



## مواصفات المقرر: معدات سطحية

### Course Specification of: Surface Facilities

المعلومات العامة عن المقرر						
1.	اسم المقرر Course Title	Surface Facilities				
2.	رمز المقرر ورقمه Course Code and Number	PNGE 454				
3.	الساعات المعتمدة للمقرر Credit Hours	الساعات المعتمدة			الإجمالي Total	
		محاضرات Lecture	عملي Practical	سمنار/تمارين Seminar/Tutorial		تدريب Training
		2	0	1	0	3
4.	المستوى والفصل الدراسي Study Level and Semester	Fourth Level /second semester				
5.	المتطلبات السابقة للمقرر (إن وجدت) Pre-requisites (if any)	PNGE 351				
6.	المتطلبات المصاحبة (إن وجدت) Co-requisites (if any)	NA				
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				
9.	نظام الدراسة Study System	Semester wise				
10.	مكان تدريس المقرر Location of teaching the course	Faculty of Petroleum and Natural Resources				
11.	اسم معد (و) مواصفات المقرر Prepared by	Prof. Abbas Mohamed Al-Khudafi				
12.	تاريخ اعتماد مجلس الجامعة Date of Approval					

### وصف المقرر

وصف المقرر بالإنجليزية

وصف المقرر بالعربية

This course deals mainly with theories and practice of surface production process and facilities. Topics include production facility overview, two-phase separation of produced fluids and facilities, three-phase separation facilities, treatment of separation oil, crude oil desalting facilities, crude oil stabilization facilities, produced water treating facilities.

### مخرجات تعلم المقرر (CILOs)

After completing the course, the student will be able to: || بعد الانتهاء من دراسة المقرر سوف يكون الطالب قادرا على أن:

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



<b>a1.</b>	Identify the basic principles of separation process.		- a1
<b>a2.</b>	Describe the modern techniques and technology in surface facilities.		- a2
<b>b1.</b>	Evaluate the optimum operating conditions of multi-stage separators for different produced crude oil compositions		-b1
<b>c1.</b>	Design treatment equipment and separation facilities		- c1
<b>c2.</b>	Apply theory of equilibrium and fluid properties to estimate separation characteristics		-c2
<b>d1.</b>	Participate in team work effectively		- d1

### 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)	
<b>a1</b>	Identify the basic principles of separation process.	<b>A2</b>	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.
<b>a2</b>	Describe the modern techniques and technology in surface facilities.	<b>A4</b>	Show the knowledge understanding of basic principles of general culture.
<b>b1</b>	Evaluate the optimum operating conditions of multi-stage separators for different produced crude oil compositions	<b>B1</b>	Use the principles of engineering in developing solutions to . practical petroleum engineering and select appropriate computer software for modeling
<b>c1</b>	Design treatment equipment and separation facilities	<b>C1</b>	Carry out special engineering design in all petroleum. engineering projects.
<b>c2</b>	Apply theory of equilibrium and fluid properties to estimate separation characteristics	<b>C2</b>	Analysis of well logs and well testing and practice the. techniques for constructing engineering graphics.
<b>d1</b>	Participate in team work effectively	<b>D1</b>	Collaborate effectively within multidisciplinary teams under stressful environment and within constraints.

### مواءمة مخرجات التعلم باستراتيجيات التعليم والتعلم والتقييم

Alignment of CILOs to Teaching and Assessment Strategies

أولاً: مواءمة مخرجات تعلم المقرر (المعارف والفهم) باستراتيجية التعليم والتعلم والتقييم:

First: Alignment of Knowledge and Understanding CILOs

مخرجات المقرر/ المعرفة والفهم Knowledge and Understanding CILOs	استراتيجية التعليم والتعلم Teaching Strategies	استراتيجية التقييم Assessment Strategies
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<b>a1 -</b>	Identify the basic principles of separation process.	<ul style="list-style-type: none"> <li>- Lectures</li> <li>- Field trip</li> <li>- Self and independent learning</li> </ul>	<ul style="list-style-type: none"> <li>- Oral questions</li> <li>- Quiz's</li> <li>- Exams</li> </ul>
<b>a2 -</b>	Describe the modern techniques and technology in surface facilities.		

