

**Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department**



Academic Program and Course Description Guide

2024

Introduction:

The educational program is a structured set of courses designed to develop students' skills, preparing them for labor market requirements. This program is reviewed and evaluated annually through internal or external audit procedures.

The academic program description provides a summary of the program's content and its courses, outlining the skills students acquire in alignment with its academic objectives. This description is a fundamental component in obtaining program accreditation and is prepared by faculty members under the supervision of the department's scientific committees.

This guide includes updates to the academic description based on recent developments in the Iraqi educational system. It encompasses the description of traditional programs (annual and semester-based) in addition to adopting the description of academic programs according to the Bologna Process, as stated in the directive of the Directorate of Studies No. T.M.3/2906 dated 3/5/2023.

In this context, we emphasize the importance of accurately documenting academic program and course descriptions to ensure the continuous improvement of the educational process.

Concepts and terminology:

Academic Program Description: Provides a brief summary outlining the program's vision, mission, and objectives, including a precise description of the intended learning outcomes based on specific learning strategies.

Course Description: Highlights the key features of the course and the expected learning outcomes that students should achieve. This helps assess the extent of their benefit from available learning opportunities and is derived from the program description.

Program Vision: An ambitious depiction of the program's future, making it progressive, inspiring, realistic, and feasible.

Program Mission: Defines the objectives and activities required to achieve them while outlining the program's development paths and directions.

Program Objectives: Statements describing what the program aims to accomplish within a specific timeframe. These objectives must be measurable and observable.

Curriculum Structure: Includes all courses within the academic program according to the adopted learning system (semester-based, annual, Bologna Process). It encompasses ministry, university, college, and department requirements, specifying the number of credit hours for each course.

Learning Outcomes: The knowledge, skills, and values that students acquire upon successfully completing the academic program. Learning outcomes must be defined for each course to align with the program's objectives.

Teaching and Learning Strategies: The methods employed by faculty members to enhance student learning. These include all in-class and extracurricular activities designed to achieve the desired learning outcomes.

Academic Program Description form

University Name: University of Mosul

Faculty / Institute: College of Engineering

Scientific Department: Civil Engineering

Academic or Professional Program Name: Bachelor of Science in Civil Engineering

Final Certificate Name: Bachelor of Science in Civil Engineering

Academic System: Bologna Process (First Year), Semester System (Second Year), Courses System (Third and Fourth Years)

Description Preparation Date: 31/3/ 2024

File Completion Date: 31/3/ 2024

Signature:

Head of Department Name: Al-Hadidy Abdel Ibrahim



Signature:

Scientific Associate Name: Dr. Ayman T. Hameed



The file is checked by: Department of Quality Assurance and University Performance

Director of Quality Assurance and University Performance Department:



Date:

Signature:

Approval of the Dean



1. Program Vision

Developing engineering education in the field of civil engineering to achieve excellence and deliver innovative, high-quality educational programs.

2. Program Mission

Preparing specialized civil engineers with a high level of scientific excellence to keep up with advancements in curricula and scientific research, utilizing these capabilities to serve the community and develop public and private institutions while adhering to human, ethical, and professional values.

3. Program Objectives

- Acquiring fundamental knowledge and skills in civil engineering, specializing in structures, geotechnics, and transportation, to serve the community and facilitate membership in professional associations.
- Establishing engineering practice in civil engineering to meet societal needs.
- Engaging in continuous learning to ensure professional development.
- Gaining creative knowledge that enables graduates to acquire problem-solving skills and adapt to rapid and emerging technologies in structural engineering, geotechnics, and transportation, in addition to continuing lifelong learning activities.

4. Program Accreditation

The program is under review by the National Council for the Accreditation of Engineering Education (ICAEE).

5. Other external influences

The Dean's Office of the College of Engineering.

6 Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews•
Institution Requirements	6	11		There are three academic systems in the department: Bologna, Semester-based, and Course-based.
College Requirements	3	6		
Department Requirements	53	159		
Summer Training	1	Met or Not Met		
Other				

This can include notes whether the course is basic or optional.

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(The Bologna Process / Stage 1)

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)					Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code	
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)								Semn (hr/w)
UGI	One	1	CE101	Mathematics I	الرياضيات I	English	3				2		3	78	72	150	6.00	C	
		2	CE102	Engineering Mechanics I	الميكانيك الهندسي I	English	3				2		3	78	72	150	6.00	C	
		3	CE103	Engineering Drawing I	الرسم الهندسي I	English	2		2				3	63	62	125	5.00	C	
		4	CE104	Geology	علم الجيولوجيا	Arabic	2		2				3	63	87	150	6.00	C	
		5	CE105	Statistics I	الاحصاء I	English	2						3	33	42	75	3.00	S	
		6	UOM104	Democracy and Human Rights	ديمقراطية وحقوق الانسان	Arabic	2						3	33	17	50	2.00	B	
		7	UOM102	English Language	اللغة الانكليزية	English	2						3	33	17	50	2.00	B	
				Total		16	0	4	0	4	0	21	381	389	750	30.00			
UGI	Two	1	CE106	Mathematics II	الرياضيات II	English	3				2		3	78	97	175	7.00	C	
		2	CE107	Engineering Mechanics II	الميكانيك الهندسي II	English	3				2		3	78	97	175	7.00	C	
		3	CE108	Engineering drawing II	الرسم الهندسي II	English	2		2				3	63	87	150	6.00	C	
		4	UOM103	Computer	الحاسوب	Arabic	1		2				3	48	27	75	3.00	B	
		5	CE109	Statistics II	الاحصاء II	English	2						3	33	42	75	3.00	S	
		9	CE110	Electrical Engineering	الهندسة الكهربائية	English	2						3	33	17	50	2.00	S	
		7	UOM101	Arabic Language	اللغة العربية	Arabic	2						3	33	17	50	2.00	B	
				Total		15	0	4	0	4	0	21	386	384	750	30			

(Semester-Based System / Stage 2)

