MODULE HANDBOOK

Module Name	:	Microcontroller and digital instrumentation
Module Level	:	Bachelor
Abbreviation, if applicable	:	FI3171
Sub-heading, if applicable	:	
Semester/ term	:	5
Module Coordinator(s)	:	
Lecturer(s)	:	
Language	:	Indonesia
Classification within the curriculum	:	
Teaching format/ class hours per week during the semester	:	
Workload	:	2 CU
Credits Points	:	
Requirements	:	Electonic, Instrumentation System
Leraning goals	:	Knowledge: (1) measuring and control system Skill: (1) computer networks (2) programming Competencies: (1) ICT
Content	:	Introduction: Definition of microcontroller, microcontroller vs computer, microcontroller vs microprocessor, type and application of microcontroller. Microcontroller architecture: Microcontroller hardware, Ports in microcontroller, memory organization, register, clock and reset. Microcontroller Programming: Set of instruction, basic of programming, arithmatical instruction, logical instruction, data transfer instruction, boolean instruction, branching, repeating, function. Timer: Clock source, timer and counter, timer and counter programming, real-time clock. Interupption: interruption structure, interruption process, interruption programming, types and application of interruption, interruption timer. Serial communication: Serial port register, operation mode, initialization and how to access serial port register, how to control baud rate. Microcontroller and interface system application: running led, 7 segment display application, hexadecimal keypad, ADC and multiplexer, LCD display appication, Interface system for microcontroller and PC, control system based on mcrocontroller. Case study: design and create a measurement system or control system based on microcontroller.