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

**Second: Alignment of Intellectual Skills CILOs**

	مخرجات المقرر / المهارات الذهنية Intellectual Skills CILOs	استراتيجية التعليم والتعلم Teaching Strategies	استراتيجية التقييم Assessment Strategies
<b>b1 -</b>	Evaluate the optimum operating conditions of multi-stage separators for different	<ul style="list-style-type: none"> <li>- Project</li> <li>- Tutorial</li> <li>- Class Discussions</li> </ul>	<ul style="list-style-type: none"> <li>- Project report evaluation</li> <li>- Homework</li> <li>- Practical Exam</li> <li>- Quiz</li> </ul>

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

**Third: Alignment of Professional and Practical Skills CILOs**

	مخرجات المقرر / المهارات المهنية والعملية Professional and Practical Skills CILOs	استراتيجية التعليم والتعلم Teaching Strategies	استراتيجية التقييم Assessment Strategies
<b>c1 -</b>	Design treatment equipment and separation facilities	<ul style="list-style-type: none"> <li>- Class discussion</li> <li>- Lecture</li> <li>- Project</li> <li>- Tutorial</li> </ul>	<ul style="list-style-type: none"> <li>- Homework</li> <li>- Practical exams</li> <li>- Project report evaluation</li> </ul>
<b>c2 -</b>	Apply theory of equilibrium and fluid properties to estimate separation characteristics		

**رابعاً: مواعمة 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
<b>d1 -</b>	Participate in team work effectively	<ul style="list-style-type: none"> <li>- Project</li> <li>- Presentation</li> <li>- Group discussions</li> </ul>	<ul style="list-style-type: none"> <li>- Project report evaluation</li> <li>- Oral presentation</li> </ul>

**Course Content محتوى المقرر**

**Theoretical Aspect الجوانب النظرية**

الرقم Order	الموضوعات الرئيسية/ الوحدات	الموضوعات الفرعية Sub Topics List	عدد الأسابيع	الساعات الفعلية	رموز مخرجات التعلم للمقرر
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	Topic List / Units		Number of Weeks	Contact Hours	(CILOs)
1	<b>Production Facility Overview</b>	<ul style="list-style-type: none"> <li>Fluid Treatment Objectives</li> <li>Production and Separation of Well Fluids</li> <li>Treatment and Handling of Separated Fluids</li> <li>Additional Facility Functions</li> </ul>	1	2	a1,a2
2	<b>Two-Phase Separation of Produced Fluids and facilities</b>	<ul style="list-style-type: none"> <li>Separation theory and separation calculations</li> <li>Optimum separation calculation</li> </ul>	1	2	a1,a2,b1,c1,c2
		<ul style="list-style-type: none"> <li>Two-Phase(Liquid-Gas) Separation</li> <li>Two-Phase Horizontal Separators</li> <li>Two-Phase Vertical Separators</li> <li>Spherical Separators</li> <li>Double-Barreled and Filter-Type Separators</li> </ul>	1	2	
		<ul style="list-style-type: none"> <li>Comparison of Two-Phase Separator Types</li> <li>Internal Components</li> </ul>	1	2	
		<ul style="list-style-type: none"> <li>Operating Problems</li> <li>Sizing Two-Phase Separators</li> </ul>	1	2	
3	<b>Three-phase separation facilities</b>	<ul style="list-style-type: none"> <li>Theory of three phase separation</li> <li>Three -Phase Horizontal Separators</li> </ul>	1	2	a1,a2,c1,c2
		<ul style="list-style-type: none"> <li>Three -Phase Vertical Separators</li> <li>Sizing Three -Phase Separators</li> <li>Operating Problems</li> </ul>	1	2	
4	<b>Mid-term Exam</b>		1	2	a1,a2,b1
5	<b>Treatment of Separation Oil</b>	<ul style="list-style-type: none"> <li>Emulsions and Their Treatment</li> <li>Oil-Treating Equipment <ul style="list-style-type: none"> <li>Vertical Treaters</li> <li>Horizontal Treaters</li> </ul> </li> </ul>	1	2	a1,a2,c1,c2

