وزارة التعليم العالي والبحث العلمي
جهاز الاشراف والتقويم العلمي
دائرة ضمان الجودة والاعتماد الأكاديمي
قسم الاعتماد

وصف البرنامج الأكاديمي والمقرر الدراسي 2026-2025

اعداد
وحدة ضمان الجودة
كلية الهندسة-قسم النفط والغاز

المقدمة:

يُعد البرنامج التعليمي بمثابة حزمة منسقة ومنظمة من المقررات الدراسية التي تشتمل على إجراءات وخبرات تنظم بشكل مفردات دراسية الغرض الأساس منها بناء وصقل مهارات الخريجين مما يجعلهم مؤهلين لتلبية متطلبات سوق العمل. يتم مراجعته وتقييمه سنوياً عبر إجراءات وبرامج التدقيق الداخلي أو الخارجي مثل برنامج الممتحن الخارجي.

يقدم وصف البرنامج الأكاديمي ملخص موجز للسمات الرئيسة للبرنامج ومقرراته مبيناً المهارات التي يتم العمل على اكسابها للطلبة مبنية على وفق اهداف البرنامج الأكاديمي وتتجلى أهمية هذا الوصف لكونه يمثل الحجر الأساس في الحصول على الاعتماد البرامجي ويشترك في كتابته الملاكات التدريسية بإشراف اللجان العلمية في الأقسام العلمية.

ويتضمن هذا الدليل وصفاً للبرنامج الأكاديمي بعد تحديث مفردات وفقرات الدليل في ضوء مستجدات وتطورات النظام التعليمي في العراق والذي تضمن وصف البرنامج الأكاديمي بشكلها التقليدي نظام (فصلي) فضلاً عن اعتماد وصف البرنامج الأكاديمي فيما يخص البرامج التي تعتمد مسار بولونيا أساساً لعملها.

وفي هذا المجال لا يسعنا إلا أن نؤكد على أهمية كتابة وصف البرامج الاكاديمية والمقررات الدراسية لضمان حسن سير العملية التعليمية.

مفاهيم ومصطلحات:

وصف البرنامج الأكاديمي: يوفر وصف البرنامج الأكاديمي إيجازاً مقتضباً لرؤيته ورسالته وأهدافه متضمناً وصفاً دقيقاً لمخرجات التعلم المستهدفة على وفق استراتيجيات تعلم محددة.

وصف المقرر: يوفر إيجازاً مقتضباً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ويكون مشتق من وصف البرنامج.

رؤية البرنامج: صورة طموحة لمستقبل البرنامج الأكاديمي ليكون برنامجاً متطوراً وملهماً ومحفزاً وواقعياً وقابلاً للتطبيق.

رسالة البرنامج: توضح الأهداف والأنشطة اللازمة لتحقيقها بشكل موجز كما يحدد مسارات تطور البرنامج واتجاهاته.

أهداف البرنامج: هي عبارات تصف ما ينوي البرنامج الأكاديمي تحقيقه خلال فترة زمنية محددة وتكون قابلة للقياس والملاحظة.

هيكلية المنهج: كافة المقررات الدراسية / المواد الدراسية التي يتضمنها البرنامج الأكاديمي على وفق نظام التعلم المعتمد (فصلي، مسار بولونيا) مع عدد الوحدات الدراسية.

مخرجات التعلم: مجموعة متوافقة من المعارف والمهارات والقيم التي اكتسبها الطالب بعد انتهاء البرنامج الأكاديمي بنجاح ويجب أن يُحدد مخرجات التعلم لكل مقرر بالشكل الذي يحقق أهداف البرنامج.

استراتيجيات التعليم والتعلم: بأنها الاستراتيجيات المستخدمة من قبل عضو هيئة التدريس لتطوير تعليم وتعلم الطالب وهي خطط يتم إتباعها للوصول إلى أهداف التعلم. أي تصف جميع الأنشطة الصفية واللاصفية لتحقيق نتائج التعلم للبرنامج.

وزارة التعليم العالي والبحث العلمي

جهاز الاشراف والتقويم العلمي

دائرة ضمان الجودة والاعتماد الأكاديمي

استمارة وصف البرنامج الأكاديمي للكليات والمعاهد للعام الدراسي 2025-2026

الجامعة: شط العرب

الكلية/المعهد: الهندسة

القسم العلمي: هندسة النفط والغاز

تاريخ ملء الملف: 2025/9/1

اسم رئيس القسم: أ.د. عماد حسن رضا

التوقيع

التاريخ:

اسم المعاون العلمي: د. جواد كاظم

التوقيع

التاريخ:

دقق الملف من قبل

شعبة ضمان الجودة والاداء الجامعي

اسم مدير شعبة ضمان الجودة والاداء الجامعي: د. جاسم محسن ياسر

التاريخ:

التوقيع

الدكتور
جاسم محسن ياسر
Dr.Jasim Al-Battat

جامعة شط العرب
كلية الهندسة
العمادة
SHATT AL-ARAB UNIVERSITY

مصادقة السيد العميد

أ.م.د. احسان قاسم محمد
عميد كلية الهندسة

نموذج وصف المقرر

وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

1. المؤسسة التعليمية	جامعة شط العرب
2. القسم العلمي / المركز	كلية الهندسة
3. اسم البرنامج الاكاديمي	قسم هندسة النفط والغاز
4. الشهادة النهائية	بكالوريوس
5. النظام الدراسي	بولونيا
6. برنامج الاعتماد المعتمد	لم يتم تخرج دفعة لحد الان
7. تاريخ إعداد هذا الوصف	**2025/9/1**
8. أهداف المقرر	
يهدف هذا المقرر ضمن برنامج هندسة النفط والغاز إلى تحقيق الآتي: 1. التأهيل المعرفي: تزويد الطلبة بالأسس العلمية والنظرية المتعلقة بصناعة النفط والغاز، وفهم المبادئ الأساسية لعمليات الاستكشاف والحفر والإنتاج وهندسة المكامن والمنشآت النفطية. 2. الربط التطبيقي: تمكين الطالب من ربط المفاهيم الرياضية والفيزيائية والكيميائية والجيولوجية بالتطبيقات والحلول الهندسية في الحقول والمنشآت النفطية والغازية. 3. التأهيل المهني: إكساب الطلبة المهارات اللازمة للتعامل مع المشكلات الهندسية في قطاع النفط والغاز، وتطبيق المعايير والأكواد والمواصفات الهندسية، وإجراء الحسابات والفحوصات وتحليل البيانات بكفاءة، مع مراعاة متطلبات السلامة والصحة المهنية وحماية البيئة.	

9. مخرجات المقرر وطرائق التعليم والتعلم والتقييم

أ– الأهداف المعرفية:

أ1- يستذكر ويشرح المبادئ والنظريات والمعادلات الأساسية المرتبطة بهندسة النفط والغاز وعمليات الاستكشاف والحفر والإنتاج والمكامن.

