



**Mutah University**  
**Academic Development & Quality Assurance Center**

**COURSE PLAN SPECIFICATION FORM**

**Course: Abstract Algebra**

**Faculty: Science**

**Department: Mathematics**

**Academic Year: 2017-2018**

**A. Course Specification & General Information:**

<b>• University: Mutah</b>	<b>Course Title: Abstract Algebra 1</b>
<b>College: Science</b>	<b>Code: 741</b>
<b>Department: MATHEMATICS</b>	<b>Credit Hours: 3</b>
<b>Semester &amp; Academic Year: Second</b>	<b>Instructor: Prof. Dr. Ibrahim Suleiman</b>
<b>Office Hours: 1:00 Mon. &amp; Wed.</b>	<b>• Course Level: M. Sc.</b>

**B. Objectives and Expected Learning Outcomes**

- To study deeply the following subjects : Isomorphism Theorems of groups , group automorphisms , finite direct products , finitely generated groups , group actions , Sylow theorems , rings and ideals, prime and maximal ideals , polynomial rings and irreducibility tests , unique factorization domains, Euclidean domains .

### C. Course Plan Distribution

Week	Topics to be Covered
1.	Revision to Groups , subgroups and main theorems
2.	Normal subgroups , Quotient groups and kernels .
3.	Isomorphism Theorems and correspondence Theorem
4.	Subgroups generated by a set, commutator subgroup
5.	Group actions and some applications
6.	Sylow theorems and Applications
7.	Direct product and inner product
8.	Finitely generated abelian groups .
9.	Right and left Ideals , Ideals .
10.	Prime and maximal ideals
11.	Factorization of commutative rings
12.	Polynomial rings
13.	Factorization of polynomials
14.	Final revision

### D. Methods of assessment

No.	Assessment task	Proportion of Final Assessment
1.	A Lecture for each student	10%
2.	A 1 <sup>st</sup> Exam	20%
3.	Take home Exam before the final exam	10%
4.	A 2 <sup>nd</sup> Exam	20%
5.	Final Exam	40%
<b>Total</b>		<b>(100%)</b>

### E. General Instructions:

No	Additional Notes, office hours, attendance policy, etc....
1	Attendance is absolutely essential to success in this class. You are expected to attend every class.
2	If a student is absent for more than 10% of lectures on the course without an excuse , he /she will be barred from the final examination .
3	My phone ,e-mail, Whatsup are available for serious questions and notifications .
4	E-mail <a href="mailto:iasuleiman@yahoo.com">iasuleiman@yahoo.com</a> Web. Site <a href="http://www.prof-iasuleiman.com">www.prof-iasuleiman.com</a>

**References :** These are some main references :

- 1- Hungerford , Algebra , Holt, Rinehart and Winston
- 2- Dummit and Foot , Abstract Algebra, Prince-Hall International 1991