criterion is lacking.

Status

The program weakness is unresolved. In preparation for the next review, the EAC anticipates translated documentation indicating that an appropriate assessment process has been fully developed and implemented.

PROGRAM CONCERN

Criterion 1. Students

This criterion requires that student performance must be evaluated and that student progress must be monitored to foster success in attaining student outcomes. The current institutional practice where courses are coded by the level of student who may enroll in them appears to work in most cases. However, it has the potential to allow students to enroll in classes that they are not prepared for since it does not base enrollment restrictions on knowledge acquired in previous classes but rather on the amount of time a student has been enrolled in the program. Transcript analysis showed that students were allowed to enroll in higher level courses without adequate knowledge from previous course material. For example, after getting a failing grade in Calculus I, students were allowed to enroll in Calculus II or even Calculus III. Although these students who failed Calculus I received a C or better in the subsequent calculus course, the use of course level rather than courses taken as prerequisites may result in students taking courses without adequate preparation and future compliance with this criterion may be jeopardized.

30-Day Due-Process Response

EAC acknowledges receiving documentation indicating that, for the program courses, prerequisites have been identified and enforcement of these prerequisite requirements was in effect for spring 2020. However, the extent to which the university has approved this change was not demonstrated in the documentation translated into English. Specifically, it is not clear whether changes have been approved for all engineering and non-engineering courses and whether the changes have been implemented in the relevant academic information system. As a result, it may still be possible for program students to enroll in other engineering and non-engineering courses without meeting the necessary pre-/ co- requisites. Thus, after further review the strength of compliance with this criterion is found to be lacking.

Status

The program concern is now cited as a program weakness. In preparation for the next review, the EAC anticipates that translated documentation would be made available indicating that appropriate pre- and co- requisites for all engineering and non- engineering courses that the program's students may take have been identified, and been incorporated into the university course catalog and advising material. The EAC would also expect that these changes would be implemented in the relevant academic information system.

PROGRAM OBSERVATION

Student learning experience may be enriched if practicing professionals are invited to the final presentations in the Integrated Civil Infrastructure Design course.

Electrical Engineering

B.Eng Program

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

INTRODUCTION

The Electrical Engineering (B.Eng) program was established on September 1963 and the first degrees were awarded in July 1975. In fall 2019, the program had 32 full-time faculty members of whom 23 have doctoral degrees with specialties in electrical engineering, including power-engineering, telecommunications, control, electronic and computer engineering. The program has 12 adjuncts/lecturers and 12 staff members. In fall 2019 the program had a total of 387 students. The program awarded 52 bachelor's degrees in the 2018-19 academic year. The program is being reviewed for initial accreditation.

PROGRAM WEAKNESSES

1. Criterion 2. Program Educational Objectives

This criterion requires the program to have published program educational objectives that are consistent with the mission of the institution, the needs of the program's various constituencies, and the engineering accreditation criteria. It further requires that there be a documented, systematically utilized, and effective process, involving program constituents, for periodic review of these program educational objectives that ensures they remain consistent with the institutional mission, the program's constituent's needs, and the engineering accreditation criteria. The program lists its students, faculty members, industrial advisory board, major employers, and alumni as constituents. There was no evidence that any of these groups, aside from the faculty members, participated in the periodic review of program educational objectives. Without involvement of all constituencies in the process the program educational objectives may not meet the needs of the program's constituents. Thus, the strength of compliance with this criterion is lacking.

30-Day Due-Process Response

EAC acknowledges receiving documentation demonstrating that the program has involved all its constituents in the periodic review of program educational objectives through meetings seeking their review and input for improvement.

Status

The program weakness has been resolved.

2. Criterion 4. Continuous Improvement

This criterion requires that the program must 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. In fall 2018, the institution implemented a university-wide outcome-based assessment process. The program presented an assessment plan in which the seven student outcomes were mapped to courses in the curriculum, but the course instructional materials and student work did not always support the student outcomes identified to be assessed in the course. In addition, documentation of the materials and student work used to assess the level to which student outcomes were attained was incomplete. The assessment results were submitted to the university quality assurance office, but the use of the results as input to the continuous improvement of the program was not documented. Thus, the strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation detailing recent actions taken to address this shortcoming. The program states that it provided documentation of the materials and student work used to assess the level to which student outcomes were attained during the site visit. However, at the time of the visit, the team did not find those documents satisfactory, especially since very few of them were in English, and the faculty explanations were inadequate. Neither additional material nor explanation was provided in the 30-day response to demonstrate use of appropriate processes for assessing and evaluating student outcome attainment. A translated copy of the fall 2019 program faculty meeting report indicates that the faculty identified improvement steps to be taken in several courses but documentation has not been provided to indicate what and how the improvement steps have been implemented. There is no clear indication as to how outcomes assessment has improved, nor are there any data or indication of how the changes have led to systematic improvement of the program. Although some actions have been initiated, the review process and all assessment tools have not yet been fully developed and implemented. Thus, the strength of compliance with this criterion is lacking.

Status

The program weakness is unresolved. In preparation for the next review, the EAC anticipates receiving evidence in the form of documentation, that has been translated into English, indicating that an appropriate assessment process has been fully developed and implemented.

3. Criterion 5. Curriculum

This criterion requires that the program must include a culminating major engineering design experience that incorporates appropriate engineering standards and multiple constraints. The program has a capstone experience that is distributed over several courses. Appropriate engineering standards and multiple constraints were addressed indirectly in some senior design

projects, but most project reports did not include evidence of the incorporation of engineering standards and constraints. Without adequate experience in the application of design constraints and engineering standards, students in the program may not be adequately prepared for engineering practice. Thus, the strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation detailing recent actions taken to address this shortcoming. The program has redesigned two existing design courses as capstone design courses to be taken in the final year of the curriculum. In the final projects students would be asked to incorporate engineering standards and design constraints, but revised syllabi have not been provided requiring this. Of the seven student project assignment statements provided, only one requires engineering standards and constraints to be considered; the other six assignments do not require such considerations. Thus, the strength of compliance with this criterion is lacking.

Status

The program weakness is unresolved. In preparation for next review, the EAC anticipates documentation, in English, demonstrating the capstone design courses incorporate appropriate design constraints and engineering standards.

4. Criterion 7. Facilities

This criterion requires that classrooms, offices, laboratories, and associated equipment must be adequate to support attainment of the student outcomes and to provide an atmosphere conducive to learning. Modern tools, equipment, computing resources, and laboratories appropriate to the program must be available, accessible, and systematically maintained and upgraded to enable students to attain the student outcomes and to support program needs. The program has facilities to support attainment of students outcomes, but in some cases the number of students using the facility was large, such that each student may not receive the full benefit of the experience. In addition, the limited functionality of student versions of software for electrical circuit simulation, numerical computation and general office functions impeded the ability of students to fully attain the student outcomes. Without sufficient and appropriate equipment and software, student learning through hands-on laboratory experience may be inadequate. Thus, strength of compliance with this criterion is lacking.

30-Day Due-Process Response

The EAC acknowledges receipt of documentation detailing recent actions taken to address this shortcoming. The program has initiated procurement of a professional edition of a numerical simulation program and full version of an electric and electronic circuit simulator, as well as backup units of the lab equipment. No evidence was provided of the actual purchase and

installation of the software and equipment. Thus, strength of compliance with this criterion is lacking.

Status

The program weakness is unresolved. In preparation for next review, the EAC anticipates translated documentation indicating that the software and equipment needed for students to attain the learning outcomes have been obtained.