

**UNDERGRADUATE PROGRAM IN COMPUTER SCIENCE  
DEPARTMENT OF COMPUTER ENGINEERING  
FACULTY OF INTELLIGENT ELECTRICAL AND INFORMATICS TECHNOLOGY**

Module name	<b>Computer System Architecture and Organization</b>	
Module level	Undergraduate	
Code	EC184501	
Courses (if applicable)	Computer System Organization and Architecture	
Semester	5 / Fall (Gasal)	
Contact person	Ahmad Zaini, S.T, M.Sc.	
Lecturer	Ahmad Zaini, S.T, M.Sc.	
Language	Indonesia	
Relation to curriculum	Undergraduate degree program, mandatory, 5 <sup>th</sup> semester.	
Type of teaching, contact hours	Lecture, < 60 students, 170 Minutes* SKS	
Workload	<ol style="list-style-type: none"> <li>1. Lectures: 4 x 50 = 200 minutes (3.33 hours) per week.</li> <li>2. Exercises and Assignments: 4 x 60 = 240 minutes (4 hours) per week.</li> <li>3. Private study: 4 x 60 = 240 minutes (4 hours) per week.</li> </ol>	
Credit points	4 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.	
Mandatory prerequisites		
Learning outcomes and their corresponding PLOs	<p>CLO-1 Students are able to explain that the hardware components of the CPU, I/O units, Memory units and Instruction Set are designed in a single computer system to execute the program.</p> <p>CLO-2 Students are able to explain that the CPU can be implemented as either hardwired or microprogrammed.</p> <p>CLO-3 Students are able to explain the various I/O processes according to the characteristics of each I/O unit.</p> <p>CLO-4 Students are able to explain engineering techniques (cache memory, virtual memory) that can be applied to system memory.</p>	<p>PLO-3</p> <p>PLO-3</p> <p>PLO-4 PLO-5</p> <p>PLO-4 PLO-5</p>
Content	In this course, students will learn about how hardware and software components is engineered and organized to become a system working as a computer. Topics include register transfer and	

	hardwired control concept, programming, microprogrammed control, input and output process as well as memory system.
Study and examination requirements and forms of examination	<ul style="list-style-type: none"> <li>• In-class exercises</li> <li>• Quiz 1 and 2</li> <li>• Assignment 1, 2, 3</li> <li>• Mid-term examination</li> <li>• Final examination</li> </ul>
Media employed	LCD, whiteboard, websites (myITS Classroom).
Assessments and Evaluation	CO-1: Question no 1 in midterm exam (15%) CO-2: Question no 2 in midterm exam (15%) CO-3: Question no 3 in midterm exam (15%), quiz 1 (5%) CO-4: Question no 1 in final exam (20%), question no 2 in final exam (20%)
Reading List	<ol style="list-style-type: none"> <li>1. M. Mano, "Computer System Architecture ", Prentice Hall, 1993.</li> <li>2. Malvino, Digital Computer Electronics. McGrawHill</li> </ol>