



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

دليل وصف البرنامج الأكاديمي والمقرر

المقدمة

يعد البرنامج التعليمي بمثابة حزمة منسقة ومنظمة من المقررات 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 سنويا عبر إجراءات وبرامج التدقيق الداخلي والخارجي مثل برنامج الممتحن الخارجي.

يقدم وصف البرنامج الاكاديمي ملخص موجز للسلمات الرئيسة للبرنامج ومقرراته مبينا المهارات التي يتم العمل على اكسابها للطلبة مبنية على وفق اهداف البرنامج الاكاديمي وتتجلى أهمية هذا الوصف لكونه يمثل الحجر الأساس في الحصول على الاعتماد البراجمي ويشترك في كتابته الملاكات التدريسية باشراف اللجان العلمية في الأقسام العلمية.

ويتضمن هذا الدليل بنسخته الثانية وصفا للبرنامج الاكاديمي بعد تحديث مفردات وفقرات الدليل السابق في ضوء المستجدات وتطورات النظام التعليمي في العراق والذي تضمن وصف البرنامج الاكاديمي بشكلها التقليدي نظام (بولونيا ، فضلي) فضلا عن اعتماد وصف البرنامج الاكاديمي المعمم بموجب كتاب دائرة الدراسات ت م 2906/3 في 2023/5/3 فيما يخص البرامج التي تعتمد مسار بولونيا أساسا لعملها.

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

نموذج وصف البرنامج الاكاديمي

اسم الجامعة : جامعة واسط

الكلية : كلية الهندسة

القسم العلمي : قسم الهندسة المدنية

اسم البرنامج الاكاديمي : البرنامج الدراسي 2025-2026

اسم الشهادة النهائية : بكالوريوس في الهندسة المدنية

النظام الدراسي : مسار بولونيا

تاريخ اعداد الوصف : 2025/9/1

تاريخ ملء الملف : 2025/9/29



التوقيع:

اسم المعاون العلمي: أ.م.د. محمد غالب محسن

التاريخ: 2025/9 /23



التوقيع:

اسم رئيس القسم: أ.م.د. علاء خرباط شذر

التاريخ: 2025/ 9 / 22

دقق الملف من قبل: أ.م.د. حيدر ماجد حسن

شعبة ضمان الجودة والأداء الجامعي

اسم مدير شعبة ضمان الجودة: أ.م.د. حيدر ماجد حسن

التاريخ: 2025/ 9 / 29

التوقيع:



مصالفة العميد

أ.د. نائر سعود الغشام

2025/ 9 / 29

1. رؤية البرنامج

لحصول على مكانة مميزة في مجال التعليم الهندسي والبحث العلمي، تحفيز التعاون والابتكار، والسعي نحو تخريج مهندسين مدنيين أكفاء يساهمون في التطور المستدام وخدمة المجتمع

2. رسالة البرنامج

رسالة القسم هي تأهيل مهندسين مدنيين مبدعين من خلال اساليب التعليم الحديث والبحث العلمي، و معرفة التحديات المجتمعية وايجاد الحلول الهندسية المستدامة لها.

3. اهداف البرنامج

- 1- تمكين الطلبة الخريجين من أن يصبحوا مهندسين أكفاء لديهم معرفة شاملة بالهندسة المدنية.
- 2- تمكين الطلبة الخريجين من امتلاك القدرة على تطبيق أساليب التصميم والإدارة والعمل في مشاريع البناء الخاصة بالهندسة المدنية.
- 3- إكساب الخريجين القدرة على اكتساب مهارات الاتصال والعمل الجماعي في مشاريع متعددة المجالات.
- 4- إكساب الخريجين القدرة على اكتساب مهارات التعلم لتطوير الأداء المهني والعمل الإبداعي والتخطيط القائم على أخلاقيات المجتمع والعمل.
- 5- مواكبة آخر التطورات في الهندسة المدنية من خلال إعادة التقييم الدوري للخطط الدراسية والمناهج المقترحة.
- 6- إجراء البحوث والدراسات العلمية لزيادة المعرفة والتطبيقات وتقديم حلول مبتكرة للمشاكل المحلية والإقليمية على وجه الخصوص.
- 7- إقامة علاقات قوية مع الشركات والمؤسسات المحلية والإقليمية والدولية لتعزيز ودعم البحث العلمي والنشاط التعليمي في الجامعة.

4. الاعتماد البرامجي

مستمرين في العمل على اكمال ملف الاعتماد و تقم تقديم تقرير التقييم الذاتي و تقرير المراجعة

5. المؤثرات الخارجية الاخرى

وزارة التعليم العالي و البحث العلمي

6. هيكلية البرنامج

ملاحظات	النسبة	الوحدات	عدد المقررات	هيكل البرنامج
	25%	200	8	متطلبات القسم
	3%	25	1	متطلبات كلية
	72%	575	23	متطلبات قسم
		لا يوجد	1	التدريب الصيفي
				اخرى

7. وصف البرنامج				
المستوى	اسم المقرر	رمز المقرر	الساعات المعتمدة	
			نظري	عملي
المستوى الاول	مواد البناء 1	CE 112	2	2
	مواد البناء 2	CE 122	2	2
	الرياضيات 1	COE01	4	
	الميكانيك الهندسي 1	CE 111	4	
	الميكانيك الهندسي 2	CE 122	4	
	الإحصاء والإحتمالية 1	CE 113	3	
	الإحصاء والإحتمالية 2	CE 124	3	
	الرسم الهندسي	CE 114	4	
	حاسوب 1	WU01	1	2
	اللغة العربية	WU02	2	
	الورش التطبيقية	CE 115	1	2
	الرسم بالحاسبة	CE 125	4	
	برمجة الحاسبة 1	CE 126	1	2
	اللغة الإنكليزية الأكاديمية 1	WU03	2	
الديمقراطية وحقوق الإنسان	WU04	2		
المستوى الثاني	الرياضيات 2	CE 121	4	
	الرياضيات 3	CE 231	4	
	الرياضيات 4	CE 241	4	
	مقاومة المواد 1	CE 232	4	
	المساحة الهندسية 1	CE 233	2	3
	ميكانيك الموائع 1	CE 234	2	2
	ميكانيك الموائع 2	CE 244	3	2
	تكنولوجيا الخرسانة 1	CE 235	2	2

2	2	CE 246	تكنولوجيا الخرسانة 2	المستوى الثالث
	2	CE 236	انشاء المباني	
2	2	CE 245	إنشاء المباني والرسم الإنشائي	
2	1	WU22	الحاسوب 2	
	2	WU05	اللغة الانجليزية 2	
	4	CE 242	مقاومة المواد 2	
3	2	CE 243	المساحة الهندسية 2	
	2	WU21	اللغة العربية 2	
	2	WU23	جرائم حزب البعث	
	2	CE 351	التحليلات الهندسية	
	3	CE 352	التحليل الإنشائي 1	
2	2	CE 353	ميكانيك التربة 1	
	2	CE 354	الخرسانة المسلحة 1	
2	2	CE 355	هندسة المياه	
	1	CE 356	هندسة المرور	
	2	CE 357	إدارة المشاريع	
1	1	CE 358	تطبيقات الحاسوب في الهندسة المدنية 1	
	2	CE 361	التحليلات العددية	
	3	CE 362	التحليل الإنشائي 2	
2	2	CE 363	ميكانيك التربة 2	
	2	CE 364	الخرسانة المسلحة 2	
	2	CE 365	الهيدرولوجي	
	2	CE 366	التصميم الهندسي للطرق	
	2	CE 367	الاقتصاد الهندسي	
1	1	CE 368	تطبيقات الحاسوب في الهندسة المدنية 2	

8. مخرجات التعلم المتوقعة	
المعرفة	
أ1	القدرة على تحديد وصياغة وحل المشكلات الهندسية باستخدام مبادئ الرياضيات والعلوم والهندسة
أ2	القدرة على إجراء التجارب وتحليل البيانات وتفسيرها للوصول إلى استنتاجات هندسية صحيحة
المهارات	
ب1	القدرة على تصميم أنظمة أو مكونات هندسية تلبي احتياجات محددة ضمن قيود واقعية
ب2	القدرة على التواصل الفعال شفويًا وكتابيًا مع مختلف الأطراف
ب3	القدرة على العمل الجماعي وإدارة المشاريع بكفاءة في بيئات متعددة التخصصات
القيم	
ج1	فهم المسؤوليات الأخلاقية والمهنية وتأثير الحلول الهندسية على المجتمع والبيئة
ج2	القدرة على التعلم الذاتي المستمر ومواكبة التطورات العلمية والتكنولوجية

9. استراتيجيات التعليم والتعلم

1. المحاضرات النظرية: (Lectures) كوسيلة أساسية لتقديم المعرفة العلمية الأساسية.
2. التدريبات العملية والمختبرات: (Labs & Practical Sessions) لتطبيق المفاهيم النظرية عملياً وتعزيز المهارات التحليلية.
3. المشاريع والتكليفات: (Projects & Assignments) خاصة مشاريع التخرج والتقارير، التي تنمي مهارات التصميم والابتكار.
4. العروض التقديمية والنقاشات الصفية: (Presentations & Discussions) لتعزيز مهارات التواصل والعمل الجماعي.
5. الزيارات الميدانية: (Field Visits) لربط الطلبة بالواقع العملي والهندسي.
6. التعلم الإلكتروني: (E-Learning / LMS) من خلال استخدام المنصات الإلكترونية والمواد الرقمية.

التعلم الذاتي: (Self-Learning) تشجيع الطلبة على البحث المستقل واستخدام المصادر العلمية

10. طرق التقييم

مطبقة بشكل عام على كل المراحل الدراسي

الامتحانات اليومية

الواجبات المنزلية والصفية

المشاريع والاعمال المختبرية

التقارير

الامتحانات النصفية والنهائية

11. الهيئة التدريسية

اعداد الهيئة التدريسية		التخصص		الرتبة العلمية	
محاضر	ملاك	الأختصاص الدقيق	الإختصاص العام	عام	الاسم
	ملاك	إدارة المشاريع	هندسة مدنية	دكتوراه	احسان علي حسين
	ملاك	هندسة بيئية	هندسة مدنية	دكتوراه	احمد حميد شهاب
	ملاك	هندسة بيئية	هندسة مدنية	دكتوراه	احمد عادل ناجي
	ملاك	طرق ومواصلات	الهندسة المدنية	ماجستير	احمد كاظم كريم
	ملاك	جيو تكنيك	هندسة مدنية	ماجستير	اسراء محمد محسن
	ملاك	جيو تكنيك	هندسة مدنية	دكتوراه	اسعد حافظ حميش

بروج بشير محمود	دكتوراه	هندسة مدنية	إدارة مشاريع	ملاك
ثائر سعود سلمان	دكتوراه	هندسة مدنية	إنشاءات	ملاك
جاسم محمدرضا عزيز	ماجستير	هندسة مدنية	موارد مائية	ملاك
جاسم محمود مهلهل	ماجستير	هندسة مدنية	إنشاءات	ملاك
جرير جابر محمد	دكتوراه	هندسة مساحة	مساحة وجيوديسيا الفضاء	ملاك
حسام الدين القهار عمار	ماجستير	هندسة مدنية	انشاءات	ملاك
حسن علي عباس	دكتوراه	هندسة مدنية	جيوتكنيك	ملاك
حسين عسكر جابر	دكتوراه	هندسة مدنية	إنشاءات	ملاك
حقي هادي عبود	ماجستير	هندسة مدنية	جيوتكنيك	ملاك
دانية عبدالناصر عبدالرضا عليوي	ماجستير	الهندسة المدنية	انشاءات	ملاك
دعاء طه ياسين	ماجستير	تقنيات مساحة	جيوماتيك	ملاك
رنا عقيل عبيد ياسين	ماجستير	الهندسة المدنية	هندسة مياه وبيئة	ملاك
زهراء صباح حسن علي	ماجستير	الهندسة المدنية	الموارد المائية	ملاك
زهراء علي عبدالحسين	ماجستير	هندسة مدنية	إنشاءات	ملاك
سرى سليم حسن	ماجستير	هندسة مواد		ملاك
سلام رضا عليوي	دكتوراه	هندسة مدنية	هندسة الطرق	ملاك
سلمان فاضل شوكة	دكتوراه	هندسة مدنية	جيوتكنيك	ملاك
سليم محمود معارك	ماجستير	هندسة مدنية	جيوتكنيك	ملاك
صلاح لفته فرحان	دكتوراه	هندسة مدنية	هندسة بيئية	ملاك
صلال راشد عبد	دكتوراه	هندسة مدنية	إنشاءات	ملاك
عامر محسن مهاوش جابر	دكتوراه	هندسة مدنية	هندسة التربة	ملاك
عبدالله سراج أنور	ماجستير	هندسة الموارد المائية	موارد مائية	ملاك
عبدالمهيمن جعفر كاظم	ماجستير	هندسة مدنية	مواصلات	ملاك
عقيل عبود عبدالحسن	ماجستير	هندسة مساحة	مساحة	ملاك
علاء خرباط شذر	دكتوراه	هندسة مدنية	إدارة مشاريع	ملاك
علاء محسن حمد	ماجستير	مدني		ملاك

علي جويد جعيل	دكتوراه	هندسة بيئية	معالجة مياه	ملاك
علي حسين احمد	ماجستير	الهندسة المدنية	هندسة الانشاءات	ملاك
علي عبد موحى	دكتوراه	علوم الأرض	جيوفيزياء	ملاك
علي ناصر حلو	دكتوراه	هندسة مدنية	موارد مائية	ملاك
علي وحييد نعيمش	دكتوراه	هندسة مدنية	هندسة بيئية	ملاك
علياء كاظم جبر	ماجستير	تربية	التأريخ الحديث	ملاك
كرار علي فزع	دكتوراه	هندسة مدنية	انشاءات	ملاك
لمياء جبار مطر	ماجستير	انشاءات		ملاك
ليث بدر فتحي	دكتوراه	هندسة مدنية	مصادر مياه وبيئة	ملاك
محمد علي حسين حسن	دكتوراه	هندسة مدنية	جيو تكنيك	ملاك
محمد فريح خطاب	ماجستير	هندسة مدنية	هندسة مواد البناء	ملاك
مرتضى هاشم حسون	ماجستير	هندسة مدنية	جيو تكنيك	ملاك
مرورة كريم عزيز	ماجستير	هندسة مدنية	موارد مائية	ملاك
مشتاق كاظم جمعة	دكتوراه	اللغة العربية	لغة	ملاك
مصطفى ثائر حسن	ماجستير	هندسة مواد	مواد	ملاك
مقداد منذر عبدالغني	دكتوراه	هندسة مدنية	طرق	ملاك
منال عبدالستار محمد	ماجستير	هندسة مدنية	موارد مائية	ملاك
مهدي خمير راهي	ماجستير	هندسة مدنية	موارد مائية	ملاك
ميلاد محمدحسن راضي	دكتوراه	هندسة مدنية	إنشاءات	ملاك
نبيل سليم سعد	دكتوراه	هندسة مدنية	طرق	ملاك
نبيل محمدعلي حميد	دكتوراه	هندسة مدنية	جيو تكنيك	ملاك
نذير صلاح الدين أيوب	ماجستير	هندسة مدنية	موارد مائية	ملاك
نور قاسم صبري	ماجستير	هندسة مدنية	موارد مائية	ملاك
نورالهدى علاء الدين جاسم	دكتوراه	هندسة مدنية	هندسة بيئية	ملاك
هبة داود سليم	ماجستير	هندسة مدنية	جيو تكنيك	ملاك
هدى يوسف عناد	ماجستير	هندسة مدنية	موارد مائية	ملاك
ولاء عبدالحالق زغير	ماجستير	هندسة كيميائية		ملاك

التطوير المهني

توجيه أعضاء هيئة التدريس الجدد

•برنامج التعريف:

- جلسة تعريفية عند التعيين حول رسالة الكلية، أهداف البرنامج (PEOs) ، مخرجات التعلم (GOS).
- شرح أنظمة القسم: التعليم المبني على المخرجات (OBE) ، ضمان الجودة، آليات التقويم.

•التوجيه الأكاديمي:

- تعيين عضو هيئة تدريس ذي خبرة ك مشرف/مرشد أكاديمي لكل عضو جديد.
- تقديم الدعم في إعداد المحاضرات، استخدام استراتيجيات التدريس، وإدارة الصف.

•التدريب على استراتيجيات التعليم والتعلم:

- إشراك الأعضاء الجدد في ورش عمل حول:
 - طرائق التدريس الفعالة.
 - إعداد الاختبارات والروبرك لتقويم الطلبة.

•إعداد البحث العلمي والنشر:

- ورش تدريبية حول كيفية كتابة ونشر البحوث.

•التطوير المهني المستمر :

- خطة سنوية لكل تدريسي تتضمن المشاركة في ورش ودورات تدريبية.

•الدعم الإداري:

تعريفهم باللوائح الجامعية والحقوق والواجبات.

التطوير المهني لاعضاء هيئة التدريس

•الورش والدورات التدريبية:

- في استراتيجيات التعليم والتعلم النشط.
- في استخدام نظم التعليم الإلكتروني (LMS) وأدوات التعليم عن بعد.
- في إعداد الروبرك وأدوات التقويم الحديثة.

•المؤتمرات والندوات العلمية:

- المشاركة ببحوث أو حضور مؤتمرات محلية ودولية.
- تبادل الخبرات مع جامعات أخرى.
- المشاركة في برامج تدريبية خارج الجامعة.

