| | Universitas Negeri Surabaya<br>Faculty of Engineering<br>, Electrical Engineering Education Undergraduate Study Program | Document Code |
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# SEMESTER LEARNING PLAN

| Courses | CODE | Course Family | Credit Weight | | | SEMESTER | Compilation Date |
|---|---|---|---|---|---|---|---|
| Digital Electronics 1 | 8320102030 | | T=2 | P=0 | ECTS=3.18 | 3 | July 18, 2024 |

| AUTHORIZATION | SP Developer | Course Cluster Coordinator | Study Program Coordinator |
|---|---|---|---|
| | ..... | ..... | Dr. Nur Kholis, S.T., M.T. |

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| **Learning model** | **Case Studies** |
| **Program Learning Outcomes (PLO)** | **PLO study program that is charged to the course** |
| | **Program Objectives (PO)** |
| | **PLO-PO Matrix** |

| P.O |
|---|

**PO Matrix at the end of each learning stage (Sub-PO)**

| P.O | Week | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |

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| **Short Course Description** | Examining the theory of digital techniques, logic gates, flip-flops, Boolean algebra, combinatorial circuit design, sequential circuits, counters and registers, and their applications in everyday life. |
| **References** | **Main :** |


1. Tokheim, Roger L. 1995. Elektronika Digital Edisi Kedua . Jakarta: Erlangga.
2. Barmawi. 1991. Rangkaian dan Sistem Analog dan Digital Jilid 2 . Jakarta: Erlangga.
3. Dueck, Robert, Ken Reid. 2012. Digital Electronics . Delmar: Cengage Learning.
4. Leach, Donald. 1997. Digital Principles and Appications Fifth Edition . New York: McGraw-Hill.
5. Nur, Mohamad. 1977. Sistem Digital: Prinsip dan Pemakaian . Surabaya: Unipress IKIP Surabaya.
6. Tocci, Ronald J. & Widmer, Neal S & Moss, Gregory L. 2011. Digital System: Principles and Application . New Jersey: Prentice-Hall.


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| **Supporters:** | |
| **Supporting lecturer** | Dr. Meini Sondang Sumbawati, M.Pd.<br>Dr. Nurhayati, S.T., M.T.<br>L. Endah Cahya Ningrum, S.Pd., M.Pd. |

| Week- | Final abilities of each learning stage (Sub-PO) | Evaluation | | Help Learning, Learning methods, Student Assignments, [ Estimated time] | | Learning materials [ References ] | Assessment Weight (%) |
|---|---|---|---|---|---|---|---|
| | | Indicator | Criteria & Form | Offline ( *offline* ) | Online ( *online* ) | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **1** | Describe digital systems and analog systems | 1. Describe the differences between analog and digital systems<br>2. Explain the application of digital systems in everyday life | | Presentation, group discussion and reflection<br>2 X 50 | | | 0% |
| **2** | | | | 2 X 50 | | | 0% |
| **3** | | | | 2 X 50 | | | 0% |
| **4** | | | | 2 X 50 | | | 0% |
| **5** | | | | 2 X 50 | | | 0% |
| **6** | | | | 2 X 50 | | | 0% |
| **7** | | | | 2 X 50 | | | 0% |
| **8** | | | | 2 X 50 | | | 0% |
| **9** | | | | 2 X 50 | | | 0% |
| **10** | Analyze the properties of flip-flops | 1. Discuss the characteristics of the types of flip-flops<br>2. Analyze the circuit | | Presentations, group discussions, simulations and reflections<br>2 X 50 | | | 0% |
| **11** | | | | 2 X 50 | | | 0% |
| **12** | | | | 2 X 50 | | | 0% |
| **13** | | | | 2 X 50 | | | 0% |
| **14** | | | | 2 X 50 | | | 0% |
| **15** | | | | 2 X 50 | | | 0% |
| **16** | | | | 2 X 50 | | | 0% |

**Evaluation Percentage Recap: Case Study**

| No | Evaluation | Percentage |
|---|---|---|
| | | 0% |

**Notes**

1. **Learning Outcomes of Study Program Graduates (PLO - Study Program)** are the abilities possessed by each Study Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the level of their study program obtained through the learning process.
2. **The PLO imposed on courses** are several learning outcomes of study program graduates (CPL-Study Program) which are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and knowledge.
3. **Program Objectives (PO)** are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
4. **Subject Sub-PO (Sub-PO)** is a capability that is specifically described from the PO that can be measured or observed and is the final ability that is planned at each learning stage, and is specific to the learning material of the course.
5. **Indicators for assessing** ability in the process and student learning outcomes are specific and measurable statements that identify the ability or performance of student learning outcomes accompanied by evidence.

6. **Assessment Criteria** are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
7. **Forms of assessment:** test and non-test.
8. **Forms of learning:** Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.
9. **Learning Methods:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
10. **Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
11. **The assessment weight** is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
12. TM=Face to face, PT=Structured assignments, BM=Independent study.