



MODULE HANDBOOK DESCRIPTION

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| Module designation | Electronic Systems Design | |
| Code | FBB4115 | |
| Semester(s) in which the module is taught | 7 / fourth year | |
| Person responsible for the module | Paniran, ST., MT. | |
| Language | Indonesian | |
| Relation to curriculum | Elective for Electronics Engineering | |
| Teaching methods | Lectures, small group discussion, case base method. | |
| Workload (incl. contact hours, self-study hours) | Contact minutes every week, each week of the 16 weeks/semester: <ul style="list-style-type: none"> • Lectures: 2 x 50 minutes • Exercises and Assignments: 2 x 60 minutes • Private study: 2 x 60 minutes. Total study hours = 5 hours 40 minutes/week | |
| Credit points | 2 SKS (~ 3.2 ECTS) | |
| Required and recommended prerequisites for joining the module | Basic Electrical (FBS2123) Basic Electronics (FBS2125) Electric Circuits 1 (FBS1213) Electronic Circuits (FBB3101) Basic control system (FBS2231) | |
| Module objectives/intended learning outcomes | 1. Students are able to analyse the Design Process, Diodes Design, DC-Bipolar Junction Transistor (BJTs) Design, DC-Junction Field Effect Transistor (JFETs) Design, Small Signal at Bipolar Junction Transistor Design, Small Signal at Field Effect Transistor Design, Load Impedance to smaller effect Design, and Power Supplies (Voltage Regulators) Design. | PLO3 |
| | 2. Students are able to design the Diodes, BJTs, JFETs, Load Impedance (R_L) and Source Impedance (R_s), and Power Supplies (Voltage Regulators). | PLO4 |

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| | 3. Students are able to experiment the Diodes, BJTs, JFETs, Load Impedance (R_L) and Source Impedance (R_S), and Power Supplies (Voltage Regulators). | PLO5 |
| Content | <ol style="list-style-type: none"> 1. Design Process Introduction, 2. Diode Design, 3. DC-Bipolar Junction Transistor (BJTs) Design, 4. DC-Junction Field Effect Transistor (JFETs) Design, 5. Small Signal (AC) at Bipolar Junction Transistor Design, 6. Small Signal (AC) at Field Effect Transistor Design, 7. Load Impedance to smaller effect Design, 8. Power Supplies (Voltage Regulators) Design. | |
| Examination forms | <ul style="list-style-type: none"> - Written case study - Midterm and final test | |
| Study and examination requirements | <p>The final grade in the module is composed of:</p> <ol style="list-style-type: none"> a. Case I & II assessment: 25% b. Case Project assessment: 30% c. Midterm assessment: 20% d. Final assessment: 25% <p>Students must have a final grade of 65% or higher to pass</p> | |
| Reading list | <ol style="list-style-type: none"> 1. Robert Boylestad and Louis Nashelsky. 2012. Electronic Devices and Circuit Theory 11th Ed. Pearson New International Edition 2. Neil Storey, 2017. Electronics: A Systems Approach, 6th edition. Pearson New International Edition. 3. John Birds, 2021. Electrical and Electronic Principles and Technology, Third Edition 7th Edition, Routledge. 4. Gerado Mesias, 2017. Electronics: Theory and Practice 1st ed, Routledge 5. Book Pathological Elements in Analog Circuit Design (Lecture Notes in Electrical Engineering 479) 1st ed. 2018 Edition, Kindle Edition 6. Practical Electronic Design for Experimenters, McGraw-Hill Education, Mar 27, 2020. 7. Hernando Lautaro Fernandez-Canque, 2017. Analog Electronics Applications: FUNDAMENTALS OF DESIGN AND ANALYSIS, CRC Press. 8. D. K. KAUSHIK, 2006. Analog Electronic Circuits, First 1st edition, Shobhit University. | |