Module Description

Module name	Discrete Mathematics
Module level, if applicable	Bachelor of Informatics
Code, if applicable	21D12110503
Subtitle, if applicable	-
Course, if applicable	-
Semester(s) in which the module is taught	2nd
Person responsible for the module	Ir. Zaenab Muslimin, MT.
Lecturer	1. Ir. Zaenab Muslimin, MT. 2. Dr. Ir. Ingrid Nurtanio, MT. 3. Dr.Eng. Ir. Dewiani, MT 4. Dr.Eng. Intan Sari Areni, ST. MT
Language	Indonesian Language [Bahasa Indonesia]
Relation to Curriculum	This course is a compulsory course and offered in the 2nd semester.
Type of teaching, contact hours	Teaching methods: [problem-based learning]. Teaching forms: [lecture], [tutorial]. CH : 08.00 - 16.00
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consist of: - 40 hours for lecture, - 48 hours for structured assignments, - 48 hours for private study.
Credit points	3 credit points (equivalent with 5.1 ECTS)

Requirements according to the examination regulations	Students have participated in at least 80% of the learning activities (Academic Regulations, Chapter VII)
Recommended prerequisites	Basic Mathematics I
Module objectives/intended learning outcomes	After completing the course, Students are able: **Intended Learning Outcomes (ILO):** **ILO 1 :** Have the knowledge of fundamental in Computing Science that includes basic theory and concepts of computer science, Mathematics and Statistics, Programming Algorithm, Software Engineering, Information Management and Digital Resilience, also the advance topics of eitherArtificial Intelligence, Data Science, Computer Network, Cloud Computing or Internet of Things. **ILO 3 :** Apply the knowledge of computing and other related disciplines to analyse and identify solutions for any computing-based problem. **Course Learning Objective (CLO):** After taking this course, students are expected to be able to internalize the spirit of independence and logical thinking in the context of the development or implementation of science and technology in accordance with their field of expertise. And mastering the theoretical concepts of Informatics knowledge in general. **Sub CLO :** ILO 1 ⇒ CLO 1: Students are able to explain the basics of logic, sets, matrices, relations, combinatorial functions, discrete probability, and mathematical induction. ILO 3 ⇒ CLO 2: Students are able to explain graph theory.
Content	Students will learn about : 1. Basics of logic

	2. Conclusion Drawing 3. Set 4. Matrices, relations, and functions 5. Combinatorial and discrete odds 6. Mathematical Induction 7. Graph theory
Forms of Assessment	Assessment techniques: [written test]. Assessment forms: [quiz], [midterm exam], [final term exam], [assignment]. Quiz = 15%, Assignment = 30%, mid term exam = 30%, Final term exam = 25%, CLO 1 ⇒ ILO 1: 60% (Assignment and Mid term exam: written test) CLO 2 ⇒ ILO 3: 40% (Quiz and Final term exam: written test)
Study and examination requirements and forms of examination	**Study and examination requirements:** - Students must attend 15 minutes before the class starts. - Students must switch off all electronic devices. - Students must inform the lecturer if they will not attend the class due to sickness, etc. - Students must submit all class assignments before the deadline. - Students must attend the exam to get a final grade. **Form of examination:** Written exam: Essay
Media employed	Video conference, Slide Presentation, Learning Management System (LMS).
Reading list	**Main :** 1. Kenneth H. Rosen, Discrete Mathematics and Its Applications, 8th Edition, McGraw Hill 2. Rinaldi Munir, 2009, Matematika Diskrit , Edisi Ketiga , Informatika Bandung **Support :** 1. Skvarcius, Robinson, 1986, Discrete Mathematics with Computer Science Applications, The Benjamin Publishing Company, Inc.

	2. Susanna S.Epp, 1995, Discrete Mathematics with Applications, Second Edition, Brooks Publishing Company. 3. Jong Jek Siang, 2009, Matematika Diskrit dan Aplikasinya pada Ilmu Komputer , Edisi Ketiga , Andi Yogyakarta. M.A. Salam, 1998, Discrete Mathematics for Computing, Prentice Hall-Sprint Print