أ2- يحدد ويصنف الخصائص الجيولوجية والبتروفيزيائية والموائع المكمنية والمتغيرات التشغيلية المؤثرة في أداء المكامن والآبار النفطية والغازية.

أ3- يفسر الآليات الفيزيائية والكيميائية والميكانيكية التي تحكم سلوك الصخور المكمنية وموائع المكمن وعمليات الجريان والإنتاج.

أ4- يستوعب ويطبق المعايير والمواصفات والأكواد المهنية ذات العلاقة بصناعة النفط والغاز، ومتطلبات السلامة والصحة المهنية والبيئة.

ب – الأهداف المهاراتية الخاصة بالمقرر:

ب1- يمتلك القدرة على تحليل المشكلات الهندسية المتعلقة بآبار النفط والغاز والمكامن والعمليات الإنتاجية باستخدام الأساليب العلمية والمنهجية.

ب2- يحلل البيانات الجيولوجية والبتروفيزيائية وبيانات الآبار والإنتاج، ويجري الحسابات الهندسية والرياضية اللازمة بدقة.

ب3- يوظف البرمجيات والأدوات التقنية الحديثة المستخدمة في هندسة النفط والغاز لتحليل وتصميم ومحاكاة العمليات النفطية، مثل برامج Petrel، Eclipse، PIPESIM، WellFlo وغيرها من البرامج المتخصصة.

ج- الأهداف الوجدانية:

ج1- يطور التفكير النقدي والهندسي والقدرة على اتخاذ القرارات المتعلقة بالعمليات النفطية والغازية بما يحقق متطلبات السلامة والكفاءة الاقتصادية والاستدامة.

ج2- يلتزم بأخلاقيات المهنة والنزاهة الأكاديمية والمهنية، والدقة في إجراء الحسابات والفحوصات وتحليل البيانات وإعداد التقارير الفنية.

ج3- يثبت القدرة على العمل بروح الفريق ضمن فرق هندسية متعددة التخصصات تشمل هندسة النفط والغاز والجيولوجيا وهندسة الحفر والإنتاج والهندسة الميكانيكية والكهربائية.

د - المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي):

د1- يدير الوقت والموارد في مواقع العمل والمنشآت النفطية والمكاتب الهندسية بفعالية، ويلتزم بإنجاز المهام والتقارير الفنية ضمن المواعيد المحددة.

د2- يتواصل هندسيًا بكفاءة عالية شفهيًا وكتابيًا من خلال إعداد التقارير الفنية، والعروض التقديمية، والمخططات والبيانات والجداول الهندسية المتعلقة بالعمليات النفطية والغازية.

د3- يمتلك مهارة التعلم الذاتي والمستمر لمواكبة التطورات الحديثة في تقنيات الاستكشاف والحفر والإنتاج وهندسة المكامن والرقمنة والذكاء الاصطناعي في صناعة النفط والغاز.

10. طرائق التعليم والتعلم:

1- المحاضرات النظرية: عرض المفاهيم والنظريات الأساسية في هندسة النفط والغاز، مع تفعيل أساليب العصف الذهني والمناقشة العلمية ودراسة الحالات الحقلية.

2- جلسات التمارين والمختبرات: إجراء التجارب والفحوصات المختبرية المتعلقة بخصائص الصخور وموائع المكامن، وتطبيق الحلول الرياضية والهندسية على المسائل النفطية والغازية.

3- التعلم القائم على المشاريع: إعداد مشاريع مصغرة تحاكي التطبيقات الواقعية في صناعة النفط والغاز،

مثل تحليل بيانات الآبار، حسابات الإنتاج، تحليل المكامن، تصميم عمليات الحفر أو محاكاة الجريان والإنتاج.

4- التعلم باستخدام البرمجيات الهندسية: تدريب الطلبة على استخدام البرامج المتخصصة في تحليل ومحاكاة عمليات النفط والغاز وتفسير النتائج الهندسية.

5- دراسة الحالات الحقلية: تحليل مشكلات واقعية من حقول النفط والغاز وربط الجانب النظري بالتطبيق العملي.

طرائق التقييم:

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	الاختبارات	2	10% (10)		
	المهام	2	10% (10)		
	المشاريع/المختبر	1	10% (10)		
	التقرير	1	10% (10)		
Summative assessment	امتحان منتصف الفصل الدراسي	2hr	10% (10)		
	الامتحان النهائي	2hr	50% (50)		
Total assessment			100% (100 Marks)		

طرائق التقييم:

- التفاعل والمشاركة العلمية داخل المحاضرات.
- الواجبات البيتية والمهام الهندسية.
- التقارير الفنية والمختبرية.
- الاختبارات القصيرة .(Quizzes)
- المشاريع والتطبيقات العملية.
- الامتحانات الفصلية والنهائية.
- تقييم قدرة الطالب على تحليل المشكلات النفطية والغازية وتفسير النتائج الهندسية.

11. بنية البرنامج:

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)						
UGI	One	1	BEP111	General Geology	جيولوجيا عامة	English	4				2		2	92	58	150	6.00	C
		2	BEP112	Calculus I	رياضيات I	English	3				1		2	62	63	125	5.00	B
		3	UOB103	Computer I	حاسبات I	English	2		2				2	62	13	75	3.00	B
		3	BEP113	Physics	فيزياء	English	4				2		2	92	83	175	7.00	B
		5	BEP114	Statics Mechanical Engineering	ميكانيك هندسي ستاتيكا	English	3				1		2	62	63	125	5.00	B
		6	UOB102	Democracy and Human Rights	الديمقراطية وحقوق الانسان	Arabic	2						2	32	18	50	2.00	B
		7	UOB104	Arabic Languge I	اللغة العربية I	Arabic	2						2	32	18	50	2.00	B
						Total	20	0	2	0	6	0	14	434	316	750	30.00	

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)						
UGI	Two	1	BEP121	Stratigraphy & Sedimentary	علم الطبقات و الرسوبيات	English	2		2		2		2	92	58	150	6.00	C
		2	BEP122	Calculus II	رياضيات II	English	3				1		2	62	63	125	5.00	B
		3	BEP123	General Chemistry	كيمياء عامة	English	4		2				2	92	58	150	6.00	B
		4	BEP124	Engineering Drawing and AutoCad	الرسم الهندسي	English	3			3			2	92	58	150	6.00	B
		5	BEP125	Dynamics Mechanical Engineering	ميكانيك هندسي حركة	English	3				1		2	62	63	125	5.00	B
		6	UOB101	English language I	اللغة الإنكليزية I	English	2						2	32	18	50	2.00	B
						Total	17	0	4	3	4	0	12	432	318	750	30.00	

12. تخطيط التطوير الشخصي:

1-التعليم الالكتروني .

2-استخدام وسائل الشبكة العنكبوتية والانترنيت- .

3-استخدام وسائل الاتصال الحديثة.

13. معيار القبول (وضع الأنظمة المتعلقة بالالتحاق بالكلية أو المعهد) :

1القبول المركزي.