جامعة الموصل / كلية الهندسة – قسم الهندسة المدنية – المرحلة الثانية

الفصل الثاني							الفصل الاول						
عدد الوحدات	تطبيقي	عملي	نظري	المادة باللغة العربية	المادة باللغة الانكليزية	الرمز	عدد الوحدات	تطبيقي	عملي	نظري	المادة باللغة العربية	المادة باللغة الانكليزية	الرمز
3	1	-	3	الرياضيات IV	Mathematics IV	CE209	3	1	-	3	الرياضيات III	Mathematics III	CE201
3	1	-	3	ميكانيك المواد II	Mechanics of Materials II	CE210	3	1	-	3	ميكانيك المواد I	Mechanics of Materials I	CE202
2	-	2	1	برمجة الحاسوب II	Computer programming II	CE211	2	-	2	1	برمجة الحاسوب I	Computer programming I	CE203
3	1	2	2	المساحة الهندسية II	Engineering Surveying II	CE212	3	1	2	2	المساحة الهندسية I	Engineering Surveying I	CE204
3	1	2	2	مواد انشاء II	Construction Materials II	CE213	3	1	2	2	مواد انشاء I	Construction Materials I	CE205
3	-	2	2	ميكانيك الموائع II	Fluid mechanics II	CE214	3	-	2	2	ميكانيك الموائع I	Fluid mechanics I	CE206
2	-	-	2	انشاء المباني II	Building Construction II	CE215	2	-	-	2	انشاء المباني I	Building Construction I	CE207
							2	-	-	2	مبادئ التبريد والتكييف	Air conditioning principles	CE208
19	4	8	15	المجموع			21	4	8	17	المجموع		
27	عدد الساعات الدراسية الاسبوعية						29	عدد الساعات الدراسية الاسبوعية					
40 وحدة							مجموع الوحدات الكلية						

(Course-Based System / Level 3)

المستوى الدراسي الثالث / الفصل الأول (الفصل الخريفي)									
الملاحظات	رمز المقرر	المعهد ان وجد	عدد الوحدات	عدد الساعات العملية	عدد الساعات النظرية	اسم المقرر		نوع المتطلب (اجباري – اختياري)	اسم المتطلب
						باللغة الإنكليزية	باللغة العربية		
	-	-	2	-	2	English language – Intermediate	اللغة الإنكليزية – متوسط	اجباري	متطلبات الجامعة
	CIV301	الرياضيات الهندسية II	3	-	3	Engineering analysis	التحليلات الهندسية	اجباري	متطلبات القسم
	CIV303	ميكانيك المواد II	3	-	3	Analysis of Determinate Structures	تحليل المنشآت المحددة	اجباري	
	CIV305	مواد انشاء II (تكنولوجيا الخرسانة)	3	-	3	Fundamentals of Reinforced Concrete	اساسيات الخرسانة المسلحة	اجباري	
	CIV307	الجيولوجيا الهندسية	3	2	2	Fundamentals of Soil Mechanics	اساسيات ميكانيك التربة	اجباري	
	CIV309	الأحصاء + المساحة الهندسية II	3	-	3	Transportation Engineering and Design	هندسة النقل	اجباري	
	CIV311	-	2	-	2	Construction Enterprises	تأسيس شركات	اختياري	
يختار الطالب مقرر واحد. عدد الوحدات المطلوبة = 2 وحدة	CIV313	-	2	-	2	Contracts and Specifications	المقالات والمواصفات	اختياري	
	CIV314	ميكانيك الموائع	2	-	2	Hydrology	هيدرولوجي	اختياري	
			19	2	18	مجموع ساعات وحدات الفصل الدراسي الأول			

المستوى الدراسي الثالث / الفصل الثاني (الفصل الربيعي)									
الملاحظات	رمز المقرر	المعهد ان وجد	عدد الوحدات	عدد الساعات العملية	عدد الساعات النظرية	اسم المقرر		نوع المتطلب (اجباري – اختياري)	اسم المتطلب
						باللغة الإنكليزية	باللغة العربية		
اجباري لطلبة القسم	ENGE337	-	2	-	2	Principles of Engineering Design	مبادئ التصميم الهندسي	اختياري	متطلبات الكلية
	CIV302	التحليلات الهندسية	3	-	3	Applied Numerical Analysis	التحليل العددي التطبيقي	اجباري	متطلبات القسم
	CIV304	تحليل المنشآت المحددة	2	-	2	Analysis of Indeterminate Structures	تحليل المنشآت غير المحددة	اجباري	
	CIV306	اساسيات الخرسانة المسلحة	2	-	2	Reinforced Concrete	الخرسانة المسلحة	اجباري	
	CIV308	اساسيات ميكانيك التربة	3	2	2	Soil Mechanics - Shear Strength and its applications	ميكانيك التربة – مقاومة القص وتطبيقاتها	اجباري	
	CIV310	هندسة النقل	3	2	2	Highway Engineering	هندسة الطرق	اجباري	
	CIV316	ميكانيك الموائع	2	-	2	Hydraulic Structures	المنشآت الهيدروليكية	اجباري	
يختار الطالب مقرر واحد. عدد الوحدات المطلوبة = 2 وحدة	CIV317	-	2	-	2	Environmental Engineering	هندسة البيئة	اختياري	
	CIV318	-	2	-	2	Construction Methods	طرق انشاء	اختياري	
	CIV312	-	2	-	2	Architecture Design	التصميم المعماري	اختياري	
			19	4	17	مجموع ساعات وحدات الفصل الدراسي الثاني			

ملاحظة: التدريب الصيفي (Summer Training) من متطلبات التخرج المطلوبة بعد اكمال الطالب المستوى الثالث للفترة من 1 تموز إلى 31 تموز أو من 1 آب إلى 31 آب.

(Course-Based System / Level 3)

المستوى الدراسي الرابع / الفصل الأول (الفصل الخريفي)									
الملاحظات	رمز المقرر	المعهد ان وجد	عدد الوحدات	عدد الساعات العملية	عدد الساعات النظرية	اسم المقرر		نوع المتطلب (اجباري – اختياري)	اسم المتطلب
						باللغة الإنكليزية	باللغة العربية		
	-	-	2	-	2	English language – Upper Intermediate	اللغة الإنكليزية – ما بعد المتوسط	اجباري	متطلبات الجامعة
	CIV401	تحليل المنشآت غير المحددة	2	-	2	Fundamentals of Steel Structures	اساسيات المنشآت الحديدية	اجباري	متطلبات القسم
	CIV402	الخرسانة المسلحة	2	-	2	Reinforced Concrete Design	تصاميم الخرسانة المسلحة	اجباري	
	CIV403	ميكانيك التربة – مقاومة النض وتطبيقاتها	3	-	3	Fundamentals of Foundation Engineering	اساسيات هندسة الاسس	اجباري	
	CIV404	جميع متطلبات القسم الاجبارية للمستوى الثالث	2	-	2	Graduation Project I	مشروع التخرج I	اجباري	
	CIV405	تحليل المنشآت غير المحددة	1	2	-	Computer Applications	تطبيقات الحاسوب	اجباري	
يختار الطالب مقرر واحد. عدد الوحدات المطلوبة = 2 وحدة	CIV406	الخرسانة المسلحة	2	-	2	Special Topics in Design of Reinforced Concrete Structures	مواضيع مختارة في تصميم المنشآت الخرسانية	اختياري	
	CIV407	الخرسانة المسلحة وتحليل المنشآت غير المحددة	2	-	2	Special Topics in Structural Analysis and Design	مواضيع مختارة في التحليل والتصميم الإنشائي		
يختار الطالب مقرر واحد. عدد الوحدات المطلوبة = 2 وحدة	CIV408	ميكانيك التربة – مقاومة النض وتطبيقاتها	2	-	2	Special Topics in Geotechnical Engineering	مواضيع مختارة في هندسة الجيوتكنيك	اختياري	
	CIV409	ميكانيك التربة – مقاومة النض وتطبيقاتها	2	-	2	Problematic Soils in Engineering Applications	التربة المسببة للمشاكل في التطبيقات الهندسية		
يختار الطالب مقرر واحد. عدد الوحدات المطلوبة = 2 وحدة	CIV410	هندسة الطرق	2	-	2	Flexible Pavement Design	تصميم الرصف المرن	اختياري	
	CIV411	هندسة الطرق	2	-	2	Rigid Pavement Design	تصميم الرصف الخرساني		
			18	2	17	مجموع ساعات وحدات الفصل الدراسي الأول			

