Module Handbook (Description of Course Unit)

Course designation	Discrete Mathematics
Semester(s) in which the Course is taught	5th (fifth)
Person responsible for the Course	Sutini
Language	Indonesian Language
Relation to curriculum	Compulsory
Teaching methods	Lecture (L), Group Discussion (GD), Presentations (P)
Workload (incl. contact hours, self-study hours)	Total workload: Hours in Class, specified in hours: 35 (Lecture) Private study including examination preparation, specified in hours: 84 (Group Discussion & Presentation)
Credit points	3 CP / 4.8 ECTS
Required and recommended prerequisites for joining the Course	Introduction to Basics Mathematics
Course objectives/intended learning outcomes	The students demonstrate their understanding on the concepts of logic, discrete mathematics, algebra, analysis, geometry, odds and statistics, principles of modeling, linear program, differential equation, numerical methods for the teaching of mathematics in primary and secondary school and as the prerequisite to take other further courses. The students are able to select alternative solutions in groups.

Content	Discrete Mathematics discusses: ● basic principles of multiplication rules ● combination and permutation ● binomial coefficients and Pascal's triangle ● multinomial coefficients and power series ● generating function for combination and permutation ● relation and linear recursive system ● derangement (randomization) ● principles of inclusion-exclusion ● the number of objects with perfectly m properties and objects odd and even properties
Examination forms	● Final examination (120 min) ● Mid-term examination (120 min) ● Assignment (120 min) ● Exercise (120 min)
Study and examination requirements	● Attendance 10% ● Assignments 30% ● Mid-evaluation 20% ● Final Evaluation 40% The minimum grade to pass the course is C
Reading list	1. Anderson, I. 1989. *A First Course in Combinatorial Mathematics.* Oxford: Clarendon Press. 2. Budayasa, I.K. 2008. *Matematika Diskrit.* Surabaya: Unesa University Press. 3. Grimaldi, A. 1999. *Discrete and Combinatorial Mathematics. An Applied Introduction*. Boston: Addison Wesley Publishing Company.