



Jordan University of Science and Technology
Faculty of Science & Arts
Mathematics Department

MATH442 Abstract Algebra (2)

Second Semester 2022-2023

Course Catalog

3 Credit Hours. In this course, we study the following subjects: Rings, Subrings, Fields, Integral Domains (I.D.), Ideals, Rings of Polynomials, Factorization of Polynomials over a Field, Homomorphisms, isomorphism, Factor Rings., Prime and Maximal Ideals, Unique Factorization Domains, Principal ideal domain, Euclidean Domains.

Text Book

Title	A First Course in Abstract Algebra
Author(s)	John B. Fraleigh
Edition	7th Edition
Short Name	TextBook
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref 1	Contemporary Abstract Algebra	Joseph A. Gallian	6th Edition	
Ref 2	A First Course in Abstract Algebra	Joseph J. Rotman	3rd Edition	
Ref 3	Schaum's Outline of Modern Abstract Algebra	Frank Ayers	1st Edition	
Ref 4	Applied Abstract Algebra	Lidl, Rudolf, Pilz, G?nter	2nd Edition	

Instructor

Name	Prof. Khaldoun Al-Zoubi
Office Location	23451
Office Hours	

Email	kfzoubi@just.edu.jo
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Class Schedule & Room

Section 1:
 Lecture Time: Sun, Tue, Thu : 10:30 - 11:30
 Room: NG56

Prerequisites

Line Number	Course Name	Prerequisite Type
903420	MATH342 Abstract Algebra (1)	Prerequisite / Pass

Tentative List of Topics Covered

Weeks	Topic	References
Weeks 1, 2	Rings	
Week 3	Integral Domains (I.D.)	
Week 4	field	
Weeks 5, 6	Ring Homomorphism and ring isomorphism	
Week 7	Ideals	
Week 8	Rings of polynomials	
Week 9	Factorization of polynomials	
Weeks 10, 11	Factor rings	
Week 12	Maximal ideals and prime ideal	
Week 13	Isomorphism Theorems	
Week 14	Principal Ideal Domains (PID)	
Week 15	Euclidean Domains (ED) and Unique Factorization Domains (UFD)	

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Be able to learn about the commutative rings, subrings, integral domain, fields, homomorphism. [1SLO1]	30%	
Be able to learn about the ring isomorphisms, and their properties, isomorphic rings, ideals, the rings of polynomials and the factorization of polynomials over a field [1SLO1]	30%	
Be able to learn about the factor rings, and their properties, prime ideals, maximal ideals, isomorphism theorems for rings, Principal Ideal Domains (PID), Euclidean Domains (ED), Unique Factorization Domains (UFD). [1SLO1]	40%	

Relationship to Program Student Outcomes (Out of 100%)					
SLO1	SLO2	SLO3	SLO4	SLO5	SLO6
100					

Evaluation	
Assessment Tool	Weight
First exam-First Semester 2022-2023	30%
Second exam-First Semester 2022-2023	30%
Final exam-First Semester 2022-2023	40%

Date Printed: 2023-02-23