

Module Descriptions

A **module** is a self-contained **learning unit** within a higher education program that includes thematically related courses and is assigned a **fixed number of credits**. It follows specific **learning objectives**, includes an **assessment component**, and contributes to achieving the qualifications of a degree program. In some countries, “modules” are also named “courses”.

Please provide a module description for each module. In addition to the compulsory and elective modules, this also includes credited internships and the final thesis.

Please summarize all module descriptions in one document (Module Handbook) and create a table of contents so that the modules can be found easily.

Module designation	<i>Abstract Algebra</i>
Semester(s) in which the module is taught	2
Person responsible for the module	<i>Prof. Dr. Agus Maman Abadi M.Si. Dr. Karyati, M.Si.</i>
Language	<i>Indonesian.</i>
Relation to curriculum	<i>Elective.</i>
Teaching methods	<i>Lecture, discussion and presentation.</i>
Workload (incl. contact hours, self-study hours)	<i>Total workload is 90.67 hours per semester which consists of 100 minutes lectures, 120 minutes structured activities, and 120 minutes self-study per week for 16 weeks.</i>
Credit points	2
Required and recommended prerequisites for joining the module	-

Module objectives/intended learning outcomes	<i>After taking this course the students have ability to:</i> <i>CO1. Appreciating others' opinions and work, with fairness and honesty..</i> <i>CO2. Proving the validity of problems related to groups and their properties through mathematical verification.</i> <i>CO3. Explaining the concepts of groups and normal subgroups, and proving their related theorems.</i> <i>CO4. Explaining the concepts of permutation groups and cyclic groups, and proving their related theorems.</i> <i>CO5. Explaining and proving Lagrange's Theorem.</i> <i>CO6. Explaining the concept of factor groups and proving their related theorems.</i> <i>CO7. Explaining the concept of group homomorphisms and proving their related theorems.</i> <i>CO8. Explaining and proving the Group Isomorphism Theorems and Sylow's Theorems.</i> <i>CO9. Applying group theory and its theorems.</i>
Content	<i>This course covers group theory, group homomorphisms, ring theory, ring homomorphisms, polynomial rings, irreducible polynomials, finite fields, and their properties.</i>
Examination forms	<i>Presentations and written tests.</i>
Study and examination requirements	<i>The course assessment is divided into two main components:</i> 1. Cognitive Assessment (40%) <i>This includes the following elements:</i> ○ Attendance: 0% ○ Quiz: 0% ○ Assignment: 0% ○ Midterm Exam (UTS): 20% ○ Final Exam (UAS): 20% 2. Participatory Assessment (60%) <i>This includes:</i> ○ Case Study: 20% ○ Team-Based Project: 40% Total: 100%
Reading list	1. Gallian, J.A.. 2017. <i>Contemporary Abstract Algebra</i>. Ninth Edition. Eddison Wesley Publishing Company. 2. Malik, D.S., Mordeson, J.M., Sen, M.K.. 1997. <i>Fundamentals of Abstract Algebra</i>. Singapore: McGraw-Hill Companies, Inc. 3. Herstein, I.N..1996. <i>Abstract Algebra</i>. Third Edition. Upper Saddle River: Prentice-Hall Int. Inc. 4. Fraleigh, J.B.. 2006. <i>A First Course in Abstract Algebra</i>. Seventh Edition. New York: Addison-Wesley Publishing Company.