2-معدل الطالب ضمن قوائم القبول المركزي حيث يتم قبولهم حسب (الرغبة) لتوزيعهم على الأقسام.

14. موقع الجامعة:

جامعة شط العرب **https://www.sa-uc.edu.iq**

15. خطة تطوير المقرر الدراسي:

- المواءمة مع سوق العمل: مراجعة محتوى المحاضرات والتمارين بصورة دورية لربطها بمتطلبات شركات النفط والغاز والعمليات الحقلية القائمة في العراق، مع التركيز على تطبيقات الاستكشاف والحفر والإنتاج وهندسة المكامن.
- التحول الرقمي: تكثيف استخدام البرمجيات الهندسية المتخصصة في صناعة النفط والغاز، وبرامج المحاكاة والنمذجة وتحليل بيانات الآبار والمكامن، بما يعزز المهارات الرقمية للطلبة ويقلل الاعتماد على الحلول اليدوية التقليدية.
- تطوير البيئة المختبرية: تحديث المختبرات والتجارب العملية بما يتلاءم مع التطبيقات الحديثة في هندسة النفط والغاز، وتحديث نماذج وتقارير الفحوصات المختبرية وفق المواصفات والمعايير المعتمدة، مع تعزيز استخدام الأجهزة والبرمجيات الحديثة في تحليل خصائص الصخور وموائع

المكامن.

- التدريب العملي والحقلي: تعزيز الجانب التطبيقي من خلال الزيارات العلمية والتدريب الميداني في الحقول النفطية والغازية والمنشآت ذات العلاقة، وربط الجانب النظري بالممارسات الفعلية في مواقع العمل.
- التغذية الراجعة والتحسين المستمر: استخدام نتائج استبيانات الطلبة وأعضاء هيئة التدريس وأصحاب العمل لتقييم فاعلية المقرر وتحديد جوانب القوة والضعف، واعتماد نتائج التغذية الراجعة في تطوير محتوى المقرر وطرائق التدريس والتقييم بصورة مستمرة.
- السلامة والبيئة: تعزيز محتوى المقرر بموضوعات السلامة والصحة المهنية وإدارة المخاطر وحماية البيئة، بما يتوافق مع طبيعة العمل في الحقول والمنشآت النفطية والغازية ومتطلبات سوق العمل.

مخطط مهارات المنهج للعام الدراسي 2025-2026

وضع اشارة في المربعات المقابلة لمخرجات التعلم الفردية من البرامج الخاضعة للتقييم

مخرجات التعلم المطلوبة من البرامج

المرحلة الدراسية	اسم المقرر	نوع المقرر	الأهداف المعرفية				الأهداف المهاراتية الخاصة بالبرنامج			الأهداف الوجدانية والقيمية			المهارات العامة والتأهيلية المنقولة (أو) المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي		
			أ1	أ2	أ3	أ4	ب1	ب2	ب3	ج1	ج2	ج3	د1	د2	د3
الاولى	**الجيولوجيا العامة**	Basic	√	√	√			√	√	√	√			√	√
	الرياضيات 1	Basic	√	√	√	√	√	√	√			√	√	√	√
	علم الحاسوب 1	Core			√	√	√			√	√		√	√	√
	الفيزياء الهندسية	Basic	√	√	√	√	√	√		√	√	√	√	√	√
	الميكانيك الهندسي 1	Basic	√	√	√			√	√	√	√	√		√	√
	الديمقراطية وحقوق الانسان	Support	√	√	√	√			√	√	√	√	√	√	√
	اللغة العربية	Support	√	√	√	√	√	√			√	√	√	√	√
	الصخور الرسوبية	Basic	√	√			√	√	√	√	√	√	√		
	الرياضيات 2	Core	√	√	√	√	√	√	√	√			√	√	√
	الكيمياء الهندسية	Core	√	√	√	√	√			√	√	√	√		
	الرسم الهندسي	Basic	√	√	√	√	√			√	√	√	√	√	√
	الميكانيك الهندسي 2	Basic	√			√	√	√	√	√		√	√	√	√
	اللغة الانكليزية	Core	√	√	√			√	√	√	√			√	√

وصف المقررات

اعداد

وحدة ضمان الجودة

كلية الهندسة-قسم النفط والغاز

Module Information
معلومات المادة الدراسية

Module Title	**Engineering Drawings**	**Module Delivery**	
Module Type	**Core**	✓**Lecture** ✓**Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**E118**		
ECTS Credits	8		
SWL (hr/sem)	120		
Module Level	1	**Semester of Delivery**	2
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader		**e-mail**	
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	
Module Tutor		**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date	01/09/2025	**Version Number**	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الاخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية

Module Aims أهداف المادة الدراسية	1. To enable the students to identify the tools/instrument needed. 2. To familiarize the student, with the proper techniques, manipulation, uses, and care of the drawing instruments. 3. To introduce the students to a specific language of engineers which is a graphical language. 4. To help and guide the students to learn how technical drawings can be drawn in different methods. 5. To acquire some different skills such as the ability to read and prepare engineering drawings, the ability to make free-hand sketching of objects, the power to imagine, analyze, and communicate, and the capacity to understand other subjects. 6. To acquire adequate skills in measuring/scaling dimension accurately, and the method of placing dimensions. 7. To acquire basic analysis skills in orthographic/section/isometric drawing 8. To know the proper drawing conventions/symbols to describe the engineering drawings.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Get information about the important tools for engineering drawing. This will give student basic knowledge of technical drawings professions and means of communications to others. 2. Knowing the types of lines and their applications in technical drawings. 3. Learning the steps to construct different geometric figures like lines, arcs, polygon, ellipse etc. which is essential for engineer. 4. Comprehend general projection theory, with emphasis on orthographic projection to represent three-dimensional objects in two-dimensional views. 5. Develop student's imagination and ability to represent the shape size and specifications of physical objects. 6. Learning how to draw sectional views. 7. Knowing how to place dimensions on engineering drawings. 8. Equipped with the skill that enables the students to convert orthographic projection into isometric projection.
Indicative Contents المحتويات الارشادية	Introduction to Engineering Drawing, Drawing Tools, Pencils, Drawing Sheets, Title Block of a Sheet, Types of Lines and their Uses. (10 hrs) Exercises in the Use of Instruments: Straight lines (Solid, Dashed and Center Lines), Circles and Tangents. (10 hrs) Graphic Geometry: Bisections, Parallels, Divisions, Angles, Geometric Shapes Tangents (Straight and Curved Lines), Ellipse. (30 hrs) Orthographic Projection: Theory, Orthographic Views, Representation of

