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

2025

Introduction:

The educational program is a well—planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staP together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quaJerly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: **A** compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra—curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: University of Mosul

Faculty/Institute: College of Engineering

Scientific Department: Architecture Department

Academic or Professional Program Name: Bachelor's in Architectural Engineering

Final Certificate Name. Bachelor's in Architectural Engineering

Academic System: Courses

Description Preparation

Date: 17 / 11 /2024

File Completion Date:

17/ 11 /2024

Signature:

Head of Department

Assi.Prof. Dr. Omar kharufah

Name: Date: 25/3 /2025

Signature:

Scientific Associate

Name: Date: 6 / 4 / 2025

جامعة الموصل
كلية الهندسة
قسم هندسة العمارة

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance

Department: Date: 6 / 4 / 2025

Signature:

جامعة الموصل
مكتب العميد
كلية الهندسة

Approval of the Dean

1. Program Vision
Program vision is written here as stated in the university's catalogue and website.
The vision of the academic program is aligned with the vision of the Department of Architecture, which is for the department, through its academic program, to be a pioneer in the process of education and scientific research in architecture and its arts, thus contributing to sustainable national development.
2. Program Mission
Program mission is written here as stated in the university's catalogue and website.
• Quality and excellence in achieving comprehensive and sustainable development by preparing creative architects capable of competition, leadership, and sustaining scientific research to serve the community. • Preparing creative architects for the architectural design profession in the labor market. • Preparing graduates with distinguished capabilities to optimally meet current and future challenges related to architectural design. • Preparing distinguished graduates in achieving comprehensive development and sustainable design within the scope of urban design and building architectural design. • Providing the country and society with experts with advanced degrees in architectural engineering specializations to benefit from their scientific expertise. • Developing student performance and strategies for dealing with real-world problems through constructive and advanced scientific thinking. • Adopting students' distinctive and creative ideas and encouraging them to work collectively in diverse teams or as a single team. • Achieving quality education and scientific research to serve the community. • Maintaining communication with the department's graduates by inviting them to attend seminars, scientific conferences, and continuing education programs.
3. Program Objectives
General statements describing what the program or institution intends to achieve.
- Preparing scientifically, professionally, and educationally qualified personnel in various fields of knowledge, in accordance with high quality standards. - Promoting scientific research in theoretical and applied sciences, while encouraging initiatives linked to development programs, and ensuring that they

keep pace with global scientific developments and future planning.

- Continuously developing curricula at the undergraduate and graduate levels, keeping pace with modern scientific, methodological, and technical developments.

- Participating in community service through continuous interaction with state institutions, providing scientific consultations, and promoting continuing education programs.

- Linking architecture to other engineering disciplines and developing relationships with them, as it is an essential part of societal renaissance.

- Emphasizing the role of architecture in building society and improving the living environment.

- Preparing architectural graduates according to scientific principles that enable them to practice the profession efficiently in architectural and urban design, city planning, and interior and exterior space planning, in addition to preserving heritage and antiquities according to scientific methods.

- Implementing clear practical programs that focus on sustainability technology and architectural aesthetic standards, while keeping pace with developments in developed countries by providing an architectural education program based on modern technologies in engineering and technical fields.

- Focusing on the quality of the educational process in architecture by continuously selecting specialized and modern curricula and completing self-assessment reports with the aim of obtaining academic accreditation.

- Empowering the teaching staff in the Department of Architecture by increasing the percentage of PhD holders compared to master's degree holders.

- Focusing on applied scientific research and designing applied projects to strengthen partnerships and relationships with prestigious institutions and universities.

- Developing the skills of graduates by providing specialized continuing education courses and maintaining communication with them to enhance the achievement of the department's mission.

4. Program Accreditation

Does the program have program accreditation? And from which agency?

Work is underway to prepare the program requirements according to the approved standards, but it has not been submitted for review to the National Council for Accreditation of Engineering Education (ICAEE) due to the lack of a graduate course within the approved study system (course system) during the last academic year. Submission will be made when the requirements are fully met.

5. Other external influences

Is there a sponsor for the program?

Deanship of the College of Engineering				
6. Program Structure				
Program Structure	Number of Courses	Credit hours	Percentage	Reviews•
Institution Requirements	6	12		
College Requirements	5	11		
Department Requirements	85	185		
Summer Training				A mandatory requirement in the summer semester for students who have passed the courses at all levels.
Other				

7. Program Description

First Level

Republic of Iraq - Ministry of Higher Education and Scientific Research

University of Mosul

Bachelor's degree in Architectural Engineering (First cycle)

Five years (Ten semesters) - 300 ECTS - Each 1 ECTS = 25 hr

Program Curriculum (2023 - 2024)

جمهورية العراق - وزارة التعليم العالي والبحث العلمي

جامعة الموصل

بكالوريوس في هندسة العمارة (الدورة الأولى)

خمس سنوات (عشرة فصول دراسية) - 300 وحدة اوربية - كل وحدة اوربية = ٢٥ ساعة

المنهاج الدراسي للعام 2024-2023

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	Prerequis
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGI	One	1	ARC 111	Architecture Design and Graphic (1)	التصميم والرسم المعماري (1)	English	2			6			3	123	177	300	12.00	C	
		2	ARC 112	Descriptive geometry & Engineering Drawing	الهندسة الوصفية والرسم الهندسي	English	1			3			3	63	87	150	6.00	S	
		3	ARC 113	Art & Architecture	الفن والعمارة	English	2						3	33	67	100	4.00	C	
		4	ARC 114	Arabic Language	اللغة العربية	Arabic	2						2	32	18	50	2.00	E	
		5	ARC 115	Mathematics (1)	الرياضيات (1)	English	2	2			1		3	78	22	100	4.00	B	
		6	ARC 116	Democracy & Human Rights	الديمقراطية و حقوق الانسان	Arabic	2						2	32	18	50	2.00	E	
						Total	11	2	0	9	1	0	16	361	389	750	30.00		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequis
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGI	Two	1	ARC 121	Architecture Design and Graphic (2)	التصميم والرسم المعماري (2)	English	2			6			3	123	177	300	12.00	C	
		2	ARC 122	Free Hand Drawing (1)	الرسم اليدوي الحر (1)	English	1			3			3	63	62	125	5.00	S	
		3	ARC 123	Construction and Building Materials	الانشاء ومواد البناء	English	2			1			3	48	52	100	4.00	C	
		4	ARC 124	computer literacy	اساسيات الحاسوب	English	2						3	33	42	75	3.00	E	
		5	ARC 125	Mathematics (2)	الرياضيات (2)	English	2	2			1		3	78	22	100	4.00	B	
		6	ARC 126	English - Beginners	الانكليزية - المبتدئين	English	2						2	32	18	50	2.00	E	
						Total	11	2	0	10	1	0	17	377	373	750	30.00		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequis
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							

Second Level

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)							
UGII	Three	1	ARC 211	Architecture Design (1)	التصميم المعماري (1)	English	2			8		1	3	153	147	300	12.00	C	
		2	ARC 212	History of Ancient Architecture	تاريخ العمارة القديمة	English	2						3	33	42	75	3.0	C	
		3	ARC 213	Building Construction	انشاء المباني	English	2						3	33	67	100	4.0	B	
		4	ARC 214	Crimes of Ba'ath Regime in Iraq	جرائم نظام البعث في العراق	Arabic	2						2	32	18	50	2.0	E	
		5	ARC 215	Computer Architectural Drawing 2D	الرسم المعماري بالحاسوب 2D	English	1			3			3	63	37	100	4.0	C	
		6	ARC 216	English - Pre Intermediate	الانكليزية - قبل المتوسط	English	2						2	32	18	50	2.0	E	
		7	ARC 217	Graphic and Architectural Presentation	الرسم والاظهار المعماري	English	1			2			3	48	27	75	3.0	S	
						Total	12	0	0	13	0	1	19	394	356	750	30.00		

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)							
Four	1	ARC 221	Architecture Design (2)	التصميم المعماري (2)	English	2			8		1	3	153	147	300	12.00	C	
	2	ARC 222	Free Hand Drawing (2)	الرسم اليدوي الحر (2)	English				4			3	63	37	100	4.0	S	
	3	ARC 223	History of European Architecture	تاريخ العمارة الاوربية	English	2						3	33	42	75	3.0	C	
	4	ARC 224	Physics	الفيزياء	English	2	2					3	63	37	100	4.0	S	
	5	ARC 225	Computer Architectural Drawing 3D	الرسم المعماري بالحاسوب 3D	English	1			2			3	48	52	100	4.0	C	ARC 215 Computer Architectural Drawing 2D
	6	ARC 226	Science of Mechanics	علم الميكانيك	English	2						3	33	42	75	3.0	S	
					Total	9	2	0	14	0	1	18	393	357	750	30.00		

Third Level

السنة الثالثة		الفصل الاول			
#	رمز المادة	اسم المادة	نظري	عملي	عدد الوحدات
1	ARC 311	التصميم المعماري 3	2	8	6
2	ARC 312	الخدمات الهندسية (الصحية)	2		2
3	ARC 314	تاريخ العمارة الاسلامية	2		2
4	ARC 315	تقنيات الاظهار بالحاسوب	1	2	2
5	ARC 316	الرسوم التنفيذية 1	1	4	3
6	ARC 317	مبادئ التخطيط	2		2
7	ARC 313	اساليب الحفاظ المعماري	2		2
8	STR 317	منشآت الخرسانة المسلحة (1)	2		2
9	UoM 312	للغة الانكليزية- فوق المتوسط	2		2
			30		23

الفصل الثاني				
رمز المادة	اسم المادة	نظري	عملي	عدد الوحدات
ARC 311	التصميم المعماري 3	2	8	6
ARC 322	الخدمات الهندسية (الاضاءة)	2		2
ARC 324	التوثيق المعماري	1	2	2
ARC 325	تطبيقات حاسوبية متقدمة	2	2	3
ARC 326	الرسوم التنفيذية 2	1	4	3
ARC 327	المنطق ومنهجية التصميم	2		2
ARC 328	العمارة والصوت	2		2
STR 327	منشآت الخرسانة المسلحة (2)	2		2
		30		22

Fourth Level

المستوى الدراسي الرابع (الفصل الاول)										
اسم المتطلب	اسم المقرر		نوع المتطلب	عدد الساعات النظرية	عدد الساعات العملية	عدد الوحدات	المعهد ان وجد	رمز المقرر	الملاحظات
	باللغة العربية	باللغة الانكليزية							
متطلبات الجامعة	اخلاقيات المهنة	Professional Ethics	اجباري	2		2		UOMC404	
	اللغة الانكليزية- فوق المتوسط	English Language –Upper Intermediate	اجباري	2		2			
متطلبات القسم	التصميم المعماري (7)	Architectural Design (7)	اجباري	1	8	5	التصميم المعماري(6)	ARC 441	
	تصميم الفضاءات الداخلية	Interior Design	اجباري	1	2	2		ARC 442	
	نظريات التصميم الحضري	Theories of Urban Design	اجباري	2		2		ARC 443	
	العمارة والاستدامة البيئية	Architecture and Environmental Sustainability	اجباري	2		2		ARC 444	
	تصميم المنشات الفولاذية	Design of Steel Structures	اجباري	1	2	2		ARC 445	
	العمارة المحلية	Local Architecture	اختياري	2		2		ARC 461	يختار الطالب مقرر واحد ، عدد الوحدات المطلوبة= 2 وحدة
	اساسيات الحفاظ المعماري	Fundamentals of Architectural Conservation		1	2	2	التوثيق المعماري	ARC 462	
	علم النفس المعماري	Architectural Psychology		2		2		ARC 463	
مجموع ساعات و وحدات الفصل الاول للمستوي الرابع				13	12	19			

المستوى الدراسي الرابع (الفصل الثاني)										
اسم المتطلب	اسم المقرر		اسم المقرر	نوع المتطلب	عدد الساعات النظرية	عدد الساعات العملية	عدد الوحدات	رمز المقرر	الملاحظات
	باللغة العربية	باللغة الانكليزية							
متطلبات الكلية	تكامل المنظومات الهندسية	Engineering systems integration	اختياري	2		2		ENGE438	اجباري لطلبة القسم
متطلبات القسم	التصميم المعماري (8)	Architectural Design (8)	اجباري	1	8	5	التصميم المعماري (7)	ARC 446	
	عمارة الفضاءات الخارجية	Landscape Architecture	اجباري	1	2	2		ARC 447	
	برمجة الفضاءات المعمارية	Architectural Spaces Programming	اجباري	2		2		ARC 448	
	نظرية العمارة	Theory of Architecture	اجباري	3		3		ARC 449	
	العمارة الاسلامية	Islamic Architecture	اجباري	2		2		ARC 450	
	تقنيات البناء المتقدم	Advanced Construction Techniques	اختياري	2		2		ARC 464	يختار الطالب مقرر واحد عدد الوحدات المطلوبة= 2 وحدة
	العمارة المستدامة	Sustainable Architecture		2		2		ARC 465	
	ادارة المشاريع الانشائية	Construction Projects Management		2		2		ARC 466	
	التصميم النباتي	Planting Design		1	2	2		ARC 467	
مجموع ساعات و وحدات الفصل الثاني للمستوي الرابع				13	10	18			

Fifth Level

المستوى الدراسي الخامس (الفصل الاول)									
اسم المتطلب	اسم المقرر		نوع المتطلب	عدد الساعات النظرية	عدد الساعات العملية	عدد الوحدات	الممهد ان وجد	رمز المقرر	الملاحظات
	باللغة العربية	باللغة الانكليزية							
متطلبات الكلية	الادارة الهندسية	Engineering Management	اجباري	2		2		ENGC525	
	الاقتصاد الهندسي	Engineering Economy	اجباري	2		2		ENGC526	
متطلبات القسم	مشروع التخرج(1)	Graduation Project (1)	اجباري	2	6	5	التصميم المعماري(7)	ARC 541	
	التصميم الحضري	Urban Design	اجباري	2	6	5	نظريات التصميم الحضري	ARC 542	
	التخمين والمواصفات	Estimation and Specifications	اجباري	2		2		ARC 543	
	التصميم بمساعدة الحاسوب	Computer Aided Design	اجباري	1	2	2		ARC 544	
	متطلبات السلامة في المباني	Building Safety Requirements	اختياري	2		2		ARC 561	يختار الطالب مقرر واحد عدد الوحدات المطلوبة = 2 وحدة
	تطبيقات حاسوبية	Computer Applications		1	2	2		ARC 562	
	التفاصيل المعمارية	Architectural Details		1	2	2		ARC 563	
	نظريات النقد المعماري	Theories of Architecture Criticism		2		2		ARC 564	
مجموع ساعات و وحدات الفصل الاول للمستوي الخامس				11	18	20			

المستوى الدراسي الخامس (الفصل الثاني)									
اسم المتطلب	اسم المقرر		نوع المتطلب	عدد الساعات النظرية	عدد الساعات العملية	عدد الوحدات	الممهد ان وجد	رمز المقرر	الملاحظات
	باللغة العربية	باللغة الانكليزية							
متطلبات الكلية	هندسة البيئة و الاستدامة	Environmental Engineering and Sustainability	اختياري	3		3		ENGE536	اجباري لطلبة القسم
	انظمة البناء الذكي	Smart Building Systems	اختياري	3		3		ENGE539	اجباري لطلبة القسم
متطلبات القسم	مشروع التخرج(2)	Graduation project (2)	اجباري	1	14	8	مشروع التخرج(1)	ARC 545	
	السلوك وممارسة المهنة	Professional Practice	اجباري	2		2		ARC 546	
مجموع ساعات و وحدات الفصل الثاني للمستوي الخامس				9	14	16			

8. Expected learning outcomes of the program	
Knowledge (Cognition)	
Cognitive objectives (A)	A1. Includes the basic, applied, and engineering science principles necessary for the architectural engineering major, such as mathematics, geometry, physics, engineering drawing, statistics, computer technology, and automation. A2. Specialized architectural engineering sciences cover diverse aspects of architectural design, implementation, construction, executive drawings, architectural and freehand drawing, as well as interior and outdoor space design, urban design, and city planning. Architectural engineering addresses many aspects, interacts with many sciences, and contributes to important applications in daily life. A3. Professional Objectives and Supporting Foundations: Includes skills that support application within theoretical frameworks, such as report writing and research, as well as knowledge of economic, legal, health, social, and security determinants.
Skills	
Skill objectives (B)	B1. Design Skills: Acquire the ability to create innovative and sustainable architectural designs, including interior, outdoor, and urban space design. B2. Research and Analytical Skills: Develop research skills, gather, and analyze information for application in design projects, including environmental, economic, and social considerations. B3. Communication and Collaboration Skills: Enhance effective communication and teamwork skills with classmates and professionals in multiple fields, including report writing and presenting ideas clearly and convincingly.
Value	
Value objectives (C)	C1. Creativity and Innovation: Promoting the values of creativity and innovation in the design and research process, contributing to the development of innovative and sustainable architectural solutions. C2. Social and Environmental Responsibility: Promoting awareness of the architect's social and environmental responsibility and ensuring the application of sustainable development principles in design and construction projects.

9. Teaching and Learning Strategies
Teaching and learning strategies and methods adopted in implementing the program in general.

- Theoretical lectures using PowerPoint
- Discussion sessions
- Practical designs in the ceremonies
- Computer labs
- Video lectures
- Group assignments
- Case studies

10. Evaluation methods

- Midterm and final exams
- Short exams
- Reports
- Practical exams
- Projects
- Research

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements /Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	**Lecturer**
Assistant Professor	Architectural Engineering	Islamic Architecture			١	
Assistant Professor	Architectural Engineering	Sustainable Architecture			١	
Assistant Professor	Architectural Engineering	Architectural Design Methods			١	
Assistant Professor	Architectural Engineering	Housing			١	
Assistant Professor	Architectural Engineering	Architectural Theory			٢	
Assistant Professor	Architectural Engineering	Interior Design			١	
Assistant Professor	Architectural Engineering	Architectural Technology			١	
Assistant Professor	Architectural Engineering	Urban Design			٢	
Assistant Professor	Architectural Engineering	Architectural Design			٤	
Assistant Professor	Architectural Engineering	Outdoor Space Design			١	

Lecturer	Civil Engineering	Construction			١	
Lecturer	Architectural Engineering	Sustainable Architecture			١	
Lecturer	Architectural Engineering	Architecture and Environment			٢	
Lecturer	Architectural Engineering	Architectural Theory and History			٢	
Lecturer	Architectural Engineering	Urban Planning			١	
Lecturer	Architectural Engineering	Urban Design			٤	
Lecturer	Architectural Engineering	Architectural Technology			٣	
Lecturer	Architectural Engineering	Architectural Design			٥	
Lecturer	Architectural Engineering	Materials Engineering			١	
Lecturer	Architectural Engineering	Architectural Theory			٥	
Lecturer	Architectural Engineering	Building Performance			١	
Assistant Lecturer	Civil Engineering	Construction			١	
Assistant Lecturer	Architectural Engineering	Urban Design			٢	
Assistant Lecturer	Architectural Engineering	Architectural Technology			٣	
Assistant Lecturer	Architectural Engineering	Interior Design			٢	
Assistant Lecturer	Architectural Engineering	Architectural Theory			٤	
Assistant Lecturer	Architectural Engineering	Architectural Design			٣	

Professional development

Orientation of new faculty members

The academic program of the Department of Architecture is designed to enhance the comprehensive knowledge and skills of new faculty members in various educational fields. The program begins with a focus on equipping faculty members with the basic skills to manage their duties effectively. It then progresses to include the processes and procedures necessary to ensure the successful achievement of targeted learning outcomes in various programs.

To achieve these goals, the program includes the following main components:

• Instructional Courses: New faculty members participate in instructional courses aimed

at improving the quality of the teaching process. These courses cover a range of topics, including: Teaching Methods Training: Teaching effective strategies for engaging students and delivering course content.

• Modern Trends in University Teaching: Exploring innovative approaches to teaching and learning in higher education.

• Student Assessment: Courses and workshops for new faculty members on the process of assessing student performance and understanding.

• Exam Preparation: Strategies for preparing fair exams.

• University Policies: Familiarize yourself with relevant laws, regulations, instructions, and e-learning platforms.

• Continuous Assessment: Faculty members, both full-time and part-time, undergo continuous assessment to identify areas for development throughout their teaching careers. This process helps ensure that faculty members are continually improving and adapting to meet the evolving needs of students and the university.

• Professional Development Opportunities: Faculty members are encouraged to participate in faculty development courses offered by the department or the university's Continuing Education Unit. These courses provide faculty members with opportunities to enhance their skills, stay abreast of trends in teaching and learning, and collaborate with colleagues.

Professional Development for Faculty Members

The faculty in the Department of Architecture maintains contact with a number of official government institutions within the department's specialization. The department has organized numerous seminars and training courses over the past few years. The topics of the seminars and courses were directly related to solving societal problems, and this contact with official institutions provides faculty members with practical experience.

In this context, the Continuing Education Committee in the Department of Architecture has organized lectures and workshops for faculty members in various fields over the past few academic years. These workshops focused on developing the capabilities of university faculty members, as well as developing and keeping up with global teaching methods.

12. Acceptance Criterion

Teaching and learning strategies and methods adopted in implementing the program in general.

The Department of Architecture's admissions capacity is determined within the admissions plan and based on the department's admissions capacity. The Academic Committee determines the number of new students required and then sends it to the Deanship, then the University, and finally the Ministry for official approval. To be eligible for admission to the Department of Architecture at the undergraduate level, applicants must meet certain requirements. The admissions process is overseen by the Ministry of Higher Education and Scientific Research, which automatically allocates students' admissions to government institutions and colleges based on their high school grades. The following are some of the

main admission requirements:

A. Iraqi Nationality and Year of Birth: Applicants must be Iraqi nationals.

B. Iraqi High School Certificate: Applicants must have a certificate issued by an Iraqi high school accredited by the Ministry of Education.

C. Medical Certificate: Applicants must submit a medical certificate to ensure they meet the necessary health requirements.

D. Full-Time Enrollment: Applicants must commit to being full-time students, devoting their time and efforts to their studies in the department.

E. Not accepting continuation studies at another college. F- Non-Iraqi students (incoming) who have obtained a certificate from an Iraqi high school are admitted according to the central admissions system.

C- Admission of 10% of the best graduates of technical institutes.

H- Admission of gifted students.