المستوى الدراسي الرابع / الفصل الثاني (الفصل الربيعي)									
الملاحظات	رمز المقرر	المعهد ان وجد	عدد الوحدات	عدد الساعات العملية	عدد الساعات النظرية	اسم المقرر		نوع المتطلب (اجباري – اختياري)	اسم المتطلب
						باللغة الإنكليزية	باللغة العربية		
	ENGC425	-	2	-	2	Engineering Management	ادارة هندسية	اجباري	متطلبات الكلية
	ENGC426	-	2	-	2	Engineering Economics	الاقتصاد الهندسي	اجباري	
	CIV412	مشروع التخرج I	2	-	2	Graduation Project II	مشروع التخرج II	اجباري	متطلبات القسم
	CIV413	تصاميم الخرسانة المسلحة	2	-	2	Quantity Survey	مصح الكميات	اجباري	
	CIV414	-	3	-	3	Sanitary and Environmental Engineering	الهندسة البيئية والصحية	اجباري	
	CIV415	الرسم بواسطة الحاسوب	1	2	-	Construction Drawing	الرسم الإنشائي	اجباري	
يختار الطالب مقرر واحد. عدد الوحدات المطلوبة = 2 وحدة	CIV416	اساسيات المنشآت الحديدية	2	-	2	Steel Structures Design	تصاميم المنشآت الحديدية	اختياري	
	CIV417	تصاميم الخرسانة المسلحة	2	-	2	Prestressed Concrete and Bridge Design	تصاميم الخرسانة مسبقة الجهد والجسور		
يختار الطالب مقرر واحد. عدد الوحدات المطلوبة = 2 وحدة	CIV418	اساسيات هندسة الاسس	2	-	2	Analysis and Design of Shallow Foundations	تحليل وتصميم الاسس الضحلة	اختياري	
	CIV419	اساسيات هندسة الاسس	2	-	2	Analysis and Design of Deep Foundations	تحليل وتصميم الاسس العميقة		
يختار الطالب مقرر واحد. عدد الوحدات المطلوبة = 2 وحدة	CIV420	هندسة الطرق	2	-	2	Special Topics in Highway Engineering	مواضيع مختارة في هندسة الطرق	اختياري	
	CIV421	هندسة الطرق	2	-	2	Special Topics in Traffic Engineering	مواضيع مختارة في هندسة المرور		
			18	2	17	مجموع ساعات وحدات الفصل الدراسي الثاني			

8. Expected learning outcomes of the program

Knowledge

- i. Ability to identify and solve engineering problems by applying principles of engineering, science, and mathematics.
- ii. Ability to design and implement innovative engineering solutions that meet societal needs within technical, economic, and sustainability constraints.
- iii. Commitment to continuous learning, professional and ethical practices, while utilizing modern tools and effectively communicating in the engineering work environment.

Skills

- i. Conducting Measurements and Engineering Analysis – Ability to accurately perform engineering tests and measurements, analyze data, and derive valid conclusions based on sound scientific and engineering principles.
- ii. Effective Communication and Decision-Making – Possessing strong verbal and written communication skills with individuals and groups across various disciplines and administrative levels, along with the ability to make informed engineering decisions based on systematic analysis.
- iii. Continuous Professional Development – Ability to engage in lifelong self-directed learning, update engineering knowledge, and apply it correctly to ensure professional growth while adhering to quality standards and engineering ethics.

Ethics

- i. Professional and Ethical Responsibility – Understanding ethical and professional responsibilities in engineering issues and making well-informed decisions that consider economic, environmental, and societal impacts.
- ii. Effective Planning and Management – Ability to plan engineering activities, set objectives, manage risks, and meet deadlines while ensuring quality according to engineering standards.
- iii. Teamwork and Professional Collaboration – Ability to work effectively within multidisciplinary teams, fostering communication and coordination to achieve engineering goals efficiently.

9. Teaching and Learning Strategies

Strategies and Teaching Methods Adopted for Program Implementation:

1. Delivering theoretical lectures using PowerPoint.
2. Conducting laboratory experiments to apply concepts practically.
3. Utilizing computer labs for training on software and applications.
4. Presenting video lectures to support educational content.
5. Assigning group projects to enhance collaborative work.

10. Evaluation methods

- i. Midterm and Final Exams
- ii. Quizzes
- iii. Reports and Assignments

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirement s/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Professor	Civil Engineering	Highway Engineering			2	
		Geotechnical Engineering			2	
		Structural Engineering			1	
Assistant Professor	Civil Engineering	Highway Engineering			3	
		Geotechnical Engineering			3	
		Structural Engineering			8	
Lecturer	Civil Engineering	Highway Engineering			2	
		Geotechnical Engineering			7	
		Structural Engineering			15	
Lecturer	Civil Engineering	Highway Engineering			1	
		Geotechnical Engineering			2	
		Structural Engineering			1	

Program Development Plan

Professional Development

The academic program aims to empower new faculty members in various fields of education through:

Organizing training courses to improve teaching methods, course design, and student learning assessment, in addition to introducing university systems and e-learning.

Continuous evaluation of faculty performance to identify areas that need improvement.

Encouraging participation in faculty development courses organized by the university.

Professional development of faculty members

The Department of Civil Engineering has strong ties with the Ministry of Higher Education and Scientific Research and other ministries in Iraq. Several seminars have been organized in collaboration with the Ministry of Higher Education. These links contribute to providing practical experience for the faculty members.