	Lines, Hidden Features, Center Lines. Precedence of Lines, Exercises in Projection. (30 hrs) Sectional Views: Definition, Classification, Full and Half Sections, Exercises in Sectional Views. (20 hrs) Dimensioning Practices: Introduction, Terminology and Conventions, Exercises in Dimensioning. (10 hrs) Introduction to Types of Pictorial Drawing: Pictorial Methods Classified, Isometric. (10 hrs) Isometric Drawing: Perspective Drawing, Sketching, Layout of Circles, Exercises in Isometric Drawings. (30 hrs)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, lectures and by considering a variety of assignments that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ 15 اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	142	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	10
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	108	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7.7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	250		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5,10	1,2,3,4,5,6
	Assignments	12	15% (15)	2,3,4,5,6,7, 9,10,11,12,13 ,14	1,2,3,4,5,6,7,8
	Projects / Lab.	15	15% (15)	1,2,3,4,5,6,7, 8,9,10,11,12, 13,14,15	1,2,3,4,5,6,7,8
	Report				
Summative assessment	Midterm Exam	2 hr	10% (10)	8	1,2,3,4,5
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to engineering drawing and graphic instruments and their uses
Week 2	Exercises in the use of instruments
Week 3	Graphic geometry I
Week 4	Graphic geometry II
Week 5	Graphic geometry III
Week 6	Orthographic Projection I
Week 7	Orthographic Projection II
Week 8	Orthographic Projection III
Week 9	Sectional Views I
Week 10	Sectional Views II
Week 11	Dimensioning Practices (introduction, terminology and conventions)
Week 12	Introduction to types of Pictorial Drawing
Week 13	Isometric Drawing I
Week 14	Isometric Drawing II
Week 15	Isometric Drawing III
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	الرسم الهندس المؤلف: عبدالرسول الخفاف بغداد – 1990	Yes
Recommended Texts	The Fundamentals of Engineering Drawing & Graphic Technology, Fifth Edition Thomas E. French & Charles J. Vierck	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information
معلومات المادة الدراسية

Module Title	**Mathematics 1**	**Module Delivery**	
Module Type	**Basic**	✓**Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**E112**		
ECTS Credits	8		
SWL (hr/sem)	120		
Module Level	1	**Semester of Delivery**	1,2
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor		**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date	01/09/2025	**Version Number**	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الاخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims أهداف المادة الدراسية	• Good understanding of General Mathematics. • To give information about Integrations and derivations and how they are used in the physics field. • Helping students to connect mathematics with physics. • solving mathematical examples in their physics modules. • better understanding of integration and derivations and their importance of them in physics.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of the module, students should be able to: • Work with functions represented in various ways: graphical, numerical, analytical, or verbal. They should understand the connections among these representations. The functions include linear, polynomial, absolute value, rational, exponential, logarithmic, trigonometric, inverse trigonometric, hyperbolic, inverse hyperbolic, and piecewise defined functions. • Define and apply the concepts of limits and continuity to the mentioned functions and study them graphically and analytically. • Understand the meaning of the derivative in terms of a rate of change and local linear approximation, and should be able to use derivatives to solve a variety of problems. • Understand the meaning of the definite integral both as a limit of Riemann sums as the net accumulation of change and should be able to use integrals to solve a variety of problems. • Understand the relationship between the derivative and the definite integral as expressed in both parts of the Fundamental Theorem of Calculus. • Use various integration techniques to obtain anti-derivatives without an integral table or calculator.
Indicative Contents المحتويات الارشادية	
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• Different forms of teaching will be used to come across with objectives of the course. PowerPoint presentations for the head titles, definitions, graphs, and many useful illustrations with a summary at the end of each chapter will be presented and discussed. • The PowerPoint contains information about new topics and unsolved examples, and then the whiteboard will be used to solve them and to let students to see the solutions.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ 15 اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	142	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	10
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	108	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7.2
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	250		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)		
	Assignments	2	10% (10)		
	Projects / Lab.	1	10% (10)		
	Report	1	10% (10)		
Summative assessment	**Midterm Exam**	2hr	10% (10)		
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	**Algebraic Preliminaries** Numbers, Sets, Inequalities & Absolute value.
Week 2	**Functions** Domain, Range, graphs, Symmetry, Asymptotes.
Week 3	**Limits** Definition of Limit, Theorems, Continuity, One-Sided Limits, Limits at Infinity, L Hopital's rule.
Week 4	**Derivatives** Definition, Power and Sum Rules, Product and Quotient Rules, Chain rule, High-Order derivatives, Implicit differentiation.
Week 5	**Applications of Derivative** Maximum and minimum, mean value theorem, Increasing and Decreasing Functions, Concavity and Points of inflection, Second Derivative Test.
Week 6	**Definite Integration** Definition, Integral Theorems, Length of a Curve, Areas, Volume of Solids, Surface Area, Indefinite Integrals.
Week 7	**Transcendental Functions** Trigonometric Functions, Graphs, Derivatives of trigonometric functions, Inverse trigonometric functions, Graphs, Derivatives of Inverse trigonometric functions, Natural Logarithm Functions, Exponential Functions, Functions a^u and $\log_a u$.

Week 8	**Complex Number** Invented number systems, The Argand diagram. Addition, Subtraction, product, Qutient, Power and Roots. Demoivers theorem.
Week 9	**Hyperbolic Functions** Definition, Derivatives, Integrals, Inverse Hyperbolic Functions.
Week 10	**Plane Analytic Geometry** Circle, Parabola, Ellipse, Hyperbola
Week 11	**Volume of Revolution** Disk Method & Washer Method
Week 12	**Volume of Revolution** Volumes by Cylindrical Shells & solid with known cross sections
Week 13	**Methods of Integrations** Integration by substitution, Trigonometric Integrals & Quadratic Functions
Week 14	**Methods of Integrations** Integration by Parts, Integration by partial fractions, Integration of Rational Functions, improper integrals.
Week 15	**Matrices and Determinates** Definition, Properties of Matrices, Operations on Matrices, Determinants, Matrix Inverse, Solution of Linear Simultaneous Equations (Gramer's Rule).
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	1. Calculus with Analytical Geometry, Fourth Edition, By Robert Ellis and Denny Gulick, 1990. 2. Calculus, Fifth Edition, By Stanley I. Cross may1992. 3. Calculus, International Edition, By Thomas, 2005.	Yes

Recommended Texts	1. Calculus, 11th Edition, By Thomas, 2013. 2. Understanding Basic Calculus, by S.K. Chung, 2007	Yes
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information
معلومات المادة الدراسية

Module Title	**Mathematics 2**	**Module Delivery**	
Module Type	**Basic**		✓**Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	**E112**		
ECTS Credits	8		
SWL (hr/sem)	120		

