Advanced Programming

Module name	Advanced Programming
Module level	Undergraduate
Code	IF221111
Courses (if applicable)	Advanced Programming
Semester	3
Lecturer	Yisti Vita Via, S.ST, M.Kom (PIC) Fawwaz Ali Akbar, S.Kom, M.Kom Fetty Tri Anggraeny, S.Kom, M.Kom Wahyu Syaifullah J S, S.kom, M.Kom
Language	Bahasa Indonesia and English
Relation to curriculum	Undergraduate degree program; compulsory; 3rd semester
Type of teaching, contact hours	Lectures, < 60 students,
Teaching Methods	Simulation, case study, collaborative learning, project-based learning, problem-based learning
Workload	1. Lectures: 3 sks x 50 = 150 minutes (2 hours 30 minutes) per week. 2. Exercises and Assignments: 3 x 60 = 180 minutes (3 hours) per week. 3. Private study: 3 x 60 = 180 minutes (3 hours) per week
Credit points	3 credit points (sks)
Requirements according to the examination regulations	A student must have attended at least 80% of the lectures to sit in the exams.
Mandatory prerequisites	Algorithm & Programming
Courses description	This course emphasizes on the development of programming skills, especially structured programming. Students are expected to implement every concept related to structured programming, both theoretically and practically. This includes condition selection, looping, functions and procedures, recursive functions, abstract data structures, advanced arrays, files, and pointers.
Learning outcomes and their corresponding PLOs	After completing this module, a student is expected to:	
	CO1 Students are able to provide detailed explanations for each sub-section of computer programming.	PLO3, PLO8
	CO2 Students are able to implement a complete programming algorithm.	PLO3, PLO8
	CO3 Students are able to build implementation of a complete programming algorithm with input and output on a certain case study.	PLO3, PLO8
Content	Sequential flow of control, branching, looping, advanced branching control, looping and branching control, control flow in a programming problem, procedures and functions in programming, recursive functions, abstract data structures, abstract data structures in procedures and functions, pointer concepts, and file concepts.
Media employed	LCD, whiteboard, websites, books (as references), online meeting, etc.
Assessments and Evaluation	One written Midterm assessment (60 minutes) and one final oral exam (30 minutes), two short computer-based quizzes, takehome written assignments
Study and examination requirements and	The final grade in the module is composed of: • Two short computer-based quizzes: 15% x 2 = 30%

forms of examination	• Take-home written assignments: 15% • Written Midterm assessment: 25% • Final oral exam: 30% Students must have a final grade of 55.6% or higher to pass.
Reading List	• E. Graham, Learn The C++ Programming Language In A Structured, Straightforward & Friendly Manner. Independently published, 2022 • R Roffe, C++ Programming: A Comprehensive Beginner's Guide to Designing, Developing, and Implementing a Strong Program Through Step-by-Step Instructions. Independently published, 2024. • D. Paul, D. Harvey, C How to Program. Deitel & Associates Inc, 2023. • D. Paul, D. Harvey, C How to Program: With Case Studies in Applications and Systems Programming, Global Edition 9. Pearson, 2022. • Bancila, Marius, Modern C++ programming cookbook : master modern C++ including the latest features of C++23 with 140+ practical recipes, 3rd edition. Packt Publishing, 2024. ISBN: 9781835080542. [Online]. Available: https://portal.igpublish.com/iglibrary/obj/PACKT0007043?searchid=1754984995705 rtO767cg9o3X1qer84guy