In this context, lectures, workshops, and training courses have been organized for faculty members in the Civil Engineering Department over the past years. There has also been participation in conferences, as well as scientific publications.

12. Acceptance Criterion

The department's capacity is determined within the admission plan based on the department's intake capacity. This is then sent to the college, the university, and the ministry for official approvals. After the central student admissions are issued by the Ministry of Higher Education and Scientific Research, students are accepted by the ministry based on their grades and their preferences. Afterwards, students apply to the college through the registration office in the Engineering College Deanship, submit the required official documents, and are distributed to the college's departments based on their capacity and the student's preferences, including the possibility of transferring from other departments to the department. Once the student is accepted into the Environmental Engineering Department, registration is completed, and the student begins attending classes in this department.

13. The most important sources of information about the program

- University Guide
- College Website:

<https://uomosul.edu.iq/engineering/%d9%82%d8%b3%d9%85-%d8%a7%d9%84%d9%87%d9%86%d8%af%d8%b3%d8%a9-%d8%a7%d9%84%d9%85%d8%af%d9%86%d9%8a%d8%a9-3/>

- University Website:

<https://uomosul.edu.iq/>

Program Skills Outline

				Required program Learning outcomes								
Year/L evel	Course Code	Course Name	Basic or optional	Knowledge			Skills			Ethics		
				A1	A2	A3	B1	B2	B3	C1	C2	C3
First	CE101	Mathematics I	Basic	*	*		*					
	CE102	Engineering Mechanics I	Basic	*	*							
	CE103	Engineering Drawing I	Basic	*	*							
	CE104	Geology	Basic	*	*							
	CE105	Statistics I	Basic	*	*							
	UOM104	Democracy and Human Rights	Basic							*		
	UOM102	English Language	Basic			*		*				
	CE106	Mathematics II	Basic	*	*							
	CE107	Engineering Mechanics II	Basic	*	*							
	CE108	Engineering Drawing II	Basic	*	*							
	UOM103	Computer Science	Basic	*	*							
	CE109	Statistics II	Basic	*	*							
	CE110	Electrical Engineering	Basic	*	*							
	UOM101	Arabic Language	Basic			*		*				
	CE201	Mathematics III	Basic	*	*							
	CE202	Fluid Mechanics I	Basic	*	*		*					
	CE203	Computer Programming I	Basic	*	*				*			
	CE204	Engineering Surveying	Basic	*	*		*					

	CIV410	Flexible Pavement Design	Basic	*	*								
	CIV313	Contracts and Specifications	Basic	*	*								
	ENGC425	Engineering Management	Basic	*	*					*			
	ENGC426	Engineering Economics	Basic	*	*								
	CIV413	Quantity Surveying	Basic	*	*								
	CIV414	Environmental and Sanitary Engineering	Basic	*	*								
	CIV415	Structural Drawing	Basic	*	*								
	CIV416	Steel Structure Design	Basic	*	*								
	CIV419	Analysis and Design of Deep Foundations	Basic	*	*								
	CIV421	Selected Topics in Traffic Engineering	Basic	*	*								
	CIV412	Graduation Project II	Basic	*	*	*	*	*	*	*	*	*	*

Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

(The Bologna Process / First Year)

Course Description

Module Information			
معلومات المادة الدراسية			
Module Title	Mathematics I		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CE101		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	UGI	Semester of Delivery	1
Administering Department	Type Dept. Code	College	Type College Code
Module Leader	Mohammed Th. Al-Neima Ahmad Ibrahim	e-mail	mohammedmth@uomosul.edu.iq
Module Leader's Acad. Title	Lecture Assistant lecture	Module Leader's Qualification	Ph.D. M.SC.
Module Tutor		e-mail	
Peer Reviewer Name	Amina A Khaleel	e-mail	amina.alshumam@uomosul.edu.iq
Scientific Committee Approval Date	1/06/2023	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	<ol style="list-style-type: none">1. Provide the fundamental base for elementary mathematics.2. Use mathematical functions like trigonometric functions and application of derivatives to solve some Engineering problems.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none">1. Basic 2D Curves drawing using shifting properties.2. Apply mathematic techniques to find the limits.3. Apply differential calculus and higher order to solve Engineering problems.4. Find velocity, acceleration with application of derivatives.5. Apply determinants properties and Cramer's rule to solve Engineering problems.6. An ability to identify, analyze, and solve complex engineering

	problems according to principles of engineering, science, and mathematics.
Indicative Contents المحتويات الإرشادية	<p>Indicative content includes the following.</p> <p><u>Chapter 1</u> Prerequisites for calculus, coordinates and Graphs in the plane,. Slope and Equations for lines, functions and their graphs.Shifts, Cirrcles and parabolas , A review of trigonometric functions. [15 hrs]</p> <p><u>Chapter 2</u> Limits and continuity, introduction to limit, The sandwich theorem and $\frac{\sin \theta}{\theta}$, Limits involving infinity, continuous functions [15 hrs]</p> <p><u>Chapter 3</u> Derivatives, slopes, Tangent lines and derivatives. Differentiations Rules, Derivatives of Trigonometric functions. The chain rule, implicit differentiation and fractional powers [15 hrs]</p> <p><u>Chapter 4</u> Applications of derivatives, Related rates of change. Maxima, minima, curve sketching with y' and y''. Graphing Rational functions, Asymptotes, Optimization [15 hrs]</p> <p><u>Chapter 5</u> Types of Matrices, operations sum, multiplication by scalar, multiplication between two matrices, Determinants, The adjoin of Matrix, inverse of Matrix, Solving systems of linear equation using Matrices. [15 hrs]</p>

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	24% (24)	5, 10,11	LO #1, 2, 3
	On line Assignments	4	4% (4)	2, 4,6,8	LO # 1-4
	Onsite Assignments	4	4% (4)	3,5,7,9	LO # 1-4
	Projects / Lab. Report	1	3%(3)	13	LO # 1-6
	Seminars	1	5%(5)		LO # 1-6
Summative assessment	Midterm Exam	2 hr	10% (10)	8	LO # 1-3
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Prerequisites for calculus, coordinates and Graphs in the plane,
Week 2	Slope and Equations for lines, functions and their graphs
Week 3	Shifts, Circles and parabolas , A review of trigonometric functions.
Week 4	Limits and continuity, introduction to limit.
Week 5	The sandwich theorem and $\frac{\sin \theta}{\theta}$
Week 6	Limits involving infinity, continuous functions
Week 7	Derivatives, slopes, Tangent lines and derivatives
Week 8	Differentiations Rules, Derivatives of Trigonometric functions
Week 9	The chain rule, implicit differentiation and fractional powers
Week 10	Applications of derivatives, Related rates of change.
Week 11	Maxima, minima, curve sketching with y' and y''
Week 12	Graphing Rational functions, Asymptotes, Optimization
Week 13	Types of Matrices, operations sum, multiplication by scalar, multiplication between two matrices.
Week 14	Determinants, The adjoint of Matrix, inverse of Matrix
Week 15	Solving systems of linear equation using Matrices
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Thomas' Calculus by Finney and Thomas.	Yes
Recommended Texts	Calculus by Ron Larson, Bruce Edwards.	no
Websites		

