Discrete Mathematics

Module name	Discrete Mathematics	
Module level	Undergraduate	
Code	IF221107	
Courses (if applicable)	Discrete Mathematics	
Semester	2	
Lecturer	Eka Prakarsa Mandyartha, ST, M.Kom. (PIC) Eva Yulia Puspaningrum, S.Kom, M.Kom. Pratama Wirya Atmaja, S.Kom, M.Kom.	
Language	Bahasa Indonesia and English	
Relation to curriculum	Undergraduate degree program; compulsory; 2nd semester	
Type of teaching, contact hours	Lectures, < 60 students	
Teaching Methods	Simulation, case study, collaborative 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	Computational Mathematics	
Courses description	In this course, students learn discrete mathematics concepts as support in science informatics. Students are able to explain the concepts of logic, proof methods, sets, functions, mathematical induction & recursion, relations and can apply them to informatics problems.	
Learning outcomes and their corresponding PLOs	After completing this module, a student is expected to:	
	CO1 Accuracy in understanding and applying discrete mathematics concepts as a support in the field of computer science.	PLO5
Content	Logical concepts, methods of proof, discrete structures including sets and propositions, functions and relations, counting concepts, and recursiveness.	
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 forms of examination	The final grade in the module is composed of: • Two short computer-based quizzes: 15% x 2 = 30% • 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	● O. Levin, Discrete Mathematics and Its Applications Discrete Mathematics: An Open Introduction 4. Chapman and Hall/CRC, 2025. ● M. Bona, Introduction to Enumerative and Analytic Combinatorics (Discrete Mathematics and Its Applications), 3th edition. Chapman and Hall/CRC, 2025. ● Y. Nataliani, D. Manongga, H. Hendry, T. Wellem, Matematika Diskrit untuk Teknik Informatika. Eureka Media Aksara, 2025. ● S. Mulyati, BUKU AJAR SISTEM DIGITAL UNTUK TEKNIK INFORMATIKA. CV WIDINA MEDIA UTAMA, 2021. ● N.P. Pomde, Discrete mathematics for computer science. Arcler Press, 2024. ISBN: 9781774698303. [Online]. Available: https://portal.igpublish.com/iglibrary/obj/ARCLER0001362?searchid=1754986315057x5l4uPPelFkfAt0PjN6xs