



مواصفات المقرر: مقاومة مواد

Course Specification of: Strength of Materials

المعلومات العامة عن المقرر General information about the course					
1.	اسم المقرر Course Title	Strength of Materials			
2.	رمز المقرر ورقمه Course Code and Number	PNGE 221			
3.	الساعات المعتمدة للمقرر Credit Hours	الساعات المعتمدة Credit Hours			الإجمالي Total
		نظري Lecture	عملي Practical	سمنار/تمارين Seminar/Tutorial	
		2	2	2	4
4.	المستوى والفصل الدراسي Study Level and Semester	2nd Level/ 1st semester			
5.	المتطلبات السابقة للمقرر (إن وجدت) Pre-requisites (if any)	GENERAL PHYSICS			
6.	المتطلبات المصاحبة (إن وجدت) Co-requisites (if any)				
7.	البرنامج الذي يدرس له المقرر Program (s) in which the course is offered	PETROLEUM AND NATURAL GAS ENGINEERING			
8.	لغة تدريس المقرر Language of teaching the course	English+ Arabic			
9.	نظام الدراسة Study System	Semesters			
10.	مكان تدريس المقرر Location of teaching the course	Class room Lab			
11.	اسم معد (و) مواصفات المقرر Prepared by	Dr. Mohammad A. Algorafi			
12.	تاريخ اعتماد مجلس الجامعة Date of Approval				

وصف المقرر Course Description

وصف المقرر بالإنجليزية

وصف المقرر بالعربية

Strength of Materials is that branch of engineering mechanics which deals with structural elements behavior under load and understand how a structural element responds to applied loads and induced stress distribution (normal, shear and combined) and demonstrates the concept of structural design The knowledge and abilities taught in this course are an essential prerequisite for subsequent courses involving structure analysis, design of concrete and steel, and most of structure engineering courses.

This course Introduces the basics of normal stresses due to normal force and bending moments and determines of normal stresses in elastic bodies. Also it determines of the shear stresses in homogenous sections for different straining actions under applied static loads, determines of combined stresses analytically and graphically, and determines of stability of columns

Prepared by
Assoc.Prof. Adel Al-
Matary

Quality Assurance Unit
Assoc.Prof. Adel Al-Matary

Dean of the Faculty
Assoc.Prof. Bassim
AlKhibash

Dean of the Development
& Quality Assurance Center
Assoc.Prof. Huda Al-Emad

Rector of Sana'a University
Prof. Dr. Al Qaseem Mohammed Abas



Course Intended Learning Outcomes (CILOs) مخرجات تعلم المقرر

After completing the course, the student will be able to:		بعد الانتهاء من دراسة المقرر سوف يكون الطالب قادرا على أن:	
a1.	Describe the principles of stress and strain for structural elements under deferent types of internal forces.		- a1
a2.	Describe the physical and mechanical properties of construction materials		- a2
b1.	Justify the different internal stresses/strains for different internal forces.		-b1
b2.	Choose the mathematical approach to calculate the stress/strain of the structural elements under deferent types of internal forces.		- b2
c1.	Examine experimentally the allowable stress and strain for structure materials		- c1
c2.	Design the structure elements under deferent types of internal forces		- c2
C3	Calculate the stress/strain of the structures under deferent types of internal forces.		- d1
D1	Enhance a student's ability to both verbally and in written experimental reports,		- d2

مواءمة مخرجات تعلم المقرر مع مخرجات التعلم للبرنامج:

Alignment of CILOs (Course Intended Learning Outcomes) to PILOs (Program Intended Learning Outcomes)

مخرجات التعلم المقصودة من المقرر (Course Intended Learning Outcomes)		مخرجات التعلم المقصودة من البرنامج (Program Intended Learning Outcomes) (تكتب جميع مخرجات البرنامج كما هي رمزا ونصا)	
a1	Describe the principles of stress and strain for structural elements under deferent types of internal forces.	A1	Demonstrate the concepts of basic science and mathematics related to field of petroleum engineering.
a2	Describe the physical and mechanical properties of construction materials	.A2	Define the basic concepts of petroleum exploration, drilling and production as well as demonstrate global and local safety and environment impact on oil and gas operations.
b1	Justify the different internal stresses/strains for different internal forces.	.B1	Use the principles of engineering in developing solutions to practical petroleum engineering and select appropriate computer software for modeling
b2	Choose the mathematical approach to calculate the stress/strain of the structural elements under deferent types of internal forces.	.B1	Use the principles of engineering in developing solutions to practical petroleum engineering and select appropriate computer software for modeling



