جامعة : المنصورة

كـــلية : العلـــــوم

قسم / الرياضيات

١- بيانات المقرر		
كود المادة : Math 427	**اسم المقرر :** **Theory of Elasticity (2)**	**المستوى: الرابع**
التخصص : رياضيات	**عدد الوحدات الدراسية: ٢ ساعة معتمدة نظرى ٢: تمارين: ١ عملى: ٠**	

For students undertaking this course, the aims are to: - understating the principal concepts of the thermo elasticity - Study the plane thermo elasticity plane problems- - Introduce the principle of the anisotropic materials - Acquire the student skills that he can use some mathematical methods in solving elasticity problems	**٢- هدف المقرر:**
٣- المستهدف من التدريس المقرر:	
a- Knowledge and Understanding : **On completing this course, students will be able to:** a1- define the basic concepts of the course a2- list the principal kinds of elastic materials a3- use some numerical methods in solving some elastic problems a4- acquire an understanding for bending, buckling and vibration of the elastic bodies	**أ-المعلومات والمفاهيم:**
b- Intellectual Skills: **On completing this course, students will be able to:** b1- analyze the obtained results to explain the actual stress strain state in elastic bodies b2- predict analytic forms for strains and stresses from the given thermal and mechanical loads acting on the body b3- acquire the ability to think directly in solving the problems	**ب-المهارات الذهنية**
c-Professional and Practical Skills: **On completing this course, students will be able to:**	**ج- المهارات المهنية الخاصة بالمقرر:**

c1- assess the validity and efficiency of the mathematical model in solving the problems c2- chose the appropriate approach to explain and solve the problems c3- sketch and analyze the obtained results to analyze the stress- strain state	
d-General and Transferable Skills: **On completing this course, students will be able to:** d1- acquire the ability to collect information about the topic d2- acquire the ability to do seminar about the topic	**د- المهارات العامة:**
−Mechanical and thermo dynamical foundations −Uncoupled thermoelastic theory −Thermal stress analysis for elastic systems and some basic problems −Thermal stress analysis for viscoelasti and plastic systems - Mechanics of anisotropic elastic bodies − Theories of orthotropic plates and shells (Bending, Buckling and vibration).	**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 ذوى القدرات المحدودة:**
	٧- تقويم الطلاب :
1- Oral Exam. to assess a1-a4,b1-b3,d1-d3 2- Final Exam to assess a1-a4,b1-b3,c1-c3 3- Mid-Term Exam to assess a1-a3,b1-b2,c1-c3,	**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 :	
أ- مذكرات:	Course notes
ب- كتب ملزمة	Theory of elasticity, M. filonko- Borodch
ج- كتب مقترحة :	Anisotropic plates, S. G. Lekhnitsku
د- دوريات علمية أو نشرات..	

مصفوفة المعارف والمهارات المستهدفة من المقرر الدراسى

المحتويات للمقرر	أسبوع الدراسة	المعارف الرئيسية	مهارات ذهنية	مهارات مهنية	مهارات عامة
Mechanical and thermo dynamical foundations	1-2	a1	b3	c1	d1
Uncoupled thermoelastic theory	3-5	a3	b1-b2	c1-c3	d1-d2
Thermal stress analysis for elastic systems and some basic problems	6-10	a2	b1-b3	c1-c3	d1-d2
Thermal stress analysis for viscoelasti and plastic systems - Mechanics of anisotropic elastic bodies	11-12	a2,a3	b1-b3	c1-c3	d1-d2
Theories of orthotropic plates and shells (Bending, Buckling and vibration).	13-14	a2,a4	b1-b3	c1-c3	d1-d2

أستاذ المادة : أ.د. مجدى إلياس فارس

رئيس مجلس القسم العلمي : أ.د. مجدى إلياس فارس