Module Handbook

Module Name:	Advanced Algebra
Module Level:	Doktor (S-3) / Doctor
Abbreviation, if applicable:	8400203062
Sub-heading, if applicable:	-
Course included in the module, if applicable:	-
Semester/term:	2 / First year
Module Coordinator(s):	Dr. Agung Lukito, M.S.
Lecturer(s):	Dr. Agung Lukito, M.S.
Language:	Indonesia
Classification within the curriculum:	~~Compulsory course~~ / elective studies
Teaching format/class hours per week during the semester	Teaching format: lectures, tutorial assignment, and individual study. 3 x 270 minutes = 810 minutes = 13.5 hours lectures
Workload:	15 weeks per semester consisting of: □ 1 hour lecture (1 x 50 minutes) per week, □ 2 hours assignments (2 x 50 minutes) per week, □ 2 hours individual study (2 x 60 minutes) per week, Total workload: 14x3x270 minutes = 11,340 minutes = 7.56 ECTS*
Credit Point:	3
Requirements:	N/A

Learning Goals :	**Knowledge (KNO-2)** CLO-1 : able to gain an in-depth understanding of the concept of field extension and the canonical forms of linear transformation CLO-2: able to be skilled in understanding the definitions and statements of theorems and their proofs CLO-3: able to gain experience in communicating mathematical ideas effectively
Content:	The study of the basic properties of polynomial ring, modules of Euclid's ring, and vector spaces, and is directed to field extensions and their corresponding automorphism groups and linear transformation algebra and matrix algebra and canonical forms of linear transformations. The discussion of field expansion will include algebraic, simple, and normal expansion and the existence of an expansion of a field that contains polynomial roots on the field. The study of automorphism groups includes the Galois group, fixed field, and the relationship between automorphism normal subgroups and normal expansion. The canonical forms of linear transformation include triangular, Jordanian, and rational forms.

Study/exam achievements	☐ Students are considered competent and pass if the final score calculated from the score of midterm exam, assignments, participation, and final exam is at least 55 or C. ☐ Final score is calculated as follows: ☐ 20% midterm exam + 30% assignments + 20% participation + 30% final exam ☐ Final index is defined as follow:

Index	Converted Score	Score Range
A	4.00	$85 \leq A \leq 100$
A-	3.75	$80 \leq A- <85$
B+	3.50	$75 \leq B+ <80$
B	3.00	$70 \leq B <75$
B-	2.75	$65 \leq B- <70$
C+	2.50	$60 \leq C+ <65$
C	2.00	$55 \leq C <60$
D	1.00	$40 \leq D <55$
E	0.00	$0 \leq E <40$

Forms of Media	Slides and LCD projectors, whiteboard
Literature	1. Herstein, I. N. 1975. Topics in Algebra. New York: John Wiley and Sons, Inc. 2. Herstein, I. N. 1996. Abstract Algebra. New York: John Wiley and Sons, Inc. 3. Gallian, J. (2017). Contemporary Abstract Algebra. Boston: Brooks/Cole, Cengage Learning.
Note	*Total hours per 1 credit in 1 semester={(1 credit x 270 minutes x 14 weeks)/60 minutes}= 63 hours. Each ECTS equals with 25 hours therefore 1 credit in 1 semester equals 2.52 ECTS.
Last Amendment	Januari 2023