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		<ul style="list-style-type: none"> <li>Oil-Treating Equipment</li> <li>Electrostatic Treaters</li> <li>Chemical Treatment</li> <li>Other Treating Equipment</li> <li>Sizing of Treating Equipment</li> </ul>	1	2	
6	<b>Crude Oil Desalting Facilities</b>	<ul style="list-style-type: none"> <li>Introduction</li> <li>Determination of salt content in crude oil</li> <li>Equipment description</li> </ul>	1	2	a1,a2,c1,c2
7	<b>Crude Oil Stabilization Facilities</b>	<ul style="list-style-type: none"> <li>Introduction</li> <li>Stabilization operations</li> <li>Equipment</li> </ul>	1	2	a1,a2,c1,c2
8	<b>Produced Water Treating Facilities</b>	<ul style="list-style-type: none"> <li>Importance</li> <li>Theory of water treating</li> </ul>	1	2	a1,a2,c1,c2
		<ul style="list-style-type: none"> <li>Description of produced water equipment</li> <li>Offshore water disposal equipment</li> </ul>	1	2	
		<ul style="list-style-type: none"> <li>Design of water treating equipment</li> </ul>	1	2	
9	<b>Final Exam</b>		1	2	a1,a2,b1,c1,c2
عدد الأسابيع والساعات الفعلية Number of Weeks /and Contact Hours Per Semester			16	32	

Practical Aspect (if any)		الموضوعات العملية (إن وجدت)		
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	Separation calculations and optimum separation pressure	2	4	b1,c1,c2,d1
2	Two-phase separator sizing (horizontal & vertical).	2	4	b1,c1,c2,d1
3	Three-phase separator sizing (horizontal & vertical).	2	4	b1,c1,c2,d1
4	Crude oil treating equipment design.	3	6	b1,c1,c2,d1
5	Produced water treating equipment design.	2	4	b1,c1,c2,d1
6	Design of one complete production facilities	2	4	b1,c1,c2,d1
7	<b>Final Practical Exam</b>	1	2	b1,c1,c2
اجمالي الأسابيع والساعات الفعلية Number of Weeks /and Contact Hours Per Semester		14	28	



### استراتيجيات التعليم والتعلم Teaching Strategies

- Class discussion
- Field trip
- Group discussions
- Lectures
- Presentation
- Project
- Self and independent learning
- Tutorial

### الأنشطة والتكليفات Tasks and Assignments

م No	التكليف/ الواجب Assignments/ Tasks	نوع التكليف (فردى/ تعاوني)	الدرجة المستحقة Mark	أسبوع التنفيذ Week Due	مخرجات التعلم CILOs (symbols)
1	Homeworks	Individual	5	2,4,8,10,12	b1, c1,c2
2	Project	Cooperative	10	13	b1, c1,c2,d1
إجمالي الدرجة Total Score			15		

### 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	الأنشطة والتكليفات Tasks and Assignments	2,4,8,10,12,13	15	10%	b1,c1,c2,d1
2	كوز (1) Quiz (1)	6	2	1%	a1,a2.b1
3	اختبار نصف الفصل Midterm Exam	8	20	13%	a1,a2,b1
4	كوز (2) Quiz (2)	12	3	2%	a1,a2,b1
5	اختبار نهاية الفصل (عملي) Final Exam (practical)	15	10	7%	<b>b1, c1,c2</b>
6	اختبار نهاية الفصل (نظري) Final Exam (theoretical)	16	100	67%	a1,a2,b1,c1,c2
الإجمالي Total			150	%100	



## Learning Resources مصادر التعلم

### Required Textbook(s) المراجع الرئيسية (لا تزيد عن مرجعين)

1. Ken Arnold & Maurice Stewart, 1999, Surface Production Operations, 2nd Ed., Volume 1, Gulf Publishing Company, Houston.
2. Abdel-Aal H. K & Mohamed Aggour, 2003, Petroleum and gas field processing, Marcel Dekker, Inc, New York, USA.

### Essential References المراجع المساندة

- 1- Ken Arnold & Maurice Stewart, 2008, Surface Production Operations, 3d Ed., Volume 1, Elsevier, USA.
- 2- Production handbook, Shell International Petroleum, 1991, vol. 6. Production operation, The Haguem, UK.

