



UNIVERSITAS GADJAH MADA

Faculty of Mathematics and Natural Sciences

Mathematics Department

Sekip Utara Bulaksumur Yogyakarta 55281 Telp: +62 274 552243 Fax: +62 274 555131 Email: math@ugm.ac.id Website: <http://math.fmipa.ugm.ac.id>

Undergraduate Programme in Mathematics

Telp : +62 274 552243

Email : maths1@ugm.ac.id; kaprodi-s1-matematika.mipa@ugm.ac.id

sekprodi-s1-matematika.mipa@ugm.ac.id

Website : <http://s1math.fmipa.ugm.ac.id/>

MODULE HANDBOOK

Module name	Programming II
Module level, if applicable	Bachelor
Code, if applicable	MII-1211
Subtitle, if applicable	-
Courses, if applicable	Programming II
Semester(s) in which the module is taught	2 nd (second)
Person responsible for the module	Drs. Janoe Hendarto, M.I.Kom Faizah S.Kom. M.Kom. I Gede Mujiatna S.Kom. M.Kom.
Lecturers	Drs. Janoe Hendarto, M.I.Kom Faizah S.Kom. M.Kom. I Gede Mujiatna S.Kom. M.Kom.
Language	Bahasa Indonesia
Relation to curriculum	Elective course in the first year (2 nd semester) Bachelor Degree
Type of teaching, contact hours	150 minutes lectures and 180 minutes structured activities per week.
Workload	Total workload is 136 hours per semester, which consists of 150 minutes lectures per week for 14 weeks, 180 minutes structured activities per week, 180 minutes individual study per week, in total is 16 weeks per semester, including mid exam and final exam.
Credit points	3
Requirements according to the examination regulations	Students have taken Programming II course (MII-1211), have attendance at least 75%, and have an examination card where the course is stated on.
Recommended prerequisites	Students have taken Programming I (MMM-1201) and have participated in the final exam of the module.
Module objectives/intended learning outcomes	After completing this course, the students should have ability to: CO 1. have knowledge of the theory and basic knowledge of algorithms and data structures. CO 2. be able to analyze, design, and implement linear data structures such as linked lists, and queues. CO 3. be able to analyze, design, and implement non-linear data structures such as matrices, multiple linked lists, trees, and graphs. CO 4. have knowledge about searching and sorting algorithms and be able to implement them in a computer program. CO 5. have knowledge of the theory and basic concepts of Object Oriented Programming. CO 6. be able to create a computer programming based on OOP.
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	CO 1: problem 1 in mid-term (5%), homework 1 (5%) CO 2: problem 2 in mid-term (5%), homework 2 (5%)

	<p>CO 3: problem 3 in mid-term (5%), problem 2 in final (5%), homework 3 (5%), assignment 1: create a non-linear data structure and its corresponding algorithm and computer program (10%)</p> <p>CO 4: problem 4 in mid-term (5%), homework 4 (5%)</p> <p>CO 5: problem 1 in final (5%), homework 5 (5%), assignment 2: create an OOP program and a hashing program (5%)</p> <p>CO 6: problem 3 in final (5%), problem 4 in final (5%), homework 6 (5%), homework 7 (5%), assignment 3: create an OOP program based on a graphing problem (10%)</p> <p>The initial cut-off points for grades A, B, C, and D should not be less than 80%, 70%, 50%, and 40%, respectively.</p>
Media employed	LCD, whiteboard, websites, handouts
Reading List	<ol style="list-style-type: none"> 1. WA : Data Structures and Algorithms, Alfred V. Aho, dkk. 1998 2. WB : Data Structures and Algorithms in Java, Adam Drozdek, 2005 3. AA : Data Structures using C, Tanenbaum, A., Y. Langsam, and M. Augenstein, 1990, Prentice-Hall. 4. AB : Data Structures and Algorithms in Java 2nd Edition, Robert Lafore, 2002

PLO and CO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
CO 1			v			v			
CO 2			v						v
CO 3			v						v
CO 4				v					v
CO 5								v	v
CO 6				v					