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Undergraduate Programme in Mathematics

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MODULE HANDBOOK

Module name	Intorduction to Number Theory
Module level, if applicable	Bachelor
Code, if applicable	MMM-1105
Subtitle, if applicable	
Courses, if applicable	
Semester(s) in which the module is taught	First year (even semester)
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 (even 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 (three)
Requirements according to the examination regulations	Students have taken Intorduction 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 have: CO.1. Ability to explain the constructions of all number systems CO.2. Ability to prove the elementary properties of number systems. CO.3. Ability to prove any advance properties of number theory using the elementary properties. CO.4. Ability to solve the mathematical problems using number theory.
Content	Natural numbers, system of integers, divisor, prime numbers, prime factorisation prima, 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: No Assessment methods (components, activities) Weight (percentage) 1. Final Examination 35 2. Mid-Term Examination 30 3. Quiz/Presentation 20 4. Homework (Project) 15 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

Reading List	1. Webber, G.C., 1966, *Number System of Analysis*, Addison-Wesley Pub.Company, Massachusetts. 2. Soehakso, RMJT, 1990, *Pengantar Matematika Modern*, FMIPA UGM 3. Surodjo, B, 2014, *Diktat Teori Bilangan*, BOPTN, UGM 4. Titu, A., Andrica, D., dan Feng Z, 2006, *104 Number Theory, Problems*, Berlin

PLO and CO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
CO 1									V
CO 2			V						
CO 3			V						V
CO 4			V						V