

TEMPLATE FOR COURSE SPECIFICATION

Higher Education Performance Review: Programme Review

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

Abstract Algebra I **Dr. Ayat Abdulaali Neamah**

1. Teaching Institution	Al-Nahrain University/College of Science
2. University Department/Centre	Dept. of Mathematics and Computer Applications
3. Course title/code	Abstract Algebra I - 1 st semester- 3 rd stage
4. Modes of Attendance offered	attendance.
5. Semester/Year	First 2023-2024
6. Number of hours tuition (total)	4 hours
7. Date of production/revision of this specification	2023
8. Aims of the Course	
1- Introducing students to basic concepts and important theorems in basic algebra topics	
2- Equipping students with the basic concepts of the theory of groups	
At the end of this semester , the student can	
<ul style="list-style-type: none">■ Create complex examples in the topic of group theory.■ Proof of new theories, preliminaries and results in the subject of the group	

theory..

- Students learn a variety of topics in the mathematical developments of different groups.

9- Learning Outcomes, Teaching ,Learning and Assessment Methode

A- Cognitive goals

- 1- Form a strong foundation for the student in the subject of pure mathematics.
- 2- Creating advanced thinking in understanding most mathematics topics.

B. The skills goals special to the course..

- 1- Infusion of a sufficient and rich amount of specialized information and terminology regarding the scientific material.
- 2- Analytical and inferential skills
- 3- Development skills

Teaching and Learning Methods

- Providing students with the basics and additional topics related to thinking outcomes.
- Forming discussion groups during the lectures to discuss.
- Ask students a set of thinking questions during the lectures such as what, how when and why for specific topics
- Giving students assignments that require self-explanations

Assessment methods

- Weekly exams
- Monthly exams
- Seminars.

Specific grades with assignments and reports

C. Affective and value goals

- 1- Enabling students to solve problems related to the intellectual framework of the lecture material
- 2-Enabling students to think intellectual questions from the lecture material
- 3- The link between the lecture curriculum and the study materials in the - previous stages.
- 4- Practical applications, especially with our daily lives .

D. General and rehabilitative transferred skills(other skills relevant to employability and personal development)

- 1- General algebraic skills to solve some life problems
- 2- Follow up on scientific development by getting acquainted with new books and research via the Internet.
- 3- Participation in scientific conferences.
- 4- Participation in workshops and scientific symposia.

10. Course Structure					
Weeks	Hour	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1 st	4		Binary operation- algebraic structure- semi group- monoid	Theoretical lectures	Weekly quizzes
2 nd	4		Group and commutative group and some examples	Theoretical lectures	Weekly quizzes
3 rd	4		Properties of groups and some Theorems	Theoretical lectures	Weekly quizzes
4 th	4		Left (right) cancellation law + some examples	Theoretical lectures	Weekly quizzes
5 th	4		Order of a group and order of an element	Theoretical lectures	Weekly quizzes
6 th	4		Some theorems and problems	Theoretical lectures	Weekly quizzes
7 th	4		Exam 1 + definition of complex + multiplication of two complexes +definition of subgroup	Theoretical lectures	Weekly quizzes
8 th	4		Two step test + one step test + some theorems and examples	Theoretical lectures	Weekly quizzes
9 th	4		Definition of Coset +Some notes of cosets + Examples	Theoretical lectures	Weekly quizzes
10 th	4		Normalizer of an element +self conjugate element+center of group	Theoretical lectures	Weekly quizzes
11 th	4		Exam 2 + normal subgroup+ some results and examples	Theoretical lectures	Weekly quizzes
12 th	4		Some theorems of normal group + some problems	Theoretical lectures	Weekly quizzes
13 th	4		More theorems of Normal subgroup	Theoretical lectures	Weekly quizzes
14 th	4		Quotient group(factor group) + some examples and theorems	Theoretical lectures	Weekly quizzes
15 th	4		Review	Theoretical lectures	Weekly quizzes

11. Infrastructure

1. Books Required reading:	Introduction to Abstract Algebra
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2. Main references (sources)	Rose, John S., A course on group theory, Dover, Newyork 1994
A- Recommended books and references (scientific journals, reports...).	
B-Electronic references, Internet sites...	
12. The development of the curriculum plan	
Development and updating are carried out according to the information available from modern sources, in addition to developing illustrations to .increase the student's understanding and awareness of the course material	