•البحث العلمي والنشر:

- دعم الأبحاث التطبيقية والمشاريع المرتبطة بالمجتمع.
- تحفيز النشر في مجلات علمية رصينة.(Scopus, WoS)
- توفير دعم مالي أو وقتي لإنجاز البحوث.

•التقويم الذاتي والتغذية الراجعة:

- استبيانات الطلبة حول أداء التدريسي.
- التقويم السنوي للاداء

12. معيار القبول

1. **القبول المركزي:** دليل القبول المركزي الصادر من وزارة التعليم العالي و البحث العلمي + دليل اجراءات شؤون الطلبة وضوابط القبول وشروطه الصادر من وزارة التعليم العالي و البحث العلمي.
2. **الدراسة المسائية:** دليل القبول المركزي الصادر من وزارة التعليم العالي و البحث العلمي + دليل اجراءات شؤون الطلبة وضوابط القبول وشروطه الصادر من وزارة التعليم العالي و البحث العلمي.

13. اهم مصادر المعلومات عن البرنامج الدراسي

1. الموقع الالكتروني الرسمي للكلية/الجامعة
2. النشر على لوحة الإعلانات
3. ارسال عبر البريد الالكتروني الرسمي عند الطلب.

14. خطة تطوير البرنامج الدراسي

1. تطوير المناهج والمقررات
2. تحقيق مخرجات التعلم (GOs)
3. تطوير طرق التدريس والتقييم
4. بناء القدرات لأعضاء هيئة التدريس
5. تطوير البنية التحتية والمختبرات
6. تعزيز العلاقة مع سوق العمل والمجتمع
7. التحسين المستمر

مخطط مهارات البرنامج										
مخرجات التعلم المطلوبه من البرنامج										
القيم		المهارات			المعرفة		اساسي ام اختياري	اسم المقرر	رمز المقرر	السنة/ المستوى
ج2	ج1	ب3	ب2	ب1	أ2	أ1				
				★		★	اساسي	مواد البناء1	CE 112	المستوى الاول
				★		★	اساسي	مواد البناء2	CE 122	
					★	★	اساسي	الرياضيات1	COE01	
				★		★	اساسي	الميكانيك الهندسي1	CE 111	
				★		★	اساسي	الميكانيك الهندسي2	CE 122	
					★	★	اساسي	الإحصاء والإحتمالية1	CE 113	

مخطط مهارات البرنامج										
مخرجات التعلم المطلوبه من البرنامج							اساسي ام اختياري	اسم المقرر	رمز المقرر	السنة/ المستوى
القيم		المهارات			المعرفة					
ج2	ج1	ب3	ب2	ب1	أ2	أ1				
					★	★	اساسي	الإحصاء والإحتمالية2	CE 124	
			★	★			اساسي	الرسم الهندسي	CE 114	
★			★	★		★	اساسي	حاسوب1	WU01	
		★	★				اساسي	اللغة العربية	WU02	
			★	★			اساسي	الورش التطبيقية	CE 115	
★			★	★			اساسي	الرسم بالحاسبة	CE 125	
★			★	★		★	اساسي	برمجة الحاسبة1	CE 126	

مخطط مهارات البرنامج										
مخرجات التعلم المطلوبه من البرنامج							اساسي ام اختياري	اسم المقرر	رمز المقرر	السنة/ المستوى
القيم		المهارات			المعرفة					
ج2	ج1	ب3	ب2	ب1	أ2	أ1				
★		★	★				اساسي	اللغة الإنكليزية الأكاديمية1	WU03	
★	★						اساسي	الديمقراطية وحقوق الإنسان	WU04	
					★	★	اساسي	الرياضيات2	CE 121	
					★	★	اساسي	الرياضيات3	CE 231	المستوى الثاني
					★	★	اساسي	الرياضيات4	CE 241	
				★		★	اساسي	مقاومة المواد1	CE 232	

مخطط مهارات البرنامج										
مخرجات التعلم المطلوبه من البرنامج							اساسي ام اختياري	اسم المقرر	رمز المقرر	السنة/ المستوى
القيم		المهارات			المعرفة					
ج2	ج1	ب3	ب2	ب1	أ2	أ1				
			★	★		★	اساسي	المساحة الهندسية1	CE 233	
				★		★	اساسي	ميكانيك الموائع1	CE 234	
				★		★	اساسي	ميكانيك الموائع2	CE 244	
				★		★	اساسي	تكنولوجيا الخرسانة1	CE 235	
				★		★	اساسي	تكنولوجيا الخرسانة2	246CE	
				★		★	اساسي	انشاء المباني	CE 236	

مخطط مهارات البرنامج										
مخرجات التعلم المطلوبه من البرنامج							اساسي ام اختياري	اسم المقرر	رمز المقرر	السنة/ المستوى
القيم		المهارات			المعرفة					
ج2	ج1	ب3	ب2	ب1	أ2	أ1				
			★	★		★	اساسي	إنشاء المباني والرسم الإنشائي	CE 245	
★			★	★		★	اساسي	الحاسوب2	WU22	
★		★	★				اساسي	اللغة الانجليزية 2	WU05	
				★		★	اساسي	مقاومة المواد2	CE 242	
			★	★		★	اساسي	المساحة الهندسية2	CE 243	
★		★	★				اساسي	اللغة العربية 2	WU21	
★	★						اساسي	جرائم حزب البعث	WU23	

مخطط مهارات البرنامج										
مخرجات التعلم المطلوبه من البرنامج							اساسي ام اختياري	اسم المقرر	رمز المقرر	السنة/ المستوى
القيم		المهارات			المعرفة					
ج2	ج1	ب3	ب2	ب1	أ2	أ1				
					★	★	Core	Engineering analysis	CE 351	الثالث
				★		★	Core	Structural analysis	CE 352	
				★		★	Core	Soil mechanics1	CE 353	
				★		★	Core	Reinforced concrete1	CE 354	
				★		★	Core	Water engineering	CE 355	

مخطط مهارات البرنامج										
مخرجات التعلم المطلوبه من البرنامج							اساسي ام اختياري	اسم المقرر	رمز المقرر	السنة/ المستوى
القيم		المهارات			المعرفة					
ج2	ج1	ب3	ب2	ب1	أ2	أ1				
				★		★	Core	Traffic engineering	CE 356	
	★	★	★	★			Core	Projects administration	CE 357	
★			★	★		★	Core	Computer applications1	CE 358	
					★	★	Core	Numerical analysis	CE 361	
				★		★	Core	Structural analysis2	CE 362	

مخطط مهارات البرنامج										
مخرجات التعلم المطلوبه من البرنامج							اساسي ام اختياري	اسم المقرر	رمز المقرر	السنة/ المستوى
القيم		المهارات			المعرفة					
ج2	ج1	ب3	ب2	ب1	أ2	أ1				
				★		★	Core	Soill mechanics2	CE 363	
				★		★	Core	Reinforced concrete2	CE 364	
				★		★	Core	Hydrology	CE 365	
				★		★	Core	Road designs	CE 366	
	★			★		★	Core	Engineering economy	CE 367	

مخطط مهارات البرنامج										
مخرجات التعلم المطلوبه من البرنامج							اساسي ام اختياري	اسم المقرر	رمز المقرر	السنة/ المستوى
القيم		المهارات			المعرفة					
ج2	ج1	ب3	ب2	ب1	أ2	أ1				
★			★	★			Core	Computer applications2	CE 368	

Course Description Form

1. Course Name:	
Statistics and Probability I	
2. Course Code:	
CE 114	
3. Semester / Year:	
1/1	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Presence	
6. Number of Credit Hours (Total) / Number of Units (Total)	
45/4	
7. Course administrator's name (mention all, if more than one name)	
Name: Ali Jwied Email: alijwaid@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<ol style="list-style-type: none"> 1. To use appropriate statistical terms to describe data. 2. To use appropriate statistical methods to collect, organize, display, and analyze relevant data. 3. To compute fluently and make reasonable estimations.
9. Teaching and Learning Strategies	
Strategy	In Statistics and Probability module, which needs a comfortable classroom environment due to its complex topics that need a unique way of delivering the

materials to accommodate students' diverse learning needs to motivate and enable them to gain the skills needed to understand and succeed. Therefore, my strategy in this module is to adopt a variety of techniques designed to address the unique learning styles and diversity among students. In each lecture, I will begin with a brief example from real life to motivate interest in the subject and tie the topic into the larger picture and to make the subject much easier to understand. Also, students are encouraged to engage in the module through their questions, problem-solving, and teamwork for exchanging ideas and concepts regarding assignments.

At the end of each subject within the module, questions involving extensions of the concepts covered and their applications will be proposed to prompt critical thinking as well as motivate the next subject to be covered.

To pass the exams successfully, students must review each lecture on the same day to fully understand the subject, and they are encouraged to ask the tutor regarding anything they did not understand. Finally, reading and understanding the lectures given during the course will enable any student to succeed in the final exam.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	3	<p>At the end of this module students will be able to:</p> <ol style="list-style-type: none"> 1. Recognize and differentiate between key terms. 2. Apply various types of sampling methods to data collection. 3. Create and interpret frequency tables. 4. Display data graphically and interpret graphs, histograms, and frequency polygon. 5. Recognize, describe, and calculate the measures of location of data: quartiles and percentiles. 6. Recognize, describe, and calculate the measures of the center of data: mean, median, and mode. 	4	<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Tutorial	Quizzes Homework Classwork Mid term exam Final exam

	<p>7. Recognize, describe, and calculate the measures of the spread of data: variance, standard deviation, and range.</p> <p>8. Understand and use the terminology of probability.</p> <p>9. Determine whether two events are mutually exclusive and whether two events are independent.</p> <p>10. Calculate probability using the addition rules and multiplication rules.</p> <p>11. Construct and interpret contingency tables.</p> <p>12. Construct and interpret Venn diagrams.</p> <p>13. Construct and interpret Tree diagrams.</p>			
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11. Course Evaluation

Quizzes
Homework
Classwork
Mid term exam
Final exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Elementary Statistics- A Step By Step Approach Bluman A.G.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	YouTube channel of the instructor.

Course Description Form

1. Course Name:	
Democracy and Human Rights	
2. Course Code:	
WU04	
3. Semester / Year:	
1/1	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Presence	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30/2	
7. Course administrator's name (mention all, if more than one name)	
Name: Alyaa kadhim jepur Email: aliaa.kadim@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	1- Acquiring the skill of distinguishing between states' relations with their citizens. 2- Dealing with the concept of human rights. 3- Acquisition of knowledge in dealing with problems affecting those rights.
9. Teaching and Learning Strategies	
Strategy	1- Managing the lecture in such a way that the student feels the importance of time.

- 2- Assigning the student some group activities and duties.
- 3- Allocate a percentage of the grade for group activities.
- 4- Developing the topic of group campaigns that shed light on negative societal phenomena and the role of students as active individuals in society.
- 5- Active participation in the classroom is evidence of the student's commitment and responsibility.
- 6 Commitment to the deadline for submitting the assignments and reports required of the student to submit them.
- 7- Quarterly

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	2	1- Graduating a generation that is aware, educated and aware of its duties as an individual in society and the state, and its right exchange for those duties. 2- Developing in society a culture of respect for other, regardless of his beliefs, personal inclinations, attitudes, and social behaviors. 3- Referring first and foremost to the law regarding any offensive phenomena that may prevail in the work environment Developing the student's ability to dialogue and discussion. 5- It has a major role in analyzing emerging problems in society. 6- It contributes to increasing students' knowledge of how to prepare scientific reports.	2	Theory	Quizzes Assignments Report Mismatch Exam Final Exam

11. Course Evaluation

Formative assessment
Quizzes 20%
Assignments 10%
Report 10%
Summative assessment
Midterm Exam 10%

Final Exam 3hr 50%	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Human rights book, Dr. Ta Hamid Hassan
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Engineering Drawing	
2. Course Code:	
CE 114	
3. Semester / Year:	
1/1	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Presence	
6. Number of Credit Hours (Total) / Number of Units (Total)	
4/4	
7. Course administrator's name (mention all, if more than one name)	
Name: Laith bader Al-baderanee	
Email: laithbadr@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • To Create and interpret engineering drawing • Familiarizes students with the fundamentals of drawing. • Develop students' inspiration skills of the geometric objects
9. Teaching and Learning Strategies	
Strategy	Assessment Strategy The student's work will be assessed according to the module tasks. The excises in the drawing hall will be marked weekly. And the homework will be assessed next lecture. During both assessments, the student will give oral and written feedback in order to improve their skills. The final exam will be done at the end of the semester. Note: late work will not be marked.
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	60	<p>On successful completion of this module, the students will be able to:</p> <ul style="list-style-type: none"> -Sketch concept designs. -interpret and prepare engineering drawing a means of communication for the production of assemblies and the detail of the manufacture components. -produce two-and three dimensional engineering drawings -use appropriate formulae for the selection and design of machine elements for given engineering applications. •Drawing types: differences between general arrangement, and detail drawings. •Layout: paper sizes, borders, title block, part list. •Projection systems: first and third angle projection, projection symbols. •Lines and linework: line types and application thickness, leader lines, and arrowheads. •Lettering and symbols: style, height, direction and location. Common symbols • Views: partial, sections and rules associated with hatching. • Principles of dimensioning: projection and dimension lines, dimensioning methods, tolerance dimensions. 	4	Theory Lecture Drawing	Classwork Quizzes Homework Project Midterm exam Final Exam

11. Course Evaluation

**Classwork
Quizzes
Homework
Project
Midterm exam
Final Exam**

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	M.B.Shah, "Engineering Drawing" Dorling Kendersley (India) 2009 SIMMONS, COLIN H., Manual of engineering drawing, Butterworth-Heinemann.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	The most recent editions of: YARWOOD, A., Engineering drawing, Cassell.PHELPS, NEIL; SIMMONS, COLIN H., Engineering drawing practice: a guide for further and higher education to BS 8888:2006, Technical product specification (TPS), BSI. JENSEN, CECIL; HELSEL, JAY D., Engineering drawing and design,

	McGraw-Hill.
Electronic References, Websites	

Course Description Form

1. Course Name:	
Mathematics 1	
2. Course Code:	
COE01	
3. Semester / Year:	
1/1	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Presence	
6. Number of Credit Hours (Total) / Number of Units (Total)	
4/5	
7. Course administrator's name (mention all, if more than one name)	
Name: Hiba D. Saleem Email: hdawood@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<p>1. Providing the students with a sufficient knowledge on doing calculations, interpreting results, and dealing with different mathematical functions and their graphs.</p> <p>2. Providing the students with the necessary skills on dealing with transcendental functions (trigonometric, inverse trigonometric, exponential, and power, natural logarithm, hyperbolic, inverse hyperbolic functions).</p> <p>3. Strengthen the students' knowledge on the principles of derivatives, their concept and applications in engineering.</p>
9. Teaching and Learning Strategies	
Strategy	<p>1. Class lectures with using illustration means.</p> <p>2. Encouraging the students to participate in solving exercises in class to improve students' skills.</p> <p>3. Training students on solving home works</p> <p>4. Practicing in class questions and discussions</p> <p>5. Doing quizzes and exams</p> <p>6. In class questions and discussions to improve their understanding and critical thinking skills.</p> <p>7. Supportive videos will also be available.</p>
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	1. Realize the importance of studying mathematics and its relationship to engineering sciences. 2. Defining and understanding functions such as the trigonometric and transcendental functions and their graph. 3. The students will have the ability for dealing with limits and how to check the continuity of the functions. 4. Define and find the relationship between Limits, Continuity and derivatives. 5. The students will be able to solve a wide variety of mathematical derivative problems using different mathematical methods and understand their applications. 6. The students will be able to solve a wide variety of mathematical integration problems using substitution and integration parts. 7. To be able to use the fundamental theorem of calculus to evaluate definite integral and calculate the areas, volumes, lengths of plane curves. 8. Learn about mathematical analysis methods, mathematical equations and formulas, and how to apply them in engineering. 9. Solving complex functions. 10. Solving integrals and differentials equations with different coordinates. 11. Solving differential equations using the matrix method. 12. Solving complex equations and numbers using simple and different mathematical ways.	5	Theory Tutorial	Quizzes Homework Classwork Project Midterm exam Final exam
11. Course Evaluation					
Quizzes Homework Classwork Project Midterm exam Final exam					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)				Thomas' Calculus: (George B. Thomas, Maurice D. Weir and Joel R. Hass , 2011, 12th Edition)	
Main references (sources)					
Recommended books and references (scientific journals, reports...)				1. Matrix Methods and Differential Equations A Practical	

	Introduction by Wynand S. Verwoerd. 2. Advanced Engineering Mathematics by Erwin Kreyszig 8th Edition. 3. Essential Engineering Mathematics by Michael Batty 2011.
Electronic References, Websites	