Module Level	1	**Semester of Delivery**	1,2
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor		**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date	01/09/2025	**Version Number**	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الاخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims أهداف المادة الدراسية	• Good understanding of General Mathematics. • To give information about Integrations and derivations and how they are used in the physics field. • Helping students to connect mathematics with physics. • solving mathematical examples in their physics modules. • better understanding of integration and derivations and their importance of them in physics.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of the module, students should be able to: • Work with functions represented in various ways: graphical, numerical, analytical, or verbal. They should understand the connections among these representations. The functions include linear, polynomial, absolute value, rational, exponential, logarithmic, trigonometric, inverse trigonometric, hyperbolic, inverse hyperbolic, and piecewise defined functions. • Define and apply the concepts of limits and continuity to the mentioned functions and study them graphically and analytically. • Understand the meaning of the derivative in terms of a rate of change and local linear approximation, and should be able to use derivatives to solve a variety of problems. • Understand the meaning of the definite integral both as a limit of Riemann sums as the net accumulation of change and should be able to use integrals to solve a variety of problems. • Understand the relationship between the derivative and the definite integral as expressed in both parts of the Fundamental Theorem of Calculus. • Use various integration techniques to obtain anti-derivatives without an integral table or calculator.
Indicative Contents المحتويات الارشادية	
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• Different forms of teaching will be used to come across with objectives of the course. PowerPoint presentations for the head titles, definitions, graphs, and many useful illustrations with a summary at the end of each chapter will be presented and discussed. • The PowerPoint contains information about new topics and unsolved examples, and then the whiteboard will be used to solve them and to let students to see the solutions.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ 15 اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	142	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	10
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	108	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7.2
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	250		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)		
	Assignments	2	10% (10)		
	Projects / Lab.	1	10% (10)		
	Report	1	10% (10)		
Summative assessment	Midterm Exam	2hr	10% (10)		
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Complex numbersComplex number systems, Argand diagram.
Week 2	Addition, subtraction, multiplication, division, powers, and roots, De Moivre's theorem
Week 3	Hyperbolic functions: definition, derivatives
Week 4	Hyperbolic functions: Integrals, inverse hyperbolic functions.
Week 5	Plane Analytical Geometry: Circle, Parabola
Week 6	Plane Analytical Geometry: Ellipse, Hyperbola
Week 7	Magnitude of the rotation result: Disc method

Week 8	Volume of the rotation: The method of cylindrical shells
Week 9	Surface area resulting from rotation: The method of cylindrical shells
Week 10	Methods of Integration: Integration by Substitution
Week 11	Methods of Integration: Trigonometric Integrals and Quadratic Functions
Week 12	Methods of integration: integration by parts, integration by partial fractions
Week 13	Integration methods: integration of rational functions, improper integrals
Week 14	Matrices and Determinants: Definition, Properties of Matrices, Operations on Matrices
Week 15	Matrices and determinants: determinants, the inverse of a matrix, solving simultaneous linear equations (Cramer's rule).
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	4. Calculus with Analytical Geometry, Fourth Edition, By Robert Ellis and Denny Gulick, 1990. 5. Calculus, Fifth Edition, By Stanley I. Cross may1992. 6. Calculus, International Edition, By Thomas, 2005.	Yes

Recommended Texts	3. Calculus, 11th Edition, By Thomas, 2013. 4. Understanding Basic Calculus, by S.K. Chung, 2007	Yes
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information
معلومات المادة الدراسية

Module Title	**Arabic**	**Module Delivery**	
Module Type	**Supported**	✓**Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**216 AL**		
ECTS Credits	**2**		
SWL (hr/sem)	**30**		

Module Level	1	**Semester of Delivery**	2
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor		**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date	01/09/2025	**Version Number**	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الاخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية

Module Aims أهداف المادة الدراسية	1- Educating students about the nature of linguistics and assisting them in correct expression. 2- Regulating language styles and uncovering its secrets. 3- Equipping students with linguistic abilities that enable them to correct their speech while reading.

	4- Developing students' linguistic, grammatical, and spelling skills. 5- Understanding sentence structures and their different styles. 6- Correcting mistakes arising from linguistic errors in pronunciation or writing. 7- Introducing punctuation marks and how to use them.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- Establish a solid foundation in knowledge and linguistic thought for students in scientific disciplines, both human and scientific. 2- Maintain the integrity of the Arabic language. 3- Evaluate the language of researchers in preparing master's theses and doctoral dissertations, as well as the language of book authorship in accordance with the correct rules of the Arabic language.
Indicative Contents المحتويات الارشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1- Conduct linguistic research that serves the language of the Holy Quran and legal arguments as a living means of expressing ideas. 2- Train the mind in scientific analysis, which is part of the levels of thinking. 3- Use multiple teaching methods to equip students with the ability to grasp the curriculum. 4- Develop the student's ability to choose topics that address contemporary intellectual problems.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ 15 اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	58	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)		
	Assignments	8	20% (20)		
	Seminar	1	10% (10)		
Summative assessment	**Midterm Exam**	2 hr	10% (10)		
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	The Arabic language and its position in global linguistics
Week 2	Speech and its components Categories of speech
Week 3	Noun - Signs of the noun
Week 4	Verb - Signs of the verb
Week 5	Part - Signs of the part
Week 6	Spelling and writing rules: Origins and development
Week 7	Spelling rules and written expression: Origin and development
Week 8	Rules for controlling the initial hamzah: 1- The hamzah of connection.
Week 9	2- Hamzat al-Qat' 3- Hamzat al-Estifham
Week 10	Rules for controlling the medial hamza
Week 11	Rules for controlling the extreme
Week 12	Rules for controlling the letter 'Alif'
Week 13	Punctuation Marks - History - Origin and Development
Week 14	Modern punctuation marks
Week 15	Review
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Lectures and handouts	No
Recommended Texts	Books on linguistics, grammar, and orthographic conventions	Yes
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information
معلومات المادة الدراسية

Module Title	**Engineering Geology**	**Module Delivery**	
Module Type	**Basic**	☐ **Theory** ✔ **Lecture** ✔ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CE114**		
ECTS Credits	6		
SWL (hr/sem)	75		

Module Level	1	**Semester of Delivery**	2
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor	None	**e-mail**	None
Peer Reviewer Name	None	**e-mail**	None
Scientific Committee Approval Date	01/09/2025	**Version Number**	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الاخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية

Module Aims أهداف المادة الدراسية	1. To outline the contribution of engineering geology to the civil and mining works 2. To explain the classical approach to solve an engineering geological problem 3. The extensive uses of engineering geology maps 4. The role and effect of engineering geology in the improvement of earth materials
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The student will be trained to know the description of soil and rock masses for engineering purposes and is also expected to know the following: 1. Engineering geological maps and its applications. 2. Rock engineering properties and the geotechnical problems they cause. 3. The various techniques for soil and rock improvement.
Indicative Contents المحتويات الارشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ 15 اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	86	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	64	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.26
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	7,12	5, 6, 10, and 11
	Assignments	2	10% (10)	4, 14	1, 2, 11, and 12
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	3, 4, and 11
Summative assessment	Midterm Exam	2 hr	10% (10)	8	1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	An introduction to engineering geology
Week 2	Minerals and rocks
Week 3	Physical and mechanical properties of rocks
Week 4	**Soil geology and properties**
Week 5	Groundwater (Part 1)
Week 6	Groundwater (Part 2)
Week 7	Geology maps
Week 8	Mid-term Exam
Week 9	Topography maps (Part 1)
Week 10	Topography maps (Part 2)
Week 11	Soil investigations (Part 1)
Week 12	Soil investigations (Part 2)
Week 13	Geological principles for the selection of foundations (problems of foundations)
Week 14	Geological investigation of building materials and road paving
Week 15	Preparatory Week
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction
Week 2	Discovery of metal
Week 3	Discovery of rocks
Week 4	Geology maps
Week 5	Topography maps
Week 6	Final Exam
Week 7	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Engineering Geology by Dr. Majeed Al-Taa'e	Yes
Recommended Texts	ENGINEERING GEOLOGY by Sabinoy Gangopadhyay	No
Websites	-	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** – Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C – Good	جيد	70 - 79	Sound work with notable errors
	D – Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E – Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Module Information
معلومات المادة الدراسية