13. The most important sources of information about the program

- University Guide
- College Website:

14. Program development plan

To enhance the quality of education, raise graduate outcomes, and meet the required competencies, the Department Council has decided to adopt the "Bologna Process for Education." This system incorporates the European Credit Transfer and Accumulation System (ECTS) instead of the current system, in line with the department's commitment to continuous improvement. The new system will be implemented starting from the 2024-2025 academic year. Adopting the Bologna Process is expected to provide several benefits:

- Student-Centered Learning: The system places students at the center of the learning process, enhancing the overall educational system.
- Increased Classroom Interaction: Continuous interaction between faculty and students fosters a more dynamic learning environment.
- Focus on Professional and Practical Skills: Emphasis is placed on acquiring practical skills relevant to professional development.
- Opportunities for Continuous Learning: Students will have the opportunity for continuous learning, assessment, and feedback.
- Semi-Annual Performance Evaluation: The system allows students to be evaluated twice a year, providing more comprehensive feedback.
- Deepening Subject Understanding: The system is expected to contribute to deepening students' understanding of subjects.

Program Skills Outline

Program Skills Outline									
Required program				Learning					
Year/ Level	Course Code	Course Name	Basic or optional	Knowledge			Skills		
				A1	A2	A3	B1	B	
First Level	ARC 111	Architecture Design and Graphic (1)	Basic	✓	✓		✓	✓	
	ARC 112	Descriptive geometry & Engineering Drawing	Basic	✓	✓		✓		
	ARC 113	Art & Architecture	Basic		✓				
	ARC 114	Arabic Language	Basic			✓			
	ARC 115	Mathematics (1)	Basic	✓					
	ARC 116	Democracy & Human Rights	Basic			✓			
	ARC 121	Architecture Design and Graphic (2)	Basic	✓	✓		✓	✓	
	ARC 122	Free Hand Drawing (1)	Basic		✓		✓		
	ARC 123	Construction and Building Materials	Basic			✓			
	ARC 124	computer literacy	Basic	✓	✓				
	ARC 125	Mathematics (2)	Basic	✓					
	ARC 126	English - Beginners	Basic			✓			
Second Level	ARC 211	Architecture Design (1)	Basic	✓	✓		✓	✓	
	ARC 212	History of Ancient Architecture	Basic		✓	✓			
	ARC 213	Building Construction	Basic		✓	✓			
	ARC 214	Crimes of Ba'ath Regime in Iraq	Basic						
	ARC 215	Computer Architectural Drawing 2D	Basic	✓	✓	✓	✓		
	ARC 216	English - Pre Intermediate	Basic						
	ARC 217	Graphic and Architectural Presentation	Basic	✓	✓		✓		
	ARC 221	Architecture Design (2)	Basic	✓	✓		✓	✓	
	ARC 222	Free Hand Drawing (2)	Basic		✓		✓		
	ARC 223	History of European Architecture	Basic		✓				
	ARC 224	Physics	Basic	✓					
	ARC 225	Computer Architectural Drawing 3D	Basic	✓	✓		✓		
	ARC 226	Science of Mechanics	Basic	✓					
Third	ARC311	Architectural Design (3)	Basic	✓	✓		✓	✓	

Level	ARC312	Building Services (Sanitary)	Basic	✓				
	ARC314	History of Islamic Architecture	Basic		✓			
	ARC315	Computer Aid Presentation Techniques	Basic	✓	✓		✓	
	ARC316	Working Drawings (1)	Basic	✓	✓		✓	
	ARC317	Principles of Planning	Basic		✓	✓		
	ARC313	Architectural Conservation Methods	Basic		✓	✓		
	STR317	Reinforced Concrete Structures (1)	Basic			✓		
	UoM312	English Language Intermediates	Basic			✓		
	ARC311	Building Services (Lighting)	Basic	✓	✓		✓	✓
	ARC322	Architectural Documentation	Basic	✓	✓	✓		
	ARC324	Advanced Computer Applications	Basic		✓	✓	✓	
	ARC325	Working Drawings (2)	Basic	✓	✓		✓	
	ARC326	Logic & Design Methodology	Basic	✓	✓		✓	
	ARC327	Architecture & Acoustic	Basic		✓	✓		
	ARC328	Reinforced Concrete Structures (2)	Basic	✓	✓			
	STR327	Reinforced Concrete Structures (2)	Basic	✓		✓		
Fourth Level	UOMC404	Professional Ethics	Basic			✓		
	-	English Language –Upper Intermediate	Basic			✓		
	ARC441	Architectural Design (7)	Basic	✓	✓		✓	✓
	ARC442	Interior Design	Basic	✓	✓		✓	✓
	ARC443	Theories of Urban Design	Basic		✓			
	ARC444	Architecture and Environmental Sustainability	Basic		✓	✓		
	ARC445	Design of Steel Structures	Basic	✓		✓		
	ARC461	Local Architecture	Optional		✓			
	ARC462	Fundamentals of Architectural Conservation	Optional		✓	✓		
	ARC463	Architectural Psychology	Optional			✓		
	ENGE438	Engineering systems integration	Basic			✓		
	ARC446	Architectural Design (8)	Basic	✓	✓		✓	✓
	ARC447	Landscape Architecture	Basic	✓	✓		✓	✓
	ARC448	Architectural Spaces Programming	Basic		✓			
	ARC449	Theory of Architecture	Basic		✓			
	ARC450	Islamic Architecture	Basic		✓			

	ARC464	Advanced Construction Technique	Basic		✓	✓		
	ARC465	Sustainable Architecture	Basic		✓	✓		
	ARC466	Construction Projects Management	Optional			✓		
	ARC467	Planting Design	Optional			✓		
Fifth Level	ENGE525	Engineering Management	Basic			✓		
	ENGE526	Engineering Economy	Basic			✓		
	ARC541	Graduation Project (1)	Basic	✓	✓	✓	✓	✓
	ARC542	Urban Design	Basic	✓	✓			✓
	ARC543	Estimation and Specifications	Basic			✓		
	ARC544	Computer Aided Design	Basic	✓	✓		✓	
	ARC445	Building Safety Requirements	Optional		✓	✓		
	ARC561	Computer Applications	Optional	✓	✓			
	ARC562	Architectural Details	Optional		✓		✓	
	ARC563	Theories of Architecture Criticism	Optional		✓			
	ENGE536	Environmental Engineering and Sustainability	Basic		✓	✓		
	ENGE539	Smart Building Sysytems	Basic		✓	✓		
	ARC545	Graduation project (2)	Basic	✓	✓		✓	✓
	ARC546	Professional Practice	Basic			✓		

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

MODULE DESCRIPTION FORM

Bologna track

First Level

First Level

Republic of Iraq - Ministry of Higher Education and Scientific Research
University of Mosul
Bachelor's degree in Architectural Engineering (First cycle)
Five years (Ten semesters) - 300 ECTS - Each 1 ECTS = 25 hr
Program Curriculum (2023 - 2024)

جمهورية العراق - وزارة التعليم العالي والبحث العلمي
جامعة الموصل
بكالوريوس في هندسة العمارة (الدورة الأولى)
خمس سنوات (عشرة فصول دراسية) - 300 وحدة اوربية - كل وحدة اوربية = ٢٥ ساعة
المنهاج الدراسي للعام 2023-2024

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	Prerequis
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGI	One	1	ARC 111	Architecture Design and Graphic (1)	التصميم والرسم المعماري (1)	English	2			6			3	123	177	300	12.00	C	
		2	ARC 112	Descriptive geometry & Engineering Drawing	الهندسة الوصفية والرسم الهندسي	English	1			3			3	63	87	150	6.00	S	
		3	ARC 113	Art & Architecture	الفن والعمارة	English	2						3	33	67	100	4.00	C	
		4	ARC 114	Arabic Language	اللغة العربية	Arabic	2						2	32	18	50	2.00	E	
		5	ARC 115	Mathematics (1)	الرياضيات (1)	English	2	2			1		3	78	22	100	4.00	B	
		6	ARC 116	Democracy & Human Rights	الديمقراطية وحقوق الانسان	Arabic	2						2	32	18	50	2.00	E	
						Total	11	2	0	9	1	0	16	361	389	750	30.00		
	Two	1	ARC 121	Architecture Design and Graphic (2)	التصميم والرسم المعماري (2)	English	2			6			3	123	177	300	12.00	C	
		2	ARC 122	Free Hand Drawing (1)	الرسم اليدوي الحر (1)	English	1			3			3	63	62	125	5.00	S	
		3	ARC 123	Construction and Building Materials	الانشاء ومواد البناء	English	2			1			3	48	52	100	4.00	C	
		4	ARC 124	computer literacy	اساسيات الحاسوب	English	2						3	33	42	75	3.00	E	
		5	ARC 125	Mathematics (2)	الرياضيات (2)	English	2	2			1		3	78	22	100	4.00	B	
		6	ARC 126	English - Beginners	الانكليزية - المبتدئين	English	2						2	32	18	50	2.00	E	
						Total	11	2	0	10	1	0	17	377	373	750	30.00		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequis
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							

ARC 111 Architecture Design and Graphic (1)

University of Mosul College of Engineering Architectural Engineering Department

معلومات المادة الدراسية					
Module Title	**Architecture Design and Graphic (1)**			Module Delivery	
Module Type	**Core**			✔ Theory ✔ Lecture Lab Tutorial ✔ Practical ✔ Seminar	
Module Code	**ARC111**				
ECTS Credits	**12**				
SWL (hr/sem)	**300**				
Module Level	UGI		Semester of Delivery	1	
Administering Department	ARC		College	COE	
Module Leader	Ahmed Al-Fakhry		e-mail	ahmed.alfakhry@uomosul.edu.iq	
Module Leader's Acad. Title	Assist. Prof		Module Leader's Qualification	M.Sc	
Module Tutor	OMAR ADIL SABAH ALHIALY		e-mail	omar.sabah@uomosul.edu.iq	
Peer Reviewer Name	Reem Al-Othman Isra malallah aziz		e-mail	Reemalothman@uomosul.edu.iq esraamalallah@uomosul.edu.iq	
Scientific Committee Approval Date			Version Number	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• Theoretical part: Introduction, Primary Elements, Visual proportion of form, Primary shapes, Platonic solid, Regular and irregular forms, Transformation of form, Additive forms, Formal collisions of geometry, Articulation of form, Defining space with horizontal & vertical elements, Closure, Qualities of Architectural Space, Openings in space / Lighting, Spatial Relationships, Spatial Organizations, Circulation, Proportion and Scale, Practice/ Preliminary Presentation Ordering Principles, Practice/ Development Introduce students to the concept of Architecture Design and Graphic in its general and applied context, highlighting its role in the field of architecture. • Achieve a comprehensive understanding of Architecture Design and Graphic as an idea and its application in the context of architecture. • Understand the relationship between Architecture Design and Graphic and the art of architecture, with a focus on ways to develop Architecture Design and Graphic through architectural work. • Familiarize students with Architecture Design and Graphic, including their fundamentals, Additionally, students become acquainted with the details related to Architecture Design and Graphic, especially modern systems used in contemporary architectural buildings. • Explore a range of Architecture Design and Graphic

	• Open new horizons for students to explore architectural ideas. • Enhance the role of students and activate their participation by presenting reports on Architecture Design and Graphic, and buildings. These reports are discussed Architecture Design and Graphic • Bridging the Gap between academic theories and practical applications and explore the details of Architecture Design and Graphic in architectural buildings and understanding, helping students enhance their practical and theoretical skills in this field. • Inform students – by practice – about: • Architectural elements (point, line, plane, & volume) and elements of design (line, • direction, shape, size, texture, value, & color) to achieve Unity in design according to • design principles. • The concepts of mass & space in architectural design • Influence of structural principles on architectural composition • Influence of human scale and functions on architectural design • Local identity in architecture
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	• Identify the concept of Design and Graphic and its role in Architecture. • Understanding the relationship between Architecture Design, Graphic and art in architecture and ways to develop it. • Familiarizing students with Architecture Design and Graphic form. • Studying l architectural projects and their use of Architecture Design and Graphic. • Encouraging exploration of architectural ideas and Architecture Design and Graphic development. • Enhancing student roles through report presentations and discussions. • Linking academic theories with practical applications and providing hands-on exercises. • Encouraging active learning and collaborative work among students. • Effective communication with Architecture Design and Graphic. • Functioning effectively as a team member, providing leadership, collaboration, and goal achievement. • Encouraging active learning Architecture Design and Graphic and collaboration through group presentations showcasing students' skills and collective work. • Acquiring and applying new knowledge using Architecture Design and Graphic learning strategies. • Program skill goals: • Practicing exercises and small projects in design studios, Design work in the design • studio occupies the main part in the course with a significant role of high-quality. • architectural rendering in presenting results.
Indicative Contents **المحتويات الإرشادية**	• Graphic and the concept of advanced Architecture Design and its relationship to architecture. • The most important elements and principles of advanced Architecture Design and Graphic and their applications in contemporary global projects. • The important elements and principles of advanced Architecture Design and Graphic and its significant classifications. • Important elements and principles of advanced Architecture Design and Graphic materials and their applications in global projects. • Elements and principles of advanced Architecture Design and Graphic, with international examples.
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	

Strategies	• Encouraging students' active participation through pre-lecture readings and class discussions about the important elements and principles of advanced Architecture Design and Graphic. • Promoting an interactive learning important elements and principles of advanced Architecture Design and Graphic by implementing reverse learning, where students explore and research the Architecture Design and Graphic, contemporary building elements, and new architectural design principles, leading to discussions and a deeper understanding of the subject matter.

Student Workload (SWL) **الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	123	Structured SWL (h/w) **الحمل الدراسي المنتظم للطالب أسبوعيا**	8
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	177	Unstructured SWL (h/w) **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	11.8
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	300		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Report	2	5%	22,26	22,26
	(Day Sketch	1	10% (10)	9	3,6
	Fınal Presentatıon	10	50%	4,8,10,14,16,24,26,28,29,31	6,8,9,10,11,12,13,14
	Discussions&Analysis teams work	2	5%(10)	22,26	
Summative assessment	Midterm Exam(Day Sketch 1)	2 hr	20% (20)	31	
	Final Exam (Day Sketch2)	4	10% (10)	32	
Total assessment			**100% (100 Marks)**		

FIRST SEMISTER (Weekly Syllabus)
المنهاج الاسبوعي

Gg	Material Covered	
Week 1	General introduction	General principles.
Week 2	Engineering tool, elements	Architectural Compositions.
Week 3	Architectural design principles	Pencils Techniques.
Week 4	Point	Types of Lines (one dimension) Fınal

		Presentatıon
Week 5	Line (one dimension) linear elements	Day sketch.
Week 6		Engineering shapes (Circle, Square, Triangle) …etc.
Week 7	Plan(2D) walls, roofs, floors	Regular & Irregular in practice.
Week 8	Volumes components of volume, volume dual.	Presentation in graphics. Fınal Presentatıon
Week 9	Form (3d).	Day sketch.
Week 10	Properties of form.	Texture in Architecture &Materials. Fınal Presentatıon
Week 11	Primary shapes, primary solids.	Light Degrees between (white, gray & black)
Week 12	Irregular shapes, transformation of form	Use Colors between Art composition & Engineering shapes.
Week 13	Method of a joining forms	Collage.
Week 14	Types of compositions	Planes (two dimensions) Fınal Presentatıon.
Week 15	Edges, Articulation of forms	Day Sketch.
Week 16	Engineering Volumes (three dimensions).	Fınal Presentatıon

SECOND SEMISTER (Weekly Syllabus)
المنهاج الاسبوعي

Week	Material Covered	
Week 17	Form & space, surface& edge	Dimensions & Architectural design
Week 18	Functional analysis in Architecture, organization, circulation, proportion	The relation between shape & space.
Week19		Indoor & outdoor Function.
Week 20	Residential function	Residential Use ant its concentrates.
Week 21	Small house design	Day Sketch.
Week 22	Report , Discussions& Analysis team's work	Functional Analysis of house
Week 23	Indoor & outdoor movement	Bedrooms, living rooms, kitchens, Bath rooms.
Week 24	Vertical movement	Human Scale. Fınal Presentatıon
Week 25	Mass & outdoor Environment	The Relation between Human Scale & Architecture.
Week 26	Report, Discussions& Analysis team's work	Furniture design. Fınal Presentatıon
Week 27	Furniture	Day Sketch.
Week 28	Plans	Plans drawing Fınal Presentatıon
Week 29	Elevations	Elevations drawing & its details. Fınal Presentatıon
Week 30	Sections	Sections Drawing.
Week 31	Pre. Fınal Presentatıon, Exam	The Relation between indoor & outdoor functions in site plan .
Week 32	Site plan& land Scape Design	3D Model Fınal Presentatıon & Day Sketch.

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	- Architecture, Form, Space and Order, Franic Ching, Van Nostrand Reinhold Company, New York, 1996	No

Recommended Texts	● "Sources of architectural form", Manchester University Press, MANCHESTER and NEW YORK-USA) ● (Gelernter, M. "Sources of architectural form", Manchester University Press, MANCHESTER and NEW YORK-USA) ● The Art of Color and Design, Maitland Graves, McGraw Hill Book Com. Inc., New York, 1951	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.

ARC 112 Descriptive geometry & Engineering Drawing

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	**Descriptive geometry & Engineering Drawing**			Module Delivery	
Module Type	**S**			☐ Theory ☒ Lecture ☒ Lab ☐Tutorial ☒ Practical ☐ Seminar	
Module Code	**ARC112**				
ECTS Credits	٦				
SWL (hr/sem)	**150**				
Module Level	UGI		Semester of Delivery	1	
Administering Department	ARC		College	COE	
Module Leader	Reem Ali Talib Alothman Aseel Ibrahim Khalil		e-mail	reemalothman@uomosul.edu.iq Aseel.ibrahim@uomosul.edu.iq	
Module Leader's Acad. Title	Teacher		Module Leader's Qualification	Ph.D.	
Module Tutor	Mafaz Tariq		e-mail	E-mail	
Peer Reviewer Name	Name		e-mail	E-mail	
Scientific Committee Approval Date			Version Number	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• Descriptive Geometry provides training of the students' intellectual capability of space perception and spatial reasoning. • Training the student's mind to visualize imaginary objects and represent them. • The subject aims at developing the skills needed for documenting designs using drawings and for performing graphical analysis of two dimensional and three-dimensional problems. This course develops the ability of the students to understand geometric projection and learn the types of geometric projection. Students will learn how to use deferent drawing scales. The course develops the basic engineering drawing skills in one plane of the students and use drawing tools.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• Remember and understand the most ways to draw different shapes. • Comparing the different methods of drawing. • Describe different ways that are used for drawing the same object. • Naming and describing the different scales. • Carrying out the final 2d and 3d drawing of any project. • The use of different architectural drawing tools. Benefit from the ways of drawing in engineering and architectural work after graduation.
Indicative Contents المحتويات الإرشادية	• Indicative content includes the following. • Introducing the engineering drawing subject.

	• How to draw different shapes. • How to draw 3d models. How to draw projection.

rning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through practical sessions and homework.

Student Workload (SWL) **الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	٩٣	Structured SWL (h/w) **الحمل الدراسي المنتظم للطالب أسبوعيا**	4
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	٥٧	Unstructured SWL (h/w) **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	4.1
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	١٥٠		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	1	10% (10)	5	
	Projects / Lab. Class work	١٢	15% (10)	1,3,7,10,12, 14	
	Projects / Homework	١٢	15% (10)	2,4,6,9,11,13,15	
Summative assessment	Midterm Exam	2 hr	20% (20)	8	
	Final Exam	3 hr	40% (40)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Monge's Orthographic Projection. Defining points for Monge's descriptive geometry analysis
Week 2	Defining lines for Monge's descriptive geometry analysis
Week 3	Solve for various projections (1) such as: True size and shape projections, True angles, Distances between points and lines.
Week 4	Solve for various projections (2) such as: True size and shape projections, True angles, Distances between points and lines.
Week 5	Midterm exam
Week 6	Auxiliary Views. Defining principal views relative to spatial analysis and expanding the principles of basic views to auxiliary view application

Week 7	Introduction and definition of engineering drawing for students, including the following: Learn about engineering tools and how to use them. * Types of pens used in drawing geometric shapes. * Billboard layout and addresses field numbers. * How to deal with the engineering board and the engineering board and how to install it on the board. Types of lines in engineering drawing: visible lines, hidden lines, center lines, dimension lines, cutting lines.
Week 8	Various engineering operations: * Introducing the drawing scale and its types: civil, mechanical, zoom-in and zoom-out scale. Teach students how to apply and draw the following engineering operations: * Drawing a straight line parallel to a known straight line from a point outside it. * Drawing a perpendicular bisector of a known straight line Draw tangents and learn about tangent points and how to locate them
Week 9	Various engineering operations * Draw a known arc so that it touches two known lines between which there are angles: right, acute and obtuse. * Finding the center of a known arc tangent to a known straight line and a known circle arc, inner circle arcs, and outer circle arcs. * Finding the center of a known arc that touches the arc of a known circle and passes through a point outside it. Draw the inverted shape
Week 10	Quiz
Week 11	Perpendicular projection theory of objects * Types of projection in drawing and its practical importance * Projections with vertical rays * Types of projections resulting from vertical projection and approved in the projection of various engineering objects The front, vertical, right side and left side view * How to arrange and draw the projections required for any object on the drawing board
Week 12	Drawing three-dimensional figures * Types of three-dimensional figures and their practical benefits * Isometric
Week 13	Linking the given projections with the process of imagining and drawing the analogous body Drawing axes of measurement and how to put dimensions on them
Week 14	Drawing the deleted third position of the body * How to deduce the omitted location from two known locations of the body Draw the omitted location of objects with inclined surfaces
Week 15	Geometric Sections * Rules for cutting objects * Marking the cut areas and leaving blanks and uncut parts Abnormal areas during cutting that were not marked: the oblique and vertical supports and appendages in the body
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	Material Covered
Week 1	Using the engineering board and install the sheet on the board and use engineering drawings tools.
Week 2	Drawing: visible lines, hidden lines, center lines, dimension lines, cutting lines.
Week 3	Drawing a straight line parallel to a known straight line from a point outside it. Drawing a perpendicular bisector of a known straight line
Week 4	Drawing tangents
Week 5	Quiz
Week 6	Section drawing
Week 7	Arrange and draw the projections required for any object on the drawing board
Week 8	Mid Term Exam
Week 9	Drawing three-dimensional figures
Week 10	Drawing axes of measurement and put dimensions on them
Week 11	Linking the given projections with the process of imagining and drawing the analogous body
Week 12	Drawing the deleted third position of the body
Week 13	Draw the omitted location of objects with inclined surfaces
Week 14	Marking the cut areas and leaving blanks and uncut parts
Week 15	Abnormal areas during cutting that were not marked: the oblique and vertical supports and appendages in the body
Week 16	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	-	No
Recommended Texts	Engineering Drawing and Graphic Technology, By French & Vierk, Twelve tion.	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.

