UNIVERSITAS NEGERI YOGYAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF MATHEMATICS EDUCATION
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Bachelor of Science in Mathematics **MODULE HANDBOOK**

Module name:	Number Theory
Module level,if applicable:	Undergraduate
Code:	MAT6205
Sub-heading,if applicable:	-
Classes,if applicable:	-
Semester:	2nd
Module coordinator:	Ilham Rizkianto, M.Sc.
Lecturer(s):	1. Ilham Rizkianto, M.Sc., 2. Dwi Lestari, M.Sc.
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory course
Teaching format / class hours perweek during the semester:	100 minutes lectures and 100 minutes structured activities per week.
Workload:	Total workload is 90.67 hours per semester which consists of 100 minutes lectures, 100 minutes structured activities, and 120 minutes individual study per week for 16 weeks.
Creditpoints:	2
Prerequisites course(s):	Logic and Sets (MAT6301)
Course outcomes:	After taking this course the students have ability to: CO1. Appreciate the work and opinions of other groups in submitting ideas in writing or verbally CO2. Demonstrate collaborative attitude and independence in

<table>
<tr><td></td><td>carrying out independent tasks and group assignments
CO3. Communicate ideas in solving mathematical problems in writing or verbally
CO4. explain the basic concepts of number theory and apply them to solve related problems.
CO5. Proving properties, lemmas, and theorems to be applied in logical reasoning</td></tr>
<tr><td>Content:</td><td>This course contains the properties of integers and relations. Topics covered include mathematical induction, relation of division, the greatest common divisor (GCD), The Least Common Multiplication (LCM), base number, prime number, single factorization, congruence and its application, linear congruence, Fermat and Wilson's theorem, arithmetic functions, Euler theorems, primitive roots and indexes.</td></tr>
<tr><td>Study/exam achievements:</td><td>CO1: Attitude assessment is carried out at each meeting by observation and / or self-assessment techniques using the assumption that basically every student has a good attitude. The student is given a value of very good or not good attitude if they show it significantly compared to other students in general. The result of attitude assessment is not a component of the final grades, but as one of the requirements to pass the course. Students will pass from this course if at least have a good attitude.

The final mark will be weight as follow:
<table>
<tr><th>No</th><th>CO</th><th>Assesment Object</th><th>Assessment Techniques</th><th>Weight</th></tr>
<tr><td>1</td><td>CO2, CO 3, CO4 and CO 5</td><td>a. Individual assignments
b. group assignments
c. Quiz
d. MID
e. Final Exam</td><td>Written test</td><td>15%
10%
20%
25%
30%</td></tr>
<tr><td colspan="4">Total</td><td>100%</td></tr>
</table>
</td></tr>
<tr><td>Forms of media:</td><td>Board, LCD Projector, Laptop/Computer</td></tr>
</table>

Literature:	1. Sukirman. 2013. TeoriBilangan. Yogyakarta: UNY Press 2. David M. Burton. 2011. *Elementary Number Theory, Seventh Edition.* New York: McGraw-Hill Companies. 3. Kenneth H. Rosen. 2011. Elementary Number Theory *& Its Application*. Boston 4. Lewinter, M. dan Meyer, J. 2016. *Elementary number theory with programming*. New Jersey: John Wiley and Sons Inc

PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
CO1		✓								
CO2			✓							
CO3				✓						
CO4					✓					
CO5						✓				