

## Course Description Form

<b>1. Course Name:</b>					
Abstract algebra I					
<b>2. Course Code:</b>					
Math3111					
<b>3. Semester / Year:</b>					
1 <sup>st</sup> semester / 2023–2024					
<b>4. Description Preparation Date:</b>					
2023					
<b>5. Available Attendance Forms:</b>					
<b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>					
3 Hours					
<b>7. Course administrator's name (mention all, if more than one name)</b>					
Name: Dr. Ayat Abdulaali Neamah Email: ayatneamah@nahrainuniv.edu.iq					
<b>8. Course Objectives</b>					
<b>Course Objectives</b>		<ul style="list-style-type: none"> <li>- Introducing students to basic concepts and important theorems in basic algebra topics</li> <li>- Equipping students with the basic concepts of the theory of groups.</li> <li>- At the end of this semester , the student can               <ul style="list-style-type: none"> <li>- Create complex examples in the topic of group theory.</li> <li>- Proof of new theories, preliminaries and results in the subject of the group</li> </ul> </li> </ul>			
<b>9. Teaching and Learning Strategies</b>					
<b>Strategy</b>		The main strategy that will be used in this module is to encourage the students participation in the module activities. This strategy will be by giving the students quizzes, assignments, projects and midterm exams throughout the semester			
<b>10. Course Structure</b>					
<b>Week</b>	<b>Hours</b>	<b>Required Learning Outcomes</b>	<b>Unit or subject name</b>	<b>Learning method</b>	<b>Evaluation method</b>
1	3	Binary operation- algebraic structure- semi group- monoid		Theoretical lectures	Weekly quizzes

2	3	Group and commutative group and some examples		Theoretical lectures	Weekly quizzes
3	3	Properties of groups and some Theorems		Theoretical lectures	Weekly quizzes
4	3	Left (right) cancellation law + some examples		Theoretical lectures	Weekly quizzes
5	3	Order of a group and order of an element		Theoretical lectures	Weekly quizzes
6	3	Some theorems and problems		Theoretical lectures	Weekly quizzes
7	3	Exam 1 + definition of complex + multiplication of two complexes +definition of subgroup		Theoretical lectures	Weekly quizzes
8	3	Two step test + one step test + some theorems and examples		Theoretical lectures	Weekly quizzes
9	3	Definition of Coset +Some notes of cosets + Examples		Theoretical lectures	Weekly quizzes
10	3	Normalizer of an element +self conjugate element+center of group		Theoretical lectures	Weekly quizzes
11	3	Exam 2 + normal subgroup+ some results and examples		Theoretical lectures	Weekly quizzes
12	3	Some theorems of normal group + some problems		Theoretical lectures	Weekly quizzes
13	3	More theorems of Normal subgroup		Theoretical lectures	Weekly quizzes
14	3	Quotient group(factor group) + some examples and theorems		Theoretical lectures	Weekly quizzes
15	3	Review		Theoretical lectures	Weekly quizzes

### 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

### 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Introduction to Abstract Algebra
Main references (sources)	Rose, John S., A course on group theory Dover, Newyork 1994
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	