

جامعة : المنصورة

كلية : العلوم

قسم / الرياضيات

توصيف مقرر دراسي

١- بيانات المقرر		
المستوى: الرابع	اسم المقرر : Lattice Theory	كود المادة : Math 418
عدد الوحدات الدراسية: ٢ ساعة معتمدة نظري ٢: تمارين: ١ عملي: ٠		التخصص : رياضيات

For students undertaking this course, the aims are to: 1 - This course is basic course , it is intended for undergraduate students for mathematicians and computer science and others. One of the interesting applications of Boolean lattices in switching and logic circuits. 2 - Outline the basic information of advanced courses related with lattice theory such as universal algebra. 3 - In this course students learn all types of order such as partially order, totaly order, lattices, and others.	٢- هدف المقرر:
٣- المستهدف من التدريس المقرر:	
a- Knowledge and Understanding : On completing this course, students will be able to: a1 - Understand all different types of lattices. a2 -Historical acknowledgement about lattice theory	أ-المعلومات والمفاهيم:
b- Intellectual Skills On completing this course, students will be able to: b1 - Recognize different kinds of lattices and its important properties. b2 -Distinguish and to analyze the properties of each type of lattices.	ب - المهارات الذهنية
c-Professional and Practical Skills: On completing this course, students will be able to: c1- Learn how to determine the congruence lattice for an algebra in general for	ج- المهارات المهنية الخاصة بالمقرر:

universal Algebras.	
d-General and Transferable Skills: On completing this course, students will be able to: d1- Transfer some natural problems to a certain type of lattices and solve d2- Learn how to use the properties of lattices.	د- المهارات العامة :
–Partially ordered, totally ordered and inductively ordered sets. –Lattice and complete lattice. –Sub lattices and direct product of lattices. –Lattices and ordered homomorphism and the other kinds of homeomorphisms –Distributive and Modular lattices. –Complemented lattices –Ideals and congruence relations.	٤- محتوى المقرر:
1- Lectures 2- Tutorial	٥- اساليب التعليم والتعلم:
The same as normal students, only skeletal disabilities are allowed in the Faculty of Science.	٦- أساليب التعليم والتعلم للطلاب ذوي القدرات المحدودة:
٧- تقويم الطلاب :	
1- Oral Exam. to assess 2- Final Exam to assess 3- Mid-Term Exam to assess	أ- الأساليب المستخدمة :
1- Oral Exam week 16 2- Final Exam week 16 3- Mid-Term Exam week 7	ب- التوقيت :
- Mid-Term Examination 10 - Final-Term Examination 80 - Oral Examination 10 - Practical Examination 0 Total 100%	ج- توزيع الدرجات :
٨- قائمة الكتب الدراسية والمراجع :	
1- Lecture Notes.	أ- مذكرات:
1 G. Birkhoff Lattice Theory , American math. Soc., Colloquium Publications, Vol. 25, Revised Edition, 1948.	ب- كتب ملزمة

2 - H. Gericke, Theorie der Verbände, 2. Auflage, Hochschultachenbucher- Verlag, Bibliographisches Institut Mannheim, 1969.	
3 - Gratzer, General Lattice Theory, 2nd Edition, Birkh?user (1998).	
4 - H. Hermes, Einführung in die Verbandstheorie, Die Grundlehen der mathematischen Wissenschaften in Einzeldaratellungen Band 73, 2 Auflage, Springer-Verlag Barlin Heidelberg New York., 1967.	
5 - B. Nation, Notes on Lattice Theory, Internet.	
	ج- كتب مقترحة :
	د- دوريات علمية أو نشرات..

مصفوفة المعارف والمهارات المستهدفة من المقرر الدراسي

المحتويات للمقرر	أسبوع الدراسة	المعارف الرئيسية	مهارات ذهنية	مهارات مهنية	مهارات عامة
Partially ordered, totally ordered and inductively ordered sets.	1-2	a1	b1	c1	a1
Lattice and complete lattice.	3 - 4	a1 & a2	a1&c1	a2 & c1	a1
Sub lattices and direct product of lattices.	5 - 6	b1 - b2	b1&b2	b1 & a2	b1 & a2
Lattices and ordered homomorphism and the other kinds of homeomorphisms	7 - 8	a1 & b1	a1&d1	a1 & d1	d1 & b2
Distributive and Modular lattices.	9 - 10	b1	a2&d2	a2 & d2	b1 & a2
Complemented lattices	11 -12	a1 & c1	d1&c2	d1 & c1	c1
Ideals and congruence relations.	13 -14	c1	d1&d2	d1 & d2	d2 & b2

أستاذ المادة : د. مجدى حكيم

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