ARC 113 Art & Architecture

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	**Art & Architecture**			Module Delivery	
Module Type	C			☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐Practical ☒ Seminar	
Module Code	ARC 113				
ECTS Credits	٤				
SWL (hr/sem)	١٠٠				
Module Level	UGI		Semester of Delivery	1	
Administering Department	ARC		College	COE	
Module Leader	Khawola faith mahmoud		e-mail	Khawola.mahmoud@uomosul.edu.iq	
Module Leader's Acad. Title	Assist. prof		Module Leader's Qualification	Ph.D.	
Module Tutor	anwar meshal shareef		e-mail	anwar.meshal@uomosul.edu.iq	
Peer Reviewer Name			e-mail		
Scientific Committee Approval Date			Version Number	1.0	
Relation with other Modules العلاقة مع المواد الدراسية الأخرى					
Prerequisite module	Architecture Design and Graphic (1)		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	• Introduction to Art and Architecture: The aim of this module is to provide students with a broad understanding of the relationship between art and architecture, and the relations between architecture and other sciences, introducing key concepts and terminology in the field. • Elements of Design: The aim of this module is to introduce students to the fundamental elements of design and how they apply it to both art and architecture. Students will develop an understanding of how these elements contribute to the aesthetics and functionality of architectural design. • Principles of design: : The aim of this module is to introduce students to the Principles of design and Identify and distinguish how the principles of design apply in architecture . Students will develop an understanding of how these Principles contribute to the aesthetics and functionality of architectural design. • Drawing and Visualization: This module aims to develop students' drawing skills specifically for architectural representation. The goal is to enable students to effectively communicate their design ideas through drawings and visualizations. • Space and Scale: This module aims to provide students with an understanding of space and scale in architectural design. Students will learn how to create a sense of space and manipulate the scale in their designs to achieve desired effects. • Architectural composition, types of geometric forms' connections, articulation of forms and corners and their application in art and architecture • Architectural trends and movements in art and architecture, (art nouveau, cubism).				

	• Historical Architectural Styles: This module aims to familiarize students with the major architectural styles throughout history, from ancient to contemporary, enabling them to recognize and analyze different architectural styles and their characteristics. • Materials and Construction: The aim of this module is to introduce students to different construction materials and their applications in architecture. Students will gain knowledge about the properties and characteristics of materials, enabling them to make informed material choices in their designs. • into how technology is shaping the future of architecture and Interior Design: This module aims to introduce students to the principles of interior design within architectural spaces. Students will learn how to create functional and aesthetically pleasing interiors, considering lighting, furniture, and material choices. • Landscape Design and Site Planning: The aim of this module is to provide students with an understanding of landscape design principles and their role in architectural projects. Students will learn how to integrate buildings with the surrounding landscape to create harmonious and sustainable designs. • Architectural Representation: This module aims to develop students' skills in architectural representation, including models, renderings, and digital visualization techniques. The goal is to equip students with effective communication tools to present their design ideas. • Emerging Technologies and Future Trends: This module aims to explore the impact of emerging technologies on architecture and to discuss future trends in the field. Students will gain insights into challenges and opportunities it presents.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	• Introduction to Art and Architecture: • Understand the relationship between art and architecture. • Use key concepts and terminology related to art and architecture. • Historical Architectural Styles: • Differentiate between major architectural styles throughout history. • Analyze the characteristics and influences of various architectural styles. • Elements of Design: • Apply design principles to create aesthetically pleasing and functional architectural designs. • Drawing and Visualization: • Communicate design ideas effectively through drawings and visualizations. • Space and Scale: • Manipulate spatial qualities and scale in architectural design. • Materials and Construction: • Evaluate construction materials used in architecture. • Make informed material choices for architectural applications. • Sustainable Design and Green Architecture: • Incorporate sustainable design principles and practices in architectural design. • Apply environmentally friendly materials and energy-efficient strategies. • Interior Design: • Apply principles of interior design within architectural spaces. • Landscape Design and Site Planning: • Integrate buildings with the surrounding environment through landscape design. • Architectural Representation: • Present architectural designs effectively using appropriate representation methods. • Emerging Technologies and Future Trends: • Understand the impact of emerging technologies on architecture. • Evaluate and discuss future trends in architecture.

Indicative Contents **المحتويات الإرشادية**	the relationship between art and architecture, major historical architectural styles, elements of design in architecture, drawing and visualization skills, space and scale in architectural design, materials and construction, urban design and planning, sustainable design and green architecture, architectural history, building structures, interior design principles, landscape design and site planning, architectural representation techniques, and emerging technologies and future trends in architecture. These condensed indicative contents provide an overview of the essential topics and concepts that will be covered in the curriculum on art and architecture

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	33	Structured SWL (h/w) **الحمل الدراسي المنتظم للطالب أسبوعيا**	2
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	٦٧	Unstructured SWL (h/w) **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	4.7
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	١٠٠		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	4, 13	LO #3, 4, 5, and 6
	Assignments	4	10% (10)	4, 13	LO #3, 4, 5, and 6
	Projects / Lab.	١	10% (10)		
	Exam		10%(10)		
Summative assessment	Midterm Exam	1 hr	10% (10)	8	1,2,3,4,6,14
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	• Introduction to Art and Architecture • Overview of the course and its objectives • Understanding the basic principles of art and architecture • Exploring the relationship between art and architecture • Exploring the relationship between architecture and other sciences
Week 2	• Elements of Design • Introduction to the elements of design (line, shape, form, color, texture, etc.) • Understanding how these elements apply to both art and architecture. • Examples of how artists and architects utilize these elements in their work.
Week 3	• Principles of design • Introduction to the Principles of design (identical , similarity, contrast, Gradation, dominance, Balance, unity, etc.). • Understanding how these Principles apply to architecture.

	• Identify and distinguish how the principles of design apply in architecture
Week 4	• Drawing Fundamentals for Architects • Importance of drawing skills in architecture • Basic drawing techniques and exercises for architectural representation • Introduction to architectural drafting tools and conventions
Week 5	• Understanding Space and Scale, proportion • Exploring the concepts of space and scale in art and architecture • Techniques for creating a sense of space in architectural design. • Examining how artists play with scale in their works
Week 6	• Architectural composition • types of geometric forms' connections • articulation of forms and corners and their application in art and architecture
Week 7	• Architectural trends and movements in art and architecture, (art nouveau, cubism).
Week 8	• Mid Term Exam
Week 9	• Color Theory and Application • Basics of color theory and its significance in art and architecture • Exploring color palettes and their emotional impact on architectural spaces • Case studies of buildings that effectively use color in their design.
Week 10	• Architectural Styles: From Classical to Contemporary • Introduction to various architectural styles throughout history • Overview of classical architecture (Greek and Roman) • Exploration of modern and contemporary architectural styles
Week 11	• Introduction to Interior Design • Exploring the principles of interior design in architectural spaces • Understanding the role of lighting, furniture, and materials in interior design • Case studies of well-designed interiors
Week 12	• Landscape Design and Site Planning • Introduction to landscape design principles • Understanding the relationship between buildings and their surroundings • Case studies of landscape architecture projects
Week 13	• Architectural Representation: Models and Visualization • Introduction to architectural models and their role in design • Exploring different visualization techniques (renderings, digital modeling, etc.) • Understanding the importance of effective communication in architectural representation
Week 14	• Sustainable Design and Green Architecture • Introduction to sustainable design practices in architecture • Exploring environmentally friendly materials and energy-efficient strategies • Case studies of green buildings and their sustainable features
Week 15	• Future Trends in Architecture • Exploring emerging technologies and their impact on architecture • Trends in sustainable design, smart cities, and adaptive reuse • Discussion on the future challenges and opportunities in the field of architecture
Week 16	Final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	• Architecture, Form, Space and Order / Francis Ching/1996	Yes

	• The Art of Color and Design / Maitland Graves/1951 • Launching Imagination / Mary Stewart/2006 • مباديء في الفن والعمارة /شيرين احسان شيرزاد/١٩٨٥	
Recommended Texts	• "A Global History of Architecture" by Francis D. K. Ching, Mark M. Jarzombek, and Vikramaditya Prakash • "The Story of Art" by E.H. Gombrich • "Architecture: Form, Space, and Order" by Francis D. K. Ching • "Architecture: A World History" by Daniel Borden, Jerzy Elzanowski, and Joni Taylor • The Metropolitan Museum of Art's website (www.metmuseum.org) for online exhibits and resources on art and architectural history. (www.getty.edu/education) for educational resources on art and architecture. • The National Gallery of Art's website (www.nga.gov) for virtual tours and educational materials on art history. • Architectural Review (www.architectural-review.com) • Architectural Digest (www.architecturaldigest.com) • Journal of Architectural Education (www.tandfonline.com/toc/uarc20/current)	No
Wbsites	• The Artstor Digital Library (www.artstor.org) for high-quality images of artworks, architectural drawing • s, and historical photographs. • Google Arts & Culture (artsandculture.google.com) for virtual tours, high-resolution images, and educational resources on art and architecture. • Coursera (www.coursera.org) and edX (www.edx.org) offer online courses on art history, architectural design, and related topics. • The Architectural Association School of Architecture (www.aaschool.ac.uk) offers online courses and lectures on architecture and design.	

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.				

ARC 114 Arabic Language

University of Mosul College of Engineering Architectural Engineering Department

Module Information **معلومات المادة الدراسية**					
Module Title	**Arabic Language**			Module Delivery	
Module Type	**E**			☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐Practical ☒ Seminar	
Module Code	**ARC 114**				
ECTS Credits	٢				
SWL (hr/sem)	٥٠				
Module Level	UGI		Semester of Delivery	1	
Administering Department	ARC		College	COE	
Module Leader	Nedhal Al Jarjary		e-mail		
Module Leader's Acad. Title	Assist. Lecturer		Module Leader's Qualification	MSc.	
Module Tutor			e-mail	anwar.meshal@uomosul.edu.iq	
Peer Reviewer Name			e-mail		
Scientific Committee Approval Date			Version Number	1.0	

Relation with other Modules **العلاقة مع المواد الدراسية الأخرى**			
Prerequisite module		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**	يهدف هذا المقرر إلى تعريف الطلبة بأهمية اللغة العربية في الدراسة الجامعية من خلال مناقشة عدد من المفردات والمفاهيم المستخدمة في التدريس الجامعي في مرحلة البكالوريوس لرفع الوعي بأهمية استخدام قواعد اللغة الصحيحة في كتابة التقارير والمحاضرات.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	تعريف الطلاب بأهمية اللغة تعريف الطلاب بأهمية اللغة مدخل عام نظري استرجاعي لتقسيمات اللغة العربية مدخل عام نظري استرجاعي لتقسيمات اللغة العربية التعريف بمكونات الجملة وتقسيم الكلام تعريف الطلاب بأهمية اللغة عرض أنواع الجمل في اللغة العربية والتنبيه على الأساليب الإنشائية عرض أنواع الجمل في اللغة العربية والتنبيه على الأساليب الإنشائية البدء بمعمار النحو العربي وكيف تنشأ النصوص مع عرض إشكالية اللفظ والمعنى البدء بمعمار النحو العربي وكيف تنشأ النصوص مع عرض إشكالية اللفظ والمعنى الانطلاق غلى الحديث عن الشكل والمضمون اعتمادا على الثنائية الضدية المستقاة من فلسفة الواقع الانطلاق غلى الحديث عن الشكل والمضمون اعتمادا على الثنائية الضدية المستقاة من فلسفة الواقع مدخل لدراسة الشعر وعرض بعض آلياته مدخل لدراسة الشعر وعرض بعض آلياته

Indicative Contents **المحتويات الإرشادية**	

Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**

Student Workload (SWL) **الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	33	Structured SWL (h/w) **الحمل الدراسي المنتظم للطالب أسبوعيا**	2
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	٦٧	Unstructured SWL (h/w) **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	4.7
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	٥٠		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	4, 13	LO #3, 4, 5, and 6
	Assignments	4	10% (10)	4, 13	LO #3, 4, 5, and 6
	Projects / Lab.				
	Exam				
Summative assessment	Midterm Exam	1 hr	10% (10)	8	1,2,3,4,6,14
	Final Exam	3 hr	70% (70)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	التعريف بالمصطلحات الأدبية كالإيقاع والعروض ووحدة البيت الشعري ووحدة القصيدة العربية ونظامها العمودي.
Week 2	التعريف بالمصطلحات الأدبية كالإيقاع والعروض ووحدة البيت الشعري ووحدة القصيدة العربية ونظامها العمودي
Week 3	نماذج أدبية
Week 4	نماذج أدبية
Week 5	تجاوز نظام الشعر العمودي الى الشعر الحر وعرض فكرة التحول وربطها مع نظام البناء القديم والحديث من خلال مصطلحي الكلاسيكي والحداثوي
Week 6	تجاوز نظام الشعر العمودي الى الشعر الحر وعرض فكرة التحول وربطها مع نظام البناء القديم والحديث من خلال مصطلحي الكلاسيكي والحداثوي
Week 7	سيمياء العنوان وعده مدخلا مهما في نقد التصاميم المعمارية
Week 8	**Mid Term Exam**
Week 9	عرض التكرار بوصفه آلية من آليات بناء النص الأدبي
Week 10	عرض التكرار بوصفه آلية من آليات بناء النص الأدبي
Week 11	التمييز بين مصطلحي التكرار والتوازي وبيان دور التوازي في بناء النص
Week 12	التمييز بين مصطلحي التكرار والتوازي وبيان دور التوازي في بناء النص
Week 13	السخرية والتهكم مفهومان أدبيان وكيف يدخلان في الفن المعماري نقدا وتلقيا
Week 14	السخرية والتهكم مفهومان أدبيان وكيف يدخلان في الفن المعماري نقدا وتلقيا
Week 15	مفهوم المتلقي من نظرية الاستقبال لياكومبسن

Week 16	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts		
Recommended Texts		
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.

ARC 115 Mathematics (1)

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	**Mathematics (1)**			Module Delivery	
Module Type	B			☒ Theory ☐ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	ARC 115				
ECTS Credits	4.0				
SWL (hr/sem)	100				
Module Level	UGI		Semester of Delivery	1	
Administering Department	ARC		College	COE	
Module Leader	Tuqa Waleed Ahmed		e-mail	new.matrix242@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer		Module Leader's Qualification	M.SC.	
Module Tutor	Mohammed Al Jawahery		e-mail	mohammed.aljawahery@uomosul.edu.iq	
Peer Reviewer Name			e-mail		
Scientific Committee Approval Date			Version Number	1.0	
Relation with other Modules العلاقة مع المواد الدراسية الأخرى					
Prerequisite module	None		Semester		
Co-requisites module	None		Semester		
Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية					
Module Aims أهداف المادة الدراسية	• Provide the fundamental concepts for elementary mathematics. • Use mathematical functions like trigonometric functions and application of derivatives to solve some Engineering problems.				
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• At the end of this course, students will have gained knowledge of the Basic 2D Curves drawing using shifting properties. • Understanding the concepts of limits and continuity. • Being able to apply the differentiation to solve Engineering problems. • Learning how to use the power, product, quotient and chain rule to differentiate algebraic trigonometric functions. • Recognizing different types of matrices and their properties. • Applying matrix operations to solve system of linear equations.				

Indicative Contents **المحتويات الإرشادية**	Indicative content includes the following. Prerequisites for calculus, coordinates, and graphs in the plane. Slope and Equations for lines, functions, and their graphs. Shifts, circles, and parabolas. A review of trigonometric functions. [15 hrs] Limits and continuity, introduction to limit, the sandwich theorem and $\frac{\sin\theta}{\theta}$, limits involving infinity, continuous functions. [15 hrs] Derivatives, slopes, tangent lines, and derivatives. Differentiations rules, derivatives of trigonometric functions. The chain rule, implicit differentiation, and fractional powers. [15 hrs] Applications of derivatives, related rates of change. maxima, minima, curve sketching with y' and y''. graphing rational functions, asymptotes, optimization. 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]
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.

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**	22	Unstructured SWL (h/w) **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	1.46
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	100		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	30% (30)	4,7,10and15	LO #1, 2,3 and 4
	Assignments	5	10% (10)	3,9,11,13, and14	LO # 1-6
	Projects / Lab.				
	Report				
Summative assessment	Midterm Exam	1 hr	10% (10)	9	LO # 1-4
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Types of matrices, operations, sum, multiplication by scalar and multiplication between two matrices.

Week 2	Determinants, the adjoint and the inverse of matrix.
Week 3	Solving systems of linear equations using matrices.
Week 4	Prerequisites for calculus, coordinates, and Graphs in the plane,
Week 5	Slope and equations for lines, functions, and their graphs.
Week 6	Shifts, circles, parabolas, and a review of trigonometric functions.
Week 7	Introduction to limits.
Week 8	The sandwich theorem and $\frac{\sin\theta}{\theta}$.
Week 9	Limits involving infinity and continuous functions.
Week 10	Derivatives, slopes, and tangent lines.
Week 11	Differentiation rules and derivatives of trigonometric functions.
Week 12	The chain rule, implicit differentiation, and fractional powers.
Week 13	Applications of derivatives and related rates of change.
Week 14	Maxima, minima, and curve sketching with y' and y''.
Week 15	Graphing rational functions, asymptotes, and optimization.
Week 16	Preparatory week before the final exam.

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Thomas__Calculus_11th_Edition by Thomas.	No
Recommended Texts	Calculus and Analytic Geometry 1 by Purcell,1972.	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.

ARC 116 Democracy & Human Rights

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	**Democracy and Human Rights**			Module Delivery	
Module Type	E			☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	ARC 116				
ECTS Credits	٢				
SWL (hr/sem)	٥٠				
Module Level	UGI		Semester of Delivery	1	
Administering Department	ARC		College	COE	
Module Leader	Shatha jajan		e-mail		
Module Leader's Acad. Title	Assistant lecturer		Module Leader's Qualification	MSc	
Module Tutor			e-mail		
Peer Reviewer Name			e-mail		
Scientific Committee Approval Date			Version Number	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• The aim of studying the democracy and human rights topics is to: • Understand the concept of human rights and explore their sources, including international, regional, national, and religious sources. • Define administrative corruption, explore its types, and understand its detrimental effects on society. Study methods to combat administrative corruption and promote transparency, accountability, and good governance. • Trace the historical development and evolution of human rights, examining key milestones and movements that have shaped the modern understanding of human rights. • Differentiate between different categories of human rights, including civil and political rights, economic and social rights, and environmental, cultural, and developmental rights. • Explore legal, institutional, and societal guarantees to prevent human rights violations, including guarantees of human rights in Islam, national-level protections, and international safeguards. • Comprehend the concept of democracy, including its principles, values, and various forms of democratic governance such as direct, semi-direct, indirect, and digital democracy. • Overall, studying these topics aims to develop a comprehensive understanding of human rights, democracy, and combating corruption, empowering individuals to actively promote and protect human rights and democratic values in society.
Module Learning Outcomes	• After these module aims, students should be able to:

مخرجات التعلم للمادة الدراسية	• Demonstrate a comprehensive understanding of the concept of human rights and their sources, including international, regional, national, and religious sources. • Identify and explain the fundamental characteristics of human rights, such as universality, indivisibility, interdependence, and inalienability. • Analyze the historical emergence and evolution of human rights, including key milestones and movements that have shaped their development. • Differentiate between different categories of human rights, including civil and political rights, economic and social rights, and environmental, cultural, and developmental rights. • Evaluate and apply legal, institutional, and societal guarantees to prevent human rights violations, considering guarantees in Islam, at the national level, and within the international framework. • Understand and discuss the concept of democracy, including its principles, values, and different forms of democratic governance. • Evaluate the Islamic stance on democracy and engage in critical analysis of the strengths and weaknesses of the democratic system. • Recognize and assess the impact of administrative corruption on society and propose methods to combat and prevent corruption in administrative systems. • Demonstrate critical thinking skills by analyzing and evaluating different perspectives on human rights, democracy, and corruption. • Apply acquired knowledge and skills to promote and protect human rights, democracy, and good governance in personal, professional, and civic contexts. • Overall, students should have a solid understanding of democracy and human rights, democracy, and corruption issues, and be able to apply this knowledge to contribute to the advancement of human rights and democratic values in society.
Indicative Contents **المحتويات الإرشادية**	The indicative content includes: 1. Definition and sources of democracy and human rights (international, regional, national, religious). [3h] 2. Characteristics of democracy and human rights: universality, indivisibility, interdependence, inalienability. [3h] 3. Emergence and evolution of human rights: historical development, key milestones, influential movements. [3h] 4. Types of human rights: civil and political, economic and social, environmental, cultural, and developmental. [3h] 5. Guarantees to prevent human rights violations: legal, institutional, societal safeguards, Islamic guarantees, national and international levels. [3h] 6. Concept of democracy: principles, values, forms of governance (direct, semi-direct, indirect). [3h] 7. Islamic stance on democracy: compatibility, strengths, weaknesses. [3h] 8. Critique of the democratic system: analysis of strengths and weaknesses. [3h] 9. Administrative corruption: definition, types, societal impact. [3h] 10. Methods to combat administrative corruption. [3h]
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	• When it comes to learning and teaching strategies for a human rights module, there are several approaches can be taken to enhance understanding and engagement. Here are some effective strategies: • Interactive Discussions: Encourage students to actively participate in discussions, debates, and group activities. This promotes critical thinking, allows for different perspectives to be shared, and fosters a deeper understanding of human rights issues. • Case Studies: Present real-life case studies that highlight human rights violations

	or achievements. Analyzing these cases helps students apply theoretical concepts to practical situations and develops their problem-solving skills. • Research Projects: Assign research projects on specific human rights topics or issues. This encourages independent learning, critical analysis, and the development of research skills. • Collaborative Learning: Foster collaboration among students through group projects or assignments. This encourages teamwork, peer learning, and the exchange of diverse perspectives. • Assessment Variety: Use a variety of assessment methods, including essays, presentations, debates, and quizzes, to assess students' understanding of human rights concepts and their ability to apply them to real-world situations.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	٣٢	Structured SWL (h/w) **الحمل الدراسي المنتظم للطالب أسبوعيا**	2.3
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	١٨	Unstructured SWL (h/w) **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	1.2
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**			

odule Evaluation
تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Definition of human rights and sources of rights (international sources / regional sources / national sources / religious sources).
Week 2	Characteristics of human rights.
Week 3	The emergence and evolution of human rights.
Week 4	Types of human rights / civil and political rights. Economic and social rights. Environmental, cultural, and developmental rights.
Week 5	Guarantees to prevent human rights violations / guarantees of human rights in Islam.
Week 6	Guarantees for the protection of human rights at the national level.
Week 7	Guarantees of human rights at the international level.
Week 8	The concept of democracy.
Week 9	Characteristics of a democratic system.
Week 10	Forms of democratic governance (direct democracy / semi-direct democracy / indirect democracy).
Week 11	Digital democracy / definition and advantages and disadvantages of digital democracy /

	manifestations of digital democracy.
Week 12	The Islamic stance on democracy.
Week 13	Critique of the democratic system.
Week 14	Administrative corruption / definition and types.
Week 15	Methods to combat administrative corruption.
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	**ضمانات حقوق الانسان وحمايتها وفقا للقانون الدولي والتشريع الوطني / نبيل عبد الرحمن ناصر الدين**	No
Recommended Texts	**الديمقراطية وحقوق الانسان / د. امير عبد العزيز**	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.

