توصيف مقرر دراسي

جامعة : المنصورة
كلية العلـــــوم
قســم : الرياضيات

١ - بيانات المقرر		
كود المادة : Math 212	**اسم المقرر : Abstract Algebra (1)**	**المستوى: الثانى**
التخصص: إحصاء وعلوم الحاسب	**عدد الوحدات الدراسية: ٣ ساعة معتمدة نظرى ٢: تمارين: ٢ عملى: ٠**	

٢ - هدف المقرر :	**For students undertaking this course, the aims are to:** 1- Introduce the basic ideas of groups and rings with a good range of examples so that the student has some familiarity with the fundamental concepts of abstract algebra and a good grounding for further study. As a prerequisite to the abstract algebra 2which will in given be the third year for mathematicians.
٣ - المستهدف من تدريس المقرر	
أ - المعلومات و المفاهيم :	**a- Knowledge and Understanding** **On completing this course, students will be able to:** a1- Understand the basic definitions and theories of groups and rings. a2- know the basic concepts of algebra such as subgroups , cyclic groups, finite groups, rings, fields. a3 – familiar with the algebraic structures of factor groups and factor rings. a4 – be aware of the relation between algebraic structures
ب- المهارات الذهنية :	**b- Intellectual Skills**: **On completing this course, students will be able to:** b1- Find the structures of all finite groups of small orders. b2- Apply the basic concepts of normal subgroups and ideal to find a new structures such as factor and factor ring groups. b3- develop self-awareness and general study skills on the relation between groups and rings
ج- المهارات المهنية الخاصة بالمقرر :	**c-Professional and Practical Skills :** **On completing this course, students will be able to:** c1 - Handing-in of homework and attendance at tutorials described in the second Year Handbook. c2 - Solving some simple problems in groups and rings
د- المهارات العامة :	**d-General and Transferable Skills :** **On completing this course, students will be able to:** d1- Use Internet and Library to get information d2- Problem solving d3- Team work
٤ - محتوى المقرر :	• Maps, kinds of maps, operations, groupies and all essential kinds of groupies • Groups and subgroups and its properties • Cyclic groups. • Symmetric groups and permutation groups • Normal subgroups and factor groups • Homomorphism theorems of groups and Automorphisms group. • Direct product and inner product of groups. • P-Groups and Sylow Theorems. • Rings and fields.

٥- أســاليــب التعليــم و التعلــم	1- Lectures (2H/W) 2- Tutorials (2H/w)
٦- أساليب التعليم و التعلم للطـلاب ذوى القـدرات المحـدودة	The same as normal students, only skeletal disabilities are allowed in the Faculty of Science.
٧- تقويـــــم الطـــــلاب :	
أ- الأساليب المستخدمة	1- Oral exam to assess a1,a2, b2,b1,c2, d1, d3 2- Mid-Term Examination to assess a1, a2, b1,b2,c1 3- Final exam to assess a1,a2,a3,a4,b1,b2,b3,c1,c3,d2
ب- التوقيت	1- Oral week 14 2- Mid-Term Examination week 7 3- Final exam week 16
ج- توزيع الدرجات	- Mid-Term Examination 10 % - Final-Term Examination 80% - Oral Examination 10% - Practical Examination 0% - Semester work 0% - Other types of assessment 0% Total 100%
٨- قائمة الكتب الدراسية و المراجع :	
أ- المذكرات	Lectures notes available in the Dept
ب- الكتب ملزمة	Elements of Abstract Algebra
ج- كتب مقترحة	1- Abstract Algebra, by John A. Beachy and William D. Blair. 2- John B. Fraleigh,A first course in Abstract algebra, Addidon-Wesley
د- دوريـــات علميـــة أو نشرات ... الخ	http://joshua.smcvt.edu/linearalgebra/ http://www.math.unl.edu/~tshores1/linalgtext.html http://www.math.niu.edu/~beachy/aaol/

(أ) مصفوفة المعارف والمهارات المستهدفة من المقرر الدراسى

المحتويات للمقرر	اسبوع الدراسة	المعارف الرئيسية	مهارات ذهنية	مهارات مهنية	مهارات عامة
Maps, kinds of maps, operations, groupies and all essential kinds of groupies	**1**	a1, a2	b1	c1, c2	d1-d3
Groups and subgroups and its properties	**2-3**	a1,a2,a4	b1	c1, c2	d1-d3
Cyclic groups.	**4-5**	a1,a2,a4	b1	c1, c2	d1-d3
Symmetric groups and permutation groups	**6**	a1,a2,a4	b1, b2	c1, c2	d1-d3
Normal subgroups and factor groups	**7**	a1-a4	b1, b2	c1, c2	d1-d3
Homomorphism theorems of groups and Automorphisms group.	**8-9**	a1-a4	b1, b2	c1, c2	d1-d3
Direct product and inner product of groups.	**10-11**	a1-a4	b1, b2	c1, c2	d1-d3
p-Groups and Sylow Theorems.	**12**	a1-a4	b2	c1, c2	d1-d3
Rings and fields.	**13**	a1-a4	b3	c1, c2	d1-d3
Review	**14**				

أستاذ المادة : د. صالح المهدى

رئيس مجلس القسم العلمى : ا.د. مجدى الياس فارس