c1	examine experimentally the allowable stress and strain for structure materials	.C2	Analysis of well logs and well testing and practice the techniques for constructing engineering graphics.
c2	Design the structure elements under deferent types of internal forces	.C1	Carry out special engineering design in all petroleum engineering projects.
C3	calculate the stress/strain of the structures under deferent types of internal forces.	.C2	Analysis of well logs and well testing and practice the techniques for constructing engineering graphics.
D1	Enhance a student's ability to both verbally and in written experimental reports,	D3	Prepare technical petroleum reports.

مواعمة مخرجات التعلم باستراتيجيات التعليم والتعلم والتقويم

Alignment of CILOs to Teaching and Assessment Strategies

أولاً: مواعمة مخرجات تعلم المقرر (المعارف والفهم) باستراتيجية التعليم والتعلم والتقويم:

First: Alignment of Knowledge and Understanding CILOs

مخرجات المقرر / المعرفة والفهم Knowledge and Understanding CILOs	استراتيجية التعليم والتعلم Teaching Strategies	استراتيجية التقويم Assessment Strategies
a1 - Describe the principles of stress and strain for structural elements under deferent types of internal forces.	Lecture Presentations Tutorial Reading	Problem set- Written exam- Written assignment
a2 - Describe the physical and mechanical properties of construction materials		

ثانياً: مواعمة مخرجات تعلم المقرر (المهارات الذهنية) باستراتيجية التدريس والتقويم:

Second: Alignment of Intellectual Skills CILOs

مخرجات المقرر / المهارات الذهنية Intellectual Skills CILOs	استراتيجية التعليم والتعلم Teaching Strategies	استراتيجية التقويم Assessment Strategies
b1 - Justify the different internal stresses/strains for different internal forces.	Lecture Presentations Tutorial Reading	Problem set- Written exam- Written assignment
b2 - Choose the mathematical approach to calculate the stress/strain of the structural elements under deferent types of internal forces.		

ثالثاً: مواعمة مخرجات تعلم المقرر (المهارات المهنية والعملية) باستراتيجية التدريس والتقويم:

Third: Alignment of Professional and Practical Skills CILOs

مخرجات المقرر / المهارات المهنية والعملية Professional and Practical Skills CILOs	استراتيجية التعليم والتعلم Teaching Strategies	استراتيجية التقويم Assessment Strategies
c1- Examine experimentally the allowable stress and strain for	lab Lecture	Reports, Lab exam



	structure materials	Tutorial Presentations	Problem set- Written exam- Written assignment
c2-	Design the structure elements under deferent types of internal forces		
c3-	Calculate the stress/strain of the structures under deferent types of internal forces.		

رابعاً: موازنة مخرجات تعلم المقرر (المهارات العامة) باستراتيجية التدريس والتقييم:

Fourth: Alignment of Transferable (General) Skills CILOs

مخرجات المقرر Transferable (General) Skills CILOs		استراتيجية التعليم والتعلم Teaching Strategies	استراتيجية التقييم Assessment Strategies
d1-	Enhance a student's ability to both verbally and in written experimental reports,	lab Lecture	Reports, -Lab exam

Course Content محتوى المقرر

Theoretical Aspect الموضوعات الجانب النظري

الرقم Order	الموضوعات الرئيسية/ الوحدات Topic List / Units	الموضوعات الفرعية Sub Topics List	عدد الأسابيع Number of Weeks	الساعات الفعلية Contact Hours	رموز مخرجات التعلم للمقرر (CILOs)
1	Introduction	Revise the cross section properties; general internal forces.	1	2	a1, b1
2	Normal stress and strain	application to the analysis of simple structures; stresses on an oblique plane under axial loading and moment, Normal stresses in elastic bodies for heterogeneous and composite symmetrical and unsymmetrical sections for eccentric axial loading.	3	6	a1, a2, b1, b2, c2, c3
3	Shear stress and strain	Shear stresses due to direct and flexural shear. Determination of shear stresses due to shearing force; Transverse loading: Shear flow; shear stresses; stresses under combined loading. Determination of shear stresses on sections and bolts due to torsional	3	6	a1, a2, b1, b2, c2, c3