ARC 121 Architecture Design and Graphic (2)

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	**Architectural Design& Graphic (2)**			Module Delivery	
Module Type	Core			☒ Theory ☒ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	ARC 121				
ECTS Credits	12				
SWL (hr/sem)	٣٠٠				
Module Leader	Ahmed Al-Fakhry	e-mail		ahmed.alfakhry@uomosul.edu.iq	
Module Leader's Acad. Title	Assist. Prof	Module Leader's Qualification		M.Sc	
Module Tutor		e-mail			
Peer Reviewer Name	Reem Al-Othman	e-mail		Reemalothman@uomosul.edu.iq	
Scientific Committee Approval Date		Version Number		1.0	
Prerequisite module	Architectural design (3)		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	• This course aims to teach students the basic principles of architectural design and presentation through introduces the student to methods of graphic representation essential to design professionals in the built environment. Design representation is taught both as a craft and as a method of thinking. • Types of representation include freehand drawing (drawing from observation and from the imagination); analytic diagramming (the two-dimensional representation of an idea or process); • illustration graphics (symbolic representation), and technical drafting (conventions of plan, section, elevation and axonometric). Students will be exposed to analog (pencil-and-paper) and digital tools. • The method of instruction will emphasize application of representation skills in response to project assignments.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• The purpose of this course also is to provide students with the necessary scientific and logical justification for the studied architectural as well as the exercises on which they depend. • General skills and other skills related to portability (Personal employment and development). • Teamwork within the group. Personal development through ethical values in dealing with, and respect for the other opinion. • Personal development through building the general and professional cultural background of the profession. Interaction with teaching staff as a guide educational

	and administrative educational process.
Indicative Contents **المحتويات الإرشادية**	• Determine Creative thinking to apply design principles of composition and to deal with the level of mass and architectural space. Introduce opinions and deduce the nature of the application of design principles and the use of design elements in the studied architectural practice that achieve a collective agreement. • Self-learning skill through self-reliance in the conclusion of solutions to design problems and knowledge. Based on the students' criticism and follow-up by the teaching staff to ensure that the talents and abilities of the students are exploited and utilized to achieve the objectives of the educational program.

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

Student Workload (SWL) **الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	123	Structured SWL (h/w) **الحمل الدراسي المنتظم للطالب أسبوعيا**	8
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	177	Unstructured SWL (h/w) **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	11.8
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	٣٠٠		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
As Formative assessment Summative assessment	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome	As
	Report	2	5%	22,26	Formative assessment
	(Day Sketch	1	10% (10)	9	6,8,9,10,11,12,13, 14
	Fınal Presentatıon	10	50%	4,8,10,14,16,24,26,28,29,31	
	Discussions&Analysis teams work	2	5%(10)	22,26	5,7,8,9,10,11,12,1 3,,14
	Midterm Exam(Day Sketch 1)	2 hr	20% (20)	31	Summative assessment
Summative assessment Total assessment	Final Exam (Day Sketch2)	4	10% (10)	32	1,2,3,4,6,14
	100% (100 Marks)				Total assessment
As			Time/Number	Weight (Marks)	Week Due

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	Human Scale: Standardization and study of the reality of the activities position, a study of the chosen space and its standard dimensions. It represents the joint between the abstract state and other values in architecture. Understand the concept and its applications and distinguish between the scale in the residential building and public building.
Week 2	Submission
Week 3	Study the space or place to perform the effectiveness according to the human scale, recognition of standard dimensions Standard for the space of activities and furniture required for each of the basic human activities of sleep, food, living and kitchen, the use of expressive expressions of that furniture and the absorption of their sizes in relation to the human.
Week 4	Homework
Week 5	Application through a realistic study of interior space, design development with a focus on studying space, functional and expressive requirements of it, the introduction of color and texture, a study of furniture and others.
Week 6	Homework
Week 7	Definition of the style of presentation facades and sections and show the architectural project integrated based on the elements and principles of design at the level of the configurations of three dimensions, and the volume and mass configuration of the basic human functions and studio apartment for one person.
Week 8	Priemer Submission
Week 9	The specific project of housing unit (studio) for one person and with multi-function.
Week 10	Discussion
Week 11	Discussion
Week 12	Discution , Pre-final submission
Week 13	Final submission
Week 14	Recognition of the method of abstraction, integration, and overlay in the design of the stable volumetric formations through a short project depends on one of the light buildings with a visual character, for example, designs for external elements such as fountains, monuments, bus stations, stalls ... etc.
Week 15	Submission
Week 16	Human Scale: Standardization and study of the reality of the activities position, a study of the chosen space and its standard dimensions. It represents the joint between the abstract state and other values in architecture. Understand the concept and its applications and distinguish between the scale in the residential building and public building.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	1. Form, Space, Francis Ching, 2. Introduction to Architecture Design, Francis ching 3. Pattern Language.	No
Recommended Texts		No
Websites		
Grading Scheme		

خطط 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.				

ARC 122 Free Hand Drawing (1)

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	**Free Hand Drawing (1)**			Module Delivery	
Module Type	Core			☐Theory ☒ Lecture ☐ Lab ☐Tutorial ☒Practical ☐ Seminar	
Module Code	ARC 122				
ECTS Credits	٥				
SWL (hr/sem)	١٢٥				
Module Level	UGI		Semester of Delivery	2	
Administering Department	ARC		College	COE	
Module Leader	Ahmed Yaroub Ghanem Tohala		e-mail	ahmadtohala@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer		Module Leader's Qualification	PhD.	
Module Tutor			e-mail		
Peer Reviewer Name	Name		e-mail	E-mail	
Scientific Committee Approval Date			Version Number	1.0	
Relation with other Modules العلاقة مع المواد الدراسية الأخرى					
Prerequisite module	None		Semester		
Co-requisites module	None		Semester		
Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية					
Module Aims أهداف المادة الدراسية	The free hand drawing curriculum for the architecture student aims at several important goals for the formation of the architect during his academic years, which go beyond learning the means and techniques of free hand drawing to develop visual perception and a mature architectural engineering vision of the world, which is very important for the architect, including: • The balance of vision and the development of artistic taste for objects and formations. • Exercising the sense of sight on the vision and linking it to previous information about the theory of perspective to form thought, perception and visualization of that form. • Exercising the hand on expression by creating a harmonious relationship between the vision, the brain and the hand to express the visual perception of the world. • Learn the method of measurement of proportions and proportions using hand, pen and sight • Recognize the differences between the values of light, shade and shadows in the theory of perspective and learn to express them. • Learn the methods and techniques of drawing with different materials such as				

	pencils and colors Developing the ability to see the elements of artistic formation, such as lines, • .shapes, sizes, textures and directions, and analyze them in the model Developing self-reliance in the process of vision and expression through a series of • .drawing exercises that range in difficulty from simple shapes to more complex ones Obtaining a musical visual vision that will be important and useful for future • architecture students
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	• Aesthetic artistic taste through a musical vision of different shapes and configurations. • Learn the theory of perspective, which is the basis for visual perception of the world. • Create a harmonious relationship between vision, brain and hand for expression and the ability to express architectural ideas through free hand drawing. • Using the measurement method for proportions and proportions by hand, pen, and sight • Realizing the differences in light values in the theory of perspective and being able to express them. • Acquire the skills of using different drawing methods and techniques. • The artistic vision of the elements of the artistic composition, such as lines, shapes, sizes, textures, directions, and their analysis in the model.
Indicative Contents **المحتويات الإرشادية**	• Visual perception of different shapes from the perspective of the concept of perspective and its concepts. • Proportions in dimensions and shapes and measuring them by hand, pen, and vision. • Estimating light values, colors, tones, and the differences between them • Derivations of various shapes from the basic cube shape. • The relationship between vision, hand, visual perception, acquisition of vision skill and the ability to express. • Gaining the musical vision of an architecture student through practice and bringing concepts into practice.
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	1 . Giving the student the basic concepts and previous information about the reality that he draws through a model, and then criticizing the drawing so that the student acquires the skill of correct vision and the ability to express. 2 . Diversifying the shapes and configurations of the model and the gradation in the degree of complexity from simple to complex

Student Workload (SWL) **الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	٦٣	Structured SWL (h/w) **الحمل الدراسي المنتظم للطالب أسبوعيا**	4.2
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	٦٢	Unstructured SWL (h/w) **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	٤.١٣
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	١٢٥		

Module Evaluation **تقييم المادة الدراسية**					
As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	4, 13	LO #1, 2, and 3

	Assignments	1	30% 30)	6	LO #3
	Projects / Lab.	4 hr	30%(30)	12	LO #3 and 4
	Report				
Summative assessment	Midterm Exam	4 hr	15% (15)	15	LO #1-4
	Final Exam	3 hr	15%(15)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Introductory test for know the student aptitude
Week 2	Training for draw lines in different directions
Week 3	Simple model consist of cubes – stage 1
Week 4	Advance model consist of cubes – stage 1
Week 5	General discussion with the student about the drawing and paint
Week 6	Simple model consist of circle shapes & cylinders – Stage 1
Week 7	Simple model consist of circle shapes & cylinders – Stage 2
Week 8	Simple model consist of circle shapes & cylinders – Stage 3
Week 9	Simple model consist of oblique cubes – stage 1
Week 10	Simple model consist of oblique cubes – stage 2
Week 11	Simple models consist of potteries
Week 12	simple models consist of irregular forms1
Week 13	Advance model consist of irregular forms2
Week 14	General discussion with the student about the drawing and paint
Week 15	Final submission
Week 16	Final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Drawing – a creative process, Francis d. k. Ching , john Wiley & sons , inc. , 1990 Drawing outdoor , henry c. pits , Watson- Guptill publications , 1965 , new York How to paint and draw , Bodo w. Jax Heimer , Thames and Hudson , 1962 , London Watercolor technique , rex Brandt , sixth edition , Reinhold publishing corporation , 1963	No
Recommended Texts		No
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 – 100	Outstanding Performance
	B - Very Good	جيد جدا	80 – 89	Above average with some errors
	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

ARC 123 Construction and Building Materials

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	**Construction and Building Materials**			Module Delivery	
Module Type	**Core**			☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**ARC 123**				
ECTS Credits	٤				
SWL (hr/sem)	١٠٠				
Module Level	UGV		Semester of Delivery	10	
Administering Department	Architectural Engineering		College	College of Engineering	
Module Leader	Adil Khalil Qasim		e-mail	adil.khalil@uomosul.edu.iq	
Module Leader's Acad. Title	Assistant teacher		Module Leader's Qualification	MSc.	
Module Tutor			e-mail		
Peer Reviewer Name			e-mail		
Scientific Committee Approval Date	01/06/2023		Version Number	1.0	

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

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Instructional strategies are hands-on learning, direct instruction, and document-based questions. Introduction to the principles of Building construction. Examples of building implementations.

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	3.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	52	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.46
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation تقييم المادة الدراسية					
As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative	Quizzes	2	15% (10)	4,13	LO #1,2, and 3

assessment	Assignments	1	15% (10)	6	LO #3
	Projects / Lab.				
	Report	1	10% (10)	5 and 15	
Summative assessment	Midterm Exam	2 hr	20% (20)	15	LO # 1-4
	Final Exam	3 hr	40% (40)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	An Introduction about building materials The Stages of the construction of the building, and the components of the building (foundations- Walls- roofs- floors)
Week 2	Construction materials (Brick), building by Brick, constructional Symbols, (Homework)
Week 3	Stone, Types of stones, building by stone, Gypsum. (H.W.)
Week 4	Types of cement and Its properties. Concrete, Types of Concrete and Its Properties, Concrete Components. (Quiz1)
Week 5	A visit to laboratories and sites under construction, (Report)
Week 6	Light and hollow Concrete and Thurstone, industry, components, properties, uses. (H.W.)
Week 7	Steel, Aluminum, Plastic materials
Week 8	Term Exam 1st
Week 9	Foundations, and walls (H.W.)
Week 10	Roofs and Floors (H.W.)
Week 11	Vertical circulation elements (Stairs, Ramps, Escalators, Lifts) (H.W.)
Week 12	Vertical circulation elements (Stairs, Ramps, Escalators, Lifts) (H.W.)
Week 13	Openings (Doors and windows) (Quiz 2)
Week 14	Finishing and Insulation Materials
Week 15	A visit to sites under construction, (Report)
Week 16	Term Exam 2nd

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	• Building Constructions- By Zuhair M. Saco • Building Constructions, Walls and It's Details – By Anees Juaad • Civil Engineering for Architects (Poland)	Yes
Recommended Texts		
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.

ARC 124 Computer literacy

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	computer literacy			Module Delivery	
Module Type	Support			☒ Theory ☐ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	ARC 124				
ECTS Credits	٣				
SWL (hr/sem)	٧٥				
Module Level	UGI		Semester of Delivery	2	
Administering Department	ARC		College	COE	
Module Leader	Ebtisam Al Sawaf		e-mail	ebtisamalsawaf@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer		Module Leader's Qualification	PhD	
Module Tutor			e-mail		
Peer Reviewer Name			e-mail		
Scientific Committee Approval Date			Version Number	1.0	
Relation with other Modules العلاقة مع المواد الدراسية الأخرى					
Prerequisite module	Mathematics (1).		Semester	1	
Co-requisites module	None		Semester		
Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية					
Module Aims أهداف المادة الدراسية	The course aims to make students owing basic skills in IT (Word, Excel, Internet), Photoshop, AutoCAD				
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Introduction to Computer-Aided Drafting and Design which includes: 2D drawings, 3D modeling, rendering, and Image processing. Major CAD drafting, and presentation software tools will be used for the production, management, and presentation of project information. Introduction to utilization of modeling and simulation software tools in Architectural Engineering.				
Indicative Contents المحتويات الإرشادية					
Learning and Teaching Strategies استراتيجيات التعلم والتعليم					
Strategies					
Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا					
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	٣٣		Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	٢.٢	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	٤٢		Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	٢.٨	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	٧٥				

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	30% (30)	5, 10	LO #1, 2 and 3
	Assignments	5	10% (10)	2, 12	LO # 1-6
	Projects / Lab.				
	Report				
Summative assessment	Midterm Exam	1 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

Week	Material Covered
Week 1	Introduction
Week 2	Introduction to Word
Week 3	Font, paragraph
Week 4	Word, Font , paragraph
Week 5	Insert table
Week 6	Insert picture
Week 7	Examination
Week 8	Introduction to Excel
Week 9	Math & trig functions
Week 10	Excel Math & trig functions
Week 11	Logical functions
Week 12	Logical functions
Week 13	Introduction to internet
Week 14	Internet, searching process
Week 15	Downloading & uploading
Week 16	Final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Thomas' Calculus by Finney and Thomas.	NO
Recommended Texts	Calculus and Analytic Geometry 1 by Purcell,1972.	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.				

ARC 125 Mathematics (2)

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	**Mathematics (2)**			Module Delivery	
Module Type	**Basic**			☒ Theory ☐ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	**ARC 125**				
ECTS Credits	**4.0**				
SWL (hr/sem)	**100**				
Module Level	UGI	Semester of Delivery		2	
Administering Department	ARC	College	COE		
Module Leader	Tuqa Waleed Ahmed	e-mail	new.matrix242@uomosul.edu.iq		
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification		M.Sc.	
Module Tutor	Mohammed Al Jawahery	e-mail	mohammed.aljawahery@uomosul.edu.iq		
Peer Reviewer Name		e-mail			
Scientific Committee Approval Date		Version Number		1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Mathematics (1).	Semester	1
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• Provide the fundamental concepts of elementary mathematics for integration. • Use the mathematical integration to find the areas, volumes and the length of the curve
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	At the end of this course, students will have: • Understanding and applying the fundamental concepts of integration. • Finding the indefinite integral of a function using substitution techniques. • Being able to solve problems involving applications of integration, such as area between curves, volume of revolutions and length of curves. • Understanding the concept of inverse functions and how they relate to the original functions. • Recognizing the relationship between inverse trigonometric functions and their application in solving problems. • Applying the techniques of integration to solve integral problems.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Integrating and finding the area with respect to x and y axes, definite integrals and indefinite integrals [10 hrs.]. Applications of definite integrals, areas between curves, volumes of solids of revolution, disks and washers, cylindrical shells, length of curves in the plane and areas of surfaces of revolution. [20 hrs.]

	The calculus of transcendental functions, inverse functions, $\ln x, e^x$ and logarithmic differentiation, general exponential and logarithmic function and the inverse of trigonometric functions. [20 hrs.] Techniques of integration, basic integration formulas, integration by parts, trigonometric integrals, trigonometric substitution, rational functions and partial fractions. [25 hrs.]
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) **لحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	٧٨	Structured SWL (h/w) **الحمل الدراسي المنتظم للطالب أسبوعيا**	5.2
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	٢٢	Unstructured SWL (h/w) **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	١.٤٦
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	100		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	30% (30)	5, 10	LO #1, 2 and 3
	Assignments	5	10% (10)	2, 12	LO # 1-6
	Projects / Lab.				
	Report				
Summative assessment	Midterm Exam	1 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

Week	Material Covered
Week 1	Definite integrals and indefinite integrals.
Week 2	Integrating and finding the area with respect to x and y axes.
Week 3	Application of definite integrals and areas between curves.
Week 4	Volumes of solids of revolution: discs and washers' methods.
Week 5	Cylindrical shells method.
Week 6	Length of curves in the plane.
Week 7	Areas of surfaces of Revolution.
Week 8	The calculus of transcendental functions and inverse functions.
Week 9	$\ln x, e^x$ and logarithmic differentiation.
Week 10	General exponential and logarithmic functions.
Week 11	The inverse trigonometric functions.
Week 12	Techniques of integration and basic integration formulas.
Week 13	Integration by parts.

Week 14	Trigonometric integrals and trigonometric substitution.			
Week 15	Rational functions and partial fractions.			
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.			NO
Recommended Texts	Calculus and Analytic Geometry 1 by Purcell,1972.			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.				

ARC 126 English – Beginners

University of Mosul College of Engineering Architectural Engineering Department

المرحلة الاولى / الانكليزية - المبتدئين

Module Information **معلومات المادة الدراسية**					
Module Title	**English language – Beginner**			Module Delivery	
Module Type				Theory □ Lecture □ Lab Tutorial Practical Seminar	
Module Code	**ARC 126**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level	UGI		Semester of Delivery	1	
Administering Department	Architectural Engineering		College	College of Engineering	
Module Leader	Rawya dabdob		e-mail		
Module Leader's Acad. Title	Assistant lecture		Module Leader's Qualification	MSc.	
Module Tutor			e-mail		
Peer Reviewer Name			e-mail		
Scientific Committee Approval Date			Version Number	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**	
Module Aims **أهداف المادة الدراسية**	The main Learning Outcomes of English language Beginner module for the first stage is: 1. Developing student´s skills in English language includes the four skills: - Listening objectives: Understand the main points of clear speech. - Reading Objectives: Understand basic language to read any topic on architecture. - Writing Objectives: write simply about familiar and architectural topics. - Speaking Objectives: extended communication skills in education contexts. Reflection on own learning and development and ability to work with and relate to others. 2. upgrading the quality of architectural educational aiming to obtain academic accreditation.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	The Module Learning Outcomes that serve the aim include: 1. learning English language may allow students to communicate easily with fellow global students and other counterparts.

	2. learning English language may ease the access to different architectural information and resources in English. 3. learning English language may improve and widen employment opportunities and make them more confident. Those outcomes can be fulfilled through cognition domain from Blooms Taxonomy as following: 1. Remembering Vocabulary. • Recognizing words and their meanings • Describing things or situation 2. Understanding 'Everyday English' • Interpreting sentences • Explaining a word's meaning. 3. Applying 'Spoken grammar' • Comparing tools grammar • Applying tools and words meanings in forming sentences. • Carry out tools and grammars in writing.
Indicative Contents **المحتويات الإرشادية**	During the course, students will be able to speak interaction and production objectives, deal with most situations with basic English language. This course adopts Headway Student's Book, hence, is a communicative English language course designed by Oxford University. The course has been supplemented by a variety of communicative and business-related projects to ensure the outcomes of the program. The course aims to further develop students' language skills and strategies in reading, writing, listening, and speaking to a level where they can apply their language skills to longer, more complex material and tasks that help build confidence and prepare students to proceed to intermediate level. The course has seven units where each is carefully designed to develop students' four main skills. The course also pays good attention to grammar, vocabulary, and pronunciation.
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	Learning and teaching strategies refer to instructors' methods and approaches to facilitate student learning and achievement of module learning outcomes. These strategies aim to engage students, promote understanding, and enhance their knowledge and skills in advanced English course. Here are the adopted learning and teaching strategies: 1. Lectures and presentations: the notes and the instructors are delivered through presentations introducing fundamental knowledge of English grammar and skills. 2. Interactive discussions: promotes active learning and thinking by engaging students in discussions. Instructors can facilitate class discussions on specific topics, encouraging students to share their insights, ask questions, and explore different perspectives. 3. Formative Assessments and Feedback: Regular formative assessments, such as quizzes and homework that help instructors gauge students' understanding and progress. Providing timely feedback allows students to identify areas for improvement and reinforces their learning.

