EAC of ABET
Readiness Review Report
for the
ELECTRICAL ENGINEERING UNDERGRADUATE STUDY PROGRAM
at
HASANUDDIN UNIVERSITY
Makassar, INDONESIA
September 2018

CONFIDENTIAL

The information supplied in this Readiness Review Report is for the confidential use of ABET and its authorized agents, and will not be disclosed without authorization of the institution concerned, except for summary data not identifiable to a specific institution.

BACKGROUND INFORMATION

A. Contact Information

List name, mailing address, telephone number, fax number, and e-mail address for the primary pre-visit contact person for the program.

B. Program History

Include the year when the program was implemented. Summarize major program changes with an emphasis on changes occurring around the Readiness Review submission.

The ELECTRICAL ENGINEERING STUDY PROGRAM (EESP) at Hasanuddin University, Makassar, INDONESIA was founded in 1963 as a part of the Faculty of Engineering established a few years earlier. The campus was originally located at Baraya, near the downtown of Ujung Pandang which was the old name of the city of Makassar. In early 1980s, the university campus was relocated to Tamalanrea, about 10 km north-east of downtown Makassar. More than 30 years later, the Faculty of Engineering was relocated again to its new campus at Gowa, 20 km south of Tamalanrea, and the EESP - under the Department of Electrical Engineering - officially settled at its new facilities in the new campus at Gowa in 2017.

During the first years after its establishment in mid 1960s, most EESP students of Hasanuddin University continued and completed their undergraduate degrees in 2 (two) major universities in Indonesia, namely Gajah Mada University (UGM) in Jogyakarta and Bandung Institute of Technology (ITB) in Bandung. The majority of the graduates from this period made their careers as academicians, or as engineers at the state-owned power company (PLN) and telecommunication (TELKOM), or started their own private companies related to electricity and telephone businesses.

A major change of curriculum was implemented in 1980. The EESP was split into 2 (two) sub-study programs or concentrations, namely: (1) The Electrical Power Engineering and (2) The Telecommunication and Electronic Engineering. It was an 8 (eight) semester undergraduate engineering study program provided in 4 (four) academic years. In the first three semesters, the students took common courses on the fundamentals of Electrical Engineering and the required mathematics, physics and chemistry. Beginning at the fourth semester, the students voluntarily selected their preferences of concentration, and took different required and elective courses accordingly.

The next stage of curriculum development was started in 1995. A new concentration was established by divided the Telecommunication and Electronic Engineering sub-study program into 2 (two), i.e. (1) The Telecommunication Engineering and Information Systems, and (2) The Computer, Control and Electronic Engineering sub-study programs. Common courses for both new concentrations were listed until the fourth semester. The basis of the curriculum establishment was the nationally decreed higher education curriculum development in Indonesia: Competency-Based Curriculum (KBK).

Most recently, a major change in the EESP curriculum was made related to the campus relocation to Gowa in 2015. The new campus is designed to support the Laboratory-based Education (LBE) system adopted by the Faculty of Engineering. By this time the EESP has established its Masters and Doctoral Degree programs supported by no less than 25 research laboratories and working groups. The process of curriculum development was managed by a Focus Group Discussion (FGD) on Curriculum 2015 in a 5 (five) year working period from 2012 to 2017, with a tagline: "*From Competency To Contribution*".

The main idea of the recent curriculum change is to extend the competency-based curriculum previously implemented to a brand new curriculum called the "**R&D-(research and development)-based curriculum**". The existing (since 1995) three concentrations were discontinued and all merged back to only one EESP. The curriculum structure is now composed of 4 (four) semesters of fundamentals and 2 (two) semesters of (elective) course packages to develop the competency, and the final laboratory-based, or R&D-based, 2 (two) semesters to make the contribution.

The timeline of the EESP 55 year history is summarized in Table 1-1. After 1995, in fact the EESP curriculum has been revised every 5 (five) years, in 2000, 2005 and 2010 consecutively, but only with minor revisons.