		moment			
4	Combined stresses	Determination of combined stresses; Transformation of plane stresses: Principal stresses; maximum shearing stress; Mohr's circle	3	6	a1, a2, b1, b2, c2, c3
5	Stability of columns	Buckling of columns, Critical load, Development of column formula, Euler's formula,	2	4	a1, a2, b1, b2, c2, c3
6	Composite sections and Temperature effects	Stress – strain relationship for sections comprise from different materials, Effect of Temperature variation	2	4	a1, a2, b1, b2, c2, c3
عدد الأسابيع والساعات الفعلية Number of Weeks /and Contact Hours Per Semester			14	28	

التمارين (إن وجدت) (Tutorials Aspect (if any))				
الرقم Order	التجارب العملية/ التمارين / تدريبات Practical / Exercises/ Tutorials topics	عدد الأسابيع Number of Weeks	الساعات الفعلية Contact Hours	رموز مخرجات التعلم Course ILOs
1	cross section properties	1	2	b2, c3
2	Normal stress	3	6	b1, b2, c2, c3
3	shear stress	3	6	b1, b2, c2, c3
4	combined stresses	3	6	b1, b2, c2, c3
5	Stability of columns	2	4	b1, b2, c2, c3
6	Composite sections and Temperature effects	2	4	b1, b2, c2, c3
اجمالي الأسابيع والساعات الفعلية Number of Weeks /and Contact Hours Per Semester		14	28	

الموضوعات العملية (إن وجدت) (Practical Aspect (if any))				
الرقم Order	التجارب العملية/ التمارين / تدريبات Practical / Exercises/ Tutorials topics	عدد الأسابيع Number of Weeks	الساعات الفعلية Contact Hours	رموز مخرجات التعلم Course ILOs

Prepared by
Assoc.Prof. Adel Al-Matary

Quality Assurance Unit
Assoc.Prof. Adel Al-Matary

Dean of the Faculty
Assoc.Prof. Bassim
AlKhirbash

Dean of the Development
& Quality Assurance Center
Assoc.Prof. Huda Al-Emad

Rector of Sana'a University
Prof. Dr. Al Qaseem Mohammed Abas



1	Universal testing machines for compression and tension and accessories, measurements tools, dial gages, strain gages	1	2	a.3, c1, d1
2	Compression test procedure	1	2	a.3, c1, d1
3	Stress-strain curve (under Compression)	1	2	a.3, c1, d1
4	Flexure test	1	2	a.3, c1, d1
5	Tension test procedure	1	2	a.3, c1, d1
6	stress-strain curve (under tension)	1	2	a.3, c1, d1
7	Bent test	1	2	a.3, c1, d1
8	Schmidt Rebound Hammer test	1	2	a.3, c1, d1
9	Ultrasonic Pulse Velocity	1	2	a.3, c1, d1
10	Core drilling test	5	10	a.3, c1, d1
اجمالي الأسابيع والساعات الفعلية Number of Weeks /and Contact Hours Per Semester		14	28	

استراتيجيات التعليم والتعلم Teaching Strategies

Lecture
Presentations
Tutorial
Reading
Lab

الأنشطة والتكليفات Tasks and Assignments

م No	التكليف/ الواجب Assignments/ Tasks	نوع التكليف (فردى/ تعاونى)	الدرجة المستحقة Mark	أسبوع التنفيذ Week Due	خرجات التعلم CILOs (symbols)
1	cross section properties	Individual	4	1	b2, c3
2	Concept of Normal stress	Individual	4	2,3,4,	b1, b2, c2, c3
3	Concept of shear stress	Individual	4	5,6,7,	b1, b2, c2, c3
4	combined stresses	Individual	4	8,9,10	b1, b2, c2, c3
5	Stability of columns	Individual	2	11,12	b1, b2, c2, c3
	Composite sections and Temperature effects	Individual	2	13,14	b1, b2, c2, c3
إجمالي الدرجة Total Score			20		

Lab Reports

م No	التكليف/ التقرير Reports	نوع التكليف (فردى/ تعاونى)	الدرجة المستحقة Mark	أسبوع التنفيذ Week Due	خرجات التعلم CILOs (symbols)
1	Report 1 (Testing Machines and Equipment)	Individual	5	2	a1, a2, b1, c1, c2
2	Report 2 (Tests on Concrete)	Individual	5	5	a1, a2, b1, c1, c2
3	Report 3 (Tests on Steel bars)	Individual	5	8	a1, a2, b1, c1, c2