Course Description Form

1. Course Name:	
Engineering Mechanics I	
2. Course Code:	
CE 111	
3. Semester / Year:	
1/1	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Presence	
6. Number of Credit Hours (Total) / Number of Units (Total)	
4/5	
7. Course administrator's name (mention all, if more than one name)	
Name: Saleem Mahmood Imarek Email: smahmood@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<ol style="list-style-type: none"> 1. define and explain principles of engineering mechanics (i.e. statics and dynamics) related to civil engineering domain 2. solve problems of statics and dynamics related to civil engineering domain using principles of engineering mechanics. discuss and clarify concepts of principles of engineering mechanics (i.e. statics and dynamics) for different simple situations. 3. prepare free body diagrams of real case phenomenon considering engineering mechanics point of view.
9. Teaching and Learning Strategies	
Strategy	Engineering Mechanics is a heavy course load that requires long instruction hours. Therefore, the strategy of the course to deliver this module depends mainly on the module instructor in the class, where the material should be delivered with practical examples. Moreover, class tutorials and homework assignments would help the students to practice solving analysis Composition and resolution of forces issues more efficiently. Practical and test videos should also be occasionally used to facilitate connecting the given course elements. Visits to structural building construction sites are also another tool to combine the delivered theoretical material with its practical application.
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	<p>1. Discern and determine the magnitude of loads acting on simple structural members.</p> <p>2. Analyze rigid body equilibrium including: a. Construct free body diagrams showing the function of simple structural elements; Analyze the force(s) or moment(s) required to maintain a structure in equilibrium; c. Analyze external reactions on structural members under applied loads.</p> <p>d. Construct axial force, shear force and bending moment diagrams for simple beams .</p> <p>3. Analyze the behavior of structural members including: a. Analyze section properties for simple cross sections; b. Analyze internal axial stresses, shear stresses and bending stresses in structural members such as beams, trusses, ties, struts, shafts and bolts .</p>	4	Theory Tutorial	Quizz Report Project Homework exams

11. Course Evaluation

Quizz
Report
Project
Homework
exams

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Engineering Mechanics By: A. Higdon and W.B. Sti 1974
Main references (sources)	
Recommended books and references (scientific journals, reports...)	A Textbook of Engineering Mec R.K. Bansal Laxmi Publications, 2005 R.K. Bansal
Electronic References, Websites	

Course Description Form

1. Course Name:	
Workshop Practice	
2. Course Code:	
CE 118	
3. Semester / Year:	
1/1	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Presence	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Assis.Prof. Hatam m. Samaka Email: hsamaka@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<ol style="list-style-type: none"> 1. Providing students with the basics of training knowledge in the scientific, practical, and engineering fields 2. Improving the capabilities of trainee students towards practical (applied) industrial engineering thinking. 3. Increasing the efficiency of students in the fields of scientific and engineering applications and preparing well-qualified engineers who suit the responsibilities that await them in the workplace through a comprehensive vision of their role in implementing future development.
9. Teaching and Learning Strategies	
Strategy	<ol style="list-style-type: none"> 1. Lectures 2. Practical exercises 3. Test and exams
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	3	1. Creating engineers capable of handling machine efficiently 2. Qualifying and preparing university students practically in a parallel and consistent manner with theoretical study supplementing their theoretical information with applied experiences that enable them to keep pace with technical developments in their field of specialization and work on them. 3. Building self-confidence among the graduating student by breaking the barrier of fear of machines and hand tools 4. Giving the student the practical basics a set of skills in various engineering workshops that can be developed in future after graduation as needed	3	Practice	Quizz Homework Classwork Exams
11. Course Evaluation					
Quizz Homework Classwork Exams					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)				MANUFACTURING PROCESSES," H.N. Gupta, R Gupta,	
Main references (sources)					
Recommended books and references (scientific journals, reports...)					
Electronic References, Websites					

Course Description Form

1. Course Name:					
Computer1					
2. Course Code:					
WU03					
3. Semester / Year:					
1/1					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Presence					
6. Number of Credit Hours (Total) / Number of Units (Total)					
3/3					
7. Course administrator's name (mention all, if more than one name)					
Name: Yousif Raad Muhsen ALmolla Email: Yousif@uowasit.edu.iq					
8. Course Objectives					
Course Objectives			<ol style="list-style-type: none"> 1. Giving the student a general idea of computer material at a study environment, library, and at home. 2. Understanding the basic rules for dealing with and managing computers (computer basics, computer components, computer and software licenses, operating systems,), With the aim of preparing the student to enter the programs he needs in the department. 3. Giving the student knowledge about the office applications as basic principles for students in the College of Engineering. 		
9. Teaching and Learning Strategies					
Strategy		<ol style="list-style-type: none"> 1. Using computers and display screens to explain lectures to students to increase students' mental comprehension. 2. Practical application in the computer lab of what was explained in the theoretical lecture. 3. Using direct questions in the classroom as brainstorming skills. 4. Encouraging students to solve class and homework assignments and to perform specialized reports. 			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

15	3	<ol style="list-style-type: none"> 1. Knowing computer peripherals, their connections and Windows system. 2. Distinguish between the important tabs in Word program. 3. The ability to write an entire paragraph with formatting. 4. Understand the basics of power point program. 5. Understand the excel sheet program. 6. Understanding the concepts of programming. 	3	Lab	Quizz Assignment Lab Exams Report
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11. Course Evaluation

**Quizz
Assignment
Lab
Exams
Report**

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	<ol style="list-style-type: none"> 1. Graham Brown, David Watson, "Cambridge IGCSE Information and Communication Technology", 3rd Edition (2020) 2. Alan Evans, Kendall Martin, Mary Anne Poatsy, "Technology In Action Complete", 16th Edition (2020). 3. Ahmed Banafa, "Introduction to
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
Building Materials1					
2. Course Code:					
CE 112					
3. Semester / Year:					
1/1					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4/4					
7. Course administrator's name (mention all, if more than one name)					
Name: Milad Mohammed Hasan Email: mhasan@uowasit.edu.iq					
8. Course Objectives					
Course Objectives			<p>1. Define and explain principles of engineering properties for building materials, especially materials used in construction, and finishing.</p> <p>2. Educate the basic chemical compositions of different types of building materials and the raw materials used in their manufacture are made up.</p> <p>3. Educate the methods of manufacturing building materials.</p>		
9. Teaching and Learning Strategies					
Strategy		Engineering Material Properties is an important course that requires hours for theoretical and experimental explaining. Moreover, this course needs seminars, recorded or online videos, and educational trips which would help the students to understand the subjects and have a clear idea about all subject			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	1. Understand the main properties of materials that responsible for their different behaviors.	4	Theory Lab	Quizz Project

		2. Learn the basics of different types of building materials and the method of manufacture. 3. Learn how to test different building materials and methods of obtaining the main properties of building materials experimentally. 4. Educate the preliminary mechanical and			Homework Exam
11. Course Evaluation					
Quiz Project Homework Exam					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			S. C. Rangwala, Engineering Materials, 32nd Edition 2005		
Main references (sources)					
Recommended books and references (scientific journals, reports...)					
Electronic References, Websites					

Course Description Form

1. Course Name:	
Statistics and Probability II	
2. Course Code:	
CE 114	
3. Semester / Year:	
2/1	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Presence	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3/4	
7. Course administrator's name (mention all, if more than one name)	
Name: Ali Jwied Email: alijwaid@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<p>To enable students:</p> <ol style="list-style-type: none"> 1. To apply concepts of the normal distribution to find probability. 2. To learn the basic components of hypothesis testing and perform hypothesis tests on population means, variances and proportions. 3. To use correlation and regression to find relations between variables and determine the equation of such relationship
9. Teaching and Learning Strategies	
Strategy	<p>In Statistics and Probability module, which needs a comfortable classroom environment due to its complex topics that need a unique way of delivering the materials to accommodate students' diverse learning needs to motivate and enable them to gain the skills needed to understand and succeed. Therefore, my strategy in this module is to adopt a variety of techniques designed to address the unique learning styles and diversity among students. In each lecture, I will begin with a brief example from real life to motivate interest in the subject and tie the topic into the larger picture and to make the subject much easier to understand. Also, students are encouraged to engage in the module through their questions, problem-solving, and teamwork for exchanging ideas and concepts regarding assignments.</p> <p>At the end of each subject within the module, questions involving extensions of the concepts covered and their applications will be proposed to prompt critical thinking as well as motivate the next subject to be covered.</p> <p>To pass the exams successfully, students must review each lecture on the same day to fully understand the subject, and they are encouraged to ask the tutor regarding anything they did not understand. Finally, reading and understanding the lectures given during the course will enable any student to succeed in the final exam.</p>
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	3	At the end of this module, students will be able to: 1. Recognize the normal probability distribution and apply it appropriately. 2. Recognize the standard normal probability distribution and apply it appropriately. 3. Compare normal probabilities by converting to the standard normal distribution. 4. Describe hypothesis testing in general and in practice. 5. Differentiate between Type I and Type II Errors. 6. Conduct and interpret hypothesis tests for a single population mean, population standard deviation known. 7. Discuss basic ideas of linear regression and correlation. 8. Create and analyze scatter plots. 9. Create and interpret a line of best fit. 10. Calculate and interpret the correlation coefficient.	4	Theory Lab	Quizz Project Homework Exam

11. Course Evaluation

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12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Elementary Statistics- A Step By Step Approach Bluman A.G.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Engineering Drawing by Computer	
2. Course Code:	
CE 125	
3. Semester / Year:	
2/1	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Theory	
6. Number of Credit Hours (Total) / Number of Units (Total)	
4/4	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr.laith bader Al-baderanee Email: laithbadr@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • Familiarizes students with the fundamentals of drawing. • Enhance communication of engineering drawings and product design. • Develop students' inspiration skills for the geometric objects. • Explore the Auto-CAD program with the students accurately.
9. Teaching and Learning Strategies	
Strategy	<p>The engineering drawing in the second semester is an extension of the first semester.</p> <p>While the first one is more about drawing technics and skills manually, the second one is more about the fundamental principles of drawing.</p> <p>Those fundamentals contain various view categories, relationships between them, sections, and introducing different ways of presentation.</p> <p>Moreover, the fundamental aspects of computer-aided design will be explained to students properly. The Auto-CAD program will be used as the main software program for drawing. Using Auto CAD helps the student to draw on the computer accurately.</p> <p>Learning Session Structure as for Each week, there are 3 hours of lectures in the drawing hall. At the beginning of each lecture: there will be introduced to the new topic. After that, the students will be asked to practice it in the drawing hall.</p> <p>Assessment Strategy The student's work will be assessed according to the module tasks.</p> <p>The excises in the drawing hall will be marked weekly.</p> <p>And the homework will be assessed next lecture. During both assessments, the student will give oral and written feedback in order to improve their skills.</p> <p>The final exam will be done at the end of the semester.</p> <p>For the auto-CAD program, there will be an individual project. Through it, the student's performance will be assessed.</p> <p style="text-align: center;">Note: the late work will not be marked</p>
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	<p>1 At the end of this module, the students should be able to.</p> <ul style="list-style-type: none"> • Understand and read complicated engineering drawings clearly. • Prepare and present the technical drawings effectively. • Enhances the Imagination of geometric shapes. • Using Auto-CAD engineering program professionally. 	4	Theory Lab	Quiz Project Homework Exam

11. Course Evaluation

Quiz
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12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	AutoCAD 2014 and AutoCAD 2014: No Experience Required: Autodesk Official Press [Paperback]-Donnie Gladfelter- Publisher: John Wiley & Sons (16 Aug 2013)- Indiana
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Mathematics II	
2. Course Code:	
CE 122	
3. Semester / Year:	
2/1	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Theory	
6. Number of Credit Hours (Total) / Number of Units (Total)	
4/5	
7. Course administrator's name (mention all, if more than one name)	
Name: Hiba D. Saleem Email: hdawood@uowasit.edu.iq	
8. Course Objectives	
<p>Course Objectives</p>	<ol style="list-style-type: none"> 1. Develop their mathematical knowledge and oral, written and practical skills in a way which encourages confidence and provides satisfaction and enjoyment. 2. Read mathematics, and write and talk about the subject in a variety of ways. 3. Develop a feel for number, carry out calculations and understand the significance of the results obtained. 4. Apply mathematics in everyday situations and develop an understanding of the part which mathematics plays in the world around them. 5. Solve problems, present the solutions clearly, check and interpret the results. 6. Develop an understanding of mathematical principles. 7. Recognize when and how a situation may be represented mathematically, identify and interpret relevant factors and, where necessary, select an appropriate mathematical method to solve the problem. 8. Use mathematics as a means of communication with emphasis on the use of clear expression. 9. Develop an ability to apply mathematics in other subjects, particularly science and technology. 10. Develop the abilities to reason logically, to classify, to generalize and to prove. 11. Appreciate patterns and relationships in mathematics. 12. Produce and appreciate imaginative and creative work arising from mathematical ideas. 13. Develop their mathematical abilities by considering problems and conducting individual and co-operative enquiry and experiment, including extended pieces of work of a practical and investigative kind.

14. Appreciate the interdependence of different branches of mathematics.
15. Acquire a foundation appropriate to their further study of mathematics and of other disciplines.

9. Teaching and Learning Strategies

Strategy	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 3. Home works 4. Test and exams 5. In class questions and discussions
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	<ol style="list-style-type: none"> 1. To be able to use the fundamental theorem of calculus to evaluate Standard integral and definite integral. 2. The process of integration. 3. Techniques of integration. 4. Definite integral, physical application of integration velocity and acceleration 5. Area under and between curves 6. Volume of solids revolution 7. Theory of matrices, matrix notation and determinants 8. Inverse of matrices. 9. Solutions of simultaneous equations by matrices. 	5	Theory Lab	Quizz Project Homework Exam

11. Course Evaluation

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12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Thomas' Calculus: (George B. Thomas, Maurice D. Weir and Joel R. Hass , 2011, 12 th Edition)
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
Academic English Language 1					
2. Course Code:					
WU01					
3. Semester / Year:					
2/1					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
2/2					
7. Course administrator's name (mention all, if more than one name)					
Name: Muqdad Mundher AbdulGhani Email: muqdadcrhi@gmail.com					
8. Course Objectives					
Course Objectives				This module provides all the language and skills students need to improve their English, with grammar, vocabulary, and skills work in every unit. The aim is represented by the module's trusted methodology combines solid grammar and practice, vocabulary development, and integrated skills.	
9. Teaching and Learning Strategies					
Strategy		Reading a range of pre-intermediate level articles on selected general topics. Writing a topic (informal emails, e.g.,) to classmates to discuss group work. Writing and submitting an assignment to a lecturer, Writing slides for presentations. Listening to authentic material at the beginner level to develop listening skills and comprehension. For Speaking, students may self-select and discuss topics with classmates on a group project. Typical topics that could be used at this level in the teaching of vocabulary include The World Around Us (Countries, Nationality, Language, Physical world, Weather, etc.). It may be appropriate for students to select grammar points for discussion in class, or for the lecturer to select them as they arise in students' writing. Grammar points that typically arise at this level include present simple and past simple; present continuous; question forms and auxiliary verbs; comparison; word order; prepositions; basic phrasal verbs.			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	2	1- Demonstrate understanding of academic texts and summarize them orally and in writing. 2- Demonstrate an ability to write with a fair degree of accuracy in a variety of genres. 3- cope effectively with everyday situations everyday in English	2	Theory	Quizz Project Homework Exam

		4- Demonstrate learner independence and be aware of their own linguistic strengths and weaknesses. 5- Participate in discussions/seminars on a variety of subject related, academic and general topics.		
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11. Course Evaluation

Quiz
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12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

New headway beginner student book

Main references (sources)

Recommended books and references (scientific journals, reports...)

