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MODULE HANDBOOK

Module name	**Computer Organization and Architecture**
Module level	Undergraduate
Code	MII-1601
Courses (if applicable)	Computer Organization and Architecture
Semester	Summer (Even)
Contact person	Abdul Ro'uf
Lecturer	Abdul Ro'uf Bambang N. Prastowo
Language	Bahasa Indonesia
Relation to curriculum	1. Undergraduate degree program, compulsory, 2th semester. 2. International undergraduate program, compulsory, 2th semester.
Type of teaching, contact hours	1. Undergraduate degree program: lectures, < 60 students, 2. International undergraduate program: lectures, < 30 students.
Workload	1. Lectures: 2 x 50 = 100 minutes (1 hours 10 menit) per week. 2. Exercises and Assignments: 2 x 50 = 100 minutes per week. 3. Private study: 2 x 50 = 100 minutes per week.
Credit points	2 credit points (sks).
Requirements according to the Examination regulations	A student must have attended at least 75% of the lectures to sit in the exams.
Recommended prerequisites	-
Learning outcomes (course outcomes) and their corresponding PLOs	After completing this module, a student is expected to: CO1 Able to explain the basic concepts of computer organization and architecture and its development to date.. CO2 Be able to describe and identify instruction sets and their execution, as well as methods to increase execution speed. CO3 Able to explain the basic principles of processor implementation, the basic operations of the control unit and how to control execution in pipeline and parallel. CO4 Able to explain memory hierarchy, and able to calculate increase in memory performance. CO5 Able to explain parallel processor architecture and its development to date in multicore form.

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<tr><th colspan="2">PLO</th><th>CO 1</th><th>CO 2</th><th>CO 3</th><th>CO 4</th><th>CO5</th></tr>
<tr><td rowspan="5">Program Learning Outcome (PLO)</td><td>PLO1</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>PLO2</td><td>√</td><td>√</td><td></td><td></td><td></td></tr>
<tr><td>PLO3</td><td></td><td></td><td>√</td><td></td><td></td></tr>
<tr><td>PLO4</td><td></td><td></td><td></td><td>√</td><td>√</td></tr>
<tr><td>PLO5</td><td></td><td></td><td></td><td></td><td></td></tr>
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<tr><td>Contents</td><td>1. Introduction: Abstracts of computer systems and technology
2. Instruction Execution of stored-program computer's
3. Processor, datapath and control unit with pipeline
4. Memory hierarchy
5. Parallel processor</td></tr>
<tr><td>Study and examination requirements and forms of examination</td><td>The evaluation is done in 3 forms, namely:
1. Trial, either midterm or semester test,
2. Four tasks, individual assignments to be completed within a certain timeframe, and
3. Two quizzes, held on face-to-face, once before midterm exam and once after midterm exam, with a short answer form.

Assessment is done using benchmark assessment, with the aim of measuring the level of student understanding related to the target and class rank.</td></tr>
<tr><td>Media employed</td><td>LCD, blackboard, and websites.</td></tr>
<tr><td>Assessments and Evaluation</td><td>
<table>
<tr><th>Type</th><th>Percentage</th><th>CO1</th><th>CO2</th><th>CO 3</th><th>CO4</th><th>CO5</th><th></th></tr>
<tr><td>Quiz</td><td>5 %</td><td>√</td><td></td><td>√</td><td></td><td></td><td></td></tr>
<tr><td>Individual Task</td><td>25 %</td><td></td><td>√</td><td>√</td><td>√</td><td>√</td><td></td></tr>
<tr><td>Group Task</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Midterm Exam</td><td>40 %</td><td>√</td><td>√</td><td>√</td><td></td><td></td><td></td></tr>
<tr><td>Final Exam</td><td>30 %</td><td></td><td></td><td></td><td>√</td><td>√</td><td></td></tr>
<tr><td>Total</td><td>100%</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Reading List</td><td>[1] David A. Patterson and John L. Hennessy, 2017, Computer Organization and Design RISC-V Edition: The Hardware Software Interface, 1st Edition, Morgan Kaufmann.
[2] David A. Patterson and John L. Hennessy, 2016, Computer Organization and Design ARM Edition: The Hardware Software Interface, 1st Edition, Morgan Kaufmann.
[3] William Stallings, 2019, Computer Organization and Architecture:</td></tr>
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	Designing for Performance, 11th Edition, Pearson.