Grading Scheme

مخطط الدرجات

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

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

(Semester System / Second Year)

Course Description

1. Course Name:					
Mathematics III					
2 nd Level					
2. Course Code:					
CE201					
3. Semester / Year:					
Autumn 2024 -2023					
4. Description Preparation Date:					
2025-1-13 :					
5. Available Attendance Forms:					
Attendance					
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: assist. Prof. dr. Asaad Al-Omari					
Emai : assad.alomari@uomosul.edu.iq					
Name: Lecturer . Revan N. Wadie					
Emai : revan.nahith@uomosul.edu.iq					
8. Course Objectives					
Course Objectives		In this course, students will gain proficiency in differential and integral calculus. In calculus, we use two main tools to analyze and describe the behavior of functions: derivatives, and integrals. Students will use these tools to solve application problems in a variety of settings from physics to fieldwork and engineering problems.			
9. Teaching and Learning Strategies					
Strategy					
10. Course Structure					
Details are shown in the attachment below					
Week	Hours	Required Learning	Unit or subject	Learning	Evaluation

		Outcomes			method
11. Course Evaluation					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)					
Main references (sources)					
Recommended books and references (scientific journals, reports...)					
Electronic References, Websites					

Course Description:

The details for the description are listed in the table below.

References:

- 1- Thomas' Calculus-Early Transcendentals 13th Edition by **George B. Thomas, Jr; Maurice D. Weir; Joel Hass; and Christopher Heil**
- 2- Calculus-Vol.2 by **Ross L. Finney & George B. Thomas, Jr.**

Course Details:

Subject	Week
Hyperbolic functions: Definition and Identities	1
Hyperbolic functions: Drawing of Hyperbolic functions, derivatives	2
Hyperbolic functions: Derivatives	3
Hyperbolic functions: Integrations, Inverse functions	4
Hyperbolic functions: Drawing of inverse Hyperbolic functions, Identities between Inverse hyperbolic functions and Logarithm	5
Eng. App. For Hyperbolic functions: Catenary	6
Eng. App. For Hyperbolic functions: Catenary	7
Partial differentiation: Introduction, partial derivation	8
Partial differentiation: Total derivation	9
Partial differentiation: The maximum and minimum values of functions with several independent variables	10
Partial differentiation: Lagrange multipliers	11
Multiple integration: Introduction, Areas by double integration	12

Multiple integration: Physical applications	13
Multiple integration: Polar coordinates	14
Multiple integration: Triple integrals	15

Course Description

1. Course Name:	
Construction Materials I	
2. Course Code:	
CIV205	
3. Semester / Year:	
Autumn / 2023-2024	
4. Description Preparation Date:	
10/ 9/2023	
5. Available Attendance Forms:	
Attending	
6. Number of Credit Hours (Total) / Number of Units (Total)	
(2 Theoretical + 2 Practical) /3	
7. Course administrator's name (mention all, if more than one name)	
Email: sofyan1975@uomosul.edu.iq a.aldubony@uomosul.edu.iq rouasuhail@uomosul.edu.iq Zena.Adal@uomosul.edu.iq reffashlla@uomosul.edu.iq	Name: Sufyan Yöünis Ahmad – Ph.D Ahmam Al doubony M.Sc Roua Suhail M.Sc. Zeena Adel Mohammed M.Sc M.Sc Riffia Dallli
8. Course Objectives	
Course Objectives	1- Properties, compositions and types of cement. 2- Properties and tests of aggregate 3- Effect the properties of cement and aggregate

on the concrete.
4- Properties of concrete, workability, Bleeding, Segregation, plastic shrinkage), and durability.

9. Teaching and Learning Strategies

Strategy

- Identify the different construction materials, like Concrete blocks, Steel reinforcement, Clayey brick, Thermo stone ,Autoclaved aerated blocks, Gypsum board ,Plain concrete ,Rubber, Glass, Cement ,Gravel ,and Sand and other Commercial construction materials may be important in Civil Engineering.
- Identify the student with the Global specification of quality control of construction materials ,like ASTM, Bs EN, IQS, IS, and any other specification may be important.
- Optimal using of each type of construction materials and appropriate positions of these materials depending on the conditions, weathering, and the important of structure.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Identify Introduction of construction methods	Introduction of construction methods	Lecture	Exams
2	2	Identify Cement Composition	Cement Composition	Lecture	Exams
3	2	Identify Main Compounds of Cement and Their Effect on Hydration Process	Main Compounds of Cement and Their Effect on Hydration Process	Lecture	Exams
4	2	Identify Types of Cements, Manufacturing and Their Uses	Types of Cements, Manufacturing and Their Uses	Lecture	Exams
5	2	Identify Micro Structure of Cement Paste	Micro Structure of Cement Paste	Lecture	Exams
6	2	Identify Gel Pores-Strength Correlation	Gel Pores-Strength Correlation	Lecture	Exams

7	2	Term Exam	Term Exam	Lecture	Exams	
8	2	Identify Concrete Ingredients	Concrete Ingredients	Lecture	Exams	
9	2	Identify Rheology of Concrete ,Workability , Plasticity and its Coarseness	Properties of aggregate part 1	Lecture	Exams	
10	2	Identify Properties of fresh concrete	Properties of aggregate part 2	Lecture	Exams	
11	2	Identify Tests for ordinary Portland cement (Normal consistency) and (Setting time)	Effect the aggregate on the strength of concrete.		Exams	
12	2	Identify Tests for mortar of cement (Compressive strength, Tensile strength and effect of curing conditions on strength)	Tests for mortar of cement (Compressive strength, Tensile strength and effect of curing conditions on strength)	Lecture	Exams	
13	2	Identify Workability and Coarseness of concrete	Rheology of Concrete ,Workability , Plasticity and its Coarseness	Lecture	Exams	
14	2	Identify Rheology of Concrete and its Plasticity	Properties of fresh concrete	Lecture	Exams	
15	2	Final Exam	. Final Exam	Lecture	Exams	
		Details Covered Topics and the required time laboratory part /session				
1	2	Identify Writing a good technical report	Writing a good technical report	Lecture	Exams	
2	2	Identify Tests for ordinary portland cement (Normal consistency)	Tests for ordinary portland cement (Normal consistency)	Lecture	Exams	
3	2	Identify Tests for ordinary portland cement (Setting time)	Tests for ordinary portland cement (Setting time)	Lecture	Exams	
4	2	Identify Tests for mortar of cement (Compressive strength and effect of curing conditions on strength)	Tests for mortar of cement (Compressive strength and effect of curing conditions on strength)	Lecture	Exams	
5	2	Identify Tests for mortar of cement	Tests for mortar of cement (Tensile	Lecture	Exams	