Tabel 1-1 The Summary of Major Changes in the History of Hasanuddin University Electrical Engineering Study Program5

Year	Events
1963	The Electrical Engineering Study Program (EESP) founded
1980	Split into 2 (two) sub-study programs:
	(1) Electrical Power Engineering Sub-Study Program
	(2) Telecommunication and Electronic Engineering Sub-Study Program
1984	Relocated from Baraya Campus to Tamalanrea Campus
1995	Split into 3 (three) concentrations:
	(1) Electrical Power Engineering
	(2) Telecommunication Engineering
	(3) Computer, Control and Electronic Engineering
2000	Minor Revisions of Curriculum
2005	Minor Revisions of Curriculum, competency-based curriculum (KBK)
2010	Minor Revisions of Curriculum, competency-based curriculum (KBK)
2012	Focus Group Discussion (FGD) on Curriculum 2015 established
2015	Relocated to the Faculty of Engineering Campus at Gowa
	Commencement of the Laboratory-based Education System (LBE)
2016	Implementation of the R&D-based Curriculum 2015
2017	Focus Group Discussion (FGD) on Curriculum 2015 dismissed

C. Options

List and describe any options, tracks, concentrations, etc. included in the program.

D. Program Delivery Modes

Describe the delivery modes used by this program, e.g., days, evenings, weekends, cooperative education, traditional lecture/laboratory, off-campus, distance education, web-based, etc.

E. Program Locations

Include all locations where the program or a portion of the program is regularly offered (this would also include dual degrees, international partnerships, etc.).

F. Public Disclosure

Provide information concerning all the places where the Program Education Objectives (PEOs), Student Outcomes (SOs), annual student enrollment and

graduation data is posted or made accessible to the public. If this information is posted to the Web, please provide the URLs.

G. Deficiencies, Weaknesses or Concerns from Previous Evaluation(s) and the Actions Taken to Address Them

This section is **not** applicable for Readiness Review.

GENERAL CRITERIA

CRITERION 1. STUDENTS

For the sections below, attach any written policies that apply.

A. Student Admissions

Summarize the requirements and process for accepting new students into the program.

B. Evaluating Student Performance

Do **not** submit for Readiness Review.

C. Transfer Students and Transfer Courses

Summarize the requirements and process for accepting transfer students and transfer credit. Include any state-mandated articulation requirements that impact the program.

D. Advising and Career Guidance

Summarize the process for advising and providing career guidance to students. Include information on how often students are advised, who provides the advising (program faculty, departmental, college or university advisor).

E. Work in Lieu of Courses

Summarize the requirements and process for awarding credit for work in lieu of courses. This could include such things as life experience, Advanced Placement, dual enrollment, test out, military experience, etc.

F. Graduation Requirements

Summarize the graduation requirements for the program and the process for ensuring and documenting that each graduate completes all graduation requirements for the program. State the name of the degree awarded (Master of Science in Safety Sciences, Bachelor of Technology, Bachelor of Science in Computer Science, Bachelor of Science in Electrical Engineering, etc.)

G. Transcripts of Recent Graduates

For a Readiness Review, the program must include one graduate's *official* transcript from the most recent graduating class at the time of the submission. If the program does not have any graduates by the time of the Readiness Review submission, please include a transcript of one student who is currently in the next graduating class or in the last year of the program study. Feel free to keep the graduate/student's name anonymous. The transcript must be provided through the ABET-provided link as mentioned under Page 3 "Submission and Distribution of Readiness Review Report."

If your program is located outside the U.S. and the degree conferred information is typically not available on transcripts of your graduates, please include a copy of the graduation certificate/diploma/completion document/etc. that contains information concerning the degree conferred for the same student graduate. All information should be provided in English or come with an English translation.

Questions? Contact ReadinessReview@abet.org.

CRITERION 2. PROGRAM EDUCATIONAL OBJECTIVES

A. Mission Statement

Do **not** submit for Readiness Review.

B. Program Educational Objectives

List the program educational objectives and state where these can be found by the general public.

C. Consistency of the Program Educational Objectives with the Mission of the Institution

Do **not** submit for Readiness Review.

D. Program Constituencies

List the program constituencies. Describe how the program educational objectives meet the needs of these constituencies.

E. Process for Review of the Program Educational Objectives

Describe the process that periodically reviews the program educational objectives including how the program's various constituencies are involved in this process. Describe how this process is systematically utilized to ensure that the program's educational objectives remain consistent with the institutional mission, the program constituents' needs and these Criteria.

CRITERION 3. STUDENT OUTCOMES

A. Student Outcomes

List the student outcomes for the program and indicate where the student outcomes are documented. If the student outcomes are stated differently than those listed in Criterion 3, provide a mapping of the program's student outcomes to the student outcomes (1) through (7) listed in Criterion 3 as found in the Engineering Accreditation Criteria that will be in effect beginning in 2019-20.