Module Title	**English**	**Module Delivery**	
Module Type	**Supported**	✓**Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**U111**		
ECTS Credits	**2**		
SWL (hr/sem)	**30**		

Module Level	1	**Semester of Delivery**	2
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor		**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date	01/09/2025	**Version Number**	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الاخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية

Module Aims أهداف المادة الدراسية	Improve the students' skills of reading, speaking, and writing. Enrich the vocabulary of the student with new words related to Civil Engineering.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• Clarify the basic concepts of the English language by defining the tools for grammar, formulating sentences, texts, and pronunciation. • Acquisition of skills in speaking and writing research and reports. • The ability to read, write and to gain experience in dealing with foreign companies.
Indicative Contents المحتويات الارشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Teaching and learning strategies of English include a range of whole class, group of two or three students and individual activities to examine the different abilities, skills and learning rates of each student and allow every student to participate and to achieve some degree of success. Some of these strategies are: • Readings with a focus on improving the spelling of some complex words. 5- Exercises and activities during the lecture. 6- Homework assignments. 7- Directing students to some websites for learning and practicing. 8- Conducting seminars to explain and analyze a specific issue and find solutions to it.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ 15 اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	58	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)		
	Assignments	8	20% (20)		
	Seminar	1	10% (10)		

Summative assessment	**Midterm Exam**	2 hr	10% (10)		
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Present tense
Week 2	Past tense
Week 3	Future tense
Week 4	Punctuation
Week 5	Capitalization
Week 6	Simple sentences
Week 7	Compound sentences
Week 8	Prewriting techniques
Week 9	Midterm exam
Week 10	Connecting ideas
Week 11	Comparison
Week 12	Nouns
Week 13	Pronouns
Week 14	The passive.
Week 15	How to write an academic report
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Lectures and handouts	No
Recommended Texts		No
Websites	https://www.english-grammar.at	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Module Information
معلومات المادة الدراسية

Module Title	**Physics**	**Module Delivery**	
Module Type	**Core**	☑ **Theory** ☑ **Lecture** ☑ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**E119**		
ECTS Credits	**3**		
SWL (hr/sem)	**45**		

Module Level	1	**Semester of Delivery**	1
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor		**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date	01/09/2025	**Version Number**	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الاخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية

Module Aims أهداف المادة الدراسية	The course provides general information about physics and its branches, with a focus on the branches that are relevant to the study of civil engineering, such as classical mechanics and the laws and equations of motion. All phenomena in the natural world are measured in terms of a few fundamental relationships between measurable properties of matter and

	energy. These relationships are called the laws of physics, and they are formulas characterized by a high degree of generality, derived from a vast number of phenomena. The goal of physics can be summarized as expressing these fundamental relationships (these laws) in a mathematical form, enabling the student to use the logical rules of mathematics to apply the laws to specific cases and thus obtain quantitative results. Most physical laws are important in the field of civil engineering, which requires engineers to understand these laws to reflect them in the engineering reality related to mathematics, engineering foundations, fluid motion, hydraulic structures, and others.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- Clarifying the basic concepts of physics. 2- Acquiring skills in handling and understanding the laws of physics in a simplified manner. 3- Acquiring the essential skills as an introduction to the physical properties necessary to describe all physical measurements, called dimensions, which are length, mass, time, temperature, electric current, number of particles, and luminous intensity. And deriving other physical quantities such as force, energy, and momentum from these seven basic dimensions. 4- The ability to know and understand the science of physics. 5- The ability to think about solving any problem. 6- Writing scientific reports. 7- The ability to gain experience in dealing with physical quantities.
Indicative Contents المحتويات الارشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The course aims to provide basic information about general physics that civil engineering students need in the subjects of static and dynamic mechanics, materials resistance, and fluid mechanics.

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
	Quizzes	2	10% (10)		
	Assignments	2	10% (10)		

Formative assessment	**Projects / Lab.**	1	10% (10)		
	Report	1	10% (10)		
Summative assessment	**Midterm Exam**	2hr	10% (10)		
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to physics
Week 2	units and dimensions
Week 3	vectors
Week 4	Statics
Week 5	Kinematics
Week 6	Body dynamics
Week 7	Newton's laws of motion
Week 8	Work, energy and power
Week 9	Momentum
Week 10	Rotational motion
Week 11	Harmonic motion
Week 12	Flexibility
Week 13	Fluids
Week 14	The heat
Week 15	The sound
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	University Physics Volume 1 by Samuel J. Ling	Yes
Recommended Texts		No
Websites	https://www.coursera.org/search?query=physics	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information

معلومات المادة الدراسية

Module Title	Dynamics mechanics 2	**Module Delivery**	
Module Type	Basic	☒ **Theory** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☒ **Seminar**	
Module Code	**CE113**		
ECTS Credits	6		
SWL (hr/sem)	90		

Module Level	1	**Semester of Delivery**	2
Administering Department	Oil and Gas Department	**College**	Engineering College
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor		**e-mail**	
Peer Reviewer Name	None	**e-mail**	
Scientific Committee Approval Date		**Version Number**	1.0

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	The aims of a general Dynamics mechanics course/module typically include: 1. The student acquires the skill of dealing with engineering mechanics, as it is one of the scientific engineering foundations involved in most practical fields. 2. Clarify the concept of kinesiology and its applications.

	3. The course aims to give the student a new background that he can use to solve most of the engineering problems that he encounters in this field. 4. The student learns about some mechanical equipment and how to deal with it through engineering workshops.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The specific learning outcomes of a general dynamics mechanics course/module may vary depending on the institution and the level of the course, but some common examples include: 1 Knowledge and Understanding 2. Clarify the basic concepts of engineering mechanics through lectures and practical exercises. 3 Expand the students' perceptions and enhance the concept of mechanics by giving them general principles and concepts about static forces, torque distribution, friction and moment of inertia. 4. Working on some mechanical equipment in the engineering workshops.
Subject-specific skills	1- a detailed study of mechanics. 2- Study the mathematical details that the student needs during their studies of engineering mechanics. 3- Preparing the student to be successful by learning the correct principles related to this science.
Assessment methods	1- Interaction within the lecture 2- Homework 3- laboratory reports 4- short quizzes (kuzat) 5- semester and final exams
Thinking Skills	1- Attention: Arousing the students' attention by addressing one of the applied topics on the display screen in the hall 2- Response: Follow up the student's interaction with the material displayed on the screen 3- Attention: Follow up on the interest of the student who interacted more with the presented material, by increasing this interaction by requesting related topics and applications to be presented. 4- Forming the direction: meaning that the student is sympathetic to the presentation and may have an opinion about the direction of the presented topic and defend it.