		(Tensile strength)	strength)		
6	2	Identify Sieve analysis of coarse aggregates	Sieve analysis of coarse aggregates	Lecture	Exams
7	2	Identify Sieve analysis of fine aggregates	Sieve analysis of fine aggregates	Lecture	Exams
8	2	Identify Midterm Exam	Midterm Exam	Lecture	Exams
9	2	Identify Tests for aggregates (Specific gravity for fine and coarse aggregates)	Tests for aggregates (Specific gravity for fine and coarse aggregates)	Lecture	Exams
10	2	Identify Tests for aggregates (Unit weight)	Tests for aggregates (Unit weight)	Lecture	Exams
11	2	Identify Tests for aggregates (Moisture content)	Tests for aggregates (Moisture content)	Lecture	Exams
12	2	Identify Tests for aggregates (Absorption)	Tests for aggregates (Absorption)	Lecture	Exams
13	2	Identify Tests for clay and concrete blocks	Tests for clay and concrete blocks	Lecture	Exams
14	2	Identify Tests for tiles	Tests for tiles	Lecture	Exams
15	2	Term Exam	Term Exam		

11.Course evaluation

Method	Quantity	Percentage (%)
Quiz	4	10
Homework	4	10
Project	5	10
Midterm Exam(s)	1	20
Exam	1	50
Total	100	

Learning and Teaching Resources

) Required textbooks (curricular books	Troxell, Kelly, and Davis. (1968). Composition and Properties of Concrete, 2nd edition - McGraw-Hill book company, 480 pp. •Varghese P.C. (2015). Building Materials Paperback, second edition, Prentice Hall India Learning Private Limited; 283 pp.
Main references (sources)	•Nevile A.M. (1995). Properties of Concrete, forth and final Edition-Pearson Education Limited, 846 pp.

Recommended books and references (scientific journals, reports...)	1-American Society for Testing and Materials (ASTM) 2-British Standards (B.S) 3-Iraqi Standard Specifications
Electronic References, Websites	

Course Description

1. Course Name:	
Mechanics of Materials I	
2. Course Code:	
CIV 203	
3. Semester / Year:	
Fall 2023
4. Description Preparation Date:	
Fall 2023
5. Available Attendance Forms:	
In person	
6. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours Th. + 1 hour / 3 units	
7. Course administrator's name (mention all, if more than one name)	
Name:	Email:
Dr. Ali Natheer Abdul Baki	• aliabdulbaki@uomosul.edu.iq
Dr. Khalid Ahmed Abdullah	• khalid.alnuaemie75@uomosul.edu.iq
Revan Nahith	• revan.nahith@uomosul.edu.iq
8. Course Objectives	

Course Objectives

1. Teaching students the developed stresses, strains, and the effects of Poisson's ratio in various types of structural elements.

2. Teaching students the developed stresses due to changes in temperature or torsion.

3. Teaching students in detail drawings of the shear and moment diagrams and the calculation of deflection and rotation in beams and drawing of the elastic curve.

(Credit Hour System / Third Level)

Course Description

1. Course Name:	
Analysis of Indeterminate Structures II	
2. Course Code:	
CIV304	
3. Semester / Year:	
Spring 2024	
4. Description Preparation Date:	
Spring 2024	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours theory / 2 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Oday Asal Salih + Dr. Jasim Ali Abdullah	
Email: odaycivileng@uomosul.edu.iq + jassim24676@uomosul.edu.iq	
8. Course Objectives	
Course Objectives	Teaching students how to analysis of Indeterminate Structures (II): defining the methods used to find stresses in Indeterminate Structures, in addition to the methods used to find stresses in Structures that are subjected to moving loads.
9. Teaching and Learning Strategies	
Strategy	The main strategy that will be adopted: <ul style="list-style-type: none">• Approximate analysis for statically indeterminate structures.• Analysis of statically indeterminate beam, trusses, rigid frames, and composite structures by the method of consistent deformations.• Analysis of statically indeterminate beam, trusses, rigid frames, and composite structures by the method of least work.• Analysis of statically indeterminate beams and rigid frames without joint translation by the slope-deflection method.• Analysis of statically indeterminate rigid frames without joint translation by moment distribution.

	<ul style="list-style-type: none"> • Analysis of statically indeterminate rigid frames with one degree of freedom of joint translation by moment distribution. • Influence line for statically indeterminate structure, Maxwell's law, Betti's law.
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

11. Course Evaluation					
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reportsetc					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			1-Russell C. Hibbeler. " Structural Analysis " 8th ed.		
Main references (sources)			2-Yuan-Yu Hsieh, "Elementary Theory of Structures".		
Recommended books and references (scientific journals, reports...)					
Electronic References, Websites					

Course Description

1. Course Name:	
Reinforced Concrete	
2. Course Code:	
CIV306	
.....	
3. Semester / Year:	
2024 -2023- الفصل الربيعي	
.....	
4. Description Preparation Date:	
2025-1-13 :	
5. Available Attendance Forms:	
Attendance	
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: assist. Prof. dr. rabi M. najem	
Emai : dr.rabi.najem@uomosul.edu.iq	
Name: assist. Prof. dr. halla J. Mohammed	
Emai : engrehal.1984@uomosul.edu.iq	
8. Course Objectives	

Course Objectives	Teaching the students how to make a safe and economical design for different structural members (slabs, beams, columns and foundations), through the restriction of the used designed code (ACI code 2008), and providing them with experience to handle different designing and construction problems in site.
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9. Teaching and Learning Strategies

Strategy

10. Course Structure

Details are shown in the attachment below

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reportsetc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Basics of Reinforced concrete. Saad Al Taan, 1991
Main references (sources)	Building Code Requirements for Structural Concrete (ACI 318M-19) and Commentary
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

**MOSUL UNIVERSITY
FACULTY OF ENGINEERING
Department of CIVIL ENGINEERING,
Spring 2024**

Course Information for CIV306 Reinforced Concrete

Course Name:	Reinforced Concrete					
Code	Course type	Regular Semester	Theoretical	Practical	Credits	ECTS
CIV306			2	0	2	
Name of Lecturer(s)- Academic Title:	Ass. Prof. Rabi M. Najim. Ass. Prof. Dr. Halla Jasem Mohamad .					
Teaching Assistant(s):	N/A					
Course Language:	English					