Prepared by
Assoc.Prof. Adel Al-
Matary

Quality Assurance Unit
Assoc.Prof. Adel Al-Matary

Dean of the Faculty
Assoc.Prof. Bassim
AlKhirbash

Dean of the Development
& Quality Assurance Center
Assoc.Prof. Huda Al-Emad

Rector of Sana'a University
Prof. Dr. Al Qaseem Mohammed Abas



4	Report 4 (Nondestructive tests)	Individual	5	10	a1, a2, b1, c1, c2
Total Score إجمالي الدرجة			20		

تقييم التعلم Learning Assessment					
الرقم No.	أنشطة التقييم Assessment Tasks	أسبوع التقييم Week due	الدرجة Mark	نسبة الدرجة إلى الدرجة النهائية Proportion of Final Assessment	مخرجات التعلم CILOs (symbols)
1	Tasks and Assignments	W1-w14	20	10	b1, c2, c3
2	Reports	W2,5,8,10	15	10	a.2, c1, d1
3	Midterm Exam	W8	20	15	a1, a2, b1, c2, c3
4	Final Exam (practical)	W 15	25	15	c1, d1
5	Final Exam (theoretical)	W16	70	50	a1, a2, b1, b2, c2, c3
Total الإجمالي			150	%100	

مصادر التعلم Learning Resources	
توثيق المراجع حسب نظام APA (اسم المؤلف، سنة النشر، اسم الكتاب، دار النشر، بلد النشر).	
Required Textbook(s) المراجع الرئيسية (لا تزيد عن مرجعين)	
1- R. C. Hibbeler, 2011, " Structural analysis " 8th Edition, Prentice Hall	
Essential References المراجع المساندة	
1 Theory of Structures, Part II, Wagih Mohamed El-Dakhakni, Dar Al-Maaref-1	
2- Chu Kia Wang & Charles G. Salmon, " Introductory Structural Analysis", Prentice Hall, USA,1984	
Electronic Materials and Web Sites etc. المصادر الإلكترونية ومواقع الإنترنت	

الضوابط والسياسات المتبعة في المقرر Course Policies	
1	Class Attendance: The students should have more than 75 % of attendance according to rules and regulations of the faculty. Tardy: - The students should respect the timing of attending the lectures. They should attend within 1 minutes from starting of the lecture.
2	Exam Attendance/Punctuality: The student should attend the exam on time. The punctuality should be implemented according to rules and regulations of the faculty for midterm exam and final exam. Assignments & Projects: - The assignment is given to the students after each chapter, the student has to submit all the assignments for checking on time.
3	Cheating: If any cheating occurred during the examination, the student is not allowed to continue and he/she has to face the examination committee for enquires. Plagiarism: - The student will be terminated from the Faculty, if one student attends the exam on another behalf according to the policy, rules and regulations of the university.



4	<p>Other policies:</p> <ul style="list-style-type: none"> - All the teaching materials should be kept out the examination hall. -The mobile phone is not allowed. -There should be a respect between the student and his teacher. <p>Class Attendance:</p> <ul style="list-style-type: none"> - The students should have more than 75 % of attendance according to rules and regulations of the faculty.
5	<p>Tardy:</p> <p>The students should respect the timing of attending the lectures. They should attend within 1 minutes from starting of the lecture.</p> <p>Exam Attendance/Punctuality:</p> <ul style="list-style-type: none"> - The student should attend the exam on time. The punctuality should be implemented according to rules and regulations of the faculty for midterm exam and final exam.
6	<p>Assignments & Projects:</p> <p>The assignment is given to the students after each chapter, the student has to submit all the assignments for checking on time.</p> <p>Cheating:</p> <ul style="list-style-type: none"> - If any cheating occurred during the examination, the student is not allowed to continue and he/she has to face the examination committee for enquires.
7	<p>Plagiarism:</p> <p>The student will be terminated from the Faculty, if one student attends the exam on another behalf according to the policy, rules and regulations of the university.</p> <p>Other policies:</p> <ul style="list-style-type: none"> - - All the teaching materials should be kept out the examination hall. -The mobile phone is not allowed. - -There should be a respect between the student and his teacher.