Student Workload (SWL) **الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	٣٢	Structured SWL (h/w) **الحمل الدراسي المنتظم للطالب أسبوعيا**	٢.١٣
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	١٨	Unstructured SWL (h/w) **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	١.٢

Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	٥٠

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	3,8	1,2
	Homework assignments	9	27% (27)	2,3,4,5,6,7,8,9,11,12,13	1,2
	Discussions& Attendance	1	3% (3)	1,2,3,4,5,6,7,8,9, 11,12,13,14,15	1,2
Summative assessment	Midterm Exam	1 hr	10% (10)	10	
	Final Exam	3 hr	50% (50)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Part of speech: Noun, pronoun, adjective, adverb
Week 2	Part of speech: verb tenses
Week 3	Unit 1: Hello , Am/is. My/your, this is. How are you?
Week 4	Unite 2: your world. He/she , His/her, Questions
Week 5	Unit 3: All about you\, Negatives-he/she is not. Questions and short answers, Negatives- I am/ they/ we are not
Week 6	Unit 4: Family and friends! Possessive adjectives, Possessive s, Common verbs,
Week 7	Unit 5: Things I like! Present simple positive, Present simple negative, Questions
Week 8	Reading and listening
Week 9	Reading and listening
Week 10	Midterm Exam
Week 11	Unit 6: Every day Present simple, Adverbs of frequency, Sometimes/never, Questions and negatives
Week 12	Unit 7: Favorite things Questions words, Pronouns, Possessive, This and that
Week 13	Writing report
Week 14	Writing report
Week 15	Writing report
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Liz & John Soars and Jo McCaul (2019) Headway-Beginner Student's Book Fifth Edition. OXFORD University Press. ISBN: 978-0-19-476966-2	No
Recommended Texts		No
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A – Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	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.

اسم وتوقيع رئيس القسم او الفرع

م. راوية مروان عبدالعزيز

اسم وتوقيع صاحب المقرر

أ.م.د. عمر حازم خروفة

MODULE DESCRIPTION FORM

Bologna track

Second Level

Second Level

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)							
UGII	Three	1	ARC 211	Architecture Design (1)	التصميم المعماري (1)	English	2			8		1	3	153	147	300	12.00	C	
		2	ARC 212	History of Ancient Architecture	تاريخ العمارة القديمة	English	2						3	33	42	75	3.00	C	
		3	ARC 213	Building Construction	انشاء المباني	English	2						3	33	67	100	4.00	B	
		4	ARC 214	Crimes of Ba'ath Regime in Iraq	جرائم نظام البعث في العراق	Arabic	2						2	32	18	50	2.00	E	
		5	ARC 215	Computer Architectural Drawing 2D	الرسم المعماري 2D بالحاسوب	English	1			3			3	63	37	100	4.00	C	
		6	ARC 216	English - Pre Intermediate	الانكليزية - قبل المتوسط	English	2						2	32	18	50	2.00	E	
		7	ARC 217	Graphic and Architectural Presentation	الرسم والاظهار المعماري	English	1			2			3	48	27	75	3.00	S	
						Total	12	0	0	13	0	1	19	394	356	750	30.00		

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)							
Four	1	ARC 221	Architecture Design (2)	التصميم المعماري (2)	English	2			8		1	3	153	147	300	12.00	C	
	2	ARC 222	Free Hand Drawing (2)	الرسم اليدوي الحر (2)	English				4			3	63	37	100	4.00	S	
	3	ARC 223	History of European Architecture	تاريخ العمارة الاوربية	English	2						3	33	42	75	3.00	C	
	4	ARC 224	Physics	الفيزياء	English	2	2					3	63	37	100	4.00	S	
	5	ARC 225	Computer Architectural Drawing 3D	الرسم المعماري 3D بالحاسوب	English	1			2			3	48	52	100	4.00	C	ARC 215 Computer Architectural Drawing 2D
	6	ARC 226	Science of Mechanics	علم الميكانيك	English	2						3	33	42	75	3.00	S	
					Total	9	2	0	14	0	1	18	393	357	750	30.00		

ARC 211 Architecture Design (1)

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	**Architecture Design (1)**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**ARC 211**				
ECTS Credits	**12**				
SWL (hr/sem)	**300**				
Module Level	UGI		**Semester of Delivery**	1	
Administering Department	ARC		**College**	COE	
Module Leader	Lect. Dr. Muzahim Muhammed Mustafa		**e-mail**	Mozahim.hadidi@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	PhD	
Module Tutor	Lect. Dr. Osama Hammadi Lect. Dr. Omar Adil Lect. Dr. Iqbal Salim Younis Lect. Dr. Rana Mahfouz Lect. Dr. Ibtisam Sameer Idris Asst. Lect. Musaab Sami Younis Asst. Lect. Mohammed Mahfouz Asst. Lect. Mafaz Tariq Yousif Asst. Lect. Adil Khalil Asst. Lect. Raghad Akram		**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• This course is intended to provide skills for designing residential projects with emphasis on detailing, custom designs, specification writing etc. The typical route to qualifying is a combination of academic studies and practical work and experience. Initially, a system is required to design to fulfil certain requirements.

	● This course covers light frame building techniques and residential construction drawing production to understand design concepts and procedures. The purpose of this course's introduction to basic design is to stimulate students' insights and understanding about building architectural design and the link between design and presentation drawings. ● Providing the students with an introduction to the basic requirements of residential houses to the profession while explaining the basic elements and educational requirements to the concept of residential. ● In combination with the teaching package, students learn about the design process; the importance of color and light; other design elements influence such as furniture and materials. ● Covering and satisfying requirements and desires, as well as creating living environments with the use of specific equipment and, most importantly, imagination and creativity. ● Combining the aesthetic, functional, and philosophical approach to architectural design. ● Implementing the elements and principles of design into the project. ● The course covers common residential building materials, components, and systems. ● Enhancing critical thinking and problem-solving skills ● Identify characteristics, constraints, and opportunities. ● Develop effective communication and presentation skills.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• **Understanding basic concepts:** Develop a deep understanding of the fundamental concepts and principles of architectural design through a project. • **Practical design skills:** Developing the ability to design residential projects and small-scale administrative or health building projects. • **Critical evaluation and analytical thinking:** Enhance the ability to critically and effectively analyze and evaluate existing projects and design proposals. • **Communication Skills:** Improve the ability to communicate effectively, both written and verbally, and the ability to clearly present designs and ideas to various audiences. • **Collaboration and Teamwork:** The ability to work within teams. • Students will learn the basics of residential design including gathering data about the site plot, location, climate, space program, the relation between spaces, materials and finishes, openings such as doors and windows, and analyzing similar examples. • Students will learn how to formulate the concept of the project regarding the elements and principles of design, human needs, and form and function. • Students learn about philosophies and techniques for tackling three-dimensional design. • Students combine interdisciplinary talents they currently possess with new design skills. The projects look at concept creation and execution in 2D and 3D drawings including the detailing and furniture. • The student will gain the technical skills needed to express architectural concepts in a clear, efficient, and correct manner. • Students will draw increasingly complicated models and master new shading and color methods. Drawings of buildings and landscapes are also used to create and communicate ideas during the design process.

	• Students will use both drawing board techniques and handwriting to sketch, produce technical drawings with technical and design presentation and projections to express ideas and conceptions in the design process in the form of plans, elevations, sections, and other 3D illustrations. • It evolved into orthogonal, isometric, and axonometric projections, planes, sections, and elevations because of the employment of instruments and equipment required for precise drawing of simple geometric constructs.
Indicative Contents المحتويات الإرشادية	Architectural Design – House/Villa Design – Graphics – Plans – Site Plan – Elevations – Sections – Perspectives – Isometrics

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	1. **Project-based learning:** This strategy encourages students to engage in real-world or simulated design projects that require applying theoretical knowledge to practical scenarios. Through this approach, students can develop critical thinking and effective problem-solving skills while gaining valuable practical experience. 2. **Analysis and Critique:** In this strategy, students present their designs to the class and receive feedback from their peers and the instructor. This helps foster constructive criticism and opens the door to in-depth discussions about design principles and creative choices, improving students' overall communication and presentation skills. 3. **Contact hours:** 8 Hours weekly 4. **Explanation:** The explanation using photos, videos, examples, drawings on the whiteboard and implementation through class work. 5. **The attendance of students** in lectures will have part of the credit. He / she is required to follow the lectures continuously, submits homework and assignments. Expect quizzes any time. 6. **Students' assessment:** The students will be assessed continuously through their activities in the class. Any student with ideas about learning and suggestions of alternative ways of dealing with problems will be very welcome. 7. During the semester, extra information may provide the students with more pictures and videos on the slide show, which can help them to maximize their imagination in design and modelling.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

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

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	30% (30)	4,7, 10 and 15	LO #(1, 2),(3),(4) and (5,6).
	Assignments	5	6% (6)	3, ,9,11,13 and 14	LO # 1-6
	Projects / Lab.				
	Report	1	4% (4)	14	LO # 1-6
Summative assessment	Midterm Exam	1 hr	10% (10)	9	LO # 1-4
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	General Introduction
Week 2	Definition and characteristics of the design process
Week 3	The design problem and how to define it using architectural graphics and drawings
Week 4	Analysis as an interpreting tool to clarify the problem with the composition
Week 5	Analysis using matrices
Week 6	Architectural spaces' adjacency criteria
Week 7	Day sketch
Week 8	Synthesis – representing matrices using geometrical shapes (the bubble diagram)
Week 9	Synthesis – representing matrices using geometrical shapes (the bubble diagram)
Week 10	Synthesis - Zoning
Week 11	Architectural form and its types
Week 12	Interlocking architectural forms
Week 13	Treatment of architectural form
Week 14	Solid and void
Week 15	Horizontal elements defining space
Week 16	Vertical elements defining spaces

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	• Openings • Spatial relationships • Types of spatial organization • Movement – accessibility
Week 2	• Day sketch (planes of building (house, small building))
Week 3	• Movement patterns, Entrances • Scale • Proportion • Ordering
Week 4	Day sketch
Week 5	principles/ Axes, • Hierarchy, datum • Symmetry and dominance

Week 6	• **Rhythm, repetition** • **Rendering**
Week 7	• **Final submission**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1. Methods of systematic analysis of design in architecture, By D. Mohamed A. Shihab 2. "ARCHITECTURE, Form, Space, & Order Third Edition", Francis D.K. Ching 3. "Time Saver Standards for Architectural Design Data" by John Hanock 4. Neufert Architects Data Fourth Edition - By Wiley Blackwell 5. Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver standards for Interior Design & space planning, 2nd edition, Mc-Graw Hill professional, 2001.	No
Recommended Texts	1. "ARCHITECTURE, Form, Space, & Order Third Edition", Francis D.K. Ching 2. Neufert Architects Data Fourth Edition - By Wiley Blackwell	
Websites	Visualizing Architecture: A website that provides explanations and images of various architectural projects, helping to better understand new designs and ideas. Architizer: This site covers architecture news and new technologies and showcases architectural projects, providing a rich source of practical and theoretical information. Architecture Week: A specialized magazine that offers a wide range of articles and designs of interest to architecture students and architects.	

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.

ARC 212 History of Ancient Architecture

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	**History of Ancient Architecture**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**ARC 212**				
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level	UGI		**Semester of Delivery**	1	
Administering Department	ARC		**College**	COE	
Module Leader	Ashraf Ibrahim Mahmood		**e-mail**	ashraf.ibrahim@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**		
Module Tutor	Ashraf Ibrahim Mahmood		**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Increasing the visual knowledge store about the history of architecture, its stages of development, its characteristics, and advantages. 2. Preparing architectural graduates according to scientific rules that enable them to practice the profession of architecture in architectural and urban design, city planning, internal and external spaces, and the preservation of heritage and antiquities according to scientific rules and methods.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• Gain knowledge about architectural history, including different styles and characteristics of buildings throughout history, through lectures, reading materials, and visual aids such as pictures and videos. • Understand and appreciate the importance of architectural style and its impact on society. • Apply knowledge and skills to real-world situations and problems in the fields of architecture, town planning, urban planning, interior and exterior spaces, and the preservation of cultural heritage and antiquities.

	• Practice the profession of architects according to scientific rules and methods. • Draw inspiration from design features of older buildings for future designs. • Use knowledge, skills, and creativity to develop new ideas, products, or solutions by incorporating design features from old buildings into future designs.
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	• The course includes lecture discussions and teaching and learning strategies for students to learn about ancient architecture. • The course begins with an introduction to ancient Iraqi architecture, followed by a detailed survey of Sumerian, Babylonian, Assyrian, ancient Egyptian, and Greek architecture. • Topics are discussed weekly, and lessons are 2-6 hours per week. • This course provides general characteristics of each architectural style and specific details of temples, palaces, gates, and other structures. • In addition to lectures, students are required to participate in discussions on topics covered in class. These discussions give students an opportunity to ask questions and share insights about the architecture being studied. • Finally, students are expected to write a report on a specific topic related to ancient architecture. These reports allow students to delve deeper into specific aspects of a topic and demonstrate their understanding of the topic. In general, the teaching and learning strategies of this course are designed to provide students with a comprehensive understanding of ancient architecture through lectures, discussion, and independent study, sustainable designs that respond to complex social and environmental contexts.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

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

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	30% (30)	4,7, 10 and 15	LO #(1, 2),(3),(4) and (5,6).
	Assignments	5	6% (6)	3, ,9,11,13 and 14	LO # 1-6
	Projects / Lab.				

	Report	1	4% (4)	14	LO # 1-6
Summative assessment	**Midterm Exam**	1 hr	10% (10)	9	LO # 1-4
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to ancient Iraqi
Week 2	Architecture of Sumerian
Week 3	Architecture of Old Babylonian
Week 4	Architecture of Assyrian
Week 5	Architecture of Assyrian
Week 6	Architecture of Assyrian
Week 7	Architecture of Modern Babylonian
Week 8	Architecture of Ancient Egyptian
Week 9	Architecture of Ancient Egyptian
Week 10	Architecture of Ancient Egyptian
Week 11	Greek Architecture
Week 12	Greek Architecture
Week 13	Greek Architecture
Week 14	Students Reports Discussion
Week 15	Students Reports Discussion
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

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

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	• **Living in Ancient Mesopotamia**, Bancroft-Hunt, Norman (2009) • **Graphic History of Architecture**, John Mansbridge (1967) • **The Art and Architecture of Ancient Egypt**, Smith, William Stevenson (1981)	No

	• **Mesopotamia: Ancient Art and Architecture**, Zainab Bahrani (2017) • Winter, N. A. (2006). Greek Architectural Terracottas: From the Prehistoric to the End of the Archaic Period. Oxford University Press. • J. J. Coulton. (1977). Ancient Greek Architects at Work. Cornell University Press	
Recommended Texts	Journal of Ancient Architecture. (n.d.). Ancient Architecture Studies. Retrieved from https://ancientarchitecturejournal.org	No
Websites	Ach net	

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.

ARC 213 Building Construction

University of Mosul College of Engineering Architectural Engineering Department

Module Information
معلومات المادة الدراسية

Module Title	**Building Construction**	**Module Delivery**	
Module Type	Basic	☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**ARC 213**		
ECTS Credits	**4**		
SWL (hr/sem)	**100**		
Module Level	UGI	**Semester of Delivery**	1
Administering Department	ARC	**College**	COE
Module Leader	Asst. Lect. Adil Khalil	**e-mail**	adil.khalil@uomosul.edu.iq
Module Leader's Acad. Title	Asst. Lecturer	**Module Leader's Qualification**	MSc.
Module Tutor	Lect. Dr. Sabreen Ali Lect. Rawia Marwan Dabdoob	**e-mail**	rawia.dabdoob@uomosul.edu.iq
Peer Reviewer Name		**e-mail**	
Scientific Committee Approval Date		**Version Number**	

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

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

Module Aims أهداف المادة الدراسية	• To familiarize the student with its structural types • To suit the appropriate structural type according to the type and size of the project • To identify the types of simple foundations according to the structural structure and size of the project • To identify the structural structure as load-bearing walls with all its parts • To identify the structural structure (columns and walls) with all its parts
Module Learning Outcomes	• To identify the structural type appropriate for the size of the project • Types of simple foundations according to the structural system of the structural system • Detailed dimensions according to the structural structure • The type of roofing appropriate for the dimensions of the space

مخرجات التعلم للمادة الدراسية	• Method of designing health services sections and their relationship to the structural structure
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	67	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	30% (30)	4,7, 10 and 15	LO #(1, 2),(3),(4) and (5,6).
	Assignments	5	6% (6)	3, ,9,11,13 and 14	LO # 1-6
	Projects / Lab.				
	Report	1	4% (4)	14	LO # 1-6
Summative assessment	**Midterm Exam**	1 hr	10% (10)	9	LO # 1-4
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Determine the project dimensions, type, and function, and design its structural network (a house project with a load-bearing wall system)
Week 2	Draw the foundations in detail with reinforcement
Week 3	Draw the load-bearing walls in the plan
Week 4	Draw the service spaces, including the stairs and bathrooms
Week 5	Draw the ceilings with reinforcement
Week 6	Draw the façade
Week 7	Submit the project
Week 8	Day sketch exam
Week 9	Determine the project dimensions, type, and function, and design its structural network (a shopping mall project with a column and bridge system)
Week 10	Draw the foundations in detail with reinforcement

Week 11	Draw the columns and partitions
Week 12	Draw the service spaces, including the stairs and bathrooms
Week 13	Draw the ceilings and partitions with reinforcement
Week 14	Draw the facade
Week 15	Submit the project
Week 16	Day sketch exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Determine the project dimensions, type, and function, and design its structural network (a house project with a load-bearing wall system)
Week 2	Draw the foundations in detail with reinforcement
Week 3	Draw the load-bearing walls in the plan
Week 4	Draw the service spaces, including the stairs and bathrooms
Week 5	Draw the ceilings with reinforcement
Week 6	Draw the façade
Week 7	Submit the project
Week 8	Day sketch exam
Week 9	Determine the project dimensions, type, and function, and design its structural network (a shopping mall project with a column and bridge system)
Week 10	Draw the foundations in detail with reinforcement
Week 11	Draw the columns and partitions
Week 12	Draw the service spaces, including the stairs and bathrooms
Week 13	Draw the ceilings and partitions with reinforcement
Week 14	Draw the facade
Week 15	Submit the project
Week 16	Day sketch exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts		No
Recommended Texts		No
Websites		

Grading Scheme
مخطط الدرجات

Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	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.

ARC 214 Crimes of Ba'ath Regime in Iraq

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية			
Module Title	**Crimes of Ba'ath Regime in Iraq**	**Module Delivery**	
Module Type	E	☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**ARC 214**		
ECTS Credits	**2**		
SWL (hr/sem)	**50**		

Module Level	UGI	**Semester of Delivery**	1
Administering Department	ARC	**College**	COE
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor		**e-mail**	
Peer Reviewer Name		**e-mail**	
Scientific Committee Approval Date		**Version Number**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

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

مخرجات التعلم للمادة الدراسية	
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	32	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	18	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	30% (30)	4,7, 10 and 15	LO #(1, 2),(3),(4) and (5,6).
	Assignments	5	6% (6)	3, ,9,11,13 and 14	LO # 1-6
	Projects / Lab.				
	Report	1	4% (4)	14	LO # 1-6
Summative assessment	**Midterm Exam**	1 hr	10% (10)	9	LO # 1-4
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	

Week 14	
Week 15	
Week 16	

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts		No
Recommended Texts		No
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	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.

ARC 215 Computer Architectural Drawing 2D

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	**Computer Architectural Drawing 2D**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**ARC 215**				
ECTS Credits	**4**				
SWL (hr/sem)	**100**				
Module Level	UGI		**Semester of Delivery**	١	
Administering Department	ARC		**College**	COE	
Module Leader	Dr. Sinan Mohammed Talee		**e-mail**		
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	PhD	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Develop an understanding of the principles and fundamentals of two-dimensional architectural drawing. 2. Develop practical skills in drawing for exterior and interior architectural design. 3. Teach computer projection using drawing programs. 4. Instilling an understanding of logical thinking using a sequential drawing process.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• Basic Concepts: Understanding the basic settings and principles of architectural drawing . • Practical drawing skills as a starting point . • Evaluating drawings . • Communication and discussion among students . • Accuracy and skill in drawing .

	• Collaboration and teamwork . • Evaluating drawings. • Communication and discussion among students • Accuracy and skill in drawing
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	• Learning based on architectural projects and pre-drawn illustrative examples: This strategy encourages students to engage in demonstrating how to draw projects sequentially or by simulating the drawing process. • Follow-up with peers: In this strategy, students form collaborative groups to produce electronic drawings through theoretical conversations among themselves, without direct drawing, to benefit from the close connection between students.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	1
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	30% (30)	4,7, 10 and 15	LO #(1, 2),(3),(4) and (5,6).
	Assignments	5	6% (6)	3, ,9,11,13 and 14	LO # 1-6
	Projects / Lab.				
	Report	1	4% (4)	14	LO # 1-6
Summative assessment	**Midterm Exam**	1 hr	10% (10)	9	LO # 1-4
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction, Drawing Settings, Elements, Coordinates, Grid, etc.
Week 2	General Commands for Engineering Drawing (with application)
Week 3	Commands Related to Lines and 2D Shapes (with application)
Week 4	Commands Related to Lines and 2D Shapes (with application)

Week 5	Commands Related to Lines and 2D Shapes 1 (with application)
Week 6	Commands Related to Lines and 2D Shapes 2 First Practical Exam
Week 7	Drawing Commands for Group 2 (with application)
Week 8	Manipulating Ready-Made Shapes and Images (with application)
Week 9	Manipulating Ready-Made Shapes and Images (with application)
Week 10	Layers and 2D Shape Settings 1 (with application)
Week 11	Layers and 2D Shape Settings 2 Semester Theory Exam
Week 12	Dimensions and Measurements (with application)
Week 13	Dimensions and Measurements (with application)
Week 14	Main Tools 2
Week 15	Main Project Printing Final Output (with application) Second Practical Exam
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Introduction, Drawing Settings, Elements, Coordinates, Grid, etc.
Week 2	General Commands for Engineering Drawing (with application)
Week 3	Commands Related to Lines and 2D Shapes (with application)
Week 4	Commands Related to Lines and 2D Shapes (with application)
Week 5	Commands Related to Lines and 2D Shapes 1 (with application)
Week 6	Commands Related to Lines and 2D Shapes 2 First Practical Exam
Week 7	Drawing Commands for Group 2 (with application)
Week 8	Manipulating Ready-Made Shapes and Images (with application)
Week 9	Manipulating Ready-Made Shapes and Images (with application)
Week 10	Layers and 2D Shape Settings 1 (with application)
Week 11	Layers and 2D Shape Settings 2 Semester Theory Exam
Week 12	Dimensions and Measurements (with application)
Week 13	Dimensions and Measurements (with application)
Week 14	Main Tools 2
Week 15	Main Project Printing Final Output (with application) Second Practical Exam
Week 16	Final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts		No
Recommended Texts		No
Websites		

Grading Scheme

مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	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.

