UNIVERSITAS NEGERI PADANG
FACULTY OF MATHEMATICS AND NATURAL SCIENCES MATHEMATICS DEPARTMENT, MATHEMATICS STUDY PROGRAM Main Campus Universitas Negeri Padang.
Jalan Prof. Dr. Hamka Air Tawar Padang, Sumatera Barat
Telepon: +62 751 7053902, Fax: +62 751 7055628
Email: humas@unp.ac.id

Bachelor of Science in Mathematics **MODULE HANDBOOK**

Module name:	Finite Group Theory
Module level,if applicable:	Bachelor
Code:	MAT2.62.8003
Subheading,if applicable:	-
Classes,if applicable:	Finite Group Theory
Semester:	8^{th} (eighth)
Module coordinator:	Head of Algebra Expertise Group
Lecturer(s):	Drs. Yusmet Rizal, M.Si. and Defri Ahmad, S.Pd., M.Si.
Language:	Indonesian Language and English
Classification within the curriculum:	Compulsory course in the fourth year (8^{th} semester) Bachelor Degree
Teaching format/class hours per week during the semester:	a. Lectures : Cooperative learning with methods such as expository, drill, and discussion. (3 x 50 minutes = 150 minutes). b. Structured assignment : Weekly individual written assignment. (3 x 60 minutes = 180 minutes). c. Individual study (3 x 60 minutes = 180 minutes).
Workload:	The total workload is 136 hours per semester, which consists of 150 minute lectures, 180 minute structured activities, and 180 minutes of self-study. In total, there are 16 weeks per semester, including midterm and final exams.
Credit points:	3 SKS = 4.53 ECTS
Prerequisites course(s):	Abstract Algebra
Course outcomes:	After taking this course the students have ability to: CO1. Express the concept of Finite Groups, Permutation Groups, Modular groups and generators, Lagrange's Theorem, Group Action, Jordan Holder's Theorem; Cauchy's Theorem, Sylow's Theorem. CO2. Apply the concept of Finite Groups, Permutation Groups, Modular groups and generators, Lagrange's Theorem, Group Action, Jordan Holder's Theorem; Cauchy's Theorem, Sylow's Theorem CO3. Analyze the concept of Finite Groups, Permutation Groups, Modular groups and generators, Lagrange's. CO4. Prove the problems that connect the concept of Finite

	Groups, Permutation Groups, Modular groups and generators,Lagrange's Theorem, Group Action, Jordan Holder's Theorem; Cauchy's Theorem, Sylow's Theorem.
Content	Number system: original, whole, whole, rational, irrational, real, and complex. Mathematical induction, divisibility and binomial coefficients, congruence: Diophantus linear equations, basic properties of congruence, linear congruence, system of congruence and Chinese remainder theorem, multiplicative functions: tau and sigma functions, Euler's functions and Ceiling and floor functions, primitive functions: integer order, primitive root, arithmetic index and primality test, quadratic congruence: quadratic congruence law of quadratic reciprocity, Diophantus nonlinear equations: phytagoras triples, Fermats Theorems, and Sums of Square.
Study / Exam Achievement	The final grade will be weighted as follows: The assessment consists of a final exam (45%), a midterm exam (30%), and student activities (25%). The final and midterm exams are essay tests with a closed book (120 minutes). Quizzes, homework, exercises, discussions, and presentations are examples of student activities.
Forms of media:	White Board, laptop, Projector, e-learning via elearning2.unp.ac.id, and zoom meeting.
Literature:	1. Jean Pierre Serre, 2016, Finite Groups, International Press USA and Higher 2. M. Aschbacher, 2012, Finite Group Theory, 2nd Ed., Cambridge University Press, UK. 3. Rose, H.E., 2009, A Course on Finite Groups, Springer.

PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
CO1									✔	
CO2									✔	
CO3			✔							
CO4									✔	