B. Relationship of Student Outcomes to Program Educational Objectives

Do **not** submit for Readiness Review.

CRITERION 4. CONTINUOUS IMPROVEMENT

This section of your Readiness Review Report should document your processes for regularly assessing and evaluating the extent to which the student outcomes are being attained. This section should also document the extent to which the student outcomes are being attained. It should also describe how the results of these processes are utilized to affect continuous improvement of the program.

Assessment is defined as one or more processes that identify, collect, and prepare the data necessary for evaluation. Evaluation is defined as one or more processes for interpreting the data acquired though the assessment processes in order to determine how well the student outcomes are being attained.

Although the program can report its processes as it chooses, the following is presented as a guide to help you organize your Readiness Review Report.

A. Student Outcomes

It is recommended that this section include (a table may be used to present this information):

1. A listing and description of the assessment processes used to gather the data upon which the evaluation of each student outcome is based. Examples of data collection processes may include, but are not limited to, specific exam questions, student portfolios, internally developed assessment exams, senior project presentations, nationally-normed exams, oral exams, focus groups, industrial advisory committee meetings, or other processes that are relevant and appropriate to the program.
2. The frequency with which these assessment processes are carried out
3. The expected level of attainment for each of the student outcomes
4. Summaries of the results of the evaluation process and an analysis illustrating the extent to which each of the student outcomes is being attained
5. How the results are documented and maintained

B. Continuous Improvement

Describe how the results of evaluation processes for the student outcomes and any other available information have been systematically used as input in the continuous improvement of the program.

~~Describe the results of any changes (whether or not effective) in those cases where re-assessment of the results has been completed. Indicate any significant future program improvement plans based upon recent evaluations. Provide a brief rationale for each of these planned changes.~~ Do **not** submit this part for the Readiness Review.

C. Additional Information

Do **not** submit for Readiness Review.

CRITERION 5. CURRICULUM

A. Program Curriculum

1. Complete Table 5-1 that describes the plan of study for students in this program including information on course offerings in the form of a recommended schedule by year and term along with maximum section enrollments for all courses in the program for the last two terms the course was taught. If there is more than one curricular path or option for a program, a separate Table 5-1 should be provided for each path or option. State whether the institution operates on quarters or semesters.
2. ~~Describe how the curriculum aligns with the program educational objectives~~. Do **not** submit this for the Readiness Review.
3. ~~Describe how the curriculum and its associated prerequisite structure support the attainment of the student outcomes~~. Do **not** submit this for the Readiness Review.
4. Attach a flowchart or worksheet that illustrates the prerequisite structure of the program's required courses.
5. Describe how the program meets the requirements in terms of hours and depth of study for each subject area (Math and Basic Sciences, Engineering Topics, and General Education) specifically addressed by either the general criteria or the program criteria.
6. Describe the major design experience that prepares students for engineering practice. Describe how this experience is based upon the knowledge and skills acquired in earlier coursework and incorporates appropriate engineering standards and multiple design constraints.
7. If the program allows cooperative education to satisfy curricular requirements specifically addressed by either the general or program criteria, describe the academic component of this experience and how it is evaluated by the faculty.
8. ~~Describe the materials (course syllabi, textbooks, sample student work, etc.), that will be available for review during the visit to demonstrate achievement related to this criterion. (See the 2018-2019 APPM Section I.E.5.b.(2) regarding display materials.)~~
   Do **not** submit this for the Readiness Review.

B. Course Syllabi

In Appendix A of the Readiness Review Report, include a syllabus for each course used to satisfy the mathematics, science, and discipline-specific requirements required by Criterion 5 or by any applicable program criteria.