Electronic References, Websites

Course Description Form

1. Course Name:					
Arabic Language					
2. Course Code:					
WU02					
3. Semester / Year:					
2/1					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
2/2					
7. Course administrator's name (mention all, if more than one name)					
Name: Mushtaq Jumaa					
Email: mjmaah@uowasit.edu.iq					
8. Course Objectives					
Course Objectives			<p>المهارة اللغوية للطلبة و تمكنهم من التعبير عن أفكارهم و مشاريعهم باللغة العربية و بطلاقة.</p> <p>Linguistic proficiency of students by enabling them to express their ideas and projects in fluent Arabic.</p> <p>تجنب الطلبة التحدث باللغة الدارجة او الكلمات غير العربية 2-</p> <p>Students avoid speaking in colloquial and non-Arabic language in the simplest ways.</p> <p>كتابة التقارير و المقالات باللغة العربية و بشكل انسيابي و دقيق و 3-</p> <p>منظم</p> <p>Writing reports and articles in fluent, concise and well-organized Arabic.</p> <p>استخدام قواعد اللغة العربية بشكل صحيح لان اللغة هي الأداة 4-</p> <p>الأساسية للتواصل بين افراد المجتمع.</p> <p>Use Arabic grammar correctly; Because language is the primary tool of communication between members of society.</p> <p>قراءة و فهم النصوص الاكاديمية باللغة العربية 5-</p> <p>Reading and understanding academic texts in Arabic.</p> <p>تطوير قابلية الطلبة على أداء المهام و تقديمها في الوقت المطلوب 6-</p> <p>Developing the student's ability to perform assignments and submit them on time.</p>		
9. Teaching and Learning Strategies					
Strategy		Present theoretical lectures and determine the information that is most significant by extracting keywords and ideas. <ul style="list-style-type: none"> • Students are given opportunities to produce language, and receive direct feedback to improve their language skills. 			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

15	2	Upon completion of this course, students will be able to: 1- Demonstrate proficiency in reading, writing, and speaking to Arabic. 2-Use Arabic to communicate effectively in academic and professional settings 3- Gain an understanding of linguistic and literary expressions 4-Demonstrate an understanding of the importance of Arabic language skills for success in engineering 5-Apply critical thinking and problem-solving skills in real-world situations 6- It	2	Theory	Quiz Project Homework Exam
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11. Course Evaluation

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12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Explanation of Ibn Aqeel on the Alfiyyah of Ibn Malik, edited Muhyiddin Abdul Hamid
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
Engineering Mechanics II					
2. Course Code:					
CE122					
3. Semester / Year:					
2/1					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4/5					
7. Course administrator's name (mention all, if more than one name)					
Name: Saleem Mahmood Imarek Email: smahmood@uowasit.edu.iq					
8. Course Objectives					
Course Objectives			<ol style="list-style-type: none"> 1. define and explain principles of engineering mechanics (i.e. statics and dynamics) related to civil engineering domain 2. solve problems of statics and dynamics related to civil engineering domain using principles of engineering mechanics. discuss and clarify concepts of principles of engineering mechanics (i.e. statics and dynamics) for different simple situations. 3. prepare free body diagrams of real case phenomenon considering engineering mechanics point of view. 		
9. Teaching and Learning Strategies					
Strategy		<p>Engineering Mechanics is a heavy course load that requires long instruction hours. Therefore, the strategy of the course to deliver this module depends mainly on the module instructor in the class, where the material should be delivered with practical examples. Moreover, class tutorials and homework assignments would help the students to practice solving analysis Composition and resolution of forces issues more efficiently. Practical and test videos should also be occasionally used to facilitate connecting the given course elements. Visits to structural building construction sites are also another tool to combine the delivered theoretical material with its practical application.</p>			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	<ol style="list-style-type: none"> 1. Discern and determine the magnitude of loads act on simple structural members. 2. Analyze rigid body equilibrium including: a. Cons free body diagrams 	5	Theory	Quizz Project Homework

	showing the function of simple structural elements; Analyze the force(s) or moment(s) required to maintain a structure in equilibrium; c. Analyze external reactions on structural members under applied loading; 3. Analyze the behavior of structural members including: a. Understanding Principle of Centroid and centers of gravity; b. Analyze the moment of inertia.			Exam
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11. Course Evaluation

Quiz Project Homework Exam

12. Learning and Teaching Resources
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Required textbooks (curricular books, if any)	Engineering Mechanics By: A. Higdon and W.B. Sti 1974
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Computer Programming I	
2. Course Code:	
CE 126	
3. Semester / Year:	
2/1	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Theory	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Yousif Raad Muhsen ALmolla Email: Yousif@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<ol style="list-style-type: none"> 1. The aim of this Module is to provide the student with: provide you with the fundamental tools to use the C++ computer program . 2. The module will familiarize you with the various C++ packages, their relative strengths and therefore which one to use to solve the problem at hand. This will enable you to work efficiently through all your modules on the programmer, As the C++ Suite remains the dominant office package in the workplace, the skills you obtain here will increase your employability both during your degree (work placement, summer internship) and upon graduation and The ability to plan, develop and test C++ computer programs for a range of routine programming problems.
9. Teaching and Learning Strategies	
Strategy	<p>The computer programming course is rigorous and demands extensive instructional time. Consequently, the course's approach relies heavily on the instructor to deliver the content through practical examples during class. Furthermore, assigning tutorials and homework assignments enables students to practice and improve their software skills in problem-solving. Occasional utilization of practical and test videos aids in establishing connections between various elements of the course. Additionally, visits to intersections serve as a valuable tool to bridge the gap between theoretical concepts and their practical application.</p> <ol style="list-style-type: none"> 1. Using computers and display screens to explain lectures to students to increase students' mental comprehension. 2. Practical application in the computer lab of what was explained in the theoretical lecture. 3. Using direct questions in the classroom as brainstorming skills. 4. Encouraging students to solve class and homework assignments and to perform specialized reports.
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	3	1. Create and run programs written in a C++ programming language using an integrated development environment. 2. Identify classes and solve routine programming problems. 3. The ability to write an entire paragraph with formatting. 4. Create re-usable software routines in a C++ programming language. 5. Utilizes standard class library functionality.	3	Theory Lab	Quizz Project Homework Exam

11. Course Evaluation

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12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Object Oriented Programming in C++ 4th Edition.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
Building Materials2					
2. Course Code:					
CE 125					
3. Semester / Year:					
2/1					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
3/3					
7. Course administrator's name (mention all, if more than one name)					
Name: Milad Mohammed Hasan Email: mhasan@uowasit.edu.iq					
8. Course Objectives					
Course Objectives			<ol style="list-style-type: none"> 1. Define and explain principles of engineering properties for building materials, especially materials used in construction, and finishing. 2. Educate the basic chemical compositions of different types of building materials and the raw materials used in their manufacture are made up. 3. Educate the methods of manufacturing building materials. 		
9. Teaching and Learning Strategies					
Strategy		Engineering Material Properties is an important course that requires hours for theoretical and experimental explaining. Moreover, this course needs seminars, recorded or online videos, and educational trips which would help the students to understand the subjects and have a clear idea about all subject			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	<ol style="list-style-type: none"> 1. Understand the main properties of materials that responsible for their different behaviors. 2. Learn the basics of different types of building materials and the method of manufacture. 3. Learn how to test different building materials and methods of obtaining the main properties of building materials experimentally. 4. Educate the preliminary mechanical and 	4	Theory Lab	Quizz Project Homework Exam
11. Course Evaluation					
Quizz					

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12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

S. C. Rangwala, Engineering
Materials, 32nd
Edition 2005

Main references (sources)

Recommended books and references (scientific journals,
reports...)

Electronic References, Websites

Course Description Form

1. Course Name:					
Computer2					
2. Course Code:					
WU22					
3. Semester / Year:					
1/2					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
3/3					
7. Course administrator's name (mention all, if more than one name)					
Name: Yousif Raad Muhsen ALmolla Email: Yousif@uowasit.edu.iq					
8. Course Objectives					
Course Objectives				<ol style="list-style-type: none"> 1. Utilize the computer for fundamental tasks. 2. Identify and discuss the hardware components of the computer system. 3. Creating documents using a word processor and creating presentations. 4. Conducting research on the Internet. An introduction to Artificial Intelligence	
9. Teaching and Learning Strategies					
Strategy		<ol style="list-style-type: none"> 1. Theoretical. 2. Explanation using modern means. (For example, using the virtual class, and using simultaneous communication programs such as meet, recording simultaneous lectures and then publishing them in the virtual class) 3. Practicality. 			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	3	The expected outcomes for this course are: 1. Students will be able to effectively use a computer basic tasks such as managing files and navigating the operating system. 2. Students will have a solid understanding of the hardware components of a computer system and their respective functions. 3. Students will demonstrate proficiency in creating formatting documents using word processing software, as well as designing and delivering presentations. 4. Students will develop skills in conducting research using the Internet,	3	Theory Lab	Quizz Project Homework Exam

including evaluating sources and gathering relevant information.
 5. Students will gain a foundational understanding of Artificial Intelligence, its applications, and its impact on various fields.

11. Course Evaluation

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12. Learning and Teaching Resources

<p>Required textbooks (curricular books, if any)</p>	<p>5. Graham Brown, David Watson, “Cambridge IGCSE Information and Communication Technology” 3rd Edition (2020) 6. Alan Evans, Kendall Martin, Mary Anne Poatsy, “Technology In Action Complete”, 16th Edition (2020). Ahmed Banafa, “Introduction to Artificial Intelligence (AI)”, 1st Edition (2024).</p>
<p>Main references (sources)</p>	
<p>Recommended books and references (scientific journals, reports...)</p>	
<p>Electronic References, Websites</p>	

Course Description Form

1. Course Name:					
Mathematics (III)					
2. Course Code:					
CE231					
3. Semester / Year:					
3 / 2					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4/5					
7. Course administrator's name (mention all, if more than one name)					
Name: Salah Lafta Farhan					
Email: salahlafta@uowasit.edu.iq					
8. Course Objectives					
Course Objectives			<ol style="list-style-type: none"> 1. To provide students with the necessary mathematical tools, skills, and techniques to deal with a variety of design engineering problems. 2. To provide students with the opportunity to actively participate in activities during lectures and classes. 3. To enable students to improve their problem-solving skills through the use of relevant and appropriate mathematical strategies. 4. To enhance the previous mathematical knowledge of students gained in the previous module of Mathematics. 5. The contents of this module will be further applied to solve engineering problems in the module of Engineering 		
9. Teaching and Learning Strategies					
Strategy		<p>Providing teaching material such as lecture notes, records, and or textbook that a student can have the confidence to read and understand</p> <p>Since students struggle with new concepts in Engineering Mathematics and face difficulties with the need of using different mathematical techniques to solve problems, we developed teaching strategies to support students' development of mathematical knowledge and problem-solving skills communication and team working skills.</p> <p>We used an action research perspective as various methods within this stance can ensure flexibility in responding to the dynamics of interaction between the teachers and the students.</p>			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	After taking this course, the student should be able to	5	Theory	Quizz

	<p>1. Show logical thinking in problem solving and work effectively with self-study material.</p> <p>2. Demonstrate knowledge and understanding of skills logical thinking in problem solving.</p> <p>3. Develop mathematical models that effectively capture the fundamental characteristics of an engineering problem.</p> <p>4. Analyze mathematical outcomes and implications within a more general (engineering) framework.</p> <p>5. Perform calculations in simple situations and work through them to solve more complex examples.</p> <p>6. Demonstrate knowledge and understanding of:</p> <p>a) Sequences and series; arithmetic and geometric series,</p> <p>b) Vectors.</p> <p>c) Differentiation; gradients of curves; equations of tangent and normal.</p> <p>d) Analytical solutions for certain first-order and second-order ordinary differential equations.</p> <p>e) Partial differentiation and some more advanced techniques of calculus.</p>			Project Homework Exam
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11. Course Evaluation

Quizz Project Homework Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Thomas' Calculus:
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
Mathematics (IV)					
2. Course Code:					
CE241					
3. Semester / Year:					
4 / 2					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4/5					
7. Course administrator's name (mention all, if more than one name)					
Name: Salah Lafta Farhan Email: salahlafta@uowasit.edu.iq					
8. Course Objectives					
Course Objectives				<ol style="list-style-type: none"> 1. To provide students with the necessary mathematical tools, skills, and techniques to deal with a variety of design engineering problems. 2. To provide students with the opportunity to actively participate in activities during lectures and classes. 3. To enable students to improve their problem-solving skills through the use of relevant and appropriate mathematical strategies. 4. To enhance the previous mathematical knowledge of students gained in the previous module of Mathematics. 5. The contents of this module will be further applied to solve engineering problems in the module of Engineering 	
9. Teaching and Learning Strategies					
Strategy		<p>Providing teaching material such as lecture notes, records, and or textbook that a student can have the confidence to read and understand</p> <p>Since students struggle with new concepts in Engineering Mathematics and face difficulties with the need of using different mathematical techniques to solve problems, we developed teaching strategies to support students' development of mathematical knowledge and problem-solving skills communication and team working skills.</p> <p>We used an action research perspective as various methods within this stance can ensure flexibility in responding to the dynamics of interaction between the teachers and the students.</p>			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	After taking this course, the student should be able to 1. Show logical thinking in problem solving and work effectively with self-study	5	Theory	Quizz

	<p>material.</p> <p>2. Demonstrate knowledge and understanding of sh logical thinking in problem solving.</p> <p>3. Develop mathematical models that effectively cap the fundamental characteristics of an engineering problem.</p> <p>4. Analyze mathematical outcomes and implications within a more general (engineering) framework.</p> <p>5. Perform calculations in simple situations and wor through them to solve more complex examples.</p> <p>6. Demonstrate knowledge and understanding of:</p> <p>a) Sequences and series; arithmetic and geometric series,</p> <p>b) Vectors.</p> <p>c) Differentiation; gradients of curves; equations of tangent and normal.</p> <p>d) Analytical solutions for certain first-order and second-order ordinary differential equations.</p> <p>e) Partial differentiation and some more advanced techniques of calculus.</p>			<p>Project Homework Exam</p>
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11. Course Evaluation

Quiz
 Project
 Homework
 Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Thomas' Calculus:
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
English II					
2. Course Code:					
WU23					
3. Semester / Year:					
4 / 2					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
2/2					
7. Course administrator's name (mention all, if more than one name)					
Name: Dr Lecturer Ahmed Naji Email: ahmedadil@uowasit.edu.iq					
8. Course Objectives					
Course Objectives				<p>The main teaching objectives of English IV is to focus on developing language skills relevant to both general and academic contexts, as well as specific civil engineering vocabulary and concepts. It focused on:</p> <ol style="list-style-type: none"> 1. Improve students' reading, writing, listening, and speaking skills in English. 2. Expand vocabulary and understanding of grammatical structures. 3. Develop the ability to comprehend and produce intermediate-level English in various contexts. 4. Improve academic writing skills, focusing on clarity, coherence, and proper use of technical terminology. 5. Familiarize students with key civil engineering terms and phrases. 	
9. Teaching and Learning Strategies					
Strategy		<p>Assessment Strategy The student's work will be assessed according to the module tasks. The home works and two writing assignments will be marked and the student will be instructed with oral and written feedback in order to improve their skills. Also, the student learning will be assessed by two quizzes and one oral presentation. The final exam will be done at the end of the semester. Note: late work will not be marked.</p>			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	2	<p>On successful completion of this module, the student will be able to:</p> <ol style="list-style-type: none"> 1. Understand and Use Civil Engineering Terminology • Comprehend and accurately use technical terms and interpret 	2	Theory	<p>Quiz Project Homework</p>

	<p>engineering diagrams, plans, and technical documentation and literature written in English.</p> <p>2. Communicate Effectively in Professional Contexts</p> <ul style="list-style-type: none"> • Write clear and concise emails, reports, and proposals related to civil engineering projects. • Present technical information and project ideas confidently to both technical and non-technical audiences. • Communicate effectively with peers, supervisors, and clients in multinational environments. 			Exam
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11. Course Evaluation

<p>Quiz</p> <p>Project</p> <p>Homework</p> <p>Exam</p>
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12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	“New Headway Plus: Pre-Intermediate” by John and Soars
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
Arabic2					
2. Course Code:					
WU24					
3. Semester / Year:					
4 / 2					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
2 / 2					
7. Course administrator's name (mention all, if more than one name)					
Name: Mushtaq Jumaa Email: mjmaah@uowasit.edu.iq					
8. Course Objectives					
Course Objectives			تنبى ه الطلبة بأهمية اللغة العربية في تنمية القدرات والمهارات الاتصالية . بين المتكلم والمناقني تمكن الطلبة من التحدث بلغة عربية سليمة وتجنب الأخطاء 2- . الإملائية واللغوية الشائعة 3- كتابة التقارير والمقالات والمخاطبات الرسمية باللغة العربية وبشكل . انسيابي و دقيق و منظم 4- تعريف الطلبة بالكتابة والقراءة الصحيحة 5- تواصل الطلبة مع لغتهم الأم 6- تطوير قابلية الطلبة على أداء اللغة والقائها بصورة سليمة في المخافل المختلفة .		
9. Teaching and Learning Strategies					
Strategy		شرح المادة النظرية للطلبة بشكل تفصيلي .مشاركة الطلبة في المناسبات والمهرجانات الخطابية في المجتمع الأكاديمي .إشاعة روح التعاون والعمل الجماعي بين الطلبة			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	2	عند الانتهاء من هذا الفصل، سيكون الطلاب قادرين على: 1- رفع مستوى الكفاءة التعبيرية الشفهية والكتابية لدى الطلبة 2- قدرة الطلب ة على تحليل وفهم النصوص الشعرية والنثرية 3- تعرف الطلبة على مفردات لغوية تسهم في إثرائهم المعرفي في تخصصهم الهندسي . 4- اهتماماتهم الثقافية والفكرية .ت يمكن الطلبة من قراءة القرآن الكريم بصورة صحيحة 5- ت ساهم في زيادة معرفة الطلاب بكيفية كتابة البحوث 6-	2	Theory	Quizz Project Homework Exam
11. Course Evaluation					

Quiz
Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

ح ابن عقيل على ألفية ابن مالك، - .
تحقيق محيي الدين عبد الحميد

Main references (sources)

Recommended books and references (scientific journals, reports...)