ARC 216 English - Pre Intermediate

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	**English - Pre Intermediate**			**Module Delivery**	
Module Type	E			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**ARC 216**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level	UGI		**Semester of Delivery**	1	
Administering Department	ARC		**College**	COE	
Module Leader	Rawia Marwan dabdoob		**e-mail**	rawia.danbdoob@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	MSc.	
Module Tutor	Rawia Marwan dabdoob		**e-mail**	rawia.danbdoob@uomosul.edu.iq	
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• The curriculum integrates a balanced syllabus that supports the four skills of listening, reading, writing and speaking. • The curriculum followed an integrative approach that provides linguistic information, grammatical and vocabulary. • The curriculum emphasizes on to parts of learning English Language: firstly, 'Everyday English', and secondly, 'Spoken grammar'. • Accordingly, the curriculum focused on formal linguistic rules, methods of writing and formulating them, tenses of verbs and their uses, auxiliary

	verbs, compound sentences, interrogative sentences, tools for affirmation, affirmation and negation sentences. • The curriculum also focused on the daily language spoken by the general public in daily life, which included talking about general information, personal preferences, expressing opinion, advice, support and rejection...ect. • The curriculum emphasizes on the way the sentences are pronounced in the English Music tone. • The curriculum included articles to develop reading skills by understanding the general context with related questions about the article.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• Understanding the basic grammar. • Enriching vocabulary. • Practicing reading and speaking
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	• Lecture strategy • Discussion strategy • Cooperative learning strategy

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	32	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	18	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	30% (30)	4,7, 10 and 15	LO #(1, 2),(3),(4) and (5,6).
	Assignments	5	6% (6)	3, ,9,11,13 and 14	LO # 1-6
	Projects / Lab.				
	Report	1	4% (4)	14	LO # 1-6
Summative assessment	**Midterm Exam**	1 hr	10% (10)	9	LO # 1-4
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Unit 1: A world of difference Present, past, present perfect tenses Auxiliary verbs Questions and negatives Short answers Sounding polite
Week 2	Unit 2: The working week Present and continuous tenses State verbs Passive How often
Week 3	Unit 3: Good time, bed Past tenses
Week 4	Unit 4: Getting it right Modal and related verbs
Week 5	Unit 5: Our Changing World Future forms Future possibilities
Week 6	Term Exam
Week 7	Unit 6: What matters to me Information questions
Week 8	Unit 7: Passions and fashions Present perfect Passive Adverbs Time expressions
Week 9	Unit 8: No fear Verb patterns The infinitive The reduced infinitive
Week 10	Unit 9: It depends how you look at it Conditionals Might have done/ could have done Should have done
Week 11	Unit 10: All things high tech Noun phrases Possessives Reflexive pronouns and each other
Week 12	Unit 11: Seeing is believing Present and past Modals of probability Looks like / looks Expressing disbelief
Week 13	Unit 12: Telling it how it is Reported Speech Reported thoughts

	Reported questions
Week 14	Listening and Reading
Week 15	Listening and Reading
Week 16	Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts		No
Recommended Texts		No
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	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.

ARC 217 Graphic and Architectural Presentation

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	**Graphic and Architectural Presentation**			**Module Delivery**	
Module Type	S			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**ARC 217**				
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level	UGI		**Semester of Delivery**	1	
Administering Department	ARC		**College**	COE	
Module Leader	Anwar Meshal shareef		**e-mail**	anwar.meshal@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**		
Module Tutor	Mafaz Tareq, Aseel Ibrahem		**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The subject aims to develop the skills needed to present and document designs using hand drawings. This course will focus on drawing as a communication tool through exercises that explore design representation using techniques of perspective and shadow.
Module Learning Outcomes	• First Week: The definition of perspective drawing of cubical forms using rays' method. • Second Week: Drawing perspective of stairs and sloping surfaces and using

مخرجات التعلم للمادة الدراسية	rays' method. • Third Week: The definition of perspective drawing using measuring points method. • Fourth week: The definition of perspective drawing using a circle of vision. • Fifth week: Drawing perspective for circle and cylinder. • Sixth week: The definition of one-point perspective drawing. • Seventh week: The definition of the principles of drawing shade and shadow for cubical forms- isometric and projections. • Eighth week: Drawing shade and shadow for stairs and inclined surfaces - isometric and projections • Ninth week: Drawing shade and shadow for balconies and openings • Tenth Week: Drawing shade and shadow for circles and cylinders • Eleventh week: Drawing shade and shadow for cubical perspectives • Twelfth week: Drawing window and column shadows • Thirteenth week: Drawing shade and shadow for balconies and openings • Fourteenth week: inclined surfaces - isometric and projections • Fifteenth week: Drawing shade and shadow for house perspectives
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	• The main strategy that will be introduced to students is the fundamental principles of architectural drawings of both perspective and shadow • This enables students to develop their drawing, visualization, and representation skills effectively in the architectural design process. • Using drawings and documenting designs manually without the use of a computer, using engineering techniques and rules for drawing perspective and shadow.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	7	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	30% (30)	4,7, 10 and 15	LO #(1, 2),(3),(4) and (5,6).
	Assignments	5	6% (6)	3, ,9,11,13 and 14	LO # 1-6
	Projects / Lab.				
	Report	1	4% (4)	14	LO # 1-6

Summative assessment	**Midterm Exam**	1 hr	10% (10)	9	LO # 1-4
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	perspective drawing
Week 2	perspective drawing
Week 3	perspective drawing
Week 4	perspective drawing
Week 5	perspective drawing
Week 6	perspective drawing
Week 7	perspective drawing
Week 8	drawing shade and shadow
Week 9	drawing shade and shadow
Week 10	drawing shade and shadow
Week 11	drawing shade and shadow
Week 12	drawing shade and shadow
Week 13	drawing shade and shadow
Week 14	drawing shade and shadow
Week 15	drawing shade and shadow
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	perspective drawing
Week 2	perspective drawing
Week 3	perspective drawing
Week 4	perspective drawing
Week 5	perspective drawing
Week 6	perspective drawing
Week 7	perspective drawing
Week 8	drawing shade and shadow
Week 9	drawing shade and shadow
Week 10	drawing shade and shadow
Week 11	drawing shade and shadow
Week 12	drawing shade and shadow
Week 13	drawing shade and shadow
Week 14	drawing shade and shadow
Week 15	drawing shade and shadow
Week 16	drawing shade and shadow

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts		No
Recommended Texts		No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	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.

ARC 221 Architecture Design (2)

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	**Architecture Design (2)**			**Module Delivery**	
Module Type	Core			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**ARC 221**				
ECTS Credits	**12**				
SWL (hr/sem)	**300**				
Module Level	UGI		**Semester of Delivery**	1	
Administering Department	ARC		**College**	COE	
Module Leader	Lect. Dr. Muzahim Mohammed Mustafa		**e-mail**	Mozahim.hadidi@uomosul.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	PhD	
Module Tutor	Lect. Dr. Osama Hammadi Lect. Dr. Omar Adil Lect. Dr. Iqbal Salim Younis Lect. Dr. Rana Mahfouz Asst. Lect. Alhan Faris Ibrahim Asst. Lect. Musaab Sami Younis Asst. Lect. Mohammed Mahfouz Asst. Lect. Mafaz Tariq Yousif Asst. Lect. Adil Khalil Asst. Lect. Raghad Akram		**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• Enhancing critical thinking and problem-solving skills • Identify characteristics, constraints, and opportunities. • Develop effective communication and presentation skills. • This course is intended to provide skills for designing different projects, with emphasis on detailing, custom designs, materials, etc. The typical

	route to qualifying is a combination of standards, academic studies and practical work and experience. Initially, a system is required to fulfil certain requirements. • This course covers building techniques related to the construction drawing production in order to understand design concepts and procedures. • The purpose of this course is to stimulate students' insights and understandings about different functions buildings and the link between design concept, function, form, and presentation drawings. • Providing the students with an introduction to the basic requirements of the projects for the profession while explaining the basic elements as well as the requirements. • In combination with the teaching package, students learn about the design process; the importance of color and light; other design elements influence such as furniture and materials that are used in the projects. • Covering and satisfying requirements and desires, as well as creating environments with the use of specific equipment and, most importantly, imagination and creativity. • Combining the aesthetic, functional, and philosophical approach to architectural design. • Implementing the elements and principles of design into the project. • The course covers commonly used materials, components, and systems.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• Ability to gather, analyze, assess, record, apply, and comparatively evaluate relevant information within architectural design processes. • Demonstrate an understanding of principles and practices and integrate and apply that knowledge within architectural design processes. • Ability to develop imaginative and creative thinking. • Students will learn the basics of design including gathering data about the site plot, location, climate, space program, the relation between spaces, materials and finishes, openings such as doors and windows, and analyzing similar examples. • Students will learn how to formulate the concept of the project regarding the elements and principles of design, human needs, and form and function. • Students will learn about the philosophies and techniques for tackling three-dimensional design. • Students combine interdisciplinary talents they currently possess with new design skills. The projects look at concept creation and execution in 2D and 3D drawings including the detailing and furniture. • The student will gain the technical skills needed to express architectural concepts in a clear, efficient, and correct manner. • Students will draw increasingly complicated models and master new shading and color methods. Drawings of buildings and landscapes are also used to create and communicate ideas during the design process. • Students will use drawing board techniques, engineering drawing and handwriting to sketch, produce technical drawings with technical and design presentation and projections to express ideas and conceptions in the design process in the form of plans, elevations, sections, and other 3D illustrations. • It evolved into orthogonal, isometric, and axonometric projections, planes, sections, and elevations because of the employment of instruments and equipment required for precise drawing of simple geometric constructs.

Indicative Contents المحتويات الإرشادية	Architectural Design – School Design – Educational buildings - Graphics – Plans – Site Plan – Elevations – Sections – Perspectives – Isometrics

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	1. **Project-based learning:** This strategy encourages students to engage in real-world or simulated design projects that require applying theoretical knowledge to practical scenarios. Through this approach, students can develop critical thinking and effective problem-solving skills while gaining valuable practical experience. 2. **Analysis and Critique:** In this strategy, students present their designs to the class and receive feedback from their peers and the instructor. This helps foster constructive criticism and opens the door to in-depth discussions about design principles and creative choices, improving students' overall communication and presentation skills. 3. **Contact hours:** 8 hours weekly. 4. **The explanation** using photos, videos, examples, drawings on the whiteboard and implementation through class work. 5. **The attendance of students** in lectures will have part of the credit. He / she is required to follow the lectures continuously, submits homework and assignments. Expect quizzes any time. 6. **Students' assessment:** The students will be assessed continuously through their activities in the class. Any student with ideas about learning and suggestions of alternative ways of dealing with problems will be very welcomed. 7. During the semester, extra information may provide for the students with more pictures and videos on the slide show, which can help them to maximize their imagination in design and modelling.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

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

Module Evaluation
تقييم المادة الدراسية

		Time / Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	3	21% (21)	4, 10 and 15	
	Assignments	1	3% (3)	1….15	LO # 1-6
	Projects / Lab.	2	6% (6)		
	Report	2	10% (10)	1,3	LO # 1-6
Summative assessment	**Midterm Exam**	3 hr	10% (10)	9	LO # 1-4
	Final Exam	3 hr	50% (50)	16	All

Total assessment	100% (100 marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	**Introduction**
Week 2	**Day sketch**
Week 3	**Openings**
Week 4	**Spatial relationships**
Week 5	**Types of spatial organization**
Week 6	**Movement – accessibility**
Week 7	**Day sketch**
Week 8	**Movement patterns - Entrances**
Week 9	**Scale**
Week 10	**Proportion**
Week 11	**Ordering principles / Axes**
Week 12	**Hierarchy, datum**
Week 13	**Symmetry and dominance**
Week 14	**Rhythm, repetition**
Week 15	**Rendering**
Week 16	**Final submission**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	• Opening • Spatial relationships • Types of spatial organization • Movement – accessibility
Week 2	• Day sketch (planes of building (house, small building))
Week 3	• Movement patterns, Entrances • Scale • Proportion • Ordering
Week 4	• Day sketch
Week 5	• Principles / Axes • Hierarchy – datum • Symmetry and dominance
Week 6	• Rhythm, repetition • Rendering
Week 7	• Final submission

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the**

		Library?
Required Texts	1. Methods of systematic analysis of design in architecture, By D. Mohamed A. Shihab 2. "ARCHITECTURE, Form, Space, & Order Third Edition", Francis D.K. Ching 3. "Time Saver Standards for Architectural Design Data" by John Hanock 4. Neufert Architects Data Fourth Edition - By Wiley Blackwell 5. Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver standards for Interior Design & space planning, 2nd edition, Mc-Graw Hill professional, 2001.	No
Recommended Texts	1. "ARCHITECTURE, Form, Space, & Order Third Edition", Francis D.K. Ching 2. Neufert Architects Data Fourth Edition - By Wiley Blackwell	
Websites	Visualizing Architecture: A website that provides explanations and images of various architectural projects, helping to better understand new designs and ideas. Architizer: This site covers architecture news and new technologies and showcases architectural projects, providing a rich source of practical and theoretical information. Architecture Week: A specialized magazine that offers a wide range of articles and designs of interest to architecture students and architects.	

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.

ARC 222 Free Hand Drawing (2)

University of Mosul College of Engineering Architectural Engineering Department

Module Information
معلومات المادة الدراسية

Module Title	**Free Hand Drawing (2)**	**Module Delivery**
Module Type	S	☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☒ **Practical** ☐ **Seminar**
Module Code	**ARC 222**	
ECTS Credits	**4**	
SWL (hr/sem)	**100**	

Module Level	UGI	**Semester of Delivery**	
Administering Department	ARC	**College**	COE
Module Leader	Dr. Ahmad Yaroob Tohalla	**e-mail**	ahmadtohala@uomosul.edu.iq
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	PhD
Module Tutor	Rawia Marwan Dabdoob Sura Mohammad Adil	**e-mail**	rawia.dabdoob@uomosul.edu.iq
Peer Reviewer Name		**e-mail**	
Scientific Committee Approval Date		**Version Number**	

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

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

Module Aims أهداف المادة الدراسية	The freehand drawing curriculum for architecture students aims to achieve several important goals for the development of an architect during their academic years. These goals go beyond simply learning freehand drawing methods and techniques, to developing visual perception and a mature architectural vision of the world, which is of utmost importance for architects. These goals include: • A balanced vision and developing artistic taste for objects and formations. • Using the sense of sight to see and linking it to previous knowledge about perspective theory to shape thought, perception, and conceptualization of

	that form. • Practicing manual expression by creating a harmonious relationship between vision, brain, and hand to express visual perception of the world. • Learning how to measure proportions and dimensions using the hand, pen, and sight. • Understanding the differences between the values of light, shade, and shadows in perspective theory and learning to express them. • Learning drawing methods and techniques using various materials such as pens and colors. • Developing the ability to see and analyze the elements of artistic composition, such as lines, shapes, sizes, texture, and directions, in a model. • Developing self-reliance in the process of vision and expression through a series of drawing exercises that range in difficulty from simple to more complex forms. • Gaining a musical visual vision will be important and useful for future architecture students.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Acquire the skill of analyzing proportions and vanishing angles Strengthen the skill of planning a geometric shape Strengthen the skill of planning design ideas Strengthen the skill of drawing with pencils
Indicative Contents المحتويات الإرشادية	Gradient pencils, drawing paper, wooden board

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	The silent geometric shape consisting of a group of cubes of different sizes and cylinders is explained and analyzed. Then the students begin to draw the shape freely using the skills acquired during the theoretical explanation.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	٤
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	30% (30)	4,7, 10 and 15	LO #(1, 2),(3),(4) and (5,6).
	Assignments	5	6% (6)	3, ,9,11,13 and 14	LO # 1-6
	Projects / Lab.				
	Report	1	4% (4)	14	LO # 1-6
Summative assessment	**Midterm Exam**	1 hr	10% (10)	9	LO # 1-4
	Final Exam	3 hr	50% (50)	16	All

Total assessment	100% (100 marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to perspective, drawing angles, and vanishing points
Week 2	Preliminary test to assess student ability
Week 3	Practice drawing lines in different directions
Week 4	Simple model made of cubes - Stage 1
Week 5	Advanced model made of cubes - Stage 1
Week 6	General discussion with the student about drawing and coloring
Week 7	Simple model made of circles and cylinders - Stage 1
Week 8	Monthly drawing exam
Week 9	Simple model made of circles and cylinders - Stage 2
Week 10	Simple model made of circles and cylinders - Stage 3
Week 11	Simple model made of slanted cubes - Stage 1
Week 12	Simple model made of slanted cubes - Stage 2
Week 13	Simple models made of pottery
Week 14	Monthly drawing exam
Week 15	Simple models made of irregular shapes 1
Week 16	Advanced model made of irregular shapes 2

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Drawing a still life shape, analyzing the shape into dimensions and proportions
Week 2	Drawing a still life shape, analyzing the shape into dimensions and proportions
Week 3	Drawing a still life shape, analyzing the shape into dimensions and proportions
Week 4	Drawing a still life shape, analyzing the shape into dimensions and proportions
Week 5	Drawing a still life shape, analyzing the shape into dimensions and proportions
Week 6	Drawing a still life shape, analyzing the shape into dimensions and proportions
Week 7	Drawing a still life shape, analyzing the shape into dimensions and proportions
Week 8	Drawing a still life shape, analyzing the shape into dimensions and proportions
Week 9	Drawing a still life shape, analyzing the shape into dimensions and proportions
Week 10	Drawing a still life shape, analyzing the shape into dimensions and proportions
Week 11	Drawing a still life shape, analyzing the shape into dimensions and proportions
Week 12	Drawing a still life shape, analyzing the shape into dimensions and proportions
Week 13	Drawing a still life shape, analyzing the shape into dimensions and proportions
Week 14	Drawing a still life shape, analyzing the shape into dimensions and proportions
Week 15	Drawing a still life shape, analyzing the shape into dimensions and proportions
Week 16	Drawing a still life shape, analyzing the shape into dimensions and proportions

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the**

		Library?
Required Texts		No
Recommended Texts	Drawing – a creative process, Francis d. k. Ching , john Wiley & sons , inc. , 1990 Drawing outdoor , henry c. pits , Watson- Guptill publications , 1965 , new York How to paint and draw , Bodo w. Jax Heimer , Thames and Hudson , 1962 , London Watercolor technique , rex Brandt , sixth edition , Reinhold publishing corporation , 1963	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.

ARC 223 History of European Architecture

University of Mosul College of Engineering Architectural Engineering Department

Module Information
معلومات المادة الدراسية

Module Title	**History of European Architecture**	**Module Delivery**
Module Type	**Core**	☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	**ARC 223**	
ECTS Credits	**3**	
SWL (hr/sem)	**75**	

Module Level	UGI	**Semester of Delivery**	1
Administering Department	ARC	**College**	COE
Module Leader	Hassan Mahmood Kasim	**e-mail**	hassan.kasim@uomosul.edu.iq
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	
Module Tutor		**e-mail**	
Peer Reviewer Name		**e-mail**	
Scientific Committee Approval Date		**Version Number**	

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

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

Module Aims أهداف المادة الدراسية	• Inform students about the development of European Architecture from Greek Age till Renaissance & Baroque–17th century • Enhance the concept of architectural interactions between European civilizations and others, especially Arab-Islamic civilization • Enhance students' understanding of architectural design by analyzing historical examples of buildings according to architectural methodologies

	• Free-hand sketch analysis of historical buildings to enhance students' skills of free-hand sketches of design concepts.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	Understanding and analyzing

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

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

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	30% (30)	4,7, 10 and 15	LO #(1, 2),(3),(4) and (5,6).
	Assignments	5	6% (6)	3, ,9,11,13 and 14	LO # 1-6
	Projects / Lab.				
	Report	1	4% (4)	14	LO # 1-6
Summative assessment	**Midterm Exam**	1 hr	10% (10)	9	LO # 1-4
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to the history of European Architecture
Week 2	Greek Architecture: Architectural characters & Orders
Week 3	Greek Architecture: Temples
Week 4	Roman Architecture: Architectural characters
Week 5	Roman Architecture: Temples & Pantheon

Week 6	Roman Architecture: Basilicas, Thermae, Theatre & sports
Week 7	Roman Architecture: Palaces, Tombs & Triumphal Arches
Week 8	Interaction between Roman and Eastern Architecture
Week 9	Mid Term Exam
Week 10	Early Christian Architecture
Week 11	Byzantine Architecture
Week 12	Gothic Architecture
Week 13	Renaissance Architecture
Week 14	Renaissance Periods and Architects
Week 15	General Discussion
Week 16	Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts		No
Recommended Texts		No
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
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ARC 224 Physics

University of Mosul College of Engineering Architectural Engineering Department

Module Information
معلومات المادة الدراسية

Module Title	**Physics**	**Module Delivery**
Module Type	**S**	☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	**ARC 224**	
ECTS Credits	**4**	
SWL (hr/sem)	**100**	

Module Level	UGI	**Semester of Delivery**	
Administering Department	ARC	**College**	COE
Module Leader	Dr. Sabreen Ali	**e-mail**	sabreen.abed@uomosul.edu.iq
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	PhD
Module Tutor		**e-mail**	
Peer Reviewer Name		**e-mail**	
Scientific Committee Approval Date		**Version Number**	

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

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

Module Aims أهداف المادة الدراسية	**The Physics course aims to:** 1. Provide students with fundamental concepts in mechanics, heat, and sound alignment with the needs of their architectural engineering specialization. 2. Enable students to apply physical laws to understand the behavior of materials and the forces acting on architectural structures. 3. Enhance students' ability to analyze and solve physics-related problems relevant to architectural design and construction. 4. Relate physical concepts to real-life architectural applications such as heat

	transfer, sound insulation, and load distribution.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**By the end of this course, students are expected to be able to:** 1. Explain fundamental concepts in motion, forces, energy, momentum, and heat transfer. 2. Analyze physical systems related to buildings using physical laws such as Newton's laws, the law of conservation of energy, and the laws of thermodynamics. 3. Apply physical principles to understand how to design structurally and thermally stable buildings. 4. Solve physics problems related to forces, equilibrium, sound, and thermal insulation. 5. Evaluate the impact of physical phenomena on the efficiency and sustainability of buildings.
Indicative Contents المحتويات الإرشادية	• Basic physical quantities and unit systems • Newton's laws and motion • Work, energy, and momentum • Gravity and free fall • Fluids: pressure and buoyancy • Heat, temperature, and heat transfer • Thermal comfort in buildings

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	The Engineering Physics course for Architecture students is based on a combination of theoretical explanations and the application of problem-solving related to the field. The strategies include: 1. Theoretical lectures to explain fundamental concepts using examples from architectural practice. 2. Problem-solving sessions to reinforce understanding through the application of physical laws in design contexts. 3. Interactive learning through class discussions, illustrations, and diagrams. 4. The group works to solve physics problems related to buildings and the surrounding environment. 5. Periodic review through short quizzes and simple tests to assess progressive understanding.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

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

Module Evaluation
تقييم المادة الدراسية

		Time / Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	٢	٢0% (٢٠)	5, and 10	LO #1, 2, 3
	Assignments	٢	٥% (٥)	4 And 12	LO #3, 4
	Projects / Lab.	٤	5% (5)	3,5,7, and 9	LO# 2,3,4,5
	Report	1	10% (10)	14	LO # 5-6
Summative assessment	Midterm Exam	1 hr	10% (10)	9	LO # 1-4
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to Physics – Physical Quantities and Units
Week 2	Scalars and Vectors in Physics
Week 3	Motion in One Dimension – Velocity and Acceleration
Week 4	Newton's Laws of Motion
Week 5	Spring Force and Friction – Hooke's Law
Week 6	Mid term exam
Week 7	Uniform Circular Motion – Centripetal Force
Week 8	Work and Energy – Kinetic and Potential Energy
Week 9	Momentum and Collisions – Conservation of Momentum
Week 10	Universal Gravitation – Free-Fall Acceleration
Week 11	Fluids – Density and Pressure
Week 12	Pascal's Principle and Archimedes' Principle
Week 13	Heat and Temperature – Thermodynamic Concepts
Week 14	Heat Transfer – Conduction, Convection, and Radiation
Week 15	Comprehensive Review and Applied Exercises
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Unit conversions, dimensional analysis, physical quantities
Week 2	Problems on average velocity and constant acceleration
Week 3	Applications involving force, mass, and acceleration
Week 4	Momentum conservation problems before and after collisions
Week 5	Buoyant force problems for submerged objects
Week 6	Temperature conversion, problems on thermal expansion
Week 7	Problems on heat conduction and thermal conductivity

Learning and Teaching Resources

مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Physics for Scientists and Engineers" by Serway & Jewett	No
Recommended Texts		No
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	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.

