

**UNDERGRADUATE PROGRAM IN COMPUTER SCIENCE
DEPARTMENT OF COMPUTER SCIENCE AND ELECTRONICS
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
UNIVERSITAS GADJAH MADA**

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| Module name | Programming II Lab | |
| Module level | Undergraduate | |
| Code | MII-1212 | |
| Courses (if applicable) | Programming II Lab | |
| Semester | Spring | |
| Contact person | Guntur Budi Herwanto, M.Cs. | |
| Lecturer | Guntur Budi Herwanto, M.Cs. | |
| Language | English | |
| Relation to curriculum | <ol style="list-style-type: none"> 1. Undergraduate degree program; mandatory; 2nd, 4th, or 6th semester. 2. International undergraduate program; mandatory; 2nd, 4th, or 6th semester. | |
| Type of teaching, contact hours | <ol style="list-style-type: none"> 1. Undergraduate degree program: lectures, < 30 students 2. International undergraduate program: lectures, < 30 students | |
| Workload | <ol style="list-style-type: none"> 1. Lectures: 1 x 100 = 100 minutes (1.5 hours) per week. 2. Exercises and Assignments: 2 x 60 = 120 minutes (2 hours) per week. 3. Private study: 2 x 60 = 120 minutes (2 hours) per week. | |
| Credit points | 1 credit points (cr). | |
| Requirements according to the examination regulations | A student must have attended at least 75% of the lectures to sit in the exams. | |
| Recommended prerequisites | Programming II | |
| Learning outcomes and their corresponding PLOs | After completing this module, a student is expected to: | |
| | LO1 Having knowledge about the theory and implementation of the basic concepts of algorithms and data structures. | PL02 |
| | LO2 Can implement the basic theories and concepts of Object Oriented Programming (OOP). | PL03 |

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| | L03 Can build a computer program based on OOP. | PL04 |
| | L04 Can implement linear data structures such as linked lists, stacks and queues. | PL03 |
| | L05 Can implement advanced sorting algorithms in computer programs. | PL04 |
| | L06 Can implement non-linear data structures such as matrices, multiple linked list and tree as well as a graph. | PL03 |
| Content | This course is a core compulsory subject and is a continuation of Programming I. This course provides the knowledge and skills that allow students to be able to analyze problems, design algorithms, and use the appropriate data structure such that the resulting computer program is structured and efficient. Programming II focuses on data structures and discusses both linear and non-linear data structures, as well as the pros and cons of both. It also discusses the objected-oriented programming paradigm. | |
| Study and examination requirements and forms of examination | Final examination. | |
| Media employed | LCD, whiteboard, websites, handouts | |
| Assessments and Evaluation | L01: coursework 1 (5%) L02: problem 1 in final (7%) L03: assignment 1 (10%) L04: assignment 2 (10%), problem 2 and 3 in final (13%) L05: coursework 2 (5%) L06: assignment 3, 4 and 5 (30%), problem 1,2 and 3 in final (20%) | |