

UNIVERSITAS NEGERI YOGYAKARTA

FACULTY OF MATHEMATICS AND NATURAL SCIENCES DEPARTMENT OF MATHEMATICS EDUCATION

Jalan Colombo Nomor 1 Yogyakarta 55281 Telepon(0274)565411 Pesawat 217, (0274)565411(TU),fax (0274)548203 Laman :fmipa.uny.ac.id, E-mail :humas_fmipa@uny.ac.id

Bachelor of Science in Mathematics

MODULE HANDBOOK

Module name:	Algorithms and Programming					
Module level,if applicable:	Undergraduate					
Code:	MAT6310					
Sub-heading,if applicable:	-					
Classes,if applicable:	-					
Semester:	2 nd					
Module coordinator:	Nur Hadi W, MEng					
	1. Nur Hadi W, M.Eng.					
Lecturer(s):	2. Sahid, M.Sc					
	3. Emut, M.Si					
Language:	Bahasa Indonesia					
Classification within the						
curriculum:	Compulsory course					
Teaching format / class	150 minutes lectures and 180 minutes structured activities per					
hours perweek during the	week.					
semester:						
	Total workload is 136 hours per semester which consists of					
Workload:	150 minutes lectures, 180 minutes structured activities, and					
	180 minutes self-study per week for 16 weeks.					
Creditpoints:	3					
Prerequisites course(s):	Information and Communication Technology (MAT6204)					
	After taking this course the students have ability to:					
Course outcomes:	CO1. Demonstrate collaborative attitude and independence in					
	carrying out individual tasks and group assignments					

	CO2.Mastering the concepts and basics of Computer					
	Programming Algorithms					
	CO3. analyze a computer program from the input, output and					
	process aspects					
	CO4. create algorithms and computer programs with the					
	concept of computer programming languages to solve					
	problems.					
	CO5. make a simple program project.					
	This course discusses about problem solving (mathematics),					
	preparation and presentation of the steps to solve it, and					
	programming using the Pascal Programming Language. The					
	topics studied include: (1) problem solving and solution, (2)					
	algorithms and how they are presented, (3) the structure of					
Content:	Pascal language and data types, (4) input-output, variable, and					
	arithmetic operations commands, (5) logical operators and IF-					
	THEN-ELSE, and CASE-OF decision making structures, (6)					
	looping iterations and recursions, (7) looping structures FOR-					
	TO-DO, WHILE-DO, and REPEAT-UNTIL, (8) use of functions					
	- mathematical functions, (8) dimensioned / indexed (array)					
	data types, (9) modular programming: procedures and					
	functions, (10) recording data types (records),(complex data					
	structures), and (11) text data types (text)					
	CO1: Attitude assessment is carried out at each meeting by					
	observation and / or self-assessment techniques using the					
	assumption that basically every student has a good attitude.					
Study/exam achievements:	The student is given a value of very good or not good attitudeif					
	they show it significantlycompared to other students in general.					
	The result of attitude assessment is not a component of the					
	final grades, but as one of therequirements to pass the course.					
	Students will pass from this course if at least have a good					
	attitude.					
	The final mark will be weight as follow:					
	I					

		No	СО	Assesment Object	Assessmen t Techniques	Weigh t		
		1	CO 2	Presentation	Observation	10%		
		2	CO 3 and CO 4	a. Individual assignments b. group assignments c. MID	Written test	10% 10% 25% 30%		
				d. Final Exam				
		3	CO 5	Presentation and Project	Observation	15%		
					Total	100%		
Formsof media:	Board, LCD Projector, Laptop/Computer							
	Nur Hadi W (2017), Handout Algoritma dan Pemrograman							
	2.	Nikla	aus Wirth (1997)	, Algoritma + Str	uktur Data =	Program	า	
	(Terjemah), Yogyakarta: Andi.							
Literature:	iterature: 3. Grover, P.S. (2001), Pascal Programming Fundame							
	8 th edition (ebook), New Delhi: Allied Publisher							
	4. Parsons, Thomas W. (1995), Introduction to Algorithms in							
	Pascal, Johns Wiley and Sons, Inc.							

PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
CO1		✓								
CO2				✓						
CO3					✓					
CO4								✓		
CO5										✓