	5- Formation of value behavior: meaning that the student reaches the top of the emotional ladder, so he has a stable level in the lesson and does not become lazy or fidgety.
General and Transferable Skills (other skills relevant to employability and personal development)	1- Develop the student's ability to perform the duties and deliver them on time 2- Logical and scientific thinking to find solutions to various obstacles 3- Develop the student's ability to dialogue and discussion 4- Develop the student's ability to deal with modern technology, especially the Internet

Teaching and Learning Methods	
	The learning and teaching strategies used in a general Dynamics mechanics /module will depend on the level of the course, the institution offering it, and the specific needs and goals of the students. However, some common strategies that may be used to facilitate learning and understanding of the subject matter include: 1. Using modern means in presenting the scientific and theoretical side, such as Data Show devices, to attract attention and attract students, so that the idea can be better delivered to the student. 2 Giving students extra-curricular assignments that require them to exert skills and self-explanations in experiential ways. 3. Interrogation of students through discussion sessions by asking thinking questions (how, why, when, where, which) for specific topics. 4 Using the method of brainstorming and feedback in order to activate the accumulated experiences of students by linking what has been taken from study materials in the previous academic stages and linking them with the new ones. 5 Providing students with practical skills through conducting practical experiments on laboratory equipment.

Infrastructure	
Required reading: **CORE TEXTS** **COURSE MATERIALS** **OTHER**	• Vector Mechanics for Engineers – Statics & Dynamics, Beer & Johnston; 10 edition. • Engineering Mechanics Statics Vol. 1, Engineering Mechanics Dynamics Vol. 2, Meriam & Kraige; 6thedition

Special requirements (include for example workshops, periodicals, IT software, websites)	Engineering Mechanics – Statics, lectures by instructor, R. Ganesh Narayanan. Engineering Mechanics – Dynamics, lectures by instructor, Y. Wang. Lectures of other instructors in the department. Any other references in this field.
Community based facilities (include for example, guest Lectures, internship, field studies)	• books, resources and articles published on various websites

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information
معلومات المادة الدراسية

Module Title	**Human rights and democracy**	**Module Delivery**	
Module Type	**Supportive**	✔ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**E126**		
ECTS Credits	**4**		
SWL (hr/sem)	**60**		

Module Level	1	**Semester of Delivery**	1
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor	None	**e-mail**	None
Peer Reviewer Name	None	**e-mail**	None
Scientific Committee Approval Date	01/09/2025	**Version Number**	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الاخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims أهداف المادة الدراسية	1-Introducing students to the basic principles of human rights and clarifying those rights according to various sources. 2-Addressing the basic concepts of democracy and its historical development.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- Educating the student on the principles and laws related to the subject of human rights. 2 -Teaching students the foundations upon which human rights and the democratic system are built. 3-Developing the necessary skills to deal with the democratic system. 4-The student acquainted with the constitutional rights in the Iraqi Law
Indicative Contents المحتويات الارشادية	Universal Declaration of Human Rights

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• Teaching and learning strategies of Human rights and democracy of whole class, group of five students and individual activities and jobs to examine abilities, skills and learning. • Learn about most of the ideas and theories related to the systems of political governance and the way of looking at the issue of human rights and democratic behavior • How to preserve the right of opposition constitutionally • Preserving the rights of minorities in society • Manage discussions on topics related to the curriculum • method of democratic dialogue Respect the different opinions on the chosen topics.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ 15 اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	58	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	4,14	LO #1-3, 8-12
	Assignments	2	20% (20)	8,15	LO # 5-6, 13-14
	Report	1	10% (10)	12	LO # 1-8
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-8
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	The historical development of human rights throughout history
Week 2	Human rights in the Christian and Jewish religions
Week 3	Human rights in Islam
Week 4	Women's rights in ancient civilizations and Islam
Week 5	Universal Declaration of Human Rights
Week 6	National Human Rights Resources
Week 7	Human rights in the constitution of the Republic of Iraq for the year 2005
Week 8	Human rights and citizenship

Week 9	Definition of democracy - historical development - characteristics - types of authorities - Islam and Democracy
Week 10	Defining freedom linguistically and idiomatically - Sources of freedom - Freedom in the West - Individual and public freedom in Islam - Economic, labor and intellectual freedom
Week 11	Political and civil rights in the democratic system
Week 12	characteristics of the democratic system
Week 13	Democratic guarantees - types of guarantees - constitutional guarantees - judicial guarantees - political guarantees - combating organized corruption
Week 14	Elections systems
Week 15	Types of democratic systems
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	Human rights, children and democracy for the Ministry of Education Human rights and children and democracy for the Ministry of Higher Education and Scientific Research - University of Tikrit	Yes
Recommended Texts	**Curriculum lectures**	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information

معلومات المادة الدراسية

Module Title	Stratigraphy and Sedimentation	**Module Delivery**	
Module Type	Core	☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	BEP121		
ECTS Credits	**8**		
SWL (hr/sem)	**200**		

Module Level	1	**Semester of Delivery**	2
Administering Department	Oil and Gas Department	**College**	Engineering College
Module Leader		**e-mail**	
Module Leader's Acad. Title			
Module Tutor		**e-mail**	
Peer Reviewer Name	None	**e-mail**	
Scientific Committee Approval Date	01/03/2026		

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite	General Geology	**Semester**	

module			
Co-requisites module	Petroleum Geology, Structural Geology, Reservoir Engineering, Drilling Engineering, Well Logs, Geophysics.	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Stratigraphy Gives students Techniques For Working Out Earth History, It Integrates Diverse Materials Into A Coherent View Of How The Earth And Its Life Forms Evolved. 2. Though Stratigraphy (Literally Writing About Strata) Is Mostly About Working Out The History Of Sedimentary Rocks, In Order To Do This You Also Need To Know The Effects Of Magmatism, Metamorphism, Tectonism, Climatic Change, And Sea-level Changes, And the Effects of Organic Evolution. 3. Stratigraphy Integrates Data And Concepts from Many Specialties, And In Practice ends up as a much more comprehensive study than its name Implies. 4. Stratigraphy also lets you test ideas on how varying combinations of processes affect the planets through Time. for example, As Evidence For Continental Drift And Changing Climates, Wegener (1915) Used The Presently Separated Positions Of Carboniferous Mosasaurs-bearing And Glacial Sediments, Which Were Most Plausibly Explained By An Originally Compact Supercontinent. 5. Together, History And Process Let You Work Out How, When, And Why Environments Changed Through Time.

