

**TEMPLATE FOR A
READINESS REVIEW REPORT**

**2019-2020 Readiness Review Cycle**

*Extracted from 2018-19 EAC Self-Study Questionnaire*

**ENGINEERING ACCREDITATION COMMISSION (EAC)**

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# CRITERION 5. CURRICULUM

## Program Curriculum

Electrical Engineering od Hasanuddin University (EEUH) Program Curriculum is designed to meet the program educational objectives. Furthermore, it is also designed to satisfy the general and Electrical Engineering EAC/ABET requirements and the curricular requirement of Hasanuddin University.

EEUH requires that all educational programs must have a freshman year that consists of ***mathematics* *and basic science***, a set of ***general education***, and ***engineering topics***. With these constraints, the implementation of the EEUH program curriculum consists of three elements and with a total minimum of 145 credits hours as shown in the Figure 5.1.



Figure 5.1

1. Attach a flowchart or worksheet that illustrates the prerequisite structure of the program’s required courses.



Figure 5.2

1. 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.
2. General Education

The general education consists of 7 courses (total 14 credit hours). The general educations are listed in Table 5.2 General Education Component below. These fourteen credit hours satisfy all the requirements of the Hasanuddin University general education curriculum, which is design to accomplish the goals of Hasanuddin University as defined by its mission statements.

Table 5.2 General Education Component

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Code** | **General Education** | **Credit** | **Course (%)** | **Lab (%)** | **Other (%)** |
| 011U0032 | Civic Education  | 2 | 100 |  |  |
| 009U0032 | Bahasa Indonesia | 2 | 100 |  |  |
| 001U0032 | Religious Studies | 2 | 100 |  |  |
| 012U0032 | State Ideology: Pancasila | 2 | 100 |  |  |
| 010U0032 | English | 2 | 100 |  |  |
| 008U0032 | Science, Technology, and Art Insights | 2 | 100 |  |  |
| 007U0032 | Maritime Social-Cultural Insights | 2 | 100 |  |  |

 b. Mathematics and Basic Science

The mathematics and basic science consist of 34 (thirty-four) credit hours. It divides to 18 (eighteen) credit hours of mathematics as shown in the Table 5.3 and 16 (sixteen) credit hours of basic science as shown in The Table 5.4.

Table 5.3 Mathematics Component

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Code** | **General Education** | **Credit** | **Course (%)** | **Lab (%)** | **Other (%)** |
| 016U0033 | Basic Mathematics 1 | 3 | 100 |  |  |
| 017U0033 | Basic Mathematics 2 | 3 | 100 |  |  |
| 201D4113 | Advanced Mathematics 1 | 3 | 100 |  |  |
| 210D4123 | Advanced Mathematics 1 | 3 | 100 |  |  |
| 211D4122 | Linear Systems | 2 | 100 |  |  |
| 302D4112 | Probability and Statistics | 2 | 100 |  |  |
| 342D4122 | Numerical Methods | 2 | 100 |  |  |

 Table 5.4 Basic Science Component

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Code** | **General Education** | **Credit** | **Course (%)** | **Lab (%)** | **Other (%)** |
| 020U0033 | Basic Physics 1 | 3 | 75 | 25 |  |
| 022U0033 | Basic Physics 2 | 3 | 75 | 25 |  |
| 206D4112 | Advanced Physics | 2 | 100 |  |  |
| 104D4112 | Advanced Chemistry | 2 | 100 |  |  |
| 205D4112 | Electric Material Physics | 2 | 100 |  |  |
| 304D4112 | Electromagnetics | 2 | 100 |  |  |
| 344D4122 | Environmental Science | 2 | 100 |  |  |

 c. Engineering Topics

The engineering topics component divides to 69 (minimum) credit hours of lecture course as shown in the Table 5.5 and 28 credit hours of no lecture course as shown in the Table 5.6.