Electronic References, Websites

Course Description Form

1. Course Name:	
Engineering Surveying I	
2. Course Code:	
CE233	
3. Semester / Year:	
3 / 2	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Theory	
6. Number of Credit Hours (Total) / Number of Units (Total)	
5 / 5	
7. Course administrator's name (mention all, if more than one name)	
Name: Jareer Jaber Mohammed Email: jareermohammed@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<ol style="list-style-type: none">1. Introduce fundamental principles: The aim of the module is to provide students with a comprehensive understanding of the fundamental principles and concepts of engineering surveying. This includes the theory and application of measurement techniques, instruments, and equipment used in surveying.2. Develop practical skills: The module aims to develop students' practical skills in surveying through hands-on experience with surveying instruments and equipment. Students will learn how to accurately measure distances, angles, and heights, and how to apply these measurements to various civil engineering projects.3. Enhance spatial awareness: Engineering surveying requires a strong spatial awareness and the ability to interpret and visualize three-dimensional spaces. The module aims to enhance students' spatial awareness skills, enabling them to understand and work with complex engineering plans, maps, and spatial data.4. Promote data analysis and interpretation: Surveying generates large amounts of data that need to be analyzed and interpreted. The module aims to equip students with the necessary skills to process, analyze, and interpret surveying data using appropriate software and statistical techniques. This includes understanding error analysis and making informed decisions based on survey data.5. Foster teamwork
9. Teaching and Learning Strategies	

Strategy	<p>1. Lectures: Traditional lectures can be used to deliver theoretical concepts, principles, and methodologies of surveying. Lectures provide a structured framework for presenting information and introducing new topics. Visual aids such as slides, diagrams, and videos can be incorporated to enhance understanding.</p> <p>2. Practical Demonstrations: Practical demonstrations allow students to observe and understand the proper use of surveying instruments and equipment. Instructors can demonstrate measurement techniques, instrument calibration, data collection, and other practical aspects of surveying. Students can actively participate in the demonstrations to reinforce their understanding.</p> <p>3. Laboratory Sessions: Laboratory sessions provide hands-on experience for students to apply theoretical knowledge and practice surveying techniques. Students can work in groups or individually to perform experiments, measurements, and data analysis using surveying instruments and software.</p>
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	5	1. Demonstrate a comprehensive understanding of the fundamental principles and concepts of engineering surveying, including measurement techniques, instruments, and equipment used in surveying. 2. Apply practical skills in surveying, including accurate measurement of distances, angles, and heights using surveying instruments and equipment. 3. Interpret and analyze surveying data, including processing and applying appropriate statistical techniques and error analysis. 4. Utilize spatial awareness skills to interpret and work with complex engineering plans, maps, and spatial data. 5. Work effectively in a team and demonstrate strong communication skills in presenting surveying findings and collaborating with other professionals. 6. Demonstrate knowledge of professional ethics, standards, and	5	Theory Lab	Quiz Project Homework Exam

11. Course Evaluation

Quiz Project Homework Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- CHARLES D. GHILANI and PAUL R. WOLF Elementary Surveying An Introduction to Geomatics. 2012 2 -Moffit & Bughard , Surveying, Batsford ,1982 . 3- Bruce R. Harvey SURVEY COMPUTATIONS The University of New South Wales 2013 4- Barry F. Kavanagh .SURVEYING with Constructi
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	<p>Applications. Seventh Edition .2010 5 W. Schofield & M. Breach Engineering Surveying Sixth Edition Linacre House, Jord Hill, Oxford OX2 8DP, UK .20 6- JAMES BAO-YEN TSUI Fundamentals of Global Positioning System Receivers A Software Approach, JOHN WILEY & SONS, INC,2000.</p>
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Engineering Surveying II	
2. Course Code:	
CE234	
3. Semester / Year:	
4 / 2	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Theory	
6. Number of Credit Hours (Total) / Number of Units (Total)	
5 / 5	
7. Course administrator's name (mention all, if more than one name)	
Name: Jareer Jaber Mohammed Email: jareermohammed@uowasit.edu.iq	
13. Course Objectives	
Course Objectives	<ol style="list-style-type: none">1. Introduce fundamental principles: The aim of the module is to provide students with a comprehensive understanding of the fundamental principles and concepts of engineering surveying. This includes the theory and application of measurement techniques, instruments, and equipment used in surveying.2. Develop practical skills: The module aims to develop students' practical skills in surveying through hands-on experience with surveying instruments and equipment. Students will learn how to accurately measure distances, angles, and heights, and how to apply these measurements to various civil engineering projects.3. Enhance spatial awareness: Engineering surveying requires a strong spatial awareness and the ability to interpret and visualize three-dimensional spaces. The module aims to enhance students' spatial awareness skills, enabling them to understand and work with complex engineering plans, maps, and spatial data.4. Promote data analysis and interpretation: Surveying generates large amounts of data that need to be analyzed and interpreted. The module aims to equip students with the necessary skills to process, analyze, and interpret surveying data using appropriate software and statistical techniques. This includes understanding error analysis and making informed decisions based on survey data.5. Foster teamwork
Name: Yousif Raad Muhsen ALmolla	

8. Course Objectives

Course Objectives

1. Utilize the computer for fundamental tasks.
 2. Identify and discuss the hardware components of the computer system.
 3. Creating documents using a word processor and creating presentations.
 4. Conducting research on the Internet.
- An introduction to Artificial Intelligence

9. Teaching and Learning Strategies

Strategy

1. **Lectures:** Traditional lectures can be used to deliver theoretical concepts, principles, and methodologies of surveying. Lectures provide a structured framework for presenting information and introducing new topics. Visual aids such as slides, diagrams, and videos can be incorporated to enhance understanding.
2. **Practical Demonstrations:** Practical demonstrations allow students to observe and understand the proper use of surveying instruments and equipment. Instructors can demonstrate measurement techniques, instrument calibration, data collection, and other practical aspects of surveying. Students can actively participate in the demonstrations to reinforce their understanding.
3. **Laboratory Sessions:** Laboratory sessions provide hands-on experience for students to apply theoretical knowledge and practice surveying techniques. Students can work in groups or individually to perform experiments, measurements, and data analysis using surveying instruments and software.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	5	<ol style="list-style-type: none"> 1. Demonstrate a comprehensive understanding of the fundamental principles and concepts of engineering surveying, including measurement techniques, instruments, and equipment used in surveying. 2. Apply practical skills in surveying, including accurate measurement of distances, angles, and heights using surveying instruments and equipment. 3. Interpret and analyze surveying data, including processing and applying appropriate statistical techniques and error analysis. 4. Utilize spatial awareness skills to interpret and work with complex engineering plans, maps, and spatial data. 5. Work effectively in a team and demonstrate strong communication skills in presenting surveying findings and collaborating with other professionals. 6. Demonstrate knowledge of professional ethics, standards, and 	5	Theory Lab	Quizz Project Homework Exam

11. Course Evaluation

Quizz
Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

1- CHARLES D. GHILANI and PAUL R. WOLF Elementary

	<p>Surveying An Introduction to Geomatics. 2012</p> <p>2 -Moffit & Bughard , Surveying, Batsford ,1982 .</p> <p>3- Bruce R. Harvey SURVEY COMPUTATIONS The University of New South Wales 2013</p> <p>4- Barry F. Kavanagh .SURVEYING with Constructi Applications. Seventh Edition .2010</p> <p>5 W. Schofield & M. Breach Engineering Surveying Sixth Edition Linacre House, Jord Hill, Oxford OX2 8DP, UK .2010</p> <p>NO</p> <p>9</p> <p>6- JAMES BAO-YEN TSUI Fundamentals of Global Positioning System Receivers A Software Approach, JOHN WILEY SONS,</p>
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Building Construction and Structural Drawing	
2. Course Code:	
CE245	
3. Semester / Year:	
4 / 2	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Theory	
6. Number of Credit Hours (Total) / Number of Units (Total)	
4 / 3	
7. Course administrator's name (mention all, if more than one name)	
Name: Buroog Basheer Mahmood Email: Buruj@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<p>The program provides students with a rigorous understanding of the principles, practices and ethics in a world-wide context involved in building construction up to first degree level standard.</p> <p>The program reflects the academic underpinning necessary to prepare students for a career as a Chartered Builder, Construction Manager, and other related international professional bodies.</p> <p>Also, introduce civil engineering first stage students to the fundamentals, basic principles and applications of Building construction.</p> <p>These include varies of building materials and equipment. The course combines theory with drawing a number of sheets as a class and home work.</p> <p>The importance of building elements and the relationships between architects and civil engineer responsibility.</p> <p>Also, provides students with progressive development of knowledge and skills over three levels of study. The program is designed to ensure that graduates have a stimulating and challenging education, which prepares them for their professional career, and produces capable individuals with the potential to progress to professional status and prepare for advancement to master's level qualification. Students will develop a broad range of skills which are transferable across other industries.</p> <p>Emphasis is placed on the management</p>
9. Teaching and Learning Strategies	

Strategy	Building construction is a significant course that requires focused instruction hours. Therefore, the strategy of the course to deliver this module depends mainly on the module instructor in the class, where the material should be delivered with practical examples from surrounding projects. Moreover, classwork and homework assignments would help the students to practice solving building construction issues more efficiently. Practical and test videos should also be occasionally used to facilitate connecting the given course elements. Reports
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	The student will able to explain basic concepts relat building. The student explains type of buildings and their usage aims. The student explains construction stages. The student will able to explain properties of building elements and prepare the drawings. The student explains functions of building elements. The student explains types and properties of foundations .The student prepares foundation plans of buildings. The student expresses properties of different structures walls. The student expresses properties of different struct floors. The student draws details of foundation, walls and floors. The student v able to explain principles of construction in mass buildings and use of the techni knowledges in project drawings. The student explains properties of mass buildings. The student defines building elements of mass building. The student explains principles of mass building and uses them in project drawings. The student will able to explain types of isolation using in buildings and use the technical knowledges project drawings. The student defines isolation materials using for heat, water, noi and fire insulation and explains their usage place.	3	Theory Lab	Quizz Project Homework Exam

11. Course Evaluation

Quizz
Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	انشاء المباني زهير ساكو
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Building Construction I	
2. Course Code:	
CE235	
3. Semester / Year:	
3 / 2	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Theory	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 / 2	
7. Course administrator's name (mention all, if more than one name)	
Name: Buroog Basheer Mahmood Email: Buruj@uowasit.edu.iq	
13. Course Objectives	
Course Objectives	<p>The program provides students with a rigorous understanding of the principles, practices and ethics in a world-wide context involved in building construction up to first degree level standard.</p> <p>The program reflects the academic underpinning necessary to prepare students for a career as a Chartered Builder, Construction Manager, and other related international professional bodies.</p> <p>Also, introduce civil engineering first stage students to the fundamentals, basic principles and applications of Building construction.</p> <p>These include varies of building materials and equipment. The course combines theory with drawing a number of sheets as a class and home work.</p> <p>The importance of building elements and the relationships between architects and civil engineer responsibility.</p> <p>Also, provides students with progressive development of knowledge and skills over three levels of study. The program is designed to ensure that graduates have a stimulating and challenging education, which prepares them for their professional career, and produces capable individuals with the potential to progress to professional status and prepare for advancement to master's level qualification. Students will develop a broad range of skills which are transferable across other industries.</p> <p>Emphasis is placed on the management</p>
Name: Yousif Raad Muhsen ALmolla Email: Yousif@uowasit.edu.iq	
8. Course Objectives	

Course Objectives

1. Utilize the computer for fundamental tasks.
 2. Identify and discuss the hardware components of the computer system.
 3. Creating documents using a word processor and creating presentations.
 4. Conducting research on the Internet.
- An introduction to Artificial Intelligence

9. Teaching and Learning Strategies**Strategy**

Building construction is a significant course that requires focused instruction hours. Therefore, the strategy of the course to deliver this module depends mainly on the module instructor in the class, where the material should be delivered with practical examples from surrounding projects. Moreover, classwork and homework assignments would help the students to practice solving building construction issues more efficiently. Practical and test videos should also be occasionally used to facilitate connecting the given course elements. Reports

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	The student will able to explain basic concepts relat building. The student explains type of buildings and their usage aims. The student explains construction stages. The student will able to explain properties of building elements and prepare the drawings. The student explains functions of building elements The student explains types and properties of foundations .The student prepares foundation plans of buildings. The student expresses properties of different structures walls. The student expresses properties of different struct floors. The student draws details of foundation, walls and floors. The student v able to explain principles of construction in mass buildings and use of the techni knowledges in project drawings .The student explains properties of mass buildings. The student defines building elements of mass building. The student explains principles of mass building and uses them in project drawings. The student will able to explain types of isolation using in buildings and use the technical knowledges project drawings. The student defines isolation materials using for heat, water, noi and fire insulation and explains their usage place.	3	Theory Lab	Quizz Project Homework Exam

11. Course Evaluation

Quizz
Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

انشاء المباني زهير ساكو

Main references (sources)

Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
Concrete Technology I					
2. Course Code:					
CE236					
3. Semester / Year:					
3 / 2					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4 / 4					
7. Course administrator's name (mention all, if more than one name)					
Name: Ihsan Ali					
Email: ihsanali@uowasit.edu.iq					
8. Course Objectives					
Course Objectives			<ol style="list-style-type: none"> 1. The subject is designed to introduce the properties and use of the more common materials in modern methods in concrete practice. 2. Define and explain principles of engineering properties for concrete composition, cement, aggregate and water. 3. Introduce more Supplementary Cementitious Materials such as fly ash, Ground Granulated Iron Blast Furnace Slag and Amorphous Silica. 4. Educate basic fresh properties of concrete and the manufacturing process details such as mixing, handling, pouring and finishing. 5. Educate the most important 		
9. Teaching and Learning Strategies					
Strategy		Traditional lectures can be used to deliver theoretical concepts, principles, and methodologies of concrete. Lectures provide a structured framework for presenting information and introducing new topics. Visual aids such as slides, diagrams, and videos can be incorporated to enhance understanding.			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	<ol style="list-style-type: none"> 1. Demonstrate knowledge of the production, physical and engineering properties of construction materials; 2. Understand the effect of environmental factors on properties and performance of construction materials; 3. Select construction material in relation to specific construction requirements; 	4	Theory Lab	Quizz Project Homework Exam

4. Demonstrate knowledge of International standards
relation to material
testing methods and interpretation of test results.

11. Course Evaluation

Quiz
Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

لوجيا الخرسانة, مؤيد نوري
ف+هناء عبد يوسف, الجامعة
التكنولوجي

Main references (sources)

Recommended books and references (scientific journals,
reports...)

Electronic References, Websites

Course Description Form

1. Course Name:					
Concrete Technology II					
2. Course Code:					
CE246					
3. Semester / Year:					
4/2					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4 / 4					
7. Course administrator's name (mention all, if more than one name)					
Name: Ihsan Ali					
Email: ihsanali@uowasit.edu.iq					
8. Course Objectives					
Course Objectives				<ol style="list-style-type: none"> 1. The subject is designed to introduce the properties and use of the more common materials in modern methods in concrete practice. 2. Define and explain principles of engineering properties for concrete composition, cement, aggregate and water. 3. Introduce more Supplementary Cementitious Materials such as fly ash, Ground Granulated Iron Blast Furnace Slag and Amorphous Silica. 4. Educate basic fresh properties of concrete and the manufacturing process details such as mixing, handling, pouring and finishing. 5. Educate the most important 	
9. Teaching and Learning Strategies					
Strategy		Traditional lectures can be used to deliver theoretical concepts, principles, and methodologies of concrete. Lectures provide a structured framework for presenting information and introducing new topics. Visual aids such as slides, diagrams, and videos can be incorporated to enhance understanding.			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	<ol style="list-style-type: none"> 1. Demonstrate knowledge of the production, physical and engineering properties of construction materials; 2. Understand the effect of environmental factors on properties and performance of construction materials; 3. Select construction material in relation to specific construction requirements; 	4	Theory Lab	Quizz Project Homework Exam

4. Demonstrate knowledge of International standards
relation to material
testing methods and interpretation of test results.

11. Course Evaluation

Quiz
Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

لوجيا الخرسانة, مؤيد نوري
ف+هناء عبد يوسف, الجامعة
التكنولوجي

Main references (sources)

Recommended books and references (scientific journals,
reports...)

Electronic References, Websites

Course Description Form

1. Course Name:	
Baath Crimes in Iraq	
2. Course Code:	
CE 238	
3. Semester / Year:	
4 / 2	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Theory	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2/2	
7. Course administrator's name (mention all, if more than one name)	
Name: Mushtaq Jumaa Email: mjmaah@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<p>اطلاع الطلبة على جرائم نظام البعث في العراق التي لا تعد ولا تحصى ضد العراقيين</p> <p>2-Raising students' awareness to reject all forms of injustice, tyranny, violence and persecution of these oppressive regimes</p> <p>رفع الوعي لدى الطلبة لرفض جميع أشكال الظلم والتسلط والعنف</p> <p>والاضطهاد ل هذه الأنظمة القمعية</p> <p>3-Enabling students to write reports and articles in Arabic in a smooth, accurate and organized manner</p> <p>تمكين الطلبة من كتابة التقارير والمقالات باللغة العربية وبشكل انسيابي دقيق ومنظم</p> <p>4-Highlighting serious violations of human rights and the environment</p> <p>تسليط الضوء على الانتهاكات الخطيرة لحقوق الإنسان والبيئة</p> <p>5-Explaining the facts of this unjust regime to generations that did not go through the stages of its rule</p> <p>بيان حقائق هذا النظام الجائر إلى الأجيال التي لم تمر بمراحل حكمه</p> <p>6-Informing students about the extent of the Baathist regime in Iraq's fight against religion and scholars in seminaries</p> <p>اطلاع الطلبة على مدى محاربة النظام البعثي في العراق للدين والعلماء في الحوزات العلمية</p>
9. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none"> • Present theoretical lectures and determine the information that is most significant by extracting keywords and ideas. • Students are given opportunities to learn about the crimes committed against the Iraqi people during the time of the former regime
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	2	<p>-The student's knowledge of Baath crimes according to the Iraqi Criminal Court law</p> <p>1- معرفة الطالب ب جرائم البعث وفق قانون المحكمة الجنائية العراقية</p> <p>2-Using linguistic terms to define the crime</p> <p>2- استعمل مصطلحات اللغوية للتعريف بالجريمة</p> <p>3-Identify the decisions issued by the Iraqi Criminal Court against the regime and its cronies</p> <p>3- الطلبية على القرارات الصادرة من المحكمة الجنائية العراقية ضد النظام وأزلامه</p> <p>4-Demonstrating students' understanding of the effect of psychological crimes and the environment on the Iraqi individual at that time</p> <p>4- يمار فهم الطلبة لأثار الجرائم النفسية والبيئة على الفرد العراقي آنذاك</p> <p>5-Identifying mass graves and when they occur</p> <p>5- تعرف الطلبة على المقابر الجماعية ووقت حدوثها</p> <p>6-Watch video documents of the crimes of the defunct Baath Party</p> <p>6- مشاهدة وثائق مصورة لجرائم حزب البعث البائد</p>	2	Theory	<p>Quizz</p> <p>Project</p> <p>Homework</p> <p>Exam</p>

11. Course Evaluation

Quizz
Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

Platform for the crimes of the Baath Party in Iraq - Ministry of Higher Education and Scientific Research
منهاج جرائم حزب البعث في

Main references (sources)

Recommended books and references (scientific journals, reports...)

