UNIVERSITAS NEGERI YOGYAKARTA

FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF SCIENCE EDUCATION
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Bachelor of Education in Science **MODULE HANDBOOK**

Module name:	**Introduction to Electronics Skills**
Module level, if applicable:	Undergraduate
Code:	IPA6237
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	7th
Module coordinator:	Sumarna, M.Si.
Lecturer(s):	Widodo Setyowibowo, M.Si.
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory Course
Teaching format / class hours per week during the semester:	100 minutes lectures and 120 minutes structured activities per week.
Workload:	Total workload is 90,67 hours per semester which consists of 100 minutes lectures, 120 minutes structured activities, and 120 minutes individual study per week for 16 weeks.
Credit points:	2 SKS (3 ETCS)
Prerequisites course(s):	-
Targeted learning outcomes:	This course provides competencies for students to understand basic principles and have the knowledge and skills to: CO1. analyze and design functional electronic circuits that include electronic CO2. measuring devices (volt-meters, ohm-meters, ampare-meters, and oscilloscopes / CROs) CO3. DC circuits (series-parallel concepts, voltage dividers, current dividers, Kirchoff's law, current sources) CO4. AC circuits (inductor-transformers, capacitors, effective values, RLC circuits, generator) CO5. discrete semiconductor circuits (rectifier, filter, voltage regulator, transistor amplifier),

<table>
<tr><td></td><td>CO6. analog integrated circuit (operational amplifier, timer 555, oscillator), digital integrated circuit (logic gate, flip-flop, counter, and register)</td></tr>
<tr><td>Content:</td><td>This course provides competencies for students to understand basic principles and have the knowledge and skills to analyze and design functional electronic circuits that include electronic measuring devices (volt-meters, ohm-meters, ampare-meters, and oscilloscopes / CROs) , types and functions of electronic components (active components, passive components), DC circuits (series-parallel concepts, voltage dividers, current dividers, Kirchoff's law, current sources), AC circuits (inductor-transformers, capacitors, effective values, RLC circuits, generator), discrete semiconductor circuits (rectifier, filter, voltage regulator, transistor amplifier), analog integrated circuit (operational amplifier, timer 555, oscillator), digital integrated circuit (logic gate, flip-flop, counter, and register), and pre -work (mic pre-amp, LDR pre-amp, electronic thermometer, simple audio amplifier, multivibrator, pulse counter, etc.).</td></tr>
<tr><td>Study / exam achievements:</td><td>Attitude assessment is carried out at each meeting by observation and/or self-assessment techniques using the assumption that basically every student has a good attitude. The student is given a value of very good or not good attitude if they show it significantly compared to other students in general. The result of attitude assessment is not a component of the final grades, but as one of the requirements to pass the course. Students will pass from this course if at least have a good attitude.
The final mark will be weight as follow:

<table>
<tr><th>No</th><th>CO</th><th>Assessment Object</th><th>Assessment Technique</th><th>Weight</th></tr>
<tr><td>1</td><td>CO1,
CO2,
CO3,
CO4,</td><td>a. Individual Assignment
b. Group Assignment
c. Quiz
d. Mid
e. Final Exam</td><td>Presentation / written test</td><td>15%
15%

15%
25%
30%</td></tr>
<tr><td colspan="4">Total</td><td>100%</td></tr>
</table>
</td></tr>
<tr><td>Forms of media:</td><td>Board, LCD Projector, Laptop/Computer</td></tr>
<tr><td>Literature:</td><td>1. Smith, Ralph J. 1995. Circuits, Devices, and Systems. John Wiley & Sons.
2. Schuler. 1989. Electronics Principles and Applications. McGrawHill</td></tr>
</table>

PLO and CO mapping

	PLO											
	Attitude			Knowledge				Spesific Skill				
	PLO1	PLO2	PLO3	PLO1	PLO2	PLO3	PLO4	PLO1	PLO2	PLO3	PLO4	PLO5
CO1				✓	✓	✓						
CO2					✓		✓					
CO3				✓			✓					
CO4					✓	✓		✓				
CO5						✓	✓					
CO6				✓					✓			