Table 5.5 Lecture Courses

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Code** | **General Education** | **Credit** | **Course (%)** | **Lab (%)** | **Other (%)** |
| 101D4113 | Electric Circuits 1 | 3 | 100 |  |  |
| 102D4112 | Logic Circuits | 2 | 100 |  |  |
| 103D4112 | Engineering Drawing | 2 | 100 |  |  |
| 105D4123 | Electric Circuits 2 | 3 | 100 |  |  |
| 106D4122 | Digital Systems | 2 | 100 |  |  |
| 107D4122 | Computer Programming | 2 | 50 | 50 |  |
| 108D4121 | Electric Circuits Laboratory | 2 |  | 100 |  |
| 109D4121 | Digital Systems Laboratory | 1 |  | 100 |  |
| 202D4112 | Basic Electric Power (Systems) | 2 | 100 |  |  |
| 203D4112 | Basic Telecommunication (Systems) | 2 | 100 |  |  |
| 204D4112 | Basic Electronics | 2 | 100 |  |  |
| 207D4111 | Basic Electric Power Laboratory | 1 |  | 100 |  |
| 208D4111 | Basic Telecommunication Laboratory | 1 |  | 100 |  |
| 209D4111 | Basic Electronics Laboratory | 1 |  | 100 |  |
| 212D4122 | Electric Machines | 2 | 100 |  |  |
| 213D4122 | Basic Multimedia | 2 | 100 |  |  |
| 214D4122 | Integrated Electronics | 2 | 100 |  |  |
| 215D4122 | Microprocessor Systems and Interfaces | 2 | 100 |  |  |
| 214D4122 | Basic Control Systems | 2 | 100 |  |  |
| 217D4122 | Electric Installation and Laboratory | 2 | 75 | 25 |  |
| 218D4121 | Integrated Electronics Laboratory | 1 |  | 100 |  |
| 219D4121 | Microprocessor Systems and Interfaces Lab | 1 |  | 100 |  |
| 301D4112 | Engineering Economics | 2 | 100 |  |  |
| 303D4112 | Electric Measurements | 2 | 100 |  |  |
| 343D4122 | Energy Conversions | 2 | 100 |  |  |
| 345D4122 | Management and Entrepreneurships | 2 | 100 |  |  |
| 402D4112 | Research Methods and Scientific Writing | 2 | 100 |  |  |
|  | Selected Elective Course (2 package) | 18 |  |  |  |

Table 5.6 Non-Lecture Courses

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Code** | **General Education** | **Credit** | **Course (%)** | **Lab (%)** | **Other (%)** |
| 401D4112 | Practical (On Job) Training | 2 |  |  | 100 |
| 491D4124 | Student Community Service Programs | 4 |  |  | 100 |
|  | Laboratory 1 | 2 | 100 |  | 100 |
|  | Laboratory 2 | 3 | 100 |  | 100 |
| 403D4112 | Final Project Proposal | 2 |  |  | 100 |
| 492D4122 | Final Project Results | 2 |  |  | 100 |
| 493D4122 | Final project Report | 2 |  |  | 100 |

1. 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.
2. 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.