Electronic References, Websites

Course Description Form

1. Course Name:					
Strength of Materials I					
2. Course Code:					
CE 232					
3. Semester / Year:					
3 / 2					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4 / 5					
7. Course administrator's name (mention all, if more than one name)					
Name: Jasim Mahmood					
Email: jmahmood@uowasit.edu.iq					
8. Course Objectives					
Course Objectives				2. Identify the types of structural members and their supports and calculate the reactions. 3. Structural analysis of structural members and finding internal forces. 4. Calculating the stresses, and strains generated in the materials and comparing them to the permissible limits to indicate the suitability of the materials used.	
9. Teaching and Learning Strategies					
Strategy		Strength of Materials is a heavy course load that requires long instruction hours. Therefore, the strategy of the course to deliver this module depends mainly on the module instructor in the class, where the material should be delivered with practical examples. Moreover, class tutorials and homework assignments would help the students to practice solving analysis Composition and resolution of forces issues more efficiently. Practical and test videos should also be occasionally used to facilitate connecting the given course elements. Visits to structural building construction sites are also another tool to combine the delivered theoretical material with its practical application.			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	1. Draw a diagram of the axial forces, shear and bending moments of the beams. 2. Estimation of bending stresses, axial stresses and compound stresses. 3. Estimation of thermal stresses, mechanical stress and combined stresses.	4	Theory	Quizz Project Homework Exam
11. Course Evaluation					

Quiz
Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

- Mechanics of Materials, 10th edition (SI version), by: R. C. Hibbeler, 2017
- Mechanics of Materials, 2nd edition (SI version), by: E. Popov, 1990

Main references (sources)

Recommended books and references (scientific journals, reports...)

Electronic References, Websites

Course Description Form

1. Course Name:					
Strength of Materials II					
2. Course Code:					
CE 242					
3. Semester / Year:					
4/2					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4 / 5					
7. Course administrator's name (mention all, if more than one name)					
Name: Jasim Mahmood					
Email: jmahmood@uowasit.edu.iq					
8. Course Objectives					
Course Objectives				2. Identify the types of structural members and their supports and calculate the reactions. 3. Structural analysis of structural members and finding internal forces. 4. Calculating the stresses, and strains generated in the materials and comparing them to the permissible limits to indicate the suitability of the materials used.	
9. Teaching and Learning Strategies					
Strategy		Strength of Materials is a heavy course load that requires long instruction hours. Therefore, the strategy of the course to deliver this module depends mainly on the module instructor in the class, where the material should be delivered with practical examples. Moreover, class tutorials and homework assignments would help the students to practice solving analysis Composition and resolution of forces issues more efficiently. Practical and test videos should also be occasionally used to facilitate connecting the given course elements. Visits to structural building construction sites are also another tool to combine the delivered theoretical material with its practical application.			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	1. Draw a diagram of the axial forces, shear and bending moments of the beams. 2. Estimation of bending stresses, axial stresses and compound stresses. 3. Estimation of thermal stresses, mechanical stress and combined stresses.	4	Theory	Quizz Project Homework Exam
11. Course Evaluation					

Quiz
Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

- Mechanics of Materials, 10th edition (SI version), by: R. C. Hibbeler, 2017
- Mechanics of Materials, 2nd edition (SI version), by: E. Popov, 1990

Main references (sources)

Recommended books and references (scientific journals, reports...)

Electronic References, Websites

Course Description Form

1. Course Name:					
Fluid MechanicsI					
2. Course Code:					
CE 234					
3. Semester / Year:					
3 / 2					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4/4					
7. Course administrator's name (mention all, if more than one name)					
Name: Nadheer S. Ayooob Email: Naayoob@uowasit.edu.iq					
8. Course Objectives					
Course Objectives				1. To introduce a mathematical description of fluid flow to familiarize students with the practical applications of mathematics in the fields of fluid in static state and ideal fluid flow, and the module has been developed for students who have little or no experience in fluid mechanics. 2. To examine the principles of fluid flow relevant to a wide range of civil engineering applications. 3. To prepare students for future study of advanced topics.	
9. Teaching and Learning Strategies					
Strategy		Lecture - a lecture per week delivered primarily via PowerPoint. Tutorial - One hour per week typically dedicated to problem paper questions and examples Laboratory Work - Each lab takes 2 hours and then a technical note is 3 needed to be produced			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	1. Be able to distinguish the basic terminology of Fluid Mechanics. 2. Be able to solve practical problems in Fluid Mechanics 3. Have a systematic and coherent understanding of theoretical mathematics in the field of fluid static. 4. Have sufficient knowledge about the topics of ideal fluid flow.	4	Theory Lab	Quizz Project Homework Exam

		5. Become able to carry out proper tests and measurements, analyze the results, and utilize engineering judgment to make inferences. 6. Have the ability to work adequately on teams. 7. Be able to practice simple scientific research and presentation.			
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11. Course Evaluation

V.L. Streeter, and E.B. Wylie, Fluid Mechanics. 8th

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	V.L. Streeter, and E.B. Wylie, Fluid Mechanics. 8th edition. McGraw-Hill.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
Fluid MechanicsII					
2. Course Code:					
CE 244					
3. Semester / Year:					
4/2					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4/4					
7. Course administrator's name (mention all, if more than one name)					
Name: Nadheer S. Ayooob Email: Naayooob@uowasit.edu.iq					
8. Course Objectives					
Course Objectives				1. To introduce a mathematical description of fluid flow to familiarize students with the practical applications of mathematics in the fields of fluid in static state and ideal fluid flow, and the module has been developed for students who have little or no experience in fluid mechanics. 2. To examine the principles of fluid flow relevant to a wide range of civil engineering applications. 3. To prepare students for future study of advanced topics.	
9. Teaching and Learning Strategies					
Strategy		Lecture - a lecture per week delivered primarily via PowerPoint. Tutorial - One hour per week typically dedicated to problem paper questions and examples Laboratory Work - Each lab takes 2 hours and then a technical note is 3 needed to be produced			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	1. Be able to distinguish the basic terminology of Fluid Mechanics. 2. Be able to solve practical problems in Fluid Mechanics 3. Have a systematic and coherent understanding of theoretical mathematics in the field of fluid static. 4. Have sufficient knowledge about the topics of ideal fluid flow.	4	Theory Lab	Quizz Project Homework Exam

		5. Become able to carry out proper tests and measurements, analyze the results, and utilize engineering judgment to make inferences. 6. Have the ability to work adequately on teams. 7. Be able to practice simple scientific research and presentation.			
11. Course Evaluation					
V.L. Streeter, and E.B. Wylie, Fluid Mechanics. 8th					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			V.L. Streeter, and E.B. Wylie, Fluid Mechanics. 8th edition. McGraw-Hill.		
Main references (sources)					
Recommended books and references (scientific journals, reports...)					
Electronic References, Websites					

Course Description Form

1. Course Name:	
Structural analysis I	
2. Course Code:	
CE 352	
3. Semester / Year:	
5/3	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Theory, Lecture, Tutorial	
6. Number of Credit Hours (Total) / Number of Units (Total)	
4/4	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Karrar Ali Al-Lami Email: karrarali@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<ol style="list-style-type: none"> 1. Understanding the basic philosophy of structural analysis and distinguishing between various forms of structures such as trusses, beams, frames, and arches. 2. Identify stable structures from unstable and classify structures based on their indeterminacy. 3. Drawing axial, shear, and bending diagram for frames and arches. 4. Understanding the analysis of structures with variable or moving loads such as bridges. 5. Drawing the influence lines for various response function of structures. 6. Applying the principle of influence line to determine the absolute maximum value of a response function that may occur anywhere in a structure. 7. Introducing the principle of virtual work 8. Applying the principle of virtual work method to determine the deflection and rotation in beams, frames, and trusses. 9. Using the Castigliano's second theorem to evaluate the deflection in beams, frames, and trusses.
9. Teaching and Learning Strategies	
Strategy	<p>Structural analysis is a continuation of previously studied courses and aims to provide students with the knowl to analyze different types of determinate structures. Therefore, students should have a strong background engineering mechanics and strength of materials. Students are encouraged to review subjects like equilibrium truss analysis and shear and moment diagrams from previous courses. The course will be in the form of lect covering the main aspects of the course. In addition, multiple examples will be demonstrated for each sub Students will be handed homework and asked to solve it. At the end of each part of the course, there will be a re and discussion of the homework. Student evaluation in this course will depend on various criteria including ex homework, class discussions, and quizzes.</p>

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	<ol style="list-style-type: none"> 1. Recognize stable and indeterminate structures. 2. Analyze indeterminate structures using f method (consistent deformation method). 3. Achieving the competence to analyze indeterminate structures using slope-deflection-method. 4. Analyzing indeterminate frames via slope deflection method. 5. Evaluation structures' external reactions internal forces after settlement. 6. Using moment-distribution method to analyze braced frames and frames with side sway. 	4	Theory Lecture Lab	Quiz Project Homework Exam

11. Course Evaluation

Quiz
Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Structural analysis by R. C. Hibbel
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Computer Applications in Civil Engineering (I)	
2. Course Code:	
CE 358	
3. Semester / Year:	
5/3	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Lecture, Lab	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2/2	
7. Course administrator's name (mention all, if more than one name)	
Name: Ali Hussein Ahmed Email: Ali.Hussein@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<ol style="list-style-type: none"> 1. Introduce students to the fundamentals of structural modeling and analysis using Autodesk Robot Structural Analysis Professional. 2. Develop students' ability to define materials, sections, loads, and boundary conditions in a structural model. 3. Enhance students' understanding of structural behavior through computer-based simulation and interpretation of analysis results. 4. Provide students with the skills to design structural elements such as beams, columns, slabs, and shear walls according to design codes. 5. Train students to integrate theory and practice through the execution of a complete multi-story building project. 6. Prepare students for professional practice by emphasizing report generation, teamwork, and problem-solving in real-world structural engineering contexts.
9. Teaching and Learning Strategies	
Strategy	<ol style="list-style-type: none"> 1. Lectures (Theoretical Sessions): A. To explain fundamental concepts of structural analysis and design. 2. Practical/Laboratory Sessions: A. Students practice modeling, analysis, and design using Autodesk Robot Structural Analysis. B. Step-by-step guidance for software applications. 3. Project-Based Learning: A. Students work individually or in groups on a multi-story building project, integrating different skills. B. Encourages teamwork, problem-solving, and creativity. 4. Interactive Discussions & Problem-Solving: A. Encourage students to analyze case studies and discuss structural behavior. B. Develops critical thinking and analytical skills. 5. Self-Directed Learning (SDL): A. Students are encouraged to explore tutorials, and manuals B. Promotes independent learning and professional development. 6. Assessment-Based Learning: A. Quizzes, midterm, project, and final exam used as learning tools.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	2	<p>Knowledge By the end of this module, students will be able to:</p> <ol style="list-style-type: none"> 1. Explain the fundamentals of structural modeling and analysis using Autodesk Robot Structural Analysis. 2. Identify different types of structural elements (beams, columns, slabs, shear walls) and their role in structural systems. 3. Recognize the principles of applying load cases, and load combinations in structural analysis. 4. Describe the basics of linear, nonlinear, and dynamic analysis of structures. <p>Skills By the end of this module, students will be able to:</p> <ol style="list-style-type: none"> 1. Create structural models in Robot, including defining materials, cross-sections, supports, and load cases. 2. Perform structural analysis and interpret results (internal forces, reactions, displacements). 3. Design structural members (beams, slabs, columns, and walls) according to design codes. 4. Apply mesh generation and evaluate the accuracy of analysis for slabs and complex structures. 5. Use Robot to model and analyze multi-story buildings under different loading conditions. <p>Competence By the end of this module, students will be able to:</p> <ol style="list-style-type: none"> 1. Integrate theoretical knowledge with software-based applications to solve engineering problems. 2. Work independently and collaboratively on structural projects using Robot. 3. Communicate analysis and design results effectively through technical reports. 4. Demonstrate professional responsibility in applying codes and standards in structural design. 	2	Lecture, Lab	Quizz Project Homework Exam

11. Course Evaluation

Quizz
Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	<ol style="list-style-type: none"> 1. ENV 1997-1: 1994, Eurocode 7 2. PN-81/B-03020 Building soils. Foundation bases. Static calculation and design. 3. Soil Mechanics, Design Manual 7.01, Change 1, September 1986, Naval Facilities Engineering Command, 200 Stovall Street Alexandria, Virginia 22332-2300 4. Cours pratique de mecanique des sols, J.Coset, G.Sanglerat, Paris 1975
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	5. Soil Mechanics, Stanisł Pisarczyk, Oficyna wydawni Politechniki Warszawsk Warszawa, 1991
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Description Form

1. Course Name:	
Traffic Engineering	
2. Course Code:	
CE 356	
3. Semester / Year:	
5/3	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Theory ,Lecture, Lab	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Lecturer Muqdad Mundher Email: mmunthir@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<ol style="list-style-type: none"> 1. To introduce the fundamental principles of traffic flow, control, and management. 2. To develop understanding of driver behavior, road user characteristics, and their impact on traffic systems. 3. To equip students with knowledge of traffic data collection, analysis, and interpretation methods. 4. To provide skills in the design and evaluation of intersections, road capacity, and signalized systems. 5. To familiarize students with traffic safety principles and accident analysis techniques. 6. To introduce the use of modeling and simulation tools in traffic engineering decision-making. 7. To highlight sustainable and smart traffic management strategies for modern cities. 8. To prepare students to apply traffic engineering knowledge in solving real-world transportation problems.
9. Teaching and Learning Strategies	
Strategy	<ol style="list-style-type: none"> 1. Lectures to introduce core principles, theories, and frameworks in traffic engineering. 2. Tutorials and problem-solving sessions to practice calculations, design exercises, and case analysis. 3. Laboratory sessions / fieldwork for traffic surveys, data collection, and use of measurement tools. 4. Computer-based workshops to apply traffic simulation and modeling software. 5. Case studies on real-world traffic problems, safety issues, and management strategies. 6. Group projects to encourage teamwork in designing and evaluating traffic solutions. 7. Seminars and discussions to critically examine contemporary challenges (e.g., ITS, smart mob sustainability).

- 8. Independent learning through guided reading and research to deepen understanding of advanced topics.
- 9. Guest lectures / industry input from transportation professionals to link theory with practice.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	2	1. Demonstrate knowledge of fundamental traffic flow theories and their applications. 2. Apply appropriate techniques for traffic data collection, processing, and analysis. 3. Evaluate roadway capacity and level of service using standard methodologies. 4. Design and assess traffic control devices such as signals, signs, and markings. 5. Analyze accident data and propose traffic safety improvement measures. 6. Utilize traffic modeling and simulation tools to support decision-making. 7. Critically assess sustainable traffic management strategies in urban contexts. 8. Communicate technical findings effectively through written reports and presentations.	3	Theory, Lecture, Lab	Quiz Project Homework Exam

11. Course Evaluation

Quiz
 Project
 Homework
 Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	American Association of State Highway and Transportation Officials 2011+
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
Engineering Analysis					
2. Course Code:					
CE 351					
3. Semester / Year:					
5/3					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Lecture, Lab					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4/4					
7. Course administrator's name (mention all, if more than one name)					
Name: Dr. Salman F. AlRubaye Email: salman@uowasit.edu.iq					
8. Course Objectives					
Course Objectives					To develop students' ability to model and solve engineering problems using analytical methods for ordinary and partial differential equations, Fourier series, and related techniques, with emphasis on practical applications
9. Teaching and Learning Strategies					
Strategy		<p>Problem-Solving Sessions – Engage students in solving ODE and PDE problems during class to strengthen analytical skills.</p> <p>Visual Demonstrations – Use graphs, simulations, and software (e.g., MATLAB) to illustrate solutions and Fourier series representations.</p> <p>Application-Based Assignments – Assign tasks that require applying analytical methods to practical engineering situations.</p> <p>Group Discussions & Presentations – Encourage peer learning through problem analysis and solution presentations.</p> <p>Blended Learning – Integrate online resources, video tutorials, and interactive tools to reinforce concepts.</p>			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	Solve first-order ordinary differential equations and apply them to engineering problems. Analyze and solve second and higher-order ordinary differential equations with real-world applications. Formulate and solve systems of simultaneous linear ordinary differential equations. Apply Fourier series techniques to represent periodic functions and solve related engineering problems.	4	Lecture, Lab	Quizz Project Homework Exam

		Solve partial differential equations using analytical methods, including separation of variables. Interpret and apply mathematical solutions to model and analyze engineering systems.			
11. Course Evaluation					
Quizz Project Homework Exam					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			<ul style="list-style-type: none"> • Xie, W. C. (2010). Different equations for engineers. Cambridge university press. • DuChateau, P. (2011). Advanced mathematics for engineers and scientists. Courier Corporation. 		
Main references (sources)					
Recommended books and references (scientific journals, reports...)					
Electronic References, Websites					

Description Form

1. Course Name:	
Soil Mechanic I	
2. Course Code:	
CE 353	
3. Semester / Year:	
5/3	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Theory, Lecture, Lab, Tutorial	
6. Number of Credit Hours (Total) / Number of Units (Total)	
5/5	
7. Course administrator's name (mention all, if more than one name)	
Name: Prof. Dr. Asad H. Humaish Email: asadaldefae@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<ol style="list-style-type: none"> 1. An understanding the principles of soil mechanics with the basis scientific tools needed to understand soil behavior. 2. Gain understanding the soil composition and grain size distribution and achieving the minimum requirement of ability to classify soils and grain size distribution. 3. Knowledge the differences of void ratio in both the granular soil and cohesive soil and how this effecting on the density and stiffness of soil. 4. Understanding the principles of compaction and how this effect on the soil strength and settlement. 5. Understanding the Soils are permeable due to the existence of interconnected voids through which water can flow from points of high energy to points of low energy and investigating problems involving the pumping of water for underground construction. 6. An understand of capillary phenomenon and Knowledge of effective stresses. 7. Knowledge the overburden stress and the stresses due to structure loads. 8. Gain understanding the seepage flow with in the soil mass. Flow net and calculation of factor of safety due to seepage flow. 9. Knowledge the seepage flow within the earth dams.
9. Teaching and Learning Strategies	
Strategy	Soil Mechanics is one of the main branches in civil engineering that concerns the application of the principle mechanics, hydraulics and to smaller extent, chemistry, to engineering problems related to soils. The branch ed a civil engineer with the basic scientific tools needed to understand soil behavior. Thus, the practical examp understand the soil behavior under loads is main core of the module and for the instructor in the class. Then, tutorial consecutively after few theoretical hours can provide well-understanding to the students' knowledge improve the professional skills to solve geotechnical problems.

