MODULE HANDBOOK DESCRIPTION

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| Module designation | Microprocessor System Laboratory | |
| Code | FBS3138 | |
| Semester(s) in which the module is taught | 5 / third year | |
| Person responsible for the module | Supriono, ST., MT. | |
| Language | Indonesian. | |
| Relation to curriculum | Compulsory for all Majors. | |
| Teaching methods | Contextual Instruction (CI). | |
| Workload (incl. contact hours, self-study hours) | Contact minutes every week, each week of the 16weeks/semester:<br>• Practice: 1 x 50 minutes<br>• Data analysis: 1 x 60 minutes<br>• Writing report: 1 x 60 minutes.<br>Total study hours = 2 hours 50 minutes/week | |
| Credit points | 1 (~ 1.6 ECTS) | |
| Required and recommended prerequisites for joining the module | - Microprocessor System (FBS2235)<br>- Logic Circuit (FBS1107)<br>- Basic Electronics (FBS2125) | |
| Module objectives/intended learning outcomes | 1. Students are able to do experiment how to set up Interrupts.<br>2. Students are able to do experiment how to decide interrupt priority.<br>3. Students are able to do experiment how to set up Timer and Counter.<br>4. Students are able to do experiment how to configure 12 bits ADC and 8 bits ADC. | PLO5 |
| | 5. Students are able to choose interrupt based on demand priority.<br>6. Students are able to use Timer and Counter on a microcontroller. | PLO3 |

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| | 7. Students are able to combine interrupt and ADC on a Raspberry microcontroller. | PLO4 |
| Content | 1. Raspberry microcontroller architecture<br>2. Python Programming<br>3. Interrupts on a raspberry microcontroller<br>4. Timer and Counter on a raspberry microcontroller<br>5. ADC on a raspberry microcontroller | |
| Examination forms | - Essay on the book of Practice Guide Microprocessor laboratory | |
| Study and examination requirements | The final grade in the module is the journal practicum report.<br>1. Pre-test and practice skills = 20%<br>2. Practice report and response = 80%<br>Students must have a final grade of 65% or higher to pass | |
| Reading list | 1. RP2040 Datasheet, a microcontroller by Raspberry pi, Raspberry pi Ltd, 2022.<br>2. A micropython environment for RP2040 microcontrollers, Raspberry pi Ltd, 2022. | |