قسم/ برنامج: هندسة النفط والغاز الطبيعي Petroleum and Natural Gas Engineering
العام الجامعي: 2019-2020م

خطة مقرر: مقاومة مواد

Course Plan (Syllabus): Strength of Materials

معلومات عن أستاذ المقرر Information about Faculty Member Responsible for the Course						
الاسم Name	Dr. Mohammad A. Algorafi			الساعات المكتبية (أسبوعياً) Office Hours	2	
المكان ورقم الهاتف Location & Telephone No.		السبت SAT	الأحد SUN	الاثنين MON	الثلاثاء TUE	الأربعاء WED
البريد الإلكتروني E-mail						الخميس THU

معلومات عامة عن المقرر General information about the course					
1.	اسم المقرر Course Title	Strength of Materials مقاومة مواد			
2.	رمز المقرر ورقمه Course Code and Number	PNGE 221			
3.	الساعات المعتمدة للمقرر Credit Hours	الساعات المعتمدة Credit Hours			الإجمالي Total
		نظري Lecture	عملي Practical	سمنار/تمارين Seminar/Tutorial	
4.	المستوى والفصل الدراسي Study Level and Semester	2nd Level/ 1st semester			
5.	المتطلبات السابقة للمقرر Pre-requisites	GENERAL PHYSICS			
6.	المتطلبات المصاحبة (إن وجدت) Co-requisite				
7.	البرنامج الذي يدرس له المقرر Program (s) in which the course is offered	PETROLEUM AND NATURAL GAS ENGINEERING			
8.	لغة تدريس المقرر Language of teaching the course	English+ Arabic			
9.	مكان تدريس المقرر Location of teaching the course	Class room-Lab			

وصف المقرر Course Description

Strength of Materials is that branch of engineering mechanics which deals with structural elements behavior under load and understand how a structural element responds to applied loads and induced stress distribution (normal, shear and combined) and demonstrates the concept of structural design The knowledge and abilities taught in this course are an essential prerequisite for subsequent courses involving structure analysis, design of concrete and steel, and most of structure engineering courses.

Prepared by
Assoc.Prof. Adel Al-
Matary

Quality Assurance Unit
Assoc.Prof. Adel Al-Matary

Dean of the Faculty
Assoc.Prof. Bassim
AlKhibash

Dean of the Development
& Quality Assurance Center
Assoc.Prof. Huda Al-Emad

Rector of Sana'a University
Prof. Dr. Al Qaseem Mohammed Abas



This course Introduces the basics of normal stresses due to normal force and bending moments and determines of normal stresses in elastic bodies. Also it determines of the shear stresses in homogenous sections for different straining actions under applied static loads, determines of combined stresses analytically and graphically, and determines of stability of columns

Course Intended Learning Outcomes (CILOs) مخرجات تعلم المقرر

After completing the course, the student will be able to:	بعد الانتهاء من دراسة المقرر سوف يكون الطالب قادرا على أن:
a1. Describe the principles of stress and strain for structural elements under deferent types of internal forces.	a1.
a2. Describe the physical and mechanical properties of construction materials	a2.
b1. Justify the different internal stresses/strains for different internal forces.	b1.
b2. Choose the mathematical approach to calculate the stress/strain of the structural elements under deferent types of internal forces.	b2.
c1. Examine experimentally the allowable stress and strain for structure materials	c1.
c2. Design the structure elements under deferent types of internal forces	c2.
c3. Calculate the stress/strain of the structures under deferent types of internal forces.	C3
d1. Enhance a student's ability to both verbally and in written experimental reports,	D1

Course Content محتوى المقرر

Theoretical Aspect خطة تنفيذ الموضوعات النظرية				
الرقم Order	الوحدات (الموضوعات الرئيسية) Units	الموضوعات التفصيلية Sub Topics	الأسبوع Week Due	الساعات الفعلية Con. H
1	Introduction	<ul style="list-style-type: none"> Revise the cross section properties; general internal forces. 	1	2
2	Normal stress and strain	<ul style="list-style-type: none"> application to the analysis of simple structures; stresses on an oblique plane under axial loading and moment, Normal stresses in elastic bodies for heterogeneous and composite symmetrical and unsymmetrical 	2-3-4	6