Experimentally, in the soil mechanics laboratory, these are many experimental tests that should be done by student groups and many geotechnical parameters that have to be determined. This lab class pushes the student to be more practical experience in the future. Some of the experiments should be done by student's group in the field and stage give them more confidence in geotechnical problems in the future. Finally, the actual site investigation collected specimens can be used by student's groups to do some experimental tests rather than manufactured specimens. Short mandatory videos are also used during module to see what we are talking about.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	5	<ol style="list-style-type: none"> Understanding the basic philosophy of mechanics and origin of Soil, soil composition and its properties. Understand what is soil composition and understanding of sieve analysis, Knowledge of Atter limits and their usage and ability to classify soils determine their properties. Understand the purpose and importance of soil compaction and know the factor that will influence the field compaction of soil. Then ability to determine optimum moisture content and maximum dry density from a standard or modified proctor test result. Gain an understanding of Head and its role in fluid flow. Knowledge of Darcy's Law and its usage and understanding of hydraulic conductivity, measurement, and typical values for different soils and an ability to compute equivalent hydraulic conductivity for layered systems An ability to compute pore water pressure, effective stress, and total stress at any given point in a soil layer. An ability to understand the stresses in saturated Soil without Seepage, in saturated downward seepage and in saturated upward seepage. Understanding the stresses due to structural Loads, concentrated loads, vertical and horizontal loads, surface loads (i.e. circular and rectangular loads) Gain an understanding of seepage pressure and its role in causing the quick condition. An ability to draw flow nets and determine the water head at a given point and the water flow rate and an ability to calculate critical hydraulic gradient and factor of safety against quick condition. Understanding the Seepage through an earth dam on an Impervious base. 	5	Lecture, Lab Tutorial	Quizz Project Homework Exam

11. Course Evaluation

Quizz
Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Introduction to Geotechnical Engineering, 2nd Edition, Baraja D. 2014
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Project Management	
2. Course Code:	
CE 357	
3. Semester / Year:	
5/3	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Lecture, Lab, Tutorial	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Asst.Prof. Dr. Alaa Kharbat Shadhar Email: akhirbat@uowasit.edu.iq	
8. Course Objectives	
<p>Course Objectives</p>	<p>The program provides students with a rigorous understanding of the principles, practices and ethics in a world-wide context involved in construction management up to first degree level standard.</p> <p>The program reflects the academic underpinning necessary to prepare students for a career as a Chartered Builder, Construction Manager, and other related international professional bodies.</p> <p>Also, provides students with progressive development of knowledge and skills over three levels of study. The program is designed to ensure that graduates have a stimulating and challenging education, which prepares them for their professional career, and produces capable individuals with the potential to progress to professional status and prepare for advancement to master's level qualification. Students will develop a broad range of skills which are transferable across other industries.</p> <p>Emphasis is placed on the management of schedule throughout the construction cycle, and also upon project planning.</p>
9. Teaching and Learning Strategies	
Strategy	<p>Construction management is a significant course that requires focused instruction hours. Therefore, the strategy of the course to deliver this module depends mainly on the module instructor in the class, where the material should be delivered with practical examples from surrounding projects. Moreover, classwork and homework assignments would help the students to practice solving scheduling and productivity issues more efficiently. Practical and videos should also be occasionally used to facilitate connecting the given course elements. reports prepared by student may increase their information in this scope.</p>
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	3	<ol style="list-style-type: none"> 1. Learn end-to-end project management, tools you can use individually or as a full methodology. 2. Articulate what is in your project scope, what is out of scope, and why. 3. Plan effectively and develop an accurate schedule to manage projects. 4. Stay in control of your project to deliver time, on budget, and on scope. 5. Define roles and responsibilities for project team. 6. Create a project that's resilient to risks and changes, rather than reactive. 7. Develop tangible methods to engage and communicate with stakeholders. 8. Identify how to deal with planning and scheduling technique. 9. Review claims in construction project, defining the ways to prevent strained relationships, stalemates, delays, disputes. 	3	Lecture, Lab Tutorial	Quiz Project Homework Exam

11. Course Evaluation

Quiz
Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Construction Management: From Project Concept to Completion Paperback -2017, by Paul Netsch
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
Reinforced Concrete I					
2. Course Code:					
CE 354					
3. Semester / Year:					
5/3					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Lecture, Lab, Tutorial					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4/5					
7. Course administrator's name (mention all, if more than one name)					
Name: Prof. Dr. Sallal Rashid Abid Email: sallal@uowasit.edu.iq					
8. Course Objectives					
Course Objectives			<ol style="list-style-type: none"> 1. Understanding the basic philosophy of reinforced concrete design and distinguishing between different limit-state design criteria. 2. Understanding load distributions from surface flexural members (slabs and roofs) to beams and transferring accumulated loads and moments to columns. 3. Analyzing shear forces and bending moment in flexural members of small structures, and defining the resulting normal and shear stresses on the structural members. 4. Introducing the design of reinforced concrete beams against bending moments and shear forces. 5. Defining bond issues between steel and concrete and distinguishing the suitable design procedures to avoid bond failure. 6. Defining economical design solutions to save steel reinforcement using cut-off and bent-up techniques. 		
9. Teaching and Learning Strategies					
Strategy		<p>Reinforced concrete design is a heavy course load that requires long instruction hours aiming to lead the engineering student to the basic knowledge about the analysis and design of reinforced concrete construction system, which is the main bone of most national buildings and civil structures. Therefore, the strategy of the course to deliver this module depends mainly on the module instructor in the class in addition to class tutorials, group discussions, and homework assignments that help the students to practice solving design and analysis issues more efficiently. Practical and test videos should also be occasionally used to facilitate connecting the given concepts with their practical application. Visits to structural building construction sites are also another tool to combine the delivered theoretical material with its practical application.</p>			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

15	4	<ol style="list-style-type: none"> 1. Learn end-to-end project management, tools you can use individually or as a full methodology. 2. Articulate what is in your project scope, what is out of scope, and why. 3. Plan effectively and develop an accurate schedule to manage projects. 4. Stay in control of your project to deliver time, on budget, and on scope. 5. Define roles and responsibilities for project team. 6. Create a project that's resilient to risks changes, rather than reactive. 7. Develop tangible methods to engage stakeholders. 8. Identify how to deal with planning scheduling technique. 9. Review claims in construction project, defining the ways to prevent strained relationships, stalemates, delays, disputes. 	5	Lecture, Lab Tutorial	Quiz Project Homework Exam
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11. Course Evaluation

Quiz
Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Building Code Requirements Structural Concrete ACI 318-14 , 318-19
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
Water Engineering					
2. Course Code:					
CE 355					
3. Semester / Year:					
5/3					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Lecture, Lab,					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4/4					
7. Course administrator's name (mention all, if more than one name)					
Name: Dr . Salah Lafta Farhan Email: salahlafta@uowasit.edu.iq					
8. Course Objectives					
Course Objectives				This module aims to provide students with foundational knowledge and applied skills in water engineering, focusing on the planning, design, and operation of systems related to water supply. It explores water sources, water treatment processes, distribution networks, and environmental considerations to equip students with the competencies needed for real-world water infrastructure projects.	
9. Teaching and Learning Strategies					
Strategy		Learning and Teaching Strategies: <ul style="list-style-type: none"> • Lectures: Core theory and concepts are delivered through interactive lectures. • Tutorials: Problem-solving sessions and worked examples. • Quizzes and Assessments: Short quizzes to reinforce learning and monitor progress. • Case Studies: Real-life examples of water engineering projects. • Group Projects: Design-focused assignments to develop collaborative and practical skills. • Lab Demonstrations or Virtual Labs (if available): Visualization of water treatment processes. □ Self-Directed Learning: Students are encouraged to explore beyond the syllabus using recommended readings and online resources. 			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	By the end of this module, students will be able to: 1. Explain the roles and scope of sanitary environmental engineering in modern water management. 2. Identify and classify sources of water wastewater and estimate their quantities. 3. Evaluate the physical, chemical, and biological characteristics of water and their relevance to drinking water standards. 4. Describe and apply the principles of water treatment processes including coagulation, flocculation, sedimentation, filtration, and disinfection.	5	Lecture, Lab Tutorial	Quizz Project Homework Exam

	<p>5. Design basic elements of water in pumping systems, and distribution networks.</p> <p>6. Calculate water demand, including domestic use and fire-fighting needs, and assess their impact on system design.</p> <p>7. Recognize the importance of advanced water treatment technologies and when they are applicable.</p> <p>8. Apply theoretical knowledge to practical studies and problem-solving in water engineering systems.</p>			
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11. Course Evaluation

Quiz Project Homework Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Water Supply and Sewerage. E. Steel and Terence J. McGraw-Hill Kogakusha, LTD.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Geometric Road Design	
2. Course Code:	
CE 366	
3. Semester / Year:	
6/3	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Lecture, Lab, Tutorial	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Lecturer Muqdad Mundher Email: mmunthir@uowasit.edu	
8. Course Objectives	
Course Objectives	<ol style="list-style-type: none"> 1. Understand principles and standards of road design. 2. Design safe and efficient road components. 3. Apply national and international guidelines. 4. Integrate safety, environment, and economy in design. 5. Prepare for professional road engineering practice. 6. Explain road design principles. 7. Apply design standards (AASHTO/local). 8. Design curves, cross-sections, and sight distances. 9. Evaluate intersections and interchanges. 10. Consider terrain, traffic, and environment in design. 11. Use software tools for geometric design. 12. Assess and justify design alternatives. 13. Introduction and design principles. 14. Standards and manuals (AASHTO, local). 15. Design controls: speed, vehicles, topography. 16. Cross-section elements. 17. Sight distances. 18. Horizontal and vertical alignment. 19. Intersection and interchange design. 20. Auxiliary lanes. 21. Roadside safety and environment. 22. Design software applications.
9. Teaching and Learning Strategies	

Strategy	<ol style="list-style-type: none"> 1. Lectures to explain principles, standards, and design methods. 2. Tutorials for problem-solving and design exercises. 3. Laboratory/fieldwork for surveys and data collection. 4. Computer workshops using CAD/road design software. 5. Case studies on real-world road projects. 6. Group projects to encourage teamwork in design tasks. 7. Seminars/discussions on modern practices and challenges. 8. Independent study through guided reading and assignments. 9. Guest lectures from industry professionals.
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	2	<ol style="list-style-type: none"> 1. Explain fundamental principles of geom road design. 2. Apply relevant design standards guidelines (e.g., AASHTO, local codes). 3. Design horizontal and vertical curves, distances, and cross-sections. 4. Evaluate the safety and efficiency intersections and interchanges. 5. Incorporate terrain, traffic, environmental factors into design solutions. 6. Use software tools to perform geometric design tasks. 7. Assess alternative design options and pre justified technical solutions. 	3	Lecture, Lab Tutorial	Quiz Project Homework Exam

11. Course Evaluation

Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	American Association of State Highway and Transportation Officials 2011
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Hydrology	
2. Course Code:	
CE 365	
3. Semester / Year:	
6/3	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Lecture, Lab, Tutorial	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Asst. Prof. Dr. Nuralhuda Aladdin Jasim Email: njasim@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • To provide students with a thorough understanding of hydrology and the hydrological cycle. • To introduce the key concepts related to meteorological data, precipitation, and streamflow analysis. • To equip students with practical skills for estimating missing precipitation data and applying techniques such as double mass curve analysis. • To study the process of evaporation, transpiration, infiltration, and groundwater dynamics. • To understand the concepts of stream flow and its routing, including hydrograph analysis and flood probability.
9. Teaching and Learning Strategies	
Strategy	<p>استراتيجيات التدريس والتعلم</p> <p>1. Lectures and Discussions المحاضرات والنقاشات</p> <p>Lectures will be used to introduce core hydrological concepts, followed by discussions to engage students and ask them to critically think about hydrological phenomena and related problems.</p> <p>تم استخدام المحاضرات لتعريف الطلاب بالمفاهيم الأساسية في الهيدرولوجيا، تليها مناقشات لتمكين الطلاب من التفكير النقدي حول الظواهر الهيدرولوجية والمشاكل ذات الصلة</p> <p>2. Practical Workshops ورش العمل العملية</p> <p>Hands-on sessions will allow students to apply theoretical concepts, such as estimating precipitation data and constructing hydrographs, using real-life examples and case studies.</p> <p>ستتيح الجلسات العملية للطلاب تطبيق المفاهيم النظرية، مثل تقدير بيانات هطول الأمطار أو بناء الرسوم البيانية لتدفق المياه باستخدام أمثلة حقيقية ودراسات حالة.</p> <p>3. Field Visits and Case Studies الزيارات الميدانية ودراسات الحالة</p> <p>Field visits to rivers, reservoirs, or groundwater monitoring sites will provide students with firsthand experience in collecting data and understanding hydrological processes in real-world environments.</p> <p>ستوفر الزيارات الميدانية للأحبار أو السدود أو مواقع مراقبة المياه الجوفية للطلاب تجربة عملية في جمع البيانات وفهم العمليات الهيدرولوجية في بيئات العالم الحقيقي.</p>

	<p>4. Group Projects and Collaborative Learning المشاريع الجماعية والتعلم التعاوني</p> <p>Students will work in groups to analyze hydrological data, simulate hydrological models, and develop solution real-world hydrological challenges. This fosters teamwork and problem-solving skills.</p> <p>الطلاب في مجموعات لتحليل البيانات الهيدرولوجية، محاكاة النماذج الهيدرولوجية، وتطوير حلول للتحديات الهيدرولوجية في العالم الحقيقي. يعزز هذا العمل الجماعي ومهارات حل المشكلات.</p> <p>5. Simulations and Software Tools المحاكاة وأدوات البرمجيات</p> <p>The use of hydrological simulation software (e.g., SWMM, HEC-HMS) will allow students to model and analyze various hydrological scenarios and gain practical skills in managing hydrological data.</p> <p>بمحاكاة وتحليل سيناريوهات هيدرولوجية متنوعة واكتساب مهارات عملية في إدارة (SWMM, HEC-HMS) مثل) سيسمح استخدام برامج المحاكاة الهيدرولوجية والبيانات الهيدرولوجية.</p> <p>6. Problem-Based Learning (PBL) التعلم القائم على المشكلات</p> <p>Students will be presented with real-world hydrology problems, and they will work in teams to research, analyze, and propose solutions. This method emphasizes practical problem-solving and the application of theoretical knowledge.</p> <p>تقدم مشكلات هيدرولوجية حقيقية للطلاب، حيث سيعملون في فرق للبحث والتحليل واقتراح الحلول. يركز هذا الأسلوب على حل المشكلات العملية وتطبيق المعرفة النظرية.</p> <p>7. Interactive Tutorials الدروس التفاعلية</p> <p>Tutorials will focus on reinforcing key concepts through problem-solving exercises, interactive discussions, and Q&A sessions to ensure students grasp the material thoroughly.</p> <p>ركز الدروس التفاعلية على تعزيز المفاهيم الأساسية من خلال تمارين حل المشكلات، المناقشات التفاعلية، وجلسات الأسئلة والإجابات لضمان فهم الطلاب للمادة بشكل جيد.</p> <p>8. Assessment and Feedback التقييم والتغذية الراجعة</p> <p>Regular quizzes, assignments, and group projects will assess students' understanding. Timely feedback will be provided to help students improve their learning and address any gaps in knowledge.</p> <p>يقيم فهم الطلاب من خلال الاختبارات المنتظمة، الواجبات، والمشاريع الجماعية. سيتم تقديم التغذية الراجعة في الوقت المناسب لمساعدة الطلاب على تحسين تعلمهم ومعالجة أي فجوات في المعرفة.</p>
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	3	<p>Upon successful completion of this module, students will be able to:</p> <p>عند إتمام هذه المادة بنجاح، سيكون الطلاب قادرين على:</p> <ol style="list-style-type: none"> Demonstrate an understanding of hydrological cycle and its components. Analyze and estimate precipitation including methods for dealing with missing data and conducting double mass curve analysis. Calculate average precipitation over an area and analyze its significance. Understand the processes of evaporation, transpiration, and infiltration, and their impact on the water cycle. Analyze stream flow data, and extend the rating curve for accurate stream flow estimation. Construct and interpret hydrographs, and apply reservoir routing techniques. Understand well hydraulics and groundwater flow concepts. Evaluate flood probabilities based on hydrological data and analysis. 	3	Lecture, Lab Tutorial	Quizz Project Homework Exam

