



UNIVERSITAS NEGERI YOGYAKARTA
POSTGRADUATE DEPARTMENT OF ELECTRONICS AND
INFORMATICS ENGINEERING EDUCATION

Jalan Colombo Nomor 1 Yogyakarta 55281
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Master of Education in Electronics and Informatics Engineering

MODULE HANDBOOK

Module name:	Electronic System Design
Module level, if applicable:	Postgraduate
Code:	PTI 8212
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	3 th
Module coordinator:	Dr. Ir. Drs. Masduki Zakarijah, M.T.
Lecturer(s):	Dr. Ir. Drs. Masduki Zakarijah, M.T.
Language:	English
Classification within the curriculum:	Concentration Courses
Teaching format / class Hours per week during the semester:	100 minutes lectures and 100 minutes structured activities per week.
Workload:	Total workload is 90.67 hours per semester which consists of 100 minutes lectures, 100 minutes structured activities, and 120 minutes self-study per week for 16 weeks.
Credit points:	2
Prerequisites course(s):	-
Course Learning Outcome (CLO):	<p>After taking this course the students have ability to:</p> <ol style="list-style-type: none"> 1. Digital logic systems are viewed from the aspect of combinational circuits with multiple input combinations (more than 4 input variables) as well as sequential circuits and their applications.; 2. Electronic system design concept; 3. Configuration and Architecture of Programmable logic devices and their programming techniques.; 4. Programmable logic controller architecture and programming techniques.; 5. Design and implementation of electronic systems using programmable logic devices and / or programmable logic controllers.;
Content	The electronic system design course examines the review of digital systems (combinational, sequential, and its application), electronic system design concepts, Architecture and application of programmable logic devices, programmable logic controller architectures and their programming, as well as case studies of designing and implementing electronic systems aided by programmable logic devices and / or programmable logic controller's processors. .



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Study/exam achievements:	<p>The lecture assessment is carried out using the principle of competency assessment. The assessment includes the assessment of knowledge and thinking skills and attitudes of students in developing knowledge. Students develop independent learning through individual and group activities to be critical of existing knowledge and creatively and innovatively develop new knowledge. The ability of students to review papers, to criticize papers is considered as the ability to be scientific in learning. The ability of students in the development of knowledge is assessed by their competence in writing papers in the field of electronics engineering and informatics. The assessment technique for each PLO as well as the weight of the assessment is determined as follows.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 20px;"> <thead> <tr> <th style="width: 5%;">No</th> <th style="width: 15%;">CLO</th> <th style="width: 30%;">Assessment Object</th> <th style="width: 30%;">Assessment Technique</th> <th style="width: 20%;">Weight</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="vertical-align: top;">CLO1 - CLO5</td> <td style="vertical-align: top;">Observed: , knowledge, attitudes, and skills</td> <td style="vertical-align: top;"> Rubrics assessment and product of paper through: <ul style="list-style-type: none"> a. Individual assignments b. Group assignments c. Midterm exam d. Final exam e. Case study Product of papers </td> <td style="vertical-align: top; text-align: center;"> 15 15 20 25 25 </td> </tr> <tr> <td colspan="4" style="text-align: center;">Total</td> <td style="text-align: center;">100</td> </tr> </tbody> </table>	No	CLO	Assessment Object	Assessment Technique	Weight	1	CLO1 - CLO5	Observed: , knowledge, attitudes, and skills	Rubrics assessment and product of paper through: <ul style="list-style-type: none"> a. Individual assignments b. Group assignments c. Midterm exam d. Final exam e. Case study Product of papers	15 15 20 25 25	Total				100
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Total				100												

Forms of media:	LCD Projector, Laptop / Computer, White Board, video
Literature	<ol style="list-style-type: none"> 1) Tom J. Kazmierski, Sebastian Steinhorst, Daniel Große; Languages, Design Methods, and Tools for Electronic System Design: Selected Contributions from FDL 2018; Springer International Publishing; 2020; 2) Lavagno, Luciano; Electronic design automation for IC system design, verification, and testing; CRC Press; 2016;



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	<ol style="list-style-type: none"> 3) Liming Xiu; From Frequency to Time-Average-Frequency: A Paradigm Shift in the Design of Electronic System; Wiley-IEEE Press; 2015 4) Stefan Schuermans, Rainer Leupers; Power Estimation on Electronic System Level using Linear Power Models; Springer International Publishing; 2019; 5) Rolf Drechsler, Robert Wille (eds.); Languages, Design Methods, and Tools for Electronic System Design: Selected Contributions from FDL 2015; Springer International Publishing; 2016; 6) Aarts, Jos; Hsu, John; Rundall, Thomas; Scott, Tim; Vogt, Thomas; Implementing an Electronic Medical Record System: Successes, Failures, Lessons; CRC Press; 2016; 7) Weiwei Chen (auth.); Out-of-order Parallel Discrete Event Simulation for Electronic System-level Design; Springer International Publishing; 2015;
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PLO and CLO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
CLO1					✓	✓				
CLO2					✓	✓				
CLO3					✓	✓				
CLO4					✓	✓				
CLO5					✓	✓				