توصيف مقرر دراسي

جامعة : المنصورة

كليـة : العلـــــوم

قســم : الرياضيات

١- بيانات المقرر		
كود المادة : Math 316	**اسم المقرر : Topology(1)**	**المستوى: الثالث**
التخصص : رياضيات	**عدد الوحدات الدراسية: ٢ ساعة معتمدة نظرى ٢: تمارين: 1 عملى: ٠**	

٢- هدف المقرر :	**For students undertaking this course, the aims are to:** - introduce the students to the concepts of point set topology, - provide them with the necessary knowledge of metric spaces,general topology, compact sets and continuous functions
٣- المستهدف من تدريس المقرر	
أ- المعلومات و المفاهيم :	**a- Knowledge and Understanding** **On completing this course, students will be able to:** a1- acquaint students with the important notion of topology a2- distinguish between metric and topological spaces a3- understand the generalization of the concepts of analysis
ب- المهارات الذهنية :	**b- Intellectual Skills** **On completing this course, students will be able to:** b1- See how topology generates the notions of analysis b2- Calculate the different topological operations on a subset b3- Understand the structural differences between Euclidian, metric and topological spaces.
ج- المهارات المهنية الخاصة بالمقرر :	**c- Professional and Practical Skills** **On completing this course, students will be able to:** c1- generate a topology by different methods c2- Improve ability classification of topological spaces

c3- Solve some simple problems in topology	
d- General and Transferable Skills **On completing this course, students will be able to:** d1- Encourage the students to express them selves in the class and to present their views d2- Work effectively in a group and independently d3- To improve ability to communicate mathematics, both orally and in writing d4-Use library and internet	**د- المهارات العامة :**
– Basic Constructions.Metric spaces: Definition and examples. Open sets and neighbourhoods. Introduction to topological spaces: From the general notion of the distance in the theory of metric spaces to the definition of topological spaces, examples, open sets, and closed sets – Operations on topological spaces: Neighbourhood systems, bases and subbases. Interior, closure, derived set. – Continuity: Continuous mapping, open mapping, closed mapping, homeomorphisms, topological and non-topological properties. – separation axioms – Building new spaces from old: Subspace, quotient by equivalence relations and product topologies. – Compactness: Definition using open covers, examples, closed subsets of compact spaces, compact subsets of a Hausdorff space, the compact subsets of the real line, continuous images of compact sets, . Quotient spaces and the product of two compact spaces.	**٤- محتوى المقرر :**
1- Lectures, exercise sheets and solution sheets 2- Tutorials in groups 3- use Internet facilities	**٥- أســـاليـــب التعليـــم و التعلـم :**
The same as normal students, only skeletal disabilities are allowed in the faculty of science.	**٦- أساليب التعليم و التعلم للطـــلاب ذوى القـــدرات المحـــدودة :**
	٧- تقويـــــم الطـــلاب :
1- Final Exam to assess a1-a3,b1-b3,c1-c3 2- Oral Exam to assess a1-a3,b1-b3,d1-d4 3- Mid-Term Exam to assess a1-a3,b1,b3,c1-c3	**أ- الأساليب المستخدمة**
1- Final exam week 16 2- Oral exam week 16	**ب- التوقيت**

3- Mid-Term Exam week 7	
- Mid-Term Examination 10% - Final-Term Examination 80% - Oral Examination 10% - Practical Examination 0 Total 100%	**ج- توزيع الدرجات**
٨- قائمة الكتب الدراسية و المراجع :	
- Lecture Notes	**أ- المذكرات**
James R. Munkres, Topology, 2nd ed., Upper Saddle River, NJ: Prentice-Hall,2000. H. Seifert and W. A. Threlfall, A texetbook of topology. New York, Academic press, 1980 W. J. Porvin, Foundation of General topology, New Yourk, Academic press 1965. K. D. Joshi, Introduction to General topology, New Delhi, Wiley Eastern Limited, 1983.	**ب- الكتب ملزمة**
Lipschutz, S. General Topology, Schaum`s outline series	**ج- كتب مقترحة**
http://en.wikipedia.org/wiki/Topology	**د- دوريـــات علميـة أو نشرات**

(أ)مصفوفة المعارف والمهارات المستهدفة من المقرر الدراسى

المحتويات للمقرر	اسبوع الدراسة	المعارف الرئيسية	مهارات ذهنية	مهارات مهنية	مهارات عامة
1. Basic Constructions.Metric spaces: Definition and examples. Open sets and neighbourhoods. Introduction to topological spaces: From the general notion of the distance in the theory of metric spaces to the definition of topological spaces, examples, open sets, and closed sets,	1-2	a1, a2	b3	c1, c3	d1
2. Operations on topological spaces: Neighbourhood systems, bases and subbases. Interior, closure, derived set.	3-5	a1-a3	b1	c1	d1
3. Continuity: Continuous mapping, open mapping, closed mapping, homeomorphisms, topological and non-topological properties.	6-8	a3	b1	c2	d1
4. separation axioms	9 -10	a3	b2	c2	d1, d4
5. Building new spaces from old: Subspace, quotient by equivalence relations and product topologies.	11	a1	b2	c1	d1
6. Compactness: Definition using open covers, examples, closed subsets of compact spaces, compact subsets of a Hausdorff space, the compact subsets of the real line, continuous images of compact sets, . Quotient spaces and the product of two compact spaces.	12-13	a1, a3	b1, b3	c2	d1, d4

أستاذ المادة : أ.د. محمد السيد الشافعى

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