INCLUDE ONLY COURSE SYLLABI FOR THE DISCIPLINE-SPECIFIC COURSES OF THE PROGRAM FOR READINESS REVIEW

Table 5-1 Curriculum

Name of Program

Course (Department, Number, Title) List all courses in the program by term starting with the first term of the first year and ending with the last term of the final year.		Indicate Whether Course is Required, Elective or a Selected Elective by an R, an E or an SE.[1]	*Subject Area (Credit Hours)*				Last Two Terms the Course was Offered: Year and, Semester, or Quarter	Maximum Section Enrollment for the Last Two Terms the Course was Offered[2]
			Math & Basic Sciences	Engineering Topics Check if Contains Significant Design (√)	General Education	Other		
Add rows as needed to show all courses in the curriculum.								
TOTALS-ABET BASIC-LEVEL REQUIREMENTS								
OVERALL TOTAL CREDIT HOURS FOR COMPLETION OF THE PROGRAM								
PERCENT OF TOTAL								
Total must satisfy either credit hours or percentage	Minimum Semester Credit Hours		32 Hours	48 Hours				
	Minimum Percentage of Total Credits Required for Graduation		25%	37.5 %				

1. **Required** courses are required of all students in the program, **elective** courses (often referred to as open or free electives) are optional for students, and **selected elective** courses are those for which students must take one or more courses from a specified group.
2. For courses that include multiple elements (lecture, laboratory, recitation, etc.), indicate the maximum enrollment in each element. For selected elective courses, indicate the maximum enrollment for each option.

Instructional materials and student work verifying compliance with ABET criteria for the categories indicated above will be required during the campus visit.

CRITERION 6. FACULTY

A. Faculty Qualifications

Describe the qualifications of the faculty and how they are adequate to cover all the curricular areas of the program and also meet any applicable program criteria. This description should include the composition, size, credentials, and experience of the faculty. Complete Table 6-1. Include faculty resumes in Appendix B.

FOR THIS REPORT, INCLUDE ONLY RESUMES FOR THE FACULTY MEMBERS WHO TEACH ENGINEERING COURSES LISTED IN TABLE 5-1

B. Faculty Workload

Complete Table 6-2, Faculty Workload Summary and describe this information in terms of workload expectations or requirements.

C. Faculty Size

Discuss the adequacy of the size of the faculty and describe the extent and quality of faculty involvement in interactions with students, student advising and counseling, university service activities, professional development, and interactions with industrial and professional practitioners including employers of students.

D. Professional Development

Provide detailed descriptions of professional development activities for each faculty member.

E. Authority and Responsibility of Faculty

Describe the role played by the faculty with respect to course creation, modification, and evaluation, their role in the definition and revision of program educational objectives and student outcomes, and their role in the attainment of the student outcomes. Describe the roles of others on campus, e.g., dean or provost, with respect to these areas.

Table 6-1. Faculty Qualifications

Name of Program

Faculty Name	Highest Degree Earned- Field and Year	Rank [1]	Type of Academic Appointment [2] T, TT, NTT	FT or PT [3]	Years of Experience			Professional Registration/ Certification	Level of Activity [4] H, M, or L		
					Govt./Ind. Practice	Teaching	This Institution		Organizations Professional	Development Professional	Consulting/summer work in industry

Instructions: Complete table for each member of the faculty in the program. Add additional rows or use additional sheets if necessary. Updated information is to be provided at the time of the visit.

1. Code: P = Professor ASC = Associate Professor AST = Assistant Professor I = Instructor A = Adjunct O = Other
2. Code: TT = Tenure Track T = Tenured NTT = Non Tenure Track
3. FT = Full Time Faculty or PT = Part Time Faculty, at the institution.
4. The level of activity, high, medium or low, should reflect an average over the three years prior to the visit.

Table 6-2. Faculty Workload Summary

Name of Program

Faculty Member (name)	PT or FT[1]	Classes Taught (Course No./Credit Hrs.) Term and Year[2]	Program Activity Distribution[3]			% of Time Devoted to the Program[5]
			Teaching	Research or Scholarship	Other[4]	

1. FT = Full Time Faculty or PT = Part Time Faculty, at the institution
2. For the academic year for which the Report is being prepared.
3. Program activity distribution should be in percent of effort in the program and should total 100%.
4. Indicate sabbatical leave, etc., under "Other."
5. Out of the total time employed at the institution.

CRITERION 7. FACILITIES[1]

Do **not** submit this section for the Readiness Review.

CRITERION 8. INSTITUTIONAL SUPPORT

Do **not** submit this section for the Readiness Review.

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PROGRAM CRITERIA

Describe how the program satisfies any applicable program criteria. If already covered elsewhere in the report, provide appropriate references.

