Undergraduate Programme in Mathematics

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MODULE HANDBOOK

Module name	Programming I
Module level, if applicable	Bachelor
Code, if applicable	MII-1201
Subtitle, if applicable	-
Courses, if applicable	Programming I
Semester(s) in which the module is taught	1st (first)
Person responsible for the module	Janoe Hendarto, Drs., M. Kom.
Lecturers	Afiahayati, M. Cs, Ph.D Aniffudin Aziz, S.Si. M Kom. Aufaclav Zatu Kusuma Frisky, S.Si., M.Sc. Faizah, S.Kom., M.Kom. I Gede Mujiyatna, S.Kom., M.Kom. Isna Alfi Bustoni, S.T, M.Eng. Janoe Hendarto, Drs., M. Kom. Nur Rokhman, S.Si., M.Kom., Dr. Suprapto, Drs., M.I.Kom. Dr Triyogatama Wahyu Widodo, M.Kom Yohanes Suyanto, M.Ikom., Dr. Wahyono, S.Kom, Ph.D
Language	Bahasa Indonesia
Relation to curriculum	Compulsory course in the first year (1st 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 I course (MII-1201), have attendance at least 75%, and have an examination card where the course is stated on.
Recommended prerequisites	-
Module objectives/intended learning outcomes	After completing this course, the students should have ability to: CO 1. have knowledge about the importance of algorithms and data structures in solving problems CO 2. have knowledge about components in algorithms and can construct algorithms to solve simple problems. CO 3. have knowledge about data structures and C++ programming language. CO 4. have knowledge about data types for array and records / struct and can implement them in a computer program. CO 5. have knowledge about modular programming and can implement it in a computer program. CO 6. be able to explain and competent in how to implement sorting and searching algorithms. CO 7. have knowledge about pointer data type and can implement it in a computer program. CO 8. Be able and competent in solving more complex programming problems.

	Content
Content	Programming I provides the knowledge and skills required for students to be able to: • analyze problems • design algorithms • determine suitable data structures such that the computer program generated is structured and efficient. This course uses a procedural programming methodology and is more focused on algorithms and their associated programs, due to the fact that the data structures being used are still simple. After completing this course, students are expected to be able to analyze problems, determine a suitable algorithm to solve it, and implement it using the C++ programming language.
Study and examination requirements and forms of examination	CO 1: Problem 1 in mid-term exam (5%) and exercise 1 (5%) - 10% CO 2: Problem 2 in mid-term exam (5%) and exercise 2 (5%) - 10% CO 3: Problem 3 in mid-term exam (5%); problem 4 in mid-term exam (5%); ssignment 1: make an algorithm and computer program (5%); and exercise 3 (5%) - 20% CO 4: Problem 5 in mid-term exam (5%); problem 1 in final exam (5%) and exercise 4 (5%) - 15% CO 5: Problem 2 in final exam (5%); assignment 2: make a function and recursive (5%); and exercise 5 (5%) - 15% CO 6: Problem 3 in final exam (5%) and exercise 6 (5%) - 10% CO 7: Problem 4 in final exam (5%) and exercise 7 (5%) - 10% CO 8: Problem 5 in final exam (5%) and assignment 3: make a program based on a real-life problem (5%) - 10% The initial cut-off points for grades A, B, C, and D should not be less than 80%, 70%, 50%, and 40%, respectively.
Media employed	LCD, whiteboard, websites, books (as references), etc.
Reading List	1. Introduction to Algorithms, Thomas H. Cormen, Charles E. Leiserson, et.al., third edition, 2014. 2. Data Structures and Algorithms in C++, Adam Drozdek,Fourth Edition, 2012. 3. Munir, R., 2004, Algoritma dan Pemrograman, Informatika, Bandung. 4. Data Structures Using C , Tenenbaum, A., Y. Langsam, and M. Augenstein, 1990, Prentice-Hall. 5. C++ for everyone, Cay S. Horstmann, 2009.

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					
CO 4				v					
CO 5				v					
CO 6							v		
CO 7				v					
CO 8						v			