## Table 5-1 Curriculum

**Electrical Engineering**

| **Course Electrical Engineering** | **Required, Elective, or a Selected Elective** | ***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** |
| --- | --- | --- | --- | --- |
| **Math & Basic Sciences** | **Engineering Topics Check If Contains Significant Design ()** | **General Education** | **Other** |
| **Lecture Courses** |
| *011U0032 Civic Education* | R |  |  | 2 |  | I; 1 |  |
| *009U0032 Bahasa Indonesia* | R |  |  | 2 |  | I; 1 |  |
| *016U0033 Basic Mathematics 1* | R | 3 |  |  |  | I; 1 |  |
| *020U0033 Basic Physics 1* | R | 3 |  |  |  | I; 1 |  |
| *101D4113 Electrical Circuits 1* | R |  | 3 |  |  | I; 1 |  |
| *102D4112 Logic Circuits* | R |  | 2 |  |  | I; 1 |  |
| *103D4112 Engineering Drawing* | R |  | 2 |  |  | I; 1 |  |
| *104D4112 Advanced Chemistry* | R | 2 |  |  |  | I; 1 |  |
| *001U0032 Religious Studies (Islam, Catholic, etc)* | R |  |  | 2 |  | I; 2 |  |
| *012U0032 State Ideology: Pancasila* | R |  |  | 2 |  | I; 2 |  |
| *010U0032 English* | R |  |  | 2 |  | I; 2 |  |
| *017U0033 Basic Mathematics 2* | R | 3 |  |  |  | I; 2 |  |
| *022U0033 Basic Physics 2* | R | 3 |  |  |  | I; 2 |  |
| *105D4123 Electric Circuits 2* | R |  | 3 |  |  | I; 2 |  |
| *106D4122 Digital Systems* | R |  | 2 |  |  | I; 2 |  |
| *107D4122 Computer Programming* | R |  | 2 |  |  | I; 2 |  |
| *108D4121 Electric Circuits Laboratory* | R |  | 1 |  |  | I; 2 |  |
| *109D4121 Digital Systems Laboratory* | R |  | 1 |  |  | I; 2 |  |
| *008U0032 Science, Technology and Art Insights* | R |  |  | 2 |  | II;3 |  |
| *201D4113 Advanced Mathematics 1* | R | 3 |  |  |  | II;3 |  |
| *202D4112 Basic Electric Power (Systems)* | R |  | 2 |  |  | II;3 |  |
| *203D4112 Basic Telecommunication (Systems)* | R |  | 2 |  |  | II;3 |  |
| *204D4112 Basic Electronics* | R |  | 2 |  |  | II;3 |  |
| *205D4112 Electric Material Physics* | R | 2 |  |  |  | II;3 |  |
| *206D4112 Advanced Physics* | R | 2 |  |  |  | II;3 |  |
| *207D4111 Basic Electric Power laboratory* | R |  | 1 |  |  | II;3 |  |
| *208D4111 Basic Telecommunication Laboratory* | R |  | 1 |  |  | II;3 |  |
| *209D4111 Basic Electronics Laboratory* | R |  | 1 |  |  | II;3 |  |
| *007U0032 Maritime Social-Cultural Insight* | R |  |  | 2 |  | II;4 |  |
| *210D4123 Advanced Mathematics 2* | R | 3 |  |  |  | II;4 |  |
| *211D4122 Linear Systems* | R | 2 |  |  |  | II;4 |  |
| *212D4122 Electric Machines* | R |  | 2 |  |  | II;4 |  |
| *213D4122 Basic Multimedia* | R |  | 2 |  |  | II;4 |  |
| *214D4122 Integrated Electronics* | R |  | 2 |  |  | II;4 |  |
| *215D4122 Microprocessor Systems and Interfaces* | R |  | 2 |  |  | II;4 |  |
| *216D4122 Basic Control Systems* | R |  | 2 |  |  | II;4 |  |
| *217D4122 Electric Installation and Laboratory* | R |  | 2 |  |  | II;4 |  |
| *218D4121 Integrated Electronics Laboratory* | R |  | 1 |  |  | II;4 |  |
| *219D4121 Microprocessor Systems and Interfaces Laboratory* | R |  | 1 |  |  | II;4 |  |
| *301D4112 Engineering Economics* | R |  | 2 |  |  | III;5 |  |
| *302D4112 Probability and Statistics* | R | 2 |  |  |  | III;5 |  |
| *303D4112 Electric Measurement* | R |  | 2 |  |  | III;5 |  |
| *304D4112 Electromagnetics* | R | 2 |  |  |  | III;5 |  |
| *Selected Elective Course (1 Package)\** | SE |  | 9 |  |  | III;5 |  |
| *342D4122 Numerical Methods* | R | 2 |  |  |  | III;6 |  |
| *343D4122 Energy Conversion* | R |  | 2 |  |  | III;6 |  |
| *344D4122 Environmental Science* | R | 2 |  |  |  | III;6 |  |
| *345D4122 Management and Entrepreneurship* | R |  | 2 |  |  | III;6 |  |
| *Selected Elective Course (1 Package)\** | SE |  | 9 |  |  | III;6 |  |
| *402D4112 Research Methods and Scientific Writing* | R |  | 2 |  |  | IV;7 |  |
| *Elective Course\*\** | E |  | 2 |  |  | IV;7 |  |
| ***Total Required Minimum Lecture Courses*** | 34 | 69 | 14 | 0 |  |  |
| *Total-ABET Basic Level Requirements* |  |  |
| *Total Credit Hours for Lecture Courses* | 117 |  |  |  |  |  |  |
| *Percent of Total* | 29,1% | 59,0% | 12,0% | 0,0% |  |  |
| *Total Must Satisfy Either Credit Hours of Percentage* | Minimum Semester Credit Hours | 32 Hours | 48 Hours |  |  |  |  |
| Minimum Percentage | 25,0% | 37,5% |  |  |  |  |
| **Non-Lecture Courses** |
| *401D4112 Practical (On Job) Training* | R |  | 2 |  |  | IV;7 |  |
| *403D4112 Final Project Proposal* | R |  | 2 |  |  | IV;7 |  |
| *Laboratory 1* | R |  | 8 |  |  | IV;7 |  |
| *491D4124 Student Community Service Programs* | R |  | 4 |  |  | IV;8 |  |
| *492D4122 Final Project Results* | R |  | 2 |  |  | IV;8 |  |
| *Laboratory 2* | R |  | 8 |  |  | IV;8 |  |
| *493D4122 Final Project Report* | R |  | 2 |  |  | IV;8 |  |
| ***Total Credit Hours for Non-Lecture Courses*** | 28 |  |  |  |  |  |  |
| ***Overall Minimum Total Credit Hours For Completion of The Program*** | 145 |  |  |  |  |  |  |

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.