APPENDICES

APPENDIX A – COURSE SYLLABI

INCLUDE ONLY COURSE SYLLABI FOR THE DISCIPLINE-SPECIFIC COURSES OF THE PROGRAM FOR READINESS REVIEW

Please use the following format for the course syllabi (2 pages maximum in Times New Roman 12 point font)

1. Course number and name

2. Credits and contact hours

3. Instructor's or course coordinator's name

4. Text book, title, author, and year
    a. other supplemental materials

5. Specific course information
    a. brief description of the content of the course (catalog description)
    b. prerequisites or co-requisites
    c. indicate whether a required, elective, or selected elective (as per Table 5-1) course in the program

6. Specific goals for the course
    a. specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic.
    b. explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

7. Brief list of topics to be covered

APPENDIX B – FACULTY VITAE

FOR THIS REPORT, INCLUDE ONLY RESUMES FOR THE FACULTY MEMBERS WHO TEACH ENGINEERING COURSES LISTED IN TABLE 5-1

Please use the following format for the faculty vitae (2 pages maximum in Times New Roman 12 point type)

1. Name
2. Education – degree, discipline, institution, year
3. Academic experience – institution, rank, title (chair, coordinator, etc. if appropriate), when (ex. 2002-2007), full time or part time
4. Non-academic experience – company or entity, title, brief description of position, when (ex. 2008-2012), full time or part time
5. Certifications or professional registrations
6. Current membership in professional organizations
7. Honors and awards
8. Service activities (within and outside of the institution)
9. Briefly list the most important publications and presentations from the past five years – title, co-authors if any, where published and/or presented, date of publication or presentation
10. Briefly list the most recent professional development activities

APPENDIX C – EQUIPMENT

Do **not** submit for Readiness Review.

APPENDIX D – INSTITUTIONAL SUMMARY

Programs are requested to provide the following information.

1. The Institution

a. Name and address of the institution

b. Name and title of the chief executive officer of the institution

c. Name and title of the person submitting the Report.

d. Name the organizations by which the institution is now accredited, and the dates of the initial and most recent accreditation evaluations.

2. Type of Control

Description of the type of managerial control of the institution, e.g., private-non-profit, private-other, denominational, state, federal, public-other, etc.

3. Educational Unit

Describe the educational unit in which the program is located including the administrative chain of responsibility from the individual responsible for the program to the chief executive officer of the institution. Include names and titles. An organization chart may be included.

4. Academic Support Units

List the names and titles of the individuals responsible for each of the units that teach courses required by the program being evaluated for readiness, e.g., mathematics, physics, etc.

5. Non-academic Support Units

List the names and titles of the individuals responsible for each of the units that provide non-academic support to the program being evaluated for readiness, e.g., library, computing facilities, placement, tutoring, etc.

6. Credit Unit

It is assumed that one semester or quarter credit normally represents one class hour or three laboratory hours per week. One academic year normally represents at least 28 weeks of classes, exclusive of final examinations. If other standards are used for this program, the differences should be indicated.

7. Tables

Complete the following tables for the program undergoing the Readiness Review.

Table D-1. Program Enrollment and Degree Data

Name of the Program

	Academic Year		Enrollment Year					UndergradTotal	GradTotal	Degrees Awarded			
			1st	2nd	3rd	4th	5th			Associates	Bachelors	Masters	Doctorates
Current Year		FT											
		PT											

For Readiness Review, give the official fall term enrollment figures (head count) and undergraduate and graduate degrees conferred for the current year. The *current* year for a Readiness Review means the academic year preceding the Readiness Review submission.

FT--full time
PT--part time

Table D-2. Personnel

Name of the Program

Year[1]: _____

	HEAD COUNT		FTE[2]
	FT	PT	
Administrative[2]			
Faculty (tenure-track)[3]			
Other Faculty (excluding student Assistants)			
Student Teaching Assistants[4]			
Technicians/Specialists			
Office/Clerical Employees			
Others[5]			

Report data for the program being evaluated for readiness.

1. Data submitted for the Readiness Review should be for the academic term at the time of the submission.

2. Persons holding joint administrative/faculty positions or other combined assignments should be allocated to each category according to the fraction of the appointment assigned to that category.

3. For faculty members, 1 FTE equals what your institution defines as a full-time load

4. For student teaching assistants, 1 FTE equals 20 hours per week of work (or service). For undergraduate and graduate students, 1 FTE equals 15 semester credit-hours (or 24 quarter credit-hours) per term of institutional course work, meaning all courses — science, humanities and social sciences, etc.

5. Specify any other category considered appropriate, or leave blank.

Signature Attesting to Compliance

Do **not** submit for Readiness Review.