**Undergraduate Programme in Mathematics**

**Module name**: Introduction to Number Theory  
**Module level**, if applicable: Bachelor  
**Code**, if applicable: MMM-1105  
**Subtitle**, if applicable:  
**Courses**, if applicable: Introduction to Number Theory  
**Semester(s) in which the module is taught**: 2nd (second)  
**Person responsible for the module**: Chair of the Lab. of Analysis  
**Lecturer(s)**: Dr. Budi Surodjo, M.Si.  
**Language**: Bahasa Indonesia  
**Relation to curriculum**: Elective course in the first year (2nd semester)  
**Type of teaching, contact hours**: 150 minutes lectures per week, 180 minutes structured activities per week  
**Workload**: Total workload is 136 hours per semester, which consist of 150 minutes lectures per week for 14 weeks, 180 minutes structured activities per week (2 individual and 1 teamwork), and 180 minutes individual study per week, in total 16 weeks per semester, including preparation for mid exam and final exam.  
**Credit points**: 3  
**Requirements according to the examination regulations**: Students have taken Introduction to Number Theory course (MMM-1105) and have an examination card where the course is stated on.  
**Recommended prerequisites**: Students have taken Introduction to Mathematical Logic course (MMM-1208) and have participated in the final examination of the course.  
**Module objectives/intended learning outcomes**: After completing this course the students should be able:  
1. to explain the constructions of all number systems  
2. to prove the elementary properties of number systems.  
3. to prove any advance properties of number theory using the elementary properties.  
4. to solve the mathematical problems using number theory.  
**Content**: Natural numbers, system of integers, divisor, prime numbers, prime factorisation, order, division algorithm, numerical systems, congruence, step function, system of rational numbers, system of real numbers.  
**Study and examination requirements and forms of examination**: The final mark will be weighted as follows:  
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<thead>
<tr>
<th>No</th>
<th>Assessment methods (components, activities)</th>
<th>Weight (percentage)</th>
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<tr>
<td>1.</td>
<td>Final Examination</td>
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<td>2.</td>
<td>Mid-Term Examination</td>
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<td>3.</td>
<td>Quiz/Presentation</td>
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<td>4.</td>
<td>Homework (Project)</td>
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The initial cut-off points for grades A, B, C, and D should not be less than 80%, 70%, 50%, and 40%, respectively.  
**Media employed**: Projector, board, laptop, e-learning via [http://elisa.ugm.ac.id](http://elisa.ugm.ac.id)
Reading List


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<th>PLO 1</th>
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