11. Course Evaluation

Quizz
Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	APPLIED HYDROLOGY, Ven Te Ch Late, Urbana-Champaign David Maidment, Larry W. Mays.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Description Form

1. Course Name:	
Numerical Analysis	
2. Course Code:	
CE 361	
3. Semester / Year:	
6/3	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Lecture, Lab, Tutorial	
6. Number of Credit Hours (Total) / Number of Units (Total)	
4/4	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Salman F. AlRubaye Email: salman@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> • Understand the fundamental principles of numerical analysis and their applications to engineering and scientific problems. • Apply numerical methods for solving nonlinear equations, systems of algebraic equations, and ordinary/partial differential equations. • Perform numerical differentiation and integration with attention to accuracy and error analysis. • Use curve fitting, interpolation, and extrapolation techniques to analyze and predict data behavior. • Evaluate the efficiency, stability, and accuracy of various numerical algorithms. • Implement numerical methods using computational tools and interpret the obtained results.
9. Teaching and Learning Strategies	
Strategy	<p>Interactive Lectures – Present theory with real-world engineering and scientific examples to illustrate application of numerical methods.</p> <p>Problem-Solving Sessions – Engage students in solving step-by-step numerical problems during class to reinforce concepts.</p> <p>Hands-on Computational Labs – Use MATLAB, Python, or similar tools to implement and test numerical algorithms.</p> <p>Group Projects – Assign small projects where students apply multiple numerical techniques to solve practical problems.</p> <p>Error Analysis Discussions – Encourage students to analyze computational errors, stability, and convergence of chosen methods.</p> <p>Blended Learning – Combine face-to-face teaching with online simulations, tutorials, and visual demonstrations.</p>

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	Solve nonlinear equations, systems of algebraic equations, and differential equations using numerical methods. Apply numerical differentiation and integration to practical engineering and scientific problems. Use interpolation, extrapolation, and curve fitting techniques for data analysis and prediction. Assess the accuracy, stability, and efficiency of numerical algorithms. Implement and validate numerical solutions using appropriate computational tools	4	Lecture, Lab Tutorial	Quizz Project Homework Exam
11. Course Evaluation					
Quizz Project Homework Exam					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			<ul style="list-style-type: none"> Steven, C. C. (2007). Applied Numerical Methods with Matlab: For Engineers and Scientists. Tata McGraw Hill Education Private Limited. Numerical Methods for Engineers, S. C. Chapra and R. Canale, McGraw-Hill, 6th edition, 2010 		
Main references (sources)					
Recommended books and references (scientific journals, reports...)					
Electronic References, Websites					

Course Description Form

1. Course Name:	
Reinforced Concrete II	
2. Course Code:	
CE 364	
3. Semester / Year:	
6/3	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Lecture, Lab, Tutorial	
6. Number of Credit Hours (Total) / Number of Units (Total)	
4/5	
7. Course administrator's name (mention all, if more than one name)	
Name: Prof. Dr. Sallal Rashid Abid Email: sallal@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<ol style="list-style-type: none"> 1. Understanding the basic philosophy of reinforced concrete design and distinguishing between different limit-state design criterions. 2. Understanding load distributions from surface flexural members (slabs and roofs) to beams and transferring accumulated loads and moments to columns. 3. Analyzing shear forces and bending moment in flexural members of small structures, and defining the resulting normal and shear stresses on the structural members. 4. Introducing the design of reinforced concrete beams against bending moments and shear forces. 5. Defining bond issues between steel and concrete and distinguishing the suitable design procedures to avoid bond failure. 6. Defining economical design solutions to save steel reinforcement using cut-off and bent-up techniques.
9. Teaching and Learning Strategies	
Strategy	Reinforced concrete design is a heavy course load that requires long instruction hours aiming to lead the engineering student to the basic knowledge about the analysis and design of reinforced concrete construction system, which is the main bone of most national buildings and civil structures. Therefore, the strategy of the course to deliver this module depends mainly on the module instructor in the class in addition to class tutorials, group discussions, and homework assignments that help the students to practice solving design and analysis issues more efficiently. Practical and test videos should also be occasionally used to facilitate connecting the given code elements. Visits to structural building construction sites are also another tool to combine the delivered theoretical material with its practical application.
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	<ol style="list-style-type: none"> 1. Recognizing the main serviceability issues facing a successful structural design of reinforced concrete slabs and beams. 2. Understanding design procedures with long term consideration of deflection and cracks control to the minimum possible limits based on recommendations and limitations of the American Concrete Institute (ACI) 318 design code. 3. Achieving the capability to design simple structures composed of reinforced concrete slab and bearing walls, which is the typical housing construction procedure in Iraq. 4. Achieving the ability to use a simple method to analyze and design reinforced concrete systems in typical monolithic slab-beam reinforced concrete systems. 5. Designing of short reinforced concrete columns, concentrically or eccentrically loaded uniaxially and biaxially loaded. 6. Designing of slender reinforced concrete columns. 	5	Theory Lecture, Lab Tutorial	Quizz Project Homework Exam

11. Course Evaluation

Quizz
Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Building Code Requirements Structural Concrete ACI 318-14 , 15 318-19
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Description Form

1. Course Name:	
Soil Mechanic II	
2. Course Code:	
CE 363	
3. Semester / Year:	
6/3	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Theory, Lecture, Lab, Tutorial	
6. Number of Credit Hours (Total) / Number of Units (Total)	
5/5	
7. Course administrator's name (mention all, if more than one name)	
Name: Prof. Dr. Asad H. Humaish Email: asadaldefae@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<ol style="list-style-type: none"> 1. An understanding the purpose and the importance of consolidation with the basic scientific tools needed to understand clayey soil behavior under loads. 2. Know the assumptions made in Terzaghi's theory of consolidation. 3. Understand the cause of settlement in primary and secondary consolidation 4. Identify the difference between consolidation and compaction. 5. An ability to calculate consolidation settlement at various degree of consolidation and the time require to achieve given settlement. 6. Extrapolation of Field Consolidation Curve, Compression Index and Some Empirical Correlations to calculate the consolidation parameters. 7. Knowledge principles of Settlement determination and the vertical displacement brought by this volume change due to water dissipation. 8. Knowledge the rate of stress history and why the clayey soil being either normally consolidated or over consolidated based on the over consolidation ratio. 9. Understand what are the factors that contribute to the shear strength of soils. 10. Knowledge of Mohr circle and the ability to use Mohr circle to determine the stresses and shear in the soil at given condition. 11. Identify the difference between consolidated drained, consolidated undrained, and

unconsolidated undrained test from the Triaxial tests.
 12. An ability to use the result from triaxial test to determine the angle of internal friction and the allowable shear stress of the soil.
 13. Get familiar with direct shear test and the unconfined compression test.

9. Teaching and Learning Strategies

Strategy	<p>The engineer needs to know two main design steps in the future during the preliminary design stage of foundation of any structures. The settlement of the structure due to layers' consolidation and the shear strength soil resistance. The branch equips a civil engineer with the basic scientific tools needed to understand soil behavior under two the main concepts above. Thus, the practical example to understand the soil behavior under load (consolidation settlement and shear strength) is main core of the module and for the instructor in the class. This class tutorial consecutively after few theoretical hours can provide well-understanding to the students' knowledge and improve the professional skills to solve such important geotechnical problems.</p> <p>Experimentally, in the soil mechanic laboratory, these are many experimental test that should be done by student groups and many geotechnical consolidation and shear strength parameters that have to be determined. This class push the student to be more practical experience in the future. Some of the experiments should be done by student's group in details and this stage give them more confidence in geotechnical problems in the future. Finally, the actual site investigation collected specimens can be used by student's groups to do some experimental test rather than man-made specimens. Short mandatory videos are also used during module to see what we are talking about.</p>
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	5	<ol style="list-style-type: none"> Teach the student the basic philosophy of consolidation theory and the types of settlement under loads. Knowledge the consolidation parameters and settlement determination and what the factors effecting on the settlement. Understand the clayey soil behavior under loads and the relationship between the time and degree of consolidation. What is the difference between normally consolidated and over-consolidated soils? What are the effects of over consolidation on the physical properties of clay? What are the causes of consolidation? Knowledge how to determine consolidation parameters like the compression index, swelling index, coefficient of consolidation, consolidation ratio, degree of consolidation and consolidation stress. An ability to compute the time factor using two methods, the square root time method or the time method. An ability to understanding relationship between the changing in voids under structure loads and the applied stress due to the structure. Knowledge how to determine consolidation stress from void ratio-vertical stress relationship. Understanding the oedometer test (one-dimensional compression test and knowledge how to calculate the void ratio change with stress in the test). Improve the student capability to know principles of shear strength of soil and the shear strength parameters variation under loads. The engineer needs to know the natural shearing resistance in the soil mass to analyze problems such as bearing capacity of foundation, stability of slopes and the lateral pressure retaining walls. 	5	Theory, Lecture, Lab, Tutorial	Quizz, Project, Homework, Exam

11. Course Evaluation

Quizz

Project
Homework
Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Introduction to Geotechnical Engineering, 2nd Edition, Baraja D 2014
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
Structural analysis II					
2. Course Code:					
CE 362					
3. Semester / Year:					
6/3					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Theory, Lecture, Tutorial					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4/4					
7. Course administrator's name (mention all, if more than one name)					
Name: Dr. Karrar Ali Al-Lami Email: karrarali@uowasit.edu.iq					
8. Course Objectives					
Course Objectives				<ol style="list-style-type: none"> 1. Differentiate determinate structures from indeterminate structures. 2. Introducing the method of consistent deformation to analyze indeterminate structures. 3. Presenting displacement methods as alternative methods to analyze indeterminate structures. 4. Distinguish braced frame from frames with side sway. 5. Applying the slope-deflection method to evaluate indeterminate beams and frames. 6. Utilizing the moment-distribution method to analyze indeterminate structures. 	
9. Teaching and Learning Strategies					
Strategy		Structural analysis is a continuation of previously studied courses and aims to provide students with the knowl to analyze different types of indeterminate structures. Therefore, students should have a strong backgrou engineering mechanics, strength of materials, and structural analysis I. Students are encouraged to review sub like equilibrium and shear and moment diagrams from previous courses. The course will be in the form of lect covering the main aspects of the course. In addition, multiple examples will be demonstrated for each sub Students will be handed homework and asked to solve it. At the end of each part of the course, there will be re and discussion of the homework. Student evaluation in this course will depend on various criteria including ex homework, class discussions, and quizzes.			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	4	<ol style="list-style-type: none"> 1. Recognize stable and indeterminate structures. 2. Analyze indeterminate structures using f method (consistent deformation method). 	4	Theory Lecture Lab	Quizz Project Homework

		3. Achieving the competence to analyze indeterminate structures using slope-deflection-method. 4. Analyzing indeterminate frames via slope deflection method. 5. Evaluation structures' external reactions internal forces after settlement. 6. Using moment-distribution method to analyze braced frames and frames with side sway.			Exam
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11. Course Evaluation

Quiz Project Homework Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Structural analysis by R. C. Hibbel
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Engineering Economy	
2. Course Code:	
CE 367	
3. Semester / Year:	
6/3	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Lecture, Lab, Tutorial	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3/3	
7. Course administrator's name (mention all, if more than one name)	
Name: Asst.Prof. Dr. Alaa Kharbat Shadhar Email: akhirbat@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	The need for engineering economy is primarily motivated by the work that engineers do in performing analyses, synthesizing, and coming to a conclusion as they work on projects of all sizes. In other words, engineering economy is at the heart of making decisions. These decisions involve the fundamental elements of cash flows of money, time, and interest rates. Decisions are made routinely to choose one alternative over another by individuals in everyday life; by engineers on the job; by managers who supervise the activities of others; by corporate presidents who operate a business; and by government officials who work for the public good. Most decisions involve money, called capital or capital funds, which is usually limited in amount. The decision of where and how to invest this limited capital is motivated by a primary goal of adding value as future, anticipated results of the selected alternative are realized. Engineers play a vital role in capital investment decisions based upon their ability and experience to design, analyze, and synthesize.
9. Teaching and Learning Strategies	
Strategy	Construction management is a significant course that requires focused instruction hours. Therefore, the strategy of the course to deliver this module depends mainly on the module instructor in the class, where the material should be delivered with practical examples from surrounding projects. Moreover, classwork and homework assignments would help the students to practice solving fundamental elements of cash flows of money, time, and interest rate issues more efficiently. Practical and test videos should also be occasionally used to facilitate connecting the general course elements. reports prepared by student may be increase their information in this scope.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	3	<p>Solve first-order ordinary differential equations and apply them to engineering problems.</p> <p>Analyze and solve second and higher-order ordinary differential equations with real-world applications.</p> <p>Formulate and solve systems of simultaneous linear ordinary differential equations.</p> <p>Apply Fourier series techniques to represent periodic functions and solve related engineering problems.</p> <p>Solve partial differential equations using analytical methods, including separation of variables.</p> <p>Interpret and apply mathematical solutions to model and analyze engineering systems.</p>	3	Lecture, Lab	Quiz Project Homework Exam

11. Course Evaluation

Quiz
 Project
 Homework
 Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Engineering Economy, leland blankenship, anthony tarquin. 2012 seventh edition.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Computer Applications in Civil Engineering (II)	
2. Course Code:	
CE 358	
3. Semester / Year:	
6/3	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Lecture, Lab	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2/2	
7. Course administrator's name (mention all, if more than one name)	
Name: Ali Hussein Ahmed Email: Ali.Hussein@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	<ol style="list-style-type: none"> 1. Introduce students to the fundamentals of structural modeling and analysis using Autodesk Robot Structural Analysis Professional. 2. Develop students' ability to define materials, sections, loads, and boundary conditions in a structural model. 3. Enhance students' understanding of structural behavior through computer-based simulation and interpretation of analysis results. 4. Provide students with the skills to design structural elements such as beams, columns, slabs, and shear walls according to design codes. 5. Train students to integrate theory and practice through the execution of a complete multi-story building project. 6. Prepare students for professional practice by emphasizing report generation, teamwork, and problem-solving in real-world structural engineering contexts.
9. Teaching and Learning Strategies	
Strategy	<p>Teaching and Learning Methods – Revit Structural Module</p> <ol style="list-style-type: none"> 1. Lectures (Theoretical Sessions): <ol style="list-style-type: none"> A. Explain fundamental concepts of Building Information Modeling (BIM) and structural modeling workflow B. Introduce standards of structural documentation and coordination processes. 2. Practical / Laboratory Sessions: <ol style="list-style-type: none"> A. Students practice creating structural models using Autodesk Revit Structure. B. Step-by-step guidance for modeling elements, reinforcement detailing, and drawing production. 3. Project-Based Learning: <ol style="list-style-type: none"> A. Students work individually or in groups on a multi-story building BIM model integrating modeling, detail and documentation. B. Encourages teamwork, coordination, and problem-solving in a realistic engineering environment. 4. Interactive Discussions & Problem-Solving: <ol style="list-style-type: none"> A. Students review model coordination cases and discuss constructability and detailing solutions.

- B. Develops spatial understanding, critical thinking, and engineering judgment.
- 5. Self-Directed Learning (SDL):
 - A. Students explore tutorials, BIM libraries, and software manuals independently.
 - B. Promotes independent learning and preparation for professional BIM practice.
- 6. Assessment-Based Learning:
 - A. Quizzes, midterm, project submissions, and final exam used as learning tools.
 - B. Students improve their models and drawings based on instructor feedback.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	2	<p>Knowledge</p> <p>By the end of this module, students will be able to:</p> <ol style="list-style-type: none"> 1. Explain the fundamentals of structural modeling and analysis using Autodesk Robot Structural Analysis. 2. Identify different types of structural elements (beams, columns, slabs, shear walls) and their role in structural systems. 3. Recognize the principles of applying load cases, and load combinations in structural analysis. 4. Describe the basics of linear, nonlinear, and dynamic analysis of structures. <p>Skills</p> <p>By the end of this module, students will be able to:</p> <ol style="list-style-type: none"> 1. Create structural models in Robot, including defining materials, cross-sections, supports, and load cases. 2. Perform structural analysis and interpret results (internal forces, reactions, displacements). 3. Design structural members (beams, slab columns, and walls) according to design codes. 4. Apply mesh generation and evaluate the accuracy of analysis for slabs and complex structures. 5. Use Robot to model and analyze multi-story buildings under different loading conditions. <p>Competence</p> <p>By the end of this module, students will be able to:</p> <ol style="list-style-type: none"> 1. Integrate theoretical knowledge with software-based applications to solve engineering problems. 2. Work independently and collaboratively on structural projects using Robot. 3. Communicate analysis and design results effectively through technical reports. 4. Demonstrate professional responsibility by applying codes and standards in structural design. 	2	Lecture, Lab	Quizz Project Homework Exam

11. Course Evaluation

Quizz
Project
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Exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

American Concrete Institute —
ACI 318: Building Code
Requirements for Structural
Concrete and Commentary.

Main references (sources)

Recommended books and references (scientific journals, reports...)	
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Electronic References, Websites	
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