



# UNIVERSITAS NEGERI YOGYAKARTA

FACULTY OF MATHEMATICS AND NATURAL SCIENCES  
DEPARTMENT OF MATHEMATICS EDUCATION

Jalan Colombo Nomor 1 Yogyakarta 55281

Telepon: (0274) 565411 Pesawat 217, (0274) 565411 (TU); Fax. (0274) 548203

Laman: fmipa.uny.ac.id, E-mail: humas\_fmipa@uny.ac.id

## Bachelor of Education in Mathematics

## MODULE HANDBOOK

Module name:	Number Theory
Module level,if applicable:	Undergraduate
Code:	MAT6205
Sub-heading,if applicable:	-
Classes,if applicable:	-
Semester:	2 <sup>nd</sup>
Module coordinator:	Ilham Rizkianto, M.Sc.
Lecturer(s):	Ilham Rizkianto, M.Sc., Dwi Lestari, M.Sc.
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsary course
Teaching format / class hours per week 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.
Credit points:	2
Pre requisites course(s):	Logic and Sets (MAT6301)
Course outcomes:	After taking this course the students have ability to: CO1. Demonstrate collaborative attitude and independence in carrying out individual tasks and group assignments CO2. Communicate ideas in solving mathematical problems in writing or verbally

	CO3. Describe concepts and methods about number theory CO4. Applying concepts and methods about number theory																						
Content:	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.																						
Study/examachievements:	<p>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.</p> <p>The final mark will be weight as follow:</p> <table border="1" data-bbox="673 1260 1425 1606"> <thead> <tr> <th>No</th> <th>CO</th> <th>Assesment Object</th> <th>Assessment Techniques</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td rowspan="5">1</td> <td rowspan="5">CO2, CO 3 and CO 4</td> <td>a. Individual assignments</td> <td rowspan="5">Written test</td> <td>15%</td> </tr> <tr> <td>b. group assignments</td> <td>10%</td> </tr> <tr> <td>c. Quiz</td> <td>20%</td> </tr> <tr> <td>d. MID</td> <td>25%</td> </tr> <tr> <td>e. Final Exam</td> <td>30%</td> </tr> <tr> <td colspan="3">Total</td> <td>100%</td> </tr> </tbody> </table>	No	CO	Assesment Object	Assessment Techniques	Weight	1	CO2, CO 3 and CO 4	a. Individual assignments	Written test	15%	b. group assignments	10%	c. Quiz	20%	d. MID	25%	e. Final Exam	30%	Total			100%
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		e. Final Exam		30%																			
Total			100%																				
Formsof media:	Board, LCD Projector, Laptop/Computer																						
Literature:	<ol style="list-style-type: none"> <li>1. Sukirman. 2013. TeoriBilangan. Yogyakarta: UNY Press.</li> <li>2. David M. Burton. 2011. <i>Elementary Number Theory, Seventh Edition</i>. New York: McGraw-Hill Companies.</li> </ol>																						

	<p>3. Kenneth H. Rosen. 2011. <i>Elementary Number Theory &amp; Its Application</i>. Boston.</p> <p>4. Lewinter, M. dan Meyer, J. 2016. <i>Elementary number theory with programming</i>. New Jersey: John Wiley and Sons Inc.</p>
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**PLO and CO mapping**

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
CO1		✓										
CO2			✓									
CO3						✓						
CO4							✓					