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

Module name	**Microprocessor Systems and Microcontrollers**	
Module level	Undergraduate	
Code	EC184505	
Courses (if applicable)	Microprocessor Systems and Microcontrollers	
Semester	5 / Fall (Ganjil)	
Contact person	Ir. Hanny BoediNoegroho	
Lecturer	Ir. Hanny BoediNoegroho	
Language	Indonesia / English	
Relation to curriculum	Undergraduate degree program, mandatory, 5th semester.	
Type of teaching, contact hours	Lecture, < 60 students, 170 minutes * SKS	
Workload	1. Lectures: 3 x 50 = 150 minutes (2.5 hours) per week. 2. Exercises and Assignments: 3 x 60 = 180 minutes (3 hours) per week. 3. Private study: 3 x 60 = 180 minutes (3 hours) per week.	
Credit points	3 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	CLO-1 Understand the concepts of digital design	PLO-3 PLO-4
	CLO-2 Understand the concepts of the processor	PLO-3 PLO-4
	CLO-3 Understand the programming languages used in microprocessors	PLO-3 PLO-4
	CLO-4 Understand the single-cycle processor	PLO-3 PLO-4
	CLO-5 Understand the multi-cycles processor	PLO-3 PLO-4
	CLO-6 Understand the memory system and input-output	PLO-3 PLO-4
	CLO-7 Implement the theories into microprocessor	PLO-5 PLO-6
Content	In this course, students will learn about the microprocessor and its basic theories (Arithmetic Logic Unit, Register, and Control Signal), memory, input-output, Timer, interrupts, and cycles.	

Study and examination requirements and forms of examination	• In-class exercises • Quiz 1 and 2 • Assignment 1, 2, 3 • Mid-term examination • Final examination
Media employed	LCD, whiteboard, websites (myITS Classroom).
Assessments and Evaluation	CO-1: Question no 1 in midterm exam (10%) CO-2: Question no 2 in midterm exam (10%) CO-3: Question no 3 in midterm exam (10%), quiz 1 (5%) CO-4: Assignment 1 (5%), question no 4 in midterm exam (10%), Quiz 2 (5%) CO-5: Question no 1 in final exam (10%), question no 2 in final exam (10%) CO-6: Assignment 2 (5%), question no 3 in final exam (10%) CO-7: Assignment 3 (5%), question no 4 in final exam (5%)
Reading List	1. Steven F. Barrett, "Atmel AVR Microcontroller Primer: Programming and Interfacing, Second Edition (Synthesis Lectures on Digital Circuits and Systems)", Morgan and Claypool, 2012 2. Muhammad Ali Mazidi, "The AVR microcontroller and Embedded systems: Using Assembly and C", Mazidi and Naimi, 2011 3. Steven F. Barrett, "Arduino Microcontroller: Processing for Everyone! Second Edition (Synthesis Lectures on Digital Circuits and Systems)", Morgan and Claypool, 2012