Course Type:	Main
Office Hours	11:30 to 1:30 Tuesday, 10:30-12:30 Thursday, 8:30 to 10:30 Thursday
Contact:	Email: dr.rabi.najem@uomosul.edu.iq engrehal.1984@uomosul.edu.iq Tel: N/A
Teacher's academic profile:	Dr. Rabi M. Najim: : B.Sc./ Civil Engineering 1998, M.Sc./ Structural Engineering 2001, Ph.D./ Structural Engineering 2013. Dr. Halla: B.Sc./ Civil Engineering 2006 (Iraq), M.Sc./ Structural Engineering 2010 (Iraq), Ph.D./ Structural Engineering 2021 (Iraq).
Course Objectives:	
Course Description (Course overview):	-The course aims to acquaint students of the third stage (civil engineering) with the basics of reinforced concrete and the theories of analysis and design approved by the international ACI Code

COURSE CONTENT

Week	Hour	Date	Topic
1	2	27-02-2024	Beam design for torsion
2	2	06-03-2024	Beam design for torsion
3	2	13-03-2024	Beam design for torsion
4	2	20-03-2024	Beam design for torsion
5	2	27-03-2024	Analysis and design of short columns
6	2	03-04-2024	Analysis and design of short columns
7	2	10-04-2024	Analysis and design of short columns
8	2	17-04-2024	Analysis and design of short columns
9	2	24-04-2024	Midterm Exam
10	2	01-05-2024	Analysis and design of long columns
11	2	08-05-2024	Analysis and design of long columns
12	2	15-05-2024	Analysis and design of long columns
13	2	22-05-2024	Development and lap splices.
14	2	29-05-2024	Development and lap splices.
15	2	05-06-2024	Development and lap splices.
16	2	12-06-2024	Final Exam

Course Description

1. Course Name:	
Construction Methods	
2. Course Code:	
CIV318	
3. Semester / Year:	
Autumn 2023-2024	
4. Description Preparation Date:	
10-9-2023	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hr Number of Units=2	
7. Course administrator's name (mention all, if more than one name)	
Name: Zeena Adel Mohammed - Msc Email: Zena.adal@uomosul.edu.iq	
Name: Riffa Dalli Shlla - Msc Email: Reffashlla@uomosul.edu.iq	
8. Course Objectives	
Course Objectives	<input type="checkbox"/> construction professionals, engineers and architects to understand. This knowledge helps design structures. <input type="checkbox"/> plan projects <input type="checkbox"/> create safe working environments
9. Teaching and Learning Strategies	

Strategy	<ul style="list-style-type: none"> • Learning the ability to understand and use equations to obtain high productivity and speed of work for construction equipment and methods. • Increase the student the ability to solve an engineering problem and provide quick intuition in choosing appropriate solutions to it.
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2		1-Introduction of Construction industry	Lecture	Exam
2	2		2-Introduction of engineering evaluation.	Lecture	Exam
3	2		3-Rolling Resistance.	Lecture	Exam
4	2		4- coefficient of Traction.	Lecture	Exam
5	2		5-Type of methods compaction soil.	Lecture	Exam
6	2		6-Soil Specification & mid exam	Lecture	Exam
7	2		7-swelling and shrinkage of soil	Lecture	Exam
8	2		8-Calculation the cost of Wood	Lecture	Exam
9	2		Forms. 9-Properties of Tractors.	Lecture	Exam
10	2		10-Properties of Bulldozer and productivity,	Lecture	Exam
11	2		11-Regressive of rod	Lecture	Exam
12	2		12-Foundation injection	Lecture	Exam
13	2		13- Properties of scrapers	Lecture	Exam
14	2		14-Scrapers Productivity.	Lecture	Exam
15	2		15-Term Exam	Lecture	Exam

11. Course Evaluation		
<u>Percentage (%)</u>	<u>Quantity</u>	<u>Method</u>
10	3	Quiz
5	3	Homework
5		Attendance
20	1	Midterm Exam(s)
40	1	Total
60		Final Exam
12. Learning and Teaching Resources		
Required textbooks	Planning ,equipment and construction methods..for Mohammed Ayoub Sabry	
Main reference (sources)	Planning ,equipment and construction methods..for Mohammed Ayoub Sabry	
Recommended books and references		
Electronic Refernces , Websites		

(Credit Hour System / Fourth Level)

Course Description

1. Course Name:					
Flexible Pavement Design – 4th class					
2. Course Code:					
CIV410					
3. Semester / Year:					
2 nd Semester, 2023-2024					
4. Description Preparation Date:					
11-2-2025					
5. Available Attendance Forms:					
presence					
6. Number of Credit Hours (Total) / Number of Units (Total)					
30 hours / units (2)					
7. Course administrator's name (mention all, if more than one name)					
Name: Ayman Abdulhadi & Mohammed Ganam Email: aymanmawjoud@uomosul.edu.iq mohammed_g72@uomosul.edu.iq					
8. Course Objectives					
Course Objectives		<ul style="list-style-type: none">• Understand the basic principles of asphalt material behavior• Understand the basic principles of aggregate used in road construction works• Determine the thickness of paving layers			
9. Teaching and Learning Strategies					
Strategy		The teaching and learning strategy requires a combination of theoretical and practical methods, given the nature of the subject which combines basic engineering concepts with practical applications in pavement design and construction.			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1-5	10	Basic principles of asphalt material	Asphalt material	Explanation with data show	Daily tests
6-10	10	Basic principles of aggregates used in road construction works	Aggregate	Explanation with data show	Daily tests
11-15	10	Pavement thickness	Design methods	Explanation with data show	Daily tests

11. course Evaluation

Quiz:	10%
Classwork	10%
Midterm Exam(s)	20%
Final Exam	60%

12. Learning and Teaching Resources

Required textbooks (curricular books)	
Main references	Garber and Hoel "Traffic and Highway Engineering" Fifth edition, 2020
Recommended books and references	ASTM standards FHA, "Superpave Fundamentals. NATIONAL HIGHWAY INSTITUTE.," Asphalt-Institute-MS2-7th-Edition-Asphalt-Institute-Mix-Design.
Electronic references	https://almerja.net/reading.php?idm=197435&utm_source=chatgpt.com https://www.dr-myoussef.com/design-aashto/?utm_source=chatgpt.com