### Electronic Materials and Web Sites etc. المصادر الإلكترونية ومواقع الإنترنت

- 1- <https://en.wikipedia.org/wiki>
- 2- [https://wiki.aapg.org/Surface\\_production\\_equipment](https://wiki.aapg.org/Surface_production_equipment)
- 3- <https://www.slb.com/well-production/processing-and-separation/production-facilities>
- 4- [https://petrowiki.org/Oil\\_and\\_gas\\_processing](https://petrowiki.org/Oil_and_gas_processing)

## Course Policies الضوابط والسياسات المتبعة في المقرر

1	<p><b>Class Attendance</b> حضور الفعاليات التعليمية</p> <p>- A student should attend not less than 75 % of total hours of the subject; otherwise he/she will not be able to take the exam and will be considered as exam failure. If the student is absent due to illness, he/she should bring a proof statement from university Clinic. If the absent is more than 25% of a course total contact hours, student will be required to retake the entire course again</p>
2	<p><b>Tardy</b> الحضور المتأخر</p> <p>- For late in attending the class, the student will be initially notified. If he repeated lateness in attending class, he/she will be considered as absent.</p>
3	<p><b>Exam Attendance/Punctuality</b> ضوابط الامتحان</p> <p>- A student should attend the exam on time. He/she is permitted to attend an exam half one hour from exam beginning, after that he/she will not be permitted to take the exam and he/she will be considered as absent in exam.</p>
4	<p><b>Assignments &amp; Projects</b> التعيينات والمشاريع</p> <p>- In general one assignment is given to the students after each chapter; the student has to submit all the assignments for checking on time, mostly one week after given the assignment.</p>
5	<p><b>Cheating</b> الغش</p> <p>- For cheating in exam, a student will be considered as fail. In case the cheating is repeated three times during his/her study the student will be disengaged from the Faculty.</p>
6	<p><b>Plagiarism</b> الانتحال</p> <p>- Plagiarism is the attending of a student the exam of a course instead of another</p>



	<p>student. If the examination committee proofed a plagiarism of a student, he/she will be disengaged from the Faculty. The final disengagement of the student from the Faculty should be confirmed from the Student Council Affair of the university or according to the university roles.</p>
7	<p><b>Other policies</b> سياسات أخرى</p> <ul style="list-style-type: none"><li>- Mobile phones are not allowed to use during a class lecture. It must be closed; otherwise the student will be asked to leave the lecture room.</li><li>- Mobile phones are not allowed in class during the examination.</li><li>- Lecture notes and assignments might be given directly to students using soft or hard copy.</li></ul>





قسم/ برنامج: هندسة النفط والغاز الطبيعي  
العام الجامعي: 2019-2020م

## خطة مقرر: معدات سطحية

### Course Plan (Syllabus): Surface Facilities

معلومات عن أستاذ المقرر					
الاسم Name	Prof. Abbas Mohamed Abdo Al-Khudafi		الساعات المكتبية (أسبوعياً) Office Hours		
المكان ورقم الهاتف Location & Telephone No.	Hadramout University 967-770254579 967739678710		السبت SAT	الأحد SUN	الاثنين MON
البريد الإلكتروني E-mail	prof.abuahmad@yahoo.com				
			الثلاثاء TUE	الأربعاء WED	الخميس THU

معلومات عامة عن المقرر						
1.	اسم المقرر Course Title	Surface Facilities				
2.	رمز المقرر ورقمه Course Code and Number	PNGE 454				
3.	الساعات المعتمدة للمقرر Credit Hours	الساعات المعتمدة Credit Hours			الإجمالي Total	
		محاضرات Lecture	عملي Practical	سمنار/تمارين Seminar/Tutorial		تدريب Training
		2	0	1	0	3
4.	المستوى والفصل الدراسي Study Level and Semester	Fourth Level /second semester				
5.	المتطلبات السابقة للمقرر Pre-requisites	PNGE 351				
6.	المتطلبات المصاحبة (إن وجدت) Co-requisite	NA				
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				
9.	مكان تدريس المقرر Location of teaching the course	Faculty of Petroleum and Natural Resources				

### وصف المقرر

This course deals mainly with theories and practice of surface production process and facilities. Topics include production facility overview, two-phase separation of produced fluids and facilities, three-phase separation facilities, treatment of separation oil, crude oil desalting facilities, crude oil stabilization facilities, produced water treating facilities.