	6. Stratigraphy, Perhaps Most Importantly, Also Helps You To Understand How Many Economic Materials Formed And Got Distributed In The Way They Did – And So Will Hopefully Help You Find More. For Example, The Wembley Field Is One Of Many Isolated Oil And Gas Reservoirs In The Middle Triassic In Alberta, Canada. 7. Finding Out Why The Oil Is There, And Where Other Similar Oil And Gas Fields Are, Requires You To Proceed Logically Through The Various Phases Of Stratigraphy. First, What Are The Actual Oil-bearing Rocks And How Were They Deposited? The Local (Borehole) Sections Mostly Consist Of Porous Sands Alternating With Clays Arranged In Coarsening-upwards Cycles, Deposited By Waves And Currents As Marine Barrier Island Deposits. Second, How Are These Sediments Arranged Spatially And How Old Are They? In The Absence Of Outcrops, Space Correlations Have To Be Worked Out From Borehole Logs And Seismic Sections Which Show The Arrangement And Thickness Of The Strata And Environments And That The Productive Oil And Gas Wells Are In Linear Sand Bodies Of a Particular Type Of Marine Barrier Bar. 8. Identify the stratigraphic column of Iraq. 9. Understand the basic definitions of stratigraphy and sedimentology. 10. Identify the economic formation southern Iraq.
Module Learning Outcomes	1. Describe the stratigraphic column of Iraq. 2. List the various terms associated with stratigraphy, sedimentology and sequence stratigraphy.

مخرجات التعلم للمادة الدراسية	3. Summarize what is meant by a basic sequence stratigraphy. 4. Discuss the relationships between the stratigraphic units. 5. Describe the stratigraphic units. 6. Define tectonostratigraphic. 7. Identify the sedimentary environments. 8. Discuss the stratigraphic relationships. 9. Discuss the various mechanism of sedimentation. 10. Explain the concepts of sequence stratigraphy. 11. Describe the main formations in Iraq.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A – STRATIGRAPHIC PRINCIPLES. Sedimentary rocks important Strata & Stratification Explain stratigraphic Units types. Name the stratigraphic units. Stratigraphy Committee. Tectonics & Tectonostratigraphic of Arabian Plate. Clarification of the stages of development of the Arabian plate during geological time. Using the drawing process to understand the rock sequences in Iraq. The use of software in the task mapping process. Part B – SEQUENCE STRATIGRAPHY CONCEPTS. Understand the basic definitions of sequence stratigraphy Drawing sequence stratigraphic sections. Using the concepts of sequences stratigraphy in the investigation of oil traps

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students. One of the strategies for this course is to give the student an idea of the stratigraphic column in southern Iraq and the oil-producing rock formations, and Identify the economic formation southern Iraq. In addition to Identify the main oilfields in Iraq.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem)	109	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعي	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم الفصل للطالب خلال	91	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعي	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	200		

Module Evaluation تقييم المادة الدراسية				
	Time/Nu	**Weight (Marks)**	**Week Due**	**Relevant Learning**

		mber			Outcome
Formative assessment	Quizzes	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2 hr	50% (50)	16	All
			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction – Stratigraphy & Sedimentology – Why Bother, Development Of Stratigraphy, Phases Of Study.
Week 2	Sediments and sedimentary rocks.
Week 3	Stratigraphic Units.
Week 4	Sedimentary Environments.

Week 5	Stratigraphic Relationships
Week 6	Transgression & Regression.
Week 7	Tectonostratigraphic.
Week 8	**Mid-term Exam**
Week 9	Sequence Stratigraphy
Week 10	Stratigraphic problem times and places.
Week 11	Tectonics and sedimentary basins.
Week 12	Arabian Plate Tectonostratigraphic.
Week 13	Basin analysis.
Week 14	Petroleum System in Iraq.
Week 15	Cretaceous Stratigraphic Column Southern Iraq.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Introduction to Subsurface stratigraphic column in southern Iraq.
Week 2	Lab 2: Subsurface Cretaceous stratigraphic column in southern Iraq.
Week 3	Lab 3: The method of drawing the stratigraphic column.
Week 4	Lab 4: The method of drawing the stratigraphic correlation.
Week 5	Lab 5: stratigraphic Maps.
Week 6	Lab 6: The method of drawing the structural contour map.
Week 7	Lab 7: The method of drawing the isothickness map.
Week 8	Lab 8: Stratigraphic software.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Principles of Stratigraphy. Edited by Michael E. Brookfield, 2004 by Blackwell Publishing Ltd.	Yes
Recommended Texts	Sedimentology and Stratigraphy. Second Edition, Edited by Gary Nichols. Welly Black well. A John Wiley & Sons, Ltd., Publication.	Yes

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information
معلومات المادة الدراسية

Module Title	**Computer Science**	**Module Delivery**	
Module Type	**Basic**	☐ **Theory** ✓ ☐ **Lecture** ✓ ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ✓ ☐ **Seminar**	
Module Code	**E125**		
ECTS Credits	6		
SWL (hr/sem)	75		

Module Level	1	**Semester of Delivery**	2
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Khalid A. Saber	**e-mail**	
Module Leader's Acad. Title	Ass. Lecturer	**Module Leader's Qualification**	M.Sc.
Module Tutor		**e-mail**	
Peer Reviewer Name	None	**e-mail**	None
Scientific Committee Approval Date	01/09/2025	**Version Number**	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الاخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية

Module Aims أهداف المادة الدراسية	• To knowledge of the most important components and basics of a computer • To understand algorithms and flowcharts • To learn how to use computer software (Word, Excel, and Power point)

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• Knowledge of computer basics • Building an integrated algorithm for any program • Draw a flowchart for any program • Using Word and creating a Word file • Drawing charts using Excel • Perform all calculations and obtain results using Excel • Preparing a presentation using PowerPoint
Indicative Contents المحتويات الارشادية	

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ 15 اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	58	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5,10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2,12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	**Introduction to computer**
Week 2	Computer programming language
Week 3	Flowcharts
Week 4	Algorithms
Week 5	Introduction to Microsoft word
Week 6	Word Tutorial
Week 7	Word Tutorial
Week 8	Introduction to Microsoft excel
Week 9	Find solutions for various mathematical operations
Week 10	How to insert different functions using Excel
Week 11	Draw charts using Excel
Week 12	Introduction to power point
Week 13	prepare a presentation using Power point
Week 14	Seminar
Week 15	Seminar
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Learning about computer parts and important tasks in Windows

Week 2	Learning the basics of the Word software by controlling the type, size and color of the font and other setting
Week 3	Learning how to insert an image, chart, text, etc
Week 4	Learning the basics of the Excel and how to find the solutions for different equations
Week 5	Learn drawing different charts
Week 6	Learning the basics for power point
Week 7	Learning how to prepare a presentation using Power point

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Microsoft Word 2016 Step by Step An introduction to EXCEL for civil Engineers Microsoft Power Point 2016 Step by Step	No
Recommended Texts		No
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
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Fail Group (0 – 49)	**FX –** Fail	راسب)قيد المعالجة(	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required