

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

Module name	<b>Programming I Labworks</b>
Module level	Undergraduate
Code	MII-1202
Courses (if applicable)	<b>Programming I Labworks</b>
Semester	Odd (Ganjil)
Contact person	Guntur Budi Herwanto, M.Cs
Lecturer	Wahyono, S.Kom., Ph.D. Nia Gella Augoestien, S.Si., M.Cs. Ika Candradewi, S.Si., M.Cs. Guntur Budi Herwanto, M.Cs. Isna Alfi Bustoni, M.Eng. Roghib Muhammad Hujja, S.Si., M.Cs. Aufaclav Zatu Kusuma Frizky, M.Sc. Lukman Awaludin, S.Si., M.Cs.
Language	Indonesian and English
Relation to curriculum	1. Undergraduate degree program, compulsory, 1 <sup>st</sup> semester. 2. International undergraduate program, compulsory, 1 <sup>st</sup> semester.
Type of teaching, contact hours	1. Undergraduate degree program: lectures, < 25 students, 2. International undergraduate program: lectures, < 25 student
Workload	1. Lectures and Labwork: 10x100 = 1000 minutes (100 minutes) per week. 2. Exercises and Assignments: 8 x 20 = 160 minutes (20 minutes) per week.
Credit points	1 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.
Recommended prerequisites	
Learning outcomes and their corresponding PLOs	<p>After completing this module, a student is expected to:</p> <p><b>CO1</b> Having knowledge about algorithm and programming definition, implement algorithm maps to algorithmic language, and able to solve the problem which given. <b>PLO3</b></p> <p><b>CO2</b> Having knowledge about C++, able to mapping a logaritmic language to C++, and They can develop a simple program with C++ language. <b>PLO4</b></p> <p><b>CO3</b> Be able to solve problems in a logical, understand how to use the control statement, and set the conditions in <b>PLO5</b></p> <p><b>CO4</b> Be able to use loop, know the difference of each type of iteration, and be able to choose the loop that will be used as needed <b>PLO4</b></p> <p><b>CO5</b> Understand the array definition and know how to use it <b>PLO4</b></p>

	<p><b>CO6</b> Understand the structure description and know How to use it <b>PLO4</b></p> <p><b>CO7</b> Having knowledge about sub-program and able to use it <b>PLO4</b></p> <p><b>CO8</b> Having knowledge about function, difference with sub-program, and know how to use it <b>PLO4</b></p> <p><b>CO9</b> Understand about sorting algorithms and know how to implement them in C++ <b>PLO4</b></p> <p><b>CO10</b> Understand about searching algorithms and know how to implement them in C++ <b>PLO4</b></p>																																																																															
Content	Programming Lab I is a compulsory course given to students of the first semester at Department of Computer Science FMIPA UGM. This course provides the knowledge students so that they are able to recognize the definition of programming, translating a algorithm mapping basic concept into algorithmic language, and able to solve its using computer programming.																																																																															
Study and examination requirements and forms of examination	Midterms examination and Final examination.																																																																															
Media employed	LCD, blackboard, websites, e-Learning and grader tools																																																																															
Assessments and Evaluation	<table border="1"> <thead> <tr> <th>CO</th> <th>Evaluation Method</th> <th>Type</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td rowspan="2">CO1</td> <td>Coursework 1</td> <td>Formative</td> <td>5%</td> </tr> <tr> <td>Problem 1 in midterm exam</td> <td>Summatif</td> <td>5%</td> </tr> <tr> <td rowspan="2">CO2</td> <td>Coursework 2</td> <td>Formatif</td> <td>5%</td> </tr> <tr> <td rowspan="2">CO3</td> <td>Coursework 3</td> <td>Formatif</td> <td>5%</td> </tr> <tr> <td></td> <td>Problem 2 in midterm exam</td> <td>Summatif</td> <td>5%</td> </tr> <tr> <td rowspan="2">CO4</td> <td>Coursework 4</td> <td>Formatif</td> <td>5%</td> </tr> <tr> <td></td> <td>Problem 3 in midterm exam</td> <td>Summatif</td> <td>5%</td> </tr> <tr> <td rowspan="2">CO5</td> <td>Coursework 5</td> <td>Formatif</td> <td>5%</td> </tr> <tr> <td></td> <td>Problem 4 in midterm exam</td> <td>Summative</td> <td>5%</td> </tr> <tr> <td rowspan="2">CO6</td> <td>Coursework 6</td> <td>Formatif</td> <td>5%</td> </tr> <tr> <td></td> <td>Problem 1 in final exam</td> <td>Summatif</td> <td>5%</td> </tr> <tr> <td rowspan="2">CO7</td> <td>Coursework 7</td> <td>Formatif</td> <td>5%</td> </tr> <tr> <td></td> <td>Problem 2 in final exam</td> <td>Summatif</td> <td>5%</td> </tr> <tr> <td rowspan="2">CO8</td> <td>Coursework 8</td> <td>Formatif</td> <td>5%</td> </tr> <tr> <td></td> <td>Problem 3 in final exam</td> <td>Summatif</td> <td>5%</td> </tr> <tr> <td rowspan="2">CO9</td> <td>Coursework 9</td> <td>Formatif</td> <td>5%</td> </tr> <tr> <td></td> <td>Problem 4 in final exam</td> <td>Summatif</td> <td>5%</td> </tr> <tr> <td rowspan="2">CO10</td> <td>Coursework 10</td> <td>Formatif</td> <td>5%</td> </tr> <tr> <td></td> <td>Final exam</td> <td>Summatif</td> <td>10%</td> </tr> </tbody> </table>	CO	Evaluation Method	Type	Percentage	CO1	Coursework 1	Formative	5%	Problem 1 in midterm exam	Summatif	5%	CO2	Coursework 2	Formatif	5%	CO3	Coursework 3	Formatif	5%		Problem 2 in midterm exam	Summatif	5%	CO4	Coursework 4	Formatif	5%		Problem 3 in midterm exam	Summatif	5%	CO5	Coursework 5	Formatif	5%		Problem 4 in midterm exam	Summative	5%	CO6	Coursework 6	Formatif	5%		Problem 1 in final exam	Summatif	5%	CO7	Coursework 7	Formatif	5%		Problem 2 in final exam	Summatif	5%	CO8	Coursework 8	Formatif	5%		Problem 3 in final exam	Summatif	5%	CO9	Coursework 9	Formatif	5%		Problem 4 in final exam	Summatif	5%	CO10	Coursework 10	Formatif	5%		Final exam	Summatif	10%
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Reading List	<ol style="list-style-type: none"> <li>1. The C Programming Language 2nd Edition oleh <a href="#">Brian W. Kernighan</a>, <a href="#">Dennis M. Ritchie</a>, ISBN-13: -0131103627.</li> <li>2. Data Structures and Algorithms in C++, 2001, Second Edition oleh Adam Drozdek, ISBN 0-534-37597-9.</li> </ol>																																																																															