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### 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. Identify the basic principles of separation process.	- a1
a2. Describe the modern techniques and technology in surface facilities	- a2
b1. Evaluate the optimum operating conditions of multi-stage separators for different	-b1
c1. Design treatment equipment and separation facilities	- c1
c2. Apply theory of equilibrium and fluid properties to estimate separation characteristics	- c2
d1. Participate in team work effectively	- d1

### Course Content محتوى المقرر

Theoretical Aspect الموضوعات الجانب النظري				
الرقم Order	الموضوعات الرئيسية/الوحدات Topic List / Units	الموضوعات الفرعية Sub Topics List	الأسبوع Week Due	الساعات الفعلية Contact Hours
1	<b>Production Facility Overview</b>	<ul style="list-style-type: none"> <li>Fluid Treatment Objectives</li> <li>Production and Separation of Well Fluids</li> <li>Treatment and Handling of Separated Fluids</li> <li>Additional Facility Functions</li> </ul>	1	2
2	<b>Two-Phase Separation of Produced Fluids and facilities</b>	<ul style="list-style-type: none"> <li>Separation theory and separation calculations</li> <li>Optimum separation calculation</li> </ul>	2	2
		<ul style="list-style-type: none"> <li>Two-Phase(Liquid-Gas) Separation</li> <li>Two-Phase Horizontal Separators</li> <li>Two-Phase Vertical Separators</li> <li>Spherical Separators</li> <li>Double-Barreled and Filter-Type Separators</li> </ul>	3	2



		<ul style="list-style-type: none"> <li>• Comparison of Two-Phase Separator Types</li> <li>• Internal Components</li> </ul>	4	2
		<ul style="list-style-type: none"> <li>• Operating Problems</li> <li>• Sizing Two-Phase Separators</li> </ul>	5	2
3	<b>Three-phase separation facilities</b>	<ul style="list-style-type: none"> <li>• Theory of three phase separation</li> <li>• Three -Phase Horizontal Separators</li> </ul>	6	2
		<ul style="list-style-type: none"> <li>• Three -Phase Vertical Separators</li> <li>• Sizing Three -Phase Separators</li> <li>• Operating Problems</li> </ul>	7	2
4	<b>Mid-term Exam</b>		8	2
5	<b>Treatment of Separation Oil</b>	<ul style="list-style-type: none"> <li>• Emulsions and Their Treatment</li> <li>Oil-Treating Equipment</li> <li>• Vertical Treaters</li> <li>• Horizontal Treaters</li> </ul>	9	2
		<ul style="list-style-type: none"> <li>• Oil-Treating Equipment</li> <li>• Electrostatic Treaters</li> <li>• Chemical Treatment</li> <li>• Other Treating Equipment</li> <li>• Sizing of Treating Equipment</li> </ul>	10	2
6	<b>Crude Oil Desalting Facilities</b>	<ul style="list-style-type: none"> <li>• Introduction</li> <li>• Determination of salt content in crude oil</li> <li>• Equipment description</li> </ul>	11	2
7	<b>Crude Oil Stabilization Facilities</b>	<ul style="list-style-type: none"> <li>• Introduction</li> <li>• Stabilization operations</li> <li>• Equipment</li> </ul>	12	2
8	<b>Produced water treating facilities</b>	<ul style="list-style-type: none"> <li>• Importance</li> <li>• Theory of water treating</li> </ul>	13	2
		<ul style="list-style-type: none"> <li>• Description of produced water equipment</li> <li>• Offshore water disposal equipment</li> </ul>	14	2
		<ul style="list-style-type: none"> <li>• Design of water treating equipment</li> </ul>	15	2
9	<b>Final Exam</b>		16	2

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



عدد الأسابيع والساعات الفعلية Number of Weeks /and Contact Hours Per Semester	16	32
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Practical / Training/ Tutorials/ Exercises Aspects الخطة تنفيذ موضوعات الجانب العملي			
الرقم Order	موضوعات العملي/ المهام / التمارين Practical/ Tutorials/ Exercises Aspects	الأسبوع Week Due	الساعات الفعلية Cont. H
1	Separation calculations and optimum separation pressure	1,2	4
2	Two-phase separator sizing (horizontal & vertical).	3,4	4
3	Three-phase separator sizing (horizontal & vertical).	5,6	4
4	Crude oil treating equipment design.	7,8,9	6
5	Produced water treating equipment design.	10,11	4
6	Design of one complete production facilities	12,13	4
7	<b>Final Practical Exam</b>	14	2
اجمالي الأسابيع والساعات الفعلية Number of Weeks /and Contact Hours Per Semester		14	28

Teaching Strategies استراتيجيات التعليم والتعلم	
<ul style="list-style-type: none"> <li>- Class discussion</li> <li>- Field trip</li> <li>- Group discussions</li> <li>- Lectures</li> <li>- Presentation</li> <li>- Project</li> <li>- Self and independent learning</li> <li>- Tutorial</li> </ul>	