Prepared by
Assoc.Prof. Adel Al-Matary

Quality Assurance Unit
Assoc.Prof. Adel Al-Matary

Dean of the Faculty
Assoc.Prof. Bassim AlKhirbash

Dean of the Development
& Quality Assurance Center
Assoc.Prof. Huda Al-Emad

Rector of Sana'a University
Prof. Dr. Al Qaseem Mohammed Abas



		sections for eccentric axial loading.		
3	Shear stress and strain	<ul style="list-style-type: none"> Shear stresses due to direct and flexural shear. Determination of shear stresses due to shearing force; Transverse loading: Shear flow; shear stresses; stresses under combined loading. Determination of shear stresses on sections and bolts due to torsional moment 	5-6-7	6
4	Midterm Exam	<ul style="list-style-type: none"> 	8	2
4	Combined stresses	<ul style="list-style-type: none"> Determination of combined stresses; Transformation of plane stresses: Principal stresses; maximum shearing stress; Mohr's circle 	9-10-11	6
5	Stability of columns	<ul style="list-style-type: none"> Buckling of columns, Critical load, Development of column formula, Euler's formula, 	12-13	4
6	Composite sections and Temperature effects	<ul style="list-style-type: none"> Stress – strain relationship for sections comprise from different materials, Effect of Temperature variation 	14-15	4
7	Final Exam	<ul style="list-style-type: none"> 	16	2
عدد الأسابيع والساعات الفعلية Number of Weeks /and Contact Hours Per Semester			16	

Tutorials/ Exercises Aspects خطة تنفيذ موضوعات الجانب تمارين			
الرقم Order	موضوعات التمارين Tutorials Aspects	الأسبوع Week Due	الساعات الفعلية Cont. H
1	<ul style="list-style-type: none"> cross section properties 	1	2
2	<ul style="list-style-type: none"> Normal stress 	2,3,4	6
3	<ul style="list-style-type: none"> shear stress 	5,6,7	6
4	<ul style="list-style-type: none"> combined stresses 	8,9,10	6
5	<ul style="list-style-type: none"> Stability of columns 	11,12	4
6	<ul style="list-style-type: none"> Composite sections and Temperature effects 	13,14	4
اجمالي الأسابيع والساعات الفعلية Number of Weeks /and Contact Hours Per Semester		14	28

Practical Aspects خطة تنفيذ موضوعات الجانب العملي			
الرقم	موضوعات العملي	الأسبوع Week Due	الساعات الفعلية Cont. H
Prepared by Assoc.Prof. Adel Al-Matary	Quality Assurance Unit Assoc.Prof. Adel Al-Matary	Dean of the Faculty Assoc.Prof. Bassim AlKhirbash	Dean of the Development & Quality Assurance Center Assoc.Prof. Huda Al-Emad



Order	Practical Aspects		
1	▪ Universal testing machines for compression and tension and accessories, measurements tools, dial gages, strain gages	1	2
2	▪ Compression test procedure	2	2
3	▪ Stress-strain curve (under Compression)	3	2
4	▪ Flexure test	4	2
5	▪ Tension test procedure	5	2
6	▪ stress-strain curve (under tension)	6	2
7	▪ Bent test	7	2
8	▪ Schmidt Rebound Hammer test	8	2
9	▪ Ultrasonic Pulse Velocity	9	2
10	▪ Core drilling test	9,10,11,12 ,13,14	10
11	▪ Final Practical Exam	15	2
اجمالي الأسابيع والساعات الفعلية Number of Weeks /and Contact Hours Per Semester		15	30

Teaching Strategies استراتيجيات التعليم والتعلم				
Lecture Multimedia Presentations Presentations Tutorial Reading lab				
Tasks and Assignments الأنشطة والتكليفات				
م No	التكليف/ الواجب Assignments	نوع التكليف (فردى/ تعاونى)	الدرجة المستحقة Mark	أسبوع التنفيذ Week Due
1	cross section properties		4	1
2	Concept of Normal stress		4	2,3,4
	Concept of shear stress		4	5,6,7
	combined stresses		4	8,9,10
3	Stability of columns		2	11,12
	Composite sections and Temperature effects		2	13,14
Total Score إجمالي الدرجة			20/200 10/ 100	