Course Description

1. Course Name:	
Construction Methods	
2. Course Code:	
CIV318	
3. Semester / Year:	
Autumn 2023-2024	
4. Description Preparation Date:	
10-9-2023	
5. Available Attendance Forms:	
Attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hr Number of Units=2	
7. Course administrator's name (mention all, if more than one name)	
Name: Zeena Adel Mohammed - Msc Email: Zena.adal@uomosul.edu.iq	
Name: Riffa Dalli Shlla - Msc Email: Reffashlla@uomosul.edu.iq	
.....	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> ☐ construction professionals, engineers and architects to understand. This knowledge helps design structures. ● ☐ plan projects ● ☐ create safe working environments
9. Teaching and Learning Strategies	

Strategy	<ul style="list-style-type: none"> • Learning the ability to understand and use equations to obtain high productivity and speed of work for construction equipment and methods. • Increase the student the ability to solve an engineering problem and provide quick intuition in choosing appropriate solutions to it.
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2		1-Introduction of Construction industry	Lecture	Exam
2	2		2-Introduction of engineering evaluation.	Lecture	Exam
3	2		3-Rolling Resistance.	Lecture	Exam
4	2		4- coefficient of Traction.	Lecture	Exam
5	2		5-Type of methods compaction soil.	Lecture	Exam
6	2		6-Soil Specification & mid exam	Lecture	Exam
7	2		7-swelling and shrinkage of soil	Lecture	Exam
8	2		8-Calculation the cost of Wood	Lecture	Exam
9	2		Forms. 9-Properties of Tractors.	Lecture	Exam
10	2		10-Properties of Bulldozer and productivity,	Lecture	Exam
11	2		11-Regressive of rod	Lecture	Exam
12	2		12-Foundation injection	Lecture	Exam
13	2		13- Properties of scrapers	Lecture	Exam
14	2		14-Scrapers Productivity.	Lecture	Exam
15	2		15-Term Exam	Lecture	Exam

11. Course Evaluation			
	<u>Percentage (%)</u>	<u>Quantity</u>	<u>Method</u>
	10	3	Quiz
	5	3	Homework
	5		Attendance
	20	1	Midterm Exam(s)
	40	1	Total
	60		Final Exam
12. Learning and Teaching Resources			
	Required textbooks		Planning ,equipment and construction methods..for Mohammed Ayoub Sabry
	Main reference (sources)		Planning ,equipment and construction methods..for Mohammed Ayoub Sabry
	Recommended books and references		
	Electronic Refernces , Websites		

Course Description

1. Course Name:
Computer Applications / Fourth class.
2. Course Code:
CIV 405
3. Semester / Year:
Autumn/ 2023 - 2024
4. Description Preparation Date:
23/1/ 2025
5. Available Attendance Forms:
Excel lists
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:

Email:

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Ashtar saleh

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Rouah suhail

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8. Course Objectives

Course Objectives

- Providing the technical possibility for students to use the various engineering programs.
- Helping students analyze and design multi-story buildings and footings as well as retaining structures.
- Students learn to apply safety and economic conditions in design.

9. Teaching and Learning Strategies

Strategy

- 1- Discussing with students in the classroom and computer lab.
- 2- Practical application of models of multi-storey buildings, foundations and retaining walls, and their analysis and design using engineering problems.
- 3-Preparing reports to analyze and design practical examples.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Introduction to STAAD Pro V8i Explanation of playlists	Introduction to STAAD Pro V8i Explanation of playlists	Discussing with students in the classroom and computer lab. and practical application.	Daily and monthly exams and attendance.
2	2	Explain how to represent and analyze the beams in the program and read the results	Explain how to represent and analyze the beams in the program and read the results	Discussing with students in the classroom and computer lab. and practical application.	Daily and monthly exams and attendance
3	2	Representation and analysis of planar (2D) structures and review of results	Representation and analysis of planar (2D) structures and review of results	Discussing with students in the classroom and computer lab. and practical application.	Daily and monthly exams and attendance

4	2	Representation and analysis of a multi-story structural building (3D).	Representation and analysis of a multi-story structural building (3D).	Discussing with students in the classroom and computer lab. and practical application.	Daily and monthly exams and attendance
5	2	Representation and analysis of a multi-story structural building (3D) with slabs and view results	Representation and analysis of a multi-story structural building (3D) with slabs and view results	Discussing with students in the classroom and computer lab. and practical application.	Daily and monthly exams and attendance
6	2	Concrete design for reinforced concrete structural members (beams, columns and slabs) from the design list	Concrete design for reinforced concrete structural members (beams, columns and slabs) from the design list	Discussing with students in the classroom and computer lab. and practical application.	Daily and monthly exams and attendance
7	2	Concrete design for reinforced concrete structural members (beams, columns and slabs) by using interactive method and Preparing a report with the results and exporting it to the word program	Concrete design for reinforced concrete structural members (beams, columns and slabs) by using interactive method and Preparing a report with the results and exporting it to the word program	Discussing with students in the classroom and computer lab. and practical application.	Daily and monthly exams and attendance
8	2	Practical exam of the program	Practical exam of the program	Discussing with students in the classroom and computer lab. and practical application.	Daily and monthly exams and attendance
9	2	Design of retaining wall.	Design of retaining wall.	Discussing with students in the classroom and computer lab. and practical application.	Daily and monthly exams and attendance
10	2	Design of footing subjected to vertical load.	Design of footing subjected to vertical load.	Discussing with students in the classroom and computer lab. and practical application.	Daily and monthly exams and attendance

11	2	Design of footing subjected to vertical and horizontal loading and moment.	Design of footing subjected to vertical and horizontal loading and moment.	Discussing with students in the classroom and computer lab. and practical application.	Daily and monthly exams and attendance
12	2	Design of combined footing.	Design of combined footing.	Discussing with students in the classroom and computer lab. and practical application.	Daily and monthly exams and attendance
13	2	Preparing a homework with the results and exporting it to the word program.	Preparing a homework with the results and exporting it to the word program.	Discussing with students in the classroom and computer lab. and practical application.	Daily and monthly exams and attendance
14	2	Practical exam of the program.	Practical exam of the program.	Discussing with students in the classroom and computer lab. and practical application.	Daily and monthly exams and attendance
15	2	Practical exam of the program.	Practical exam of the program.	Discussing with students in the classroom and computer lab. and practical application.	Daily and monthly exams and attendance

11. Course Elevation

Annual quest /50

Daily exam (10)mark, monthly exam (29) mark, attendance and homework (6)mark.

12. Learning and Teaching Resource

Required textbooks (curricular books, if any)	nothing
Main references (sources)	1-Encyclopedia of structural analysis and design by using Staad Pro., Second Edition 2007, Shareef Fathe. 2-ACI Code
Recommended books and references (scientific journals, reports...)	nothing
Electronic References, Websites	Nothing