Tasks and Assignments الأنشطة والتكليفات				
م No	التكليف/ الواجب Assignments	نوع التكليف (فردى/ تعاوني)	الدرجة المستحقة Mark	أسبوع التنفيذ Week Due
1	Homeworks	Individual	5	2,4,8,10,12
2	Project	Cooperative	10	13
Total Score إجمالي الدرجة			15	

Learning Assessment تقويم التعلم				
م	أساليب التقويم	موعد (أسبوع) التقويم Week Due	الدرجة Mark	الوزن النسبي % Proportion of
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	



No	Assessment Method			Final Assessment
1	Tasks and Assignments	2,4,8,10,12,13	15	10%
2	Quiz	6	2	1%
3	Midterm Exam	8	20	13%
4	Quiz (2) كوز	12	3	2%
5	Final Exam (practical)	15	10	7%
6	Final Exam (theoretical)	16	100	67%
<b>Total الإجمالي</b>			<b>150</b>	<b>%100</b>

### Learning Resources مصادر التعلم

#### Required Textbook(s) المراجع الرئيسية (لا تزيد عن مرجعين)

1. Ken Arnold & Maurice Stewart, (1999), Surface Production Operations, 2nd Ed., Volume 1, , G Publishing Company, Houston.
2. Abdel-Aal H. K & Mohamed Aggour, (2003). Petroleum and gas field processing, , Marcel Dekker, Inc, New York, USA

#### Essential References المراجع المساندة

- 1- Ken Arnold & Maurice Stewart, 2008, Surface Production Operations, 3d Ed., Volume 1, Elsevier, USA.
- 2- Production handbook, Shell International Petroleum, 1991, vol. 6. Production operation, The Hague, UK.

#### Electronic Materials and Web Sites etc. المصادر الإلكترونية ومواقع الإنترنت

- 1- <https://en.wikipedia.org/wiki>
- 2- [https://wiki.aapg.org/Surface\\_production\\_equipment](https://wiki.aapg.org/Surface_production_equipment)
- 3- <https://www.slb.com/well-production/processing-and-separation/production-facilities>
- 4- [https://petrowiki.org/Oil\\_and\\_gas\\_processing](https://petrowiki.org/Oil_and_gas_processing)

### Course Policies الضوابط والسياسات المتبعة في المقرر

1	<p><b>Class Attendance</b> <u>حضور الفعاليات التعليمية</u></p> <p>- A student should attend not less than 75 % of total hours of the subject; otherwise he/she will not be able to take the exam and will be considered as exam failure. If the student is absent due to illness, he/she should bring a proof statement from university Clinic. If the absent is more than 25% of a course total contact hours, student will be required to retake the entire course again</p>
2	<p><b>Tardy</b> <u>الحضور المتأخر</u></p> <p>- For late in attending the class, the student will be initially notified. If he repeated lateness in attending class, he/she will be considered as absent.</p>
3	<p><b>Exam Attendance/Punctuality</b> <u>ضوابط الامتحان</u></p> <p>- A student should attend the exam on time. He/she is permitted to attend an exam half one hour from exam beginning, after that he/she will not be permitted to take the exam and he/she will be considered as absent in exam.</p>



4	<b>Assignments &amp; Projects</b> <u>التعيينات والمشاريع</u> - In general one assignment is given to the students after each chapter; the student has to submit all the assignments for checking on time, mostly one week after given the assignment.
5	<b>Cheating</b> <u>الغش</u> - For cheating in exam, a student will be considered as fail. In case the cheating is repeated three times during his/her study the student will be disengaged from the Faculty.
6	<b>Plagiarism</b> <u>الانتحال</u> - Plagiarism is the attending of a student the exam of a course instead of another student. If the examination committee proofed a plagiarism of a student, he/she will be disengaged from the Faculty. The final disengagement of the student from the Faculty should be confirmed from the Student Council Affair of the university or according to the university roles.
7	<b>Other policies</b> <u>سياسات أخرى</u> - Mobile phones are not allowed to use during a class lecture. It must be closed; otherwise the student will be asked to leave the lecture room. - Mobile phones are not allowed in class during the examination. - Lecture notes and assignments might be given directly to students using soft or hard copy.