التقارير Reports

Prepared by
Assoc.Prof. Adel Al-
Matary

Quality Assurance Unit
Assoc.Prof. Adel Al-Matary

Dean of the Faculty
Assoc.Prof. Bassim
AlKhirbash

Dean of the Development
& Quality Assurance Center
Assoc.Prof. Huda Al-Emad

Rector of Sana'a University
Prof. Dr. Al Qaseem Mohammed Abas



م No	التكليف/ الواجب Assignments	نوع التكليف (فردى/ تعاونى)	الدرجة المستحقة Mark	أسبوع التنفيذ Week Due
1	Report 1 (Testing Machines and Equipment)		5	2
2	Report 2 (Tests on Concrete)		5	5
3	Report 3 (Tests on Steel bars)		5	8
	Report 4 (Nondestructive tests)		5	10
Total Score إجمالي الدرجة			20/200 10/ 100	

Learning Assessment تقويم التعلم				
م No	أساليب التقويم Assessment Method	موعد (أسبوع) التقويم Week Due	الدرجة Mark	الوزن النسبي % Proportion of Final Assessment
1	assignment	W1-w14	20	10
2	Reports.	W2,5,8,10	15	10
3	Mid-term exam.	W8	20	15
4	Final-exam lab.	W 15	25	15
5	Final-exam.	W16	70	50
Total المجموع			150	100%

Learning Resources مصادر التعلم	
توثق المراجع حسب نظام APA (اسم المؤلف، سنة النشر، اسم الكتاب، دار النشر، بلد النشر).	
Required Textbook(s) المراجع الرئيسية (لا تزيد عن مرجعين)	
1- R. C. Hibbeler, 2011, " Structural analysis " 8th Edition, Prentice Hall	
Essential References المراجع المساندة	
1 Theory of Structures, Part II, Wagih Mohamed El-Dakhakni, Dar Al-Maaref-1	
2- Chu Kia Wang & Charles G. Salmon, " Introductory Structural Analysis", Prentice Hall, USA,1984	
Electronic Materials and Web Sites etc. المصادر الإلكترونية ومواقع الإنترنت	

Course Policies الضوابط والسياسات المتبعة في المقرر	
1	Class Attendance: The students should have more than 75 % of attendance according to rules and regulations of the faculty. Tardy: - The students should respect the timing of attending the lectures. They should attend within 1 minutes from starting of the lecture.
2	Exam Attendance/Punctuality: The student should attend the exam on time. The punctuality should be implemented according to rules and regulations of the faculty for midterm exam and final exam. Assignments & Projects:

Prepared by
Assoc.Prof. Adel Al-
Matary

Quality Assurance Unit
Assoc.Prof. Adel Al-Matary

Dean of the Faculty
Assoc.Prof. Bassim
AlKhirbash

Dean of the Development
& Quality Assurance Center
Assoc.Prof. Huda Al-Emad

Rector of Sana'a University
Prof. Dr. Al Qaseem Mohammed Abas



	- The assignment is given to the students after each chapter, the student has to submit all the assignments for checking on time.
3	<p>Cheating: If any cheating occurred during the examination, the student is not allowed to continue and he/she has to face the examination committee for enquires.</p> <p>Plagiarism: - The student will be terminated from the Faculty, if one student attends the exam on another behalf according to the policy, rules and regulations of the university.</p>
4	<p>Other policies: - All the teaching materials should be kept out the examination hall. -The mobile phone is not allowed. -There should be a respect between the student and his teacher.</p> <p>Class Attendance: - The students should have more than 75 % of attendance according to rules and regulations of the faculty.</p>
5	<p>Tardy: The students should respect the timing of attending the lectures. They should attend within 1 minutes from starting of the lecture.</p> <p>Exam Attendance/Punctuality: - The student should attend the exam on time. The punctuality should be implemented according to rules and regulations of the faculty for midterm exam and final exam.</p>
6	<p>Assignments & Projects: The assignment is given to the students after each chapter, the student has to submit all the assignments for checking on time.</p> <p>Cheating: - If any cheating occurred during the examination, the student is not allowed to continue and he/she has to face the examination committee for enquires.</p>
7	<p>Plagiarism: The student will be terminated from the Faculty, if one student attends the exam on another behalf according to the policy, rules and regulations of the university.</p> <p>Other policies: - All the teaching materials should be kept out the examination hall. -The mobile phone is not allowed. - There should be a respect between the student and his teacher.</p>