ARC 225 Computer Architectural Drawing 3D

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	**Computer Architectural Drawing 3D**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**ARC 225**				
ECTS Credits	**4**				
SWL (hr/sem)	**100**				
Module Level	UGI		**Semester of Delivery**		
Administering Department	ARC		**College**	COE	
Module Leader	Dr. Sinan Mohammed Talee		**e-mail**		
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	PhD	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• Enhancing sequential practical thinking, skills for resolving drawing constraints, and defining work features. • Developing effective communication and presentation skills. • Following current work contexts and understanding them in a way that is relevant to the current situation.
Module Learning Outcomes	• Basic concepts: Understanding the basic settings and principles of three-dimensional architectural drawing.

مخرجات التعلم للمادة الدراسية	• Practical drawing skills as a starting point. • Drawing evaluation. • Communication and discussion among students. • Accuracy and skill in drawing. • Collaboration and teamwork.
Indicative Contents المحتويات الإرشادية	•

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	Learning based on architectural projects and pre-drawn illustrative examples: This strategy encourages students to engage in demonstrating how to draw projects sequentially or by simulating the drawing process. Follow-up with peers: In this strategy, students form collaborative groups to produce electronic drawings through theoretical conversations among themselves, without direct drawing, to benefit from the close connection between students.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	1
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	52	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	30% (30)	4,7, 10 and 15	LO #(1, 2),(3),(4) and (5,6).
	Assignments	5	6% (6)	3, ,9,11,13 and 14	LO # 1-6
	Projects / Lab.				
	Report	1	4% (4)	14	LO # 1-6
Summative assessment	**Midterm Exam**	1 hr	10% (10)	9	LO # 1-4
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Review of commands related to 2D drawing
Week 2	General commands for 3D engineering drawing (with application)
Week 3	Commands related to primary 3D shapes (with application)
Week 4	Modification commands for the first group (with application)
Week 5	Modification commands for the first group (with application)

Week 6	Modification commands for the second group (with application)
Week 7	First practical test (with application)
Week 8	Modification of 3D models (with application)
Week 9	Shaping 3D surfaces (with application)
Week 10	Semester theoretical test
Week 11	Operations on 3D models (with application)
Week 12	Architectural rendering
Week 13	Materials and modifications (with application)
Week 14	Lighting and scenery (with application)
Week 15	Final rendering (with application)
Week 16	Second practical test

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Review of commands related to 2D drawing
Week 2	General commands for 3D engineering drawing (with application)
Week 3	Commands related to primary 3D shapes (with application)
Week 4	Modification commands for the first group (with application)
Week 5	Modification commands for the first group (with application)
Week 6	Modification commands for the second group (with application)
Week 7	First practical test (with application)
Week 8	Modification of 3D models (with application)
Week 9	Shaping 3D surfaces (with application)
Week 10	Semester theoretical test
Week 11	Operations on 3D models (with application)
Week 12	Architectural rendering
Week 13	Materials and modifications (with application)
Week 14	Lighting and scenery (with application)
Week 15	Final rendering (with application)
Week 16	Second practical test

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	▪ □ Computer programs that assist in drawing ▪ □ AutoCAD for two-dimensional drawing ▪ □ Using Microsoft programs to support drawing operations. ▪ 1- Al-Allaf, Emad Hani, Architectural and Computer Aided Engineering Drawing, 2D Drawing Principles in AutoCAD®, 2018.	No
Recommended Texts	Al-Alaf, Imad Hani, Computer-Aided Architectural and Engineering Drawing, Principles of 2D® Drawing in AutoCAD 2018	No
Websites	https://static.sdcpublications.com/pdfsample/978-1-63057-339-3-1-cw77gw9lwo.pdf	

	Randy H. Shih, Videos by Luke Jumper AutoCAD 2021 Tutorial ® First Level 2D Fundamentals , 2021

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.

ARC 226 Science of Mechanics

University of Mosul College of Engineering Architectural Engineering Department

Module Information معلومات المادة الدراسية					
Module Title	**Science of Mechanics**			**Module Delivery**	
Module Type	S			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**ARC 226**				
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level	UGI	**Semester of Delivery**			
Administering Department	ARC	**College**	COE		
Module Leader	Tuqa Waleed	**e-mail**			
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	MSc.		
Module Tutor		**e-mail**			
Peer Reviewer Name		**e-mail**			
Scientific Committee Approval Date		**Version Number**			

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	
Module Learning Outcomes	Students who successfully complete this unit will be able to: ● Solve mechanical problems using engineering principles (i).

مخرجات التعلم للمادة الدراسية	● Identify and quantify loads acting on simple structural elements (i). ● Analyze the equilibrium of rigid bodies, including (i). ● Construct free-body diagrams that illustrate the function of simple structural elements (i). ● Analyze the force(s) or moment(s) required to maintain the equilibrium of a structure (i). ● Analyze the external reactions on structural elements under the influence of applied loads (i). ● Identify the different types of loads applied to a given structure (ii). ● Understand the distribution and path of forces within a structure (vi). ● Find the center of gravity of a given body (i). ● Find the center of moment of inertia of a given body (i).
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	30% (30)	4,7, 10 and 15	LO #(1, 2),(3),(4) and (5,6).
	Assignments	5	6% (6)	3, ,9,11,13 and 14	LO # 1-6
	Projects / Lab.				
	Report	1	4% (4)	14	LO # 1-6
Summative assessment	**Midterm Exam**	1 hr	10% (10)	9	LO # 1-4
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Resultant force systems.
Week 2	Resultant of synchronous force systems.
Week 3	Moment of force, couple.

Week 4	Resultant of asynchronous force systems.
Week 5	Equilibrium of force systems.
Week 6	Equilibrium equations for synchronous force systems.
Week 7	Free-body diagram, types of supports, types of loads.
Week 8	Equilibrium equations for asynchronous force systems.
Week 9	Truss analysis.
Week 10	Joint method.
Week 11	Section method.
Week 12	Center of gravity of balance and centers of area.
Week 13	Center of gravity of complex shapes.
Week 14	Moments of inertia.
Week 15	Moments of inertia of complex shapes.
Week 16	Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	• Engineering Mechanics 14th by Hibbeler Vector Mechanics For Engineers Statics and Dynamics(12th)	yes
Recommended Texts		No
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
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MODULE DESCRIPTION FORM

Semester System

Third Level

Third Level

السنة الثالثة		الفصل الاول			
#	رمز المادة	اسم المادة	نظري	عملي	عدد الوحدات
1	ARC 311	التصميم المعماري 3	2	8	6
2	ARC 312	الخدمات الهندسية (الصحية)	2		2
3	ARC 314	تاريخ العمارة الاسلامية	2		2
4	ARC 315	تقنيات الاظهار بالحاسوب	1	2	2
5	ARC 316	الرسوم التنفيذية 1	1	4	3
6	ARC 317	مبادئ التخطيط	2		2
7	ARC 313	اساليب الحفاظ المعماري	2		2
8	STR 317	منشآت الخرسانة المسلحة (1)	2		2
9	UoM 312	للغة الانكليزية- فوق المتوسط	2		2
			30		23

الفصل الثاني				
رمز المادة	اسم المادة	نظري	عملي	عدد الوحدات
ARC 311	التصميم المعماري 3	2	8	6
ARC 322	الخدمات الهندسية (الاضاءة)	2		2
ARC 324	التوثيق المعماري	1	2	2
ARC 325	تطبيقات حاسوبية متقدمة	2	2	3
ARC 326	الرسوم التنفيذية 2	1	4	3
ARC 327	المنطق ومنهجية التصميم	2		2
ARC 328	العمارة والصوت	2		2
STR 327	منشآت الخرسانة المسلحة (2)	2		2
		30		22

ARC311 Architectural Design (3)

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Architectural design ٣ / Third level
2. Course Code:
ARC311
3. Semester / Year
Spring Semester/2023-2024
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Incide the class, online
6. Number of Credit Hours (Total) / Number of Units (Total)
135/ 12
7. Course administrator's name (mention all, if more than one name)
Name : Raed Salim / Email: raeedalnumman@uomosul.edu.iq Ashraf Ibrahim/ Meyssa Muafaq/ Eman Khalid/ Sheymma Kheeraldeen/ Aseel Ibrahim/ Faris atallah
8. Course Objectives
Course Objectives • Ability to gather, analyze, assess, record, apply, and comparatively evaluate relevant information within architectural design processes. • Demonstrate an understanding of principles and practices and integrate and apply that knowledge within architectural design processes. • Design Development Skills for Different Building Types Ability to create designs for a variety of building types such as schools, shopping malls, and cultural centers, while addressing specific functional, aesthetic, and social needs. • Representation and Communication Advanced representation skills: Produce accurate and detailed digital drawings, models, and sketches for schools, shopping malls, and cultural centers, ensuring clarity and accuracy in the presentation of design ideas.
9. Teaching and Learning Strategies

Strategy	Application
Architectural design focuses on integrating pract design experience and collaboration. It emphasi hands-on studio work, interdisciplinary approach and the application of architectural analysis, enab students to create innovative, sustainable designs t respond to complex social and environme contexts. 1. Learning through projects: 2. Field visits	1. Practical application of design skills in real-life projects that simulate professional challenges 2. : Direct analysis of public and private spaces and evaluation of the design approach followed 3. : Promoting an interactive studio environment to displa designs and exchange constructive feedback 4. Focus on environmental design strategies and sustainability in the selection of materials and the use of natural resources

3. Design evaluation and feedback 4. Use of technology and employing graphics, CAI and VR tools to support the educational process 5. Sustainable design 6. Case studies and applied research	5. Analysis of contemporary and historical architectu designs to extract lessons and enhance architectu understanding.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First Second Third Fourth Fifth Sixth Seventh Eighth- Nir Tenth Eleventh Twelfth Thirteenth Fourteenth Fifteenth	9 hours weekly	Understanding Basic Concepts: Develop a deep understanding c the fundamental concepts and principl in the design (school, culture, shopping center) buildings, including history, theo and current practices Practical Design Skills Develop the ability to design realistic housi projects that take into account functionality, flexibility, aesthetics, functionality, and sustainability. Critical Evaluation a Analytical Thinki Enhance the ability critically and effectiv analyze and evalu existing projects a design proposals.	Introduction ((school, culture center, shopping center, and Islamic complex) Data Gathering, Examples Examples – Presentation Site Visit / Site Analysis Final Report / Day Sketch, Concept – First Present Feed back Feed back Plans Project Design Ideas (sections & elevations) / Day sketch Pre-final Submission Review Project Final Submission	Interactive Learning: This approach involves using classroom discussions, workshops, and group activitie to promote interaction betweer students and teachers. Practical Projects: Designing realistic projects allows studen to apply their acquired knowlec in a practical setting, which hel enhance problem-solving skills and creative thinking. Field Trips and Study Visits: Visiting real sites enables students to see real-world applications of landscape desi which enhances their understanding of the challenge and opportunities in the field. Use of Technology: Digital learning through computer-aid design (CAD) software and virt reality (VR) tools enhances students' ability to visualize projects and develop complex designs. Evaluation and Feedback: Providing Evaluations	Theoretical and practical lectures with daily and monthly exams, weekly reports, ar preliminary, secondary, and fir presentations.

11. Course Evaluation

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

Day sketches	30pt
Examples analysis	2pt
Site analysis	3pt

	Concept	5pt
	plans	10pt
	Elevation and section	10pt
	Prefinal submission	25pt
	Final submission	15pt
	Total	100pt

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	1.Joseph De Chiara, Julius Panero, Time-Saver Standards Housing and Residential Development 2. Dutt, I. (2012) 'School Design and Students' Relationships w the Natural World', Children, Youthand Environments,
Recommended books and references (scientific journals, reports...)	Architectural record AD.
Electronic References, Websites	Ach net

Second semester **Course Objectives**	To make students of architecture familiar with principles and concepts of planning taking into consideration the importance of the planning process and the role of the architect within this process. Students should be able to deal with the urban planning process and its elements including street and parking design and master plans besides introducing many worldwide experiments within this subject. • Systematic introduction to issues related to the design of human habitat, its components and space standards. The objective of the studio will be on understanding residential spaces in both urban and traditional contexts. • To train students for undertaking the design of multi-story buildings, frame structures, considering site planning, structures, services, etc. • Study architecture prevalent in Iraq (MOSUL) and its local character and characteristic elements of design. • Green: Demonstration of world-leading sustainability principles • Global: Understanding of and interpreting the past, present, and future of the city, iconic, defining the identity and character of different Neighborhoods in MOSUL City, demonstration of excellence in all aspects of planning, design, contemporary, inspired, and inventive, and expressive of its time and place, poetic and thought-provoking. • Responsiveness: Welcoming, open and inclusive, integrated and harmonious, visually connected with, and open to, its immediate surroundings, responsive to the site, the wider context, and the social needs of the families and the whole community.

1. Teaching and Learning Strategies

Strategy	**Application**
Architectural design focuses integrating practical design experie and collaboration. It emphasizes han	1. Practical application of design skills in real-life projects that simulate professional challenges 2. : Direct analysis of public and private spaces and evaluation of the desig

on studio work, interdisciplin approaches, and the application architectural analysis, enabling stude to create innovative, sustainable desi that respond to complex social environmental contexts. 1. Learning through projects: 2. Field visits 3. Design evaluation and feedback 4. Use of visual media and technology 5. Sustainable design 6. Case studies and applied research	approach followed 3. : Promoting an interactive studio environment to display designs and exchange constructive feedback 4. Focus on environmental design strategies and sustainability in the selection of materials and the use of natural resources 5. Analysis of contemporary and historical architectural designs to extr lessons and enhance architectural understanding.

2. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First Second Third Fourth Fifth Sixth Seventh Eighth-Ninth Tenth Eleventl Twelfth Thirteenth Fourtee Fifteent	9 hours weekly	Understandi Basic Concep Develop a de understandi of the fundamental concepts and principles in the design of multi-storey residential buildings, including history, theo and current practices. Practical Design Skills Develop the ability to design realis housing projects that take into account functionality flexibility, aesthetics, functionality	Introduction (Multi-storey housing systems) Data Gathering, Examples Examples – Presentation Site Visit / Site Analysis Final Report / Day Sketch, Concept – First Present Feed back Feed back Plans Project Design Ideas (sections & elevations) / Day sketch Pre-final Submission Review Project Final Submission	Interactive Learning: This approach involv the use of classroom discussions, worksho and group activities t promote interaction between students and teachers. Practical Projects: Designing realistic projects allows stude to apply their acquire knowledge in a practi setting, which helps enhance problem-solving skills and creative thinking. Field Trips and Study Visits: Visiting real sit enables students to s real-world applicatio of landscape design, which enhances their understanding of the challenges and opportunities in the field.	Theoretical and practical lectu with daily and monthly exa weekly reports, and prelimin secondary and final presentations.

		and sustainabilit Critical Evaluation a Analytical Thinking: Enhance the ability to critically and effectively analyze and evaluate existing projects and design proposals. Communicat Skills: Impro the ability to communicat effectively, both in writi and orally, a the ability to clearly prese designs and ideas to a variety of audiences. Environmen Responsibili Understand and apply principles sustainable design, us resources i way t preserves environmen and impro the ove quality of life		Evaluation and Feedback: Providing Evaluations	

3. Course Evaluation

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

Day sketches	30pt	
Examples analysis	2pt	
Site analysis	3pt	
Concept	5pt	
plans	10pt	
Elevation and section	10pt	
Prefinal submission	25pt	
Final submission	15pt	
Total	100pt	

4. Learning and Teaching Resources	
Required textbooks (curric books, if any)	Joseph De Chiara, Julius Panero, Time-Saver Standards for Housing and Residen Development Callender, John Hancock, and Michael J. Crosbie. Time-Saver Standards for Architectural Design Data. 7th ed., McGraw-Hill, 2004. Polservice, 1982 Housing Technical Standards & Codes of Practice URBAN-HOUSING-STANDARDS, Iraq (2010)
Main references (sources)	
Recommended books and references (scientific journals, reports…)	Architectural record AD
Electronic References, Websites	Ach net

ARC312 Building Services (Sanitary)

University of Mosul College of Engineering Architectural Engineering Department

13. Course Name:
Building Services (Sanitary) / third stage
14. Course Code:
ARC 312
15. Semester / Year:
First/ 2023-2024
16. Description Preparation Date:
2024
17. Available Attendance Forms:
Lectures in the classroom
18. Number of Credit Hours (Total) / Number of Units (Total)
60 hours/ 2 ECTS credits
19. Course administrator's name (mention all, if more than one name)
Name: Rawia Marwan Dabdoob, Email: : : rawia.dabdoob@uomosul.edu.iq
20. **Course Objectives** Develop an understanding of the principles of urban water distribution and drainage through the public distribution network, and the factors affecting urban water consumption. •Develop practical skills in designing sanitary pipes for supply and drainage within buildings, and rainwater drainage. •Develop practical skills in designing sanitary spaces and the standards used in distributing sanitary equipment within sanitary spaces. •Instill an understanding of environmental sustainability in the subject of rainwater collection and reuse. • Instill an understanding of environmental sustainability in the subject of waste collection in multi-story residential or office buildings via waste pipes and methods for waste separation and recycling.

Course Objectives	• Describe and specify equipment and fittings for water supply and sewage systems. • Install appropriate pipes and fittings for water supply, sewage, stormwater, and wastewater systems, and waste disposal systems, according to the building design. • Calculate the building's average water consumption and the required pipe width and length.

21. Teaching and Learning Strategies

Strategy	**Application**
• Lecture strategy • Discussion strategy • Problem-solving strategy • Cooperative learning strategy	1. Promote an interactive studio environment for lecture presentations and discussions to reflect a realistic picture that simulates professional challenges. 2. Enhance understanding through classroom assignments, including calculations and diagrams of the supply and drainage network and waste disposal pipes. 3. Enhance understanding through implemented real-life projects that reflect the job market.

22. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Understanding Basic Concepts	Introduction, Definitions of the Scope of Sanitary Supply	Interactive learning: This approach includes the use of classroom discussions.	

			and Drainage Works		
2	2	Understanding the Types and Dimensions of Sanitary Equipment – Types and Dimensions of Sanitary Spaces	Sanitary Equipment, Sanitary Spaces	Interactive learning: This approach includes the use of classroom discussions.	quizz
3	2	• Types of public water distribution networks in cities and their requirements. • Steps for implementing a water distribution network in a building. • Types of water distribution networks in a building • Types of water tanks	Public Water Distribution System and Building Water Distribution Network	Interactive learning: This approach includes the use of classroom discussions.	classwork
4	2	•Determining pipe diameters •Calculating the average water consumption in a building. •Designing a water distribution network in buildings. •Using pipes and traditional methods • Using a PEX system	Building Water Requirements Calculations	Interactive learning: This approach includes the use of classroom discussions and collaborative learning in groups.	classwork
5	2	Term exam 1			exam
6	2	• Types of water distribution pipes •Water distribution system accessories •Types of valves and their applications • Types of equipment used in sewerage system installation	Types of Supply and Drainage Network Pipes	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	classwork
7	2	• Components of the sewage system •Types of sewage systems in a building: Single-pipe system •Types of sewage systems in a building: Two-pipe system •Steps for implementing sewage systems in a building • Testing sewage	Public drainage system and building drainage network	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	classwork

		systems in a building			
8	2	•Determine the building's water consumption •Pipe diameters • Ventilation pipe diameter calculation	Calculating sewer pipe sizes and lengths	Interactive learning: This approach includes the use of classroom discussions and collaborative learning in groups.	classwork
9	2	Term exam 2	Monthly exam		exam
10	2	• •Types of roof drainage systems • Rainwater harvesting systems in buildings	Rainwater drainage system	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	classwork
11	2	•Types of waste •Waste disposal systems in the building	Waste pipe system	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	classwork
12	2	Report discussion	Seminars	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	Report
13	2	Report discussion	Seminars	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	Report
14	2	Report discussion	Seminars	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	Report
15	2	Report discussion	Seminars	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	Report

23. Course Evaluation

Evaluation type	**Degree**
1 quizz	6
Classwork - calculation	7
Classwork - drawing	7
Term exam 1	7.5
Term exam 2	7.5
Repot	5
Final exam	60
Total	100

24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	**Plumbing Complete: Expert Advice from Start to Finish, Book by Rex Cauldwell.**
Recommended books and references (scientific journals, reports...)	▪ **Ultimate Guide: Plumbing, Updated 5th Edition, Book**
Electronic References, Websites	**https://iccts.moch.gov.iq/wp-content/uploads/2023/09/%D9%85%D8%AF%D9%88%D9%86%D8%A9-%D8%A7%D9%84%D8%B5%D8%B1%D9%81-**

	%D8%A7%D9%84%D8%B5%D8%AD%D9%8A-%D9%81%D9%8A-%D8%A7%D9%84%D9%85%D8%A8%D8%A7%D9%86%D9%8A.pdf https://www.alnaqeeb.me/%D8%AA%D9%86%D9%81%D9%8A%D8%B0-%D8%B4%D8%A8%D9%83%D8%A7%D8%AA-%D8%A7%D9%84%D8%B5%D8%B1%D9%81-%D8%A7%D9%84%D8%B5%D8%AD%D9%8A/#google_vignette
Curriculum or description update rate	**5%**

ARC314 History of Islamic Architecture

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
History of Islamic Architecture / Third Year
2. Course Code:
ARC 314
3. Semester / Year:
First/ 2024-2025
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
Total Hours = 30 / Total Units = 2
7. Course administrator's name (mention all, if more than one name)
Name: Asst. Prof. Dr. Ahmed Abdulwahid Thannoon Taha, Email: Ahmadabdulwahid@uomosul.edu.iq
8. Course Objectives

Course Objectives	• Study and understand Islamic architecture and its characteristics. • Develop students' skills in understanding Islamic architecture's formal, functional, and structural elements. • Identify the types of functional buildings in Islamic architecture.
9. Teaching and Learning Strategies	
Strategy	• Lecture-based learning • Field visits • Use of visual media and technology • Feedback • Report preparation and discussion

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 hours	Gain knowledge about Islamic architecture, including the various styles and characteristics of buildings in Mosul, through lectures, reading materials, and visual aids such as photos and videos.	Definition of Islamic architecture, factors of formation (natural and cultural factors) General characteristics of Islamic architecture, characteristics related to the principles of the Islamic religion	Lecture-based learning: This approach involves lectures and classroom discussions that promote interaction between students and instructors.	Theoretical and discussion lectures with daily and monthly exams and quarterly reports Field Trips and Study Visits: Field visits to Islamic architecture projects in
2	2 hours		Characteristics related to the climatic environment Characteristics related to the formal and functional concepts that characterize Islamic architecture.		
3	2 hours		The most important functional patterns in Islamic architecture First, religious buildings (the mosque). The main components of		

		Understand and appreciate the significance of Islamic architecture and its impact on society.	a mosque building are the prayer area, mihrab, minbar, courtyard, wall, and minaret. Secondary components of a mosque (ablution areas, Quran reading pulpit, prayer areas for dignitaries)	Use of visual media and technology: Using programs and display tools to support the educational process and introduce Islamic architecture.	Mosul enable students to see real-life applications of Islamic architectural designs, enhancing their understanding of the challenges and opportunities in the field. Feedback: Focus on and discuss examples of Islamic heritage. Report Preparation: Prepare and discuss reports on buildings and elements of Islamic architecture.
4	2 hours	Apply knowledge and skills to real-life situations and problems in the fields of architecture, city planning, urban planning, interior and exterior spaces, and the preservation of cultural heritage and antiquities. Practice the profession of architect in accordance with scientific rules and methods. Draw inspiration from the design features of ancient buildings for future designs Use knowledge, skills, and creativity to develop new ideas, products, or solutions by incorporating design features from ancient buildings into future designs	Main types of mosques: Arabic-style mosques, Iwan-style mosques, and Ottoman-style mosques Religious buildings (Madrassa) Architectural characteristics of a madrasa Famous examples of Islamic madrasas		
5	2 hours		Second: Service buildings (markets, khans, crown palaces) -Markets, definition of markets, location of markets - Khanats, definition of khans, architectural characteristics		
6	2 hours		- Crown palace, definition, architectural characteristics		
7	2 hours		Service buildings (baths, hospitals)		
8	2 hours		- Baths, definition, architectural characteristics		
9	2 hours		- hospitals, definition, architectural characteristics		
10	2 hours		Third: Residential buildings (traditional Islamic houses)		
11	2 hours		Residential buildings (Islamic places)		
12	2 hours		Fourth: Sufi buildings (khanqah, ribat, zawiya, tekke)		
13	2 hours		Fifth: Funeral buildings (shrine, shrine, shrine, rawda)		
14	2 hours		Sixth: Water utility buildings (Water fountain building, bridges, water meters)		
15	3 hours		Final Exam		

11. Course Evaluation

Evaluation type	Degree
2 quizzes	15
Reports	10

Term exam	15
Final exam	60
Total	100
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	There are no officially prescribed books
Main references (sources)	1. Islamic Architecture, John. D. Hoag, 2. Islamic Architecture, Form, Function, and Meaning, Robert Hillenbrand. 3. Development of Mosque Architecture, Study of the Role of Adaptation in the Development of Mosques in the First Century AH, Ahmed Abdul Wahid Dhannoon. 4. Dictionary of Islamic Peoples' Architecture, Ali Thuwaini
Recommended books and references (scientific journals, reports...)	• Islamic Art and Architecture (1250-1800), Sheila Blair, Jonathan Bloom • Arab-Islamic Architecture in Iraq, Part One, Issa Suleiman and others • Encyclopedia of Islamic Architecture, Abdul Rahim Ghaleb
Electronic References, Websites	• **Islamic Architecture" website**https://www.islamic-architecture.org This website is dedicated to studying Islamic architecture and covers various aspects of it worldwide. It contains articles, case studies, and photographs illustrating the architectural styles that developed in various Islamic regions. • **Website of the Center for Islamic Architecture – University of Islamic Architecture Studies**https://www.islamic-architecture.org.uk This center offers in-depth resources and studies on Islamic architecture from historical and artistic perspectives. The website includes videos, research articles, and digital exhibits on the history of Islamic architecture and its development. • **The website of the Museum of Islamic Architecture**https://www.islamicart.museum It features numerous digital exhibits on Islamic architecture and related arts. Visitors can enjoy viewing photographs and exhibitions of distinctive buildings and architectural projects from the Islamic world.

ARC315 Computer Aid Presentation Techniques

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Computer Aid Presentation Techniques / Third Year
2. Course Code:
ARC315
3. Semester / Year:
First/ 2024-2025
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
Total Hours = ٤٥ / Total Units = 2
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Reem Ali Talib Email: reemalothman@uomosul.edu.iq
Course Objectives: Providing students with the knowledge and skills necessary to use computers to draw and visualize architectural projects. Developing practical skills in designing and visualizing architectural projects in a realistic manner. 1. Promoting innovation and creativity and developing students' artistic taste by learning various visualization techniques and employing them in architectural compositions.

Course Objectives	Using 3ds Max: - Creating 3D Models: Learn how to create 3D architectural models. - Mastering Modeling Techniques: Develop skills in using advanced modeling tools and techniques to design architectural elements in detail. 2. Using Corona Renderer: - Applying Lighting and Material Techniques: Learn how to set up realistic lighting and apply advanced materials using Corona Renderer. - Producing Photorealistic Images: Develop skills in producing high-quality photorealistic images of architectural projects using Corona Renderer. 3. Using Lumion: - Adding Environmental Effects: Learn how to add environmental effects such as water, plants, sky, and weather to give designs a more realistic appearance. - Producing Virtual Scenes: Learn how to create interactive virtual scenes to dynamically present architectural ideas. 4. Promoting Innovation and Creativity: - Innovative Design: Encouraging innovative thinking in the design of architectural projects using modern visualization techniques. - Personal Development: Developing personal and professional skills in using modern tools and programs in the field of architectural visualization.

2. Teaching and Learning Strategies 2. Project-based learning: Students can work on real projects or simulate the architectural design process. This allows them to apply theoretical concepts in real-life contexts and gain the necessary practical experience. 3. Critique and problem-solving: Students are presented with real-life problems or case studies for them to solve using their acquired skills and knowledge. This enhances critical thinking and

problem-solving abilities		
Strategy	6. Interactive Lectures 7. Project-Based Learning 8. Experiential Learning 9. Performance-Based Assessment 10. Use of Multimedia	Application 1. Providing interactive lectures that include open discussions and questions aimed at stimulating critical thinking among students. 2. Students can work on real projects or simulate the architectural design process. This helps them apply theoretical concepts in a practical setting and develop their architectural visualization skills. 3. Workshops or practical sessions can be organized where students experiment with different programs and tools themselves. This enhances their understanding of the techniques and software used in architectural visualization. 4. Evaluating students based on their performance on practical projects and the quality of the designs they submit. This provides a more accurate assessment of students' skills and practical abilities. 5. Using educational videos and interactive presentations to help students understand complex concepts more easily. Virtual reality can also be used to enable students to interact with 3D architectural models.

3. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1 2 3 4 5 6 7 8 9 10	2 hours	1. Basic Understanding of the Software Used: - Students will be able to use 3D modeling software. - Students will be able to work with architectural visualization software. 2. Develop Practical Skills: - Students will acquire the skills necessary to create realistic 3D models. - Students will be able to apply architectural visualization	Introduction to 3ds Max, the program's drawing panel, basic settings, and the program's main menus. Learn the basic commands and commands used in 3ds Max. Learn how to draw 2D geometric shapes, edit curved line applications, and import a 2D AutoCAD file. Learn how to create advanced and 3D	Project-based learning: - Assigning students architectural design projects that require the use of various software and tools, encouraging them to work on them independently or in groups, while providing necessary guidance and support. 2. Blended learning by	Theoretical and practical lectures with exams, assessments, reports, and preliminary and final poster presentations.

11 12 13 14 15		techniques and add materials and lighting professionally. 3. Ability to Analyze and Present Designs: - Students will be able to analyze architectural designs and identify their strengths and weaknesses. - Students will be able to present designs professionally and effectively to clients and colleagues. 4. Use of Virtual Reality in Design: - Students will be able to use virtual reality technologies to present designs interactively. 5. Continuous Learning and Self-Development: - Students will be able to keep up with updates in architectural visualization software and technologies. 6. Collaboration and Teamwork: - Students will acquire the skills to work in teams and exchange ideas and information effectively.	architectural models (extended primitives) and pre-made models used in architectural and construction work (AEC Extended). Edit Poly applications Learn the list of modifications and the most important modifications used, and begin converting a 2D AutoCAD file to 3D. Presentation of an exterior design project (exterior design of a villa) using instructions, commands, and prices. Interior design of an architectural space using directives, commands, and modifiers + a semester practical exam. Learn about the Corona Render program and how to install it in 3ds Max. Learn how to adjust Corona cameras, adjust their main settings, and choose the appropriate shot. Adjust Corona display settings. Learn about the types and shapes of Corona light and how to choose, adjust, and determine the	providing e-learning materials such as educational videos, interactive lessons, and recorded lectures. 3. Performance-based assessment by evaluating students based on their performance in practical projects and the quality of their designs, in addition to providing detailed feedback on the strengths and weaknesses of their work. 4. Collaborative learning by encouraging students to work in teams to solve problems and exchange ideas. 5. Using media such as educational videos and interactive presentations to explain complex concepts. 6. Problem-based learning by presenting students with real-life problems or simulations for them to solve using available techniques and tools.	

			appropriate lighting to control it. Learn how to add Corona material and its types using the Material Editor and how to modify it. Learn about the Corona material library and how to create different materials. How to insert different blocks into 3ds Max and how to insert them with their materials, as well as identify the most important locations from which to obtain different blocks. Introduction to Lumion, the program interface, the command menu, and movement within the program. Importing a model from 3ds Max and starting to place and modify materials, adding and modifying elements (people, trees, vehicles, etc.), the environment, landscapes, and weather elements. Final rendering and key rendering settings to achieve a more realistic scene and prepare horizontal and vertical projections. Post-production using Adobe Photoshop, adding various backgrounds		

			and environmental effects. Presentation of an interior and exterior design project.		
			Final Exam		

4. Course Evaluation

Evaluation type **Degree** **The grade is distributed out of 100 based on the tasks assigned to the student, such as daily assessment, daily and monthly exams, written exams, reports, posters, etc.**	
Total	100

5. Learning and Teaching Resources

Required textbooks (curricular books, if any)	nothing
Main references (sources)	- Autodesk 3D Max Design- The Designer's Handbook. By Marcello Femi, AIA - Corona Render 1.3. By Giao Trinh - Mastering Lumion 3D. By Ciro Cardoso
Recommended books and references (scientific journals, reports...)	- A Fascinating journey into the world of 3D Graphics with 3ds Max. By Iftikhar Abbasov
Electronic References, Websites	https://lumion.com/ https://www.autodesk.com/

ARC316 Working Drawings (1)

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Working Drawings (1)/ Third Year
2. Course Code:
ARC316
3. Semester / Year:
First/ 2024-2025
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
Total Hours = 125 / Total Units = 3
7. Course administrator's name (mention all, if more than one name)
Name: Talat Ibrahim Al-Ani Email: talaat.alaane@uomosul.edu.iq Meyssa Muafaq/ Eman Khalid/ Sheymma Kheeraldeen
8. Course Objectives 1. To teach students the principles of designing concrete structures, as well as to identify the types of concrete structures and how to deal with them as an essential part of architectural design. 2. To implement clear practical programs that address the technical details of concrete structures, without neglecting the standards of architectural beauty. Keeping pace with the developments taking place in developed countries by offering an architectural education program that establishes a foundation based on modern technologies linked to recent developments in engineering and technical fields, particularly with regard to architectural constructions and building structures. 3. To enhance the capabilities and skills of graduates by offering specialized continuing education courses and communicating with them to support the achievement of the department's mission.

Course Objectives	Enhance critical thinking and problem-solving skills, identifying characteristics, constraints, and opportunities. ● Develop skills for architectural solutions linked to the structural framework of a building. ● Appreciate the contextual implications of architectural design ideas and their potential linkage to real-world engineering project solutions.

9. Teaching and Learning Strategies 4. Project-based learning: This strategy encourages students to engage in real-life or simulated design projects that require the application of theoretical knowledge to real-world situations. Through this approach, students can develop critical thinking and effective problem-solving skills while gaining valuable practical experience, particularly with regard to structural compositions and their details. 5. Analysis: In this strategy, students present their designs to the class and receive feedback from their peers and the instructor. This helps foster constructive criticism and opens the door to in-depth discussions about construction and composition principles, thus improving students' overall analytical and synthesis skills.

Strategy 11. Learning through	Practical application of design skills in real-life projects that simulate professional challenges. • Live analysis of structural details and their specific composition.

Projects: 12. Field Visits 13. Design Evaluation and Feedback 14. Use of Visual Media and Technology	• Promoting an interactive studio environment for presenting designs and exchanging constructive feedback. • Using drawings and CAD tools to support the learning process.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	٤ hours	Understanding Basic Concepts: Develop a deep understanding of the fundamental concepts and principles in the design and analysis of structural and structural detailing. Practical Design Skills: Develop the ability to design realistic and feasible structural design projects. Critical Evaluation and Analytical Thinking: Enhance the ability to critically and effectively analyze and evaluate existing	Introduction, Definitions, References Review of International Landscape Design Projects History of Landscape Design How to Start a Project Design from its Structural Structure Basics of Executive Drawing for Architectural Projects Design of Structural Networks for Projects Structural Spaces and Their Engineering Specifications Designing Buildings with Realism in Consistency with Executive Designs Details of Outdoor Spaces Design of Executive Details for Projects Under Study Discussion of the Report Final Exam	Interactive Learning: This approach includes the use of classroom discussions, workshops, and group activities that promote interaction between students and teachers. Practical Projects: Designing realistic projects allows students to apply their acquired knowledge in a practical setting, helping to enhance problem-solving skills and creative thinking.	Theoretical and practical lectures with daily and monthly exams, weekly reports, and preliminary, secondary, and final presentations.

		projects and design proposals. Communication Skills: Improve the ability to communicate effectively with other disciplines, including services and construction details for projects. Collaboration and Teamwork: The ability to work within multidisciplinary teams and collaborate effectively with engineers, architects, and other specialists (structural).		Field Trips and Study Visits: Visiting real-life sites allows students to see real-life structural design applications, enhancing their understanding of the challenges and opportunities in the field. Use of Technology: Digital learning through computer-aided design (CAD) software enhances students' ability to visualize projects and develop complex designs. Assessment and Feedback: Providing regular assessments and constructive feedback from teachers and peers helps students continually improve their work.	
11. Course Evaluation					

Evaluation type	**Degree**
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.	
Total	100
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	nothing
Main references (sources)	1- Working Drawings Handbook , Keith Styles , Kindle Edition , 2014 by Architectural Press , USA , 2014 . 2 - Working Drawings Handbook , Keith Styles, Andrew Bichard , SBN 9780750663724 Published September 4, 2004 by Routledge , UK , 2004 . 3 -Architectural Working Drawings, Fourth Edition , Ralph W. Liebing (Author) Ralph W. Liebing , Wiley , USA , 1999 . 4-Architectural Working Drawings: Residential and Commercial Buildings , William. Spence , John Wiley & Sons , USA , 2000 .
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

ARC317 Principles of Planning

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Principles of planning / third stage
2. Course Code:
ARC 317
3. Semester / Year:
First/ 2023-2024
4. Description Preparation Date:
2023-2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hours/ 2 ECTS credits
7. Course administrator's name (mention all, if more than one name)
Name: D. Hussein Salman Abdullah, Email: : : hussein.salman@uomosul.edu.iq
8. **Course Objectives** : • Introduce architecture students to the principles and concepts of planning, taking into account the practical importance of planning and the role of the architect in this process. Students should be able to engage with the urban planning process and its elements, including streetscapes, parking design, and master plans, in addition to providing numerous parking spaces around the world as examples of this topic. • Instill an understanding of sustainability in cities through water management, environmental integration with nature, and waste recycling.

Course Objectives	-Enhance philosophical thinking and urban problem-solving skills, identifying characteristics, constraints, and opportunities -Develop modern urban planning skills • Appreciate the cultural, social, and historical contexts of urban planning.
9. Teaching and Learning Strategies	
Strategy	•Lecture strategy •Discussion strategy •Problem-solving strategy • Cooperative learning strategy

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Understanding Basic Concepts	Introduction, definitions of the development of urban planning concepts and principles, and the role of the architect	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	
2	2	Understanding the	The emergence of	Interactive learning: This approach includes the use of	quizzes

		characteristics of human settlements and how they emerged in ancient civilizations	human settlements in ancient civilizations	class discussions, cooperative learning in groups,	
3	2	• Types of urban planning networks and the reasons for their emergence	Medieval and Islamic cities	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	classwork
4	2	•The theory of garden cities •Satellite cities and linear cities •Conical cities •Le Corbusier's ideas • Use of the grid system	Modern theories and ideas of urban planning	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	classwork
5	2	Term exam 1			
6	2	•The concept of sustainability in cities •Characteristics of sustainable cities •Types of sustainability and their applications • The most important sustainable cities in the Arab world	Sustainable and Contemporary Cities	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	classwork
7	2	•Components of urban areas •Types of street systems •Street classification •Components of urban streets • Street furniture	Elements of Urban Spaces and Streets	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	classwork
8	2	•Street identification and planning •Bridges • Types of	Technical Aspects of Street Planning	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	classwork

		bridges and their importance			
9	2	Term exam 2			
10	2	•How to plan walkways • Walkway furniture	Technical Aspects of Walkway Planning	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	classwork
11	2	•Types of garages • Garage planning systems on public streets	Planning Aspects of Parking Garages	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	classwork
12	2	According to the report topic	Seminars	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	Report
13	2	According to the report topic	Seminars	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	Report
14	2	According to the report topic	Seminars	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	Report
15	2	According to the report topic	Seminars	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	Report

11. Course Evaluation

Evaluation type	**Degree**
1 quizzes	7
Report	6
10 classwork	7
Term exam 1	10
Term exam 2	10
Final exam	60
Total	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	▪ "Ecological Design and Planning" - يقدم جورج إف. طومسون وفريدريك آر. ستاينر، رؤى حول كيفية تضمين مبادئ الاستدامة في تصميم وتخطيط المواقع الخارجية. ▪ جالين ، آرثر ب. ،The Urban Pattern ،Van Nostrand Reinhold Co. Chapin ،F. Stewart ،Urban Land use Planning ،University of Illinois
Recommended books and references (scientific journals,	▪ Simonds - كتاب يغطي جوانب متعددة من تخطيط وتصميم البيئي من الناحية النظرية والعملية.

reports...)	▪ مجلة " Urban Planning" - مجلة علمية تنشر بحوثاً ودراسات حول تخطيط وتصميم المدن والعمران. ▪ "Ecological Design and Planning" بواسطة George F. Thompson و Frederick R. Steiner - يقدم الكتاب منظوراً على كيفية دمج مبادئ الاستدامة في تصميم وتخطيط المدن.
Electronic References, Websites	

ARC313 Architectural Conservation Methods

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Architectural Conservation Methods / Third Year
2. Course Code:
ARC313
3. Semester / Year:
First/ 2024-2025
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
Total Hours = ٣*١٥ =٧٥ **/ Total Units = 2**
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Imad Hani Ismail Al-Alaf Email: emad.hani.ismaeel@uomosul.edu.iq
8. Course Objectives

Course Objectives	Learn the most important theories in the field of preserving historic buildings and sites. 2. Learn the most important causes of deterioration of historic buildings and structures. 3. Learn the most important methods for assessing the heritage value of historic buildings, sites, and existing urban environments. 4. Learn about preventive conservation mechanisms and procedures and utilize modern digital technologies in the maintenance of historic buildings and structures.
9. Teaching and Learning Strategies	
Strategy	Using lectures, periodic scholarly discussions, report presentations, and site visits. Upon successful completion of this semester, students will be able to: 1. Understand the basic principles of architectural heritage conservation. 2. Prepare well-designed reports for the management of historic buildings. 3. Understand cultural heritage management and cultural heritage legislation. 4. Understand the implications of cultural heritage management for cultural heritage conservation and tourism. 5. Understand the communication process in cultural heritage conservation and preservation. 6. Understand the historical development and current status of cultural heritage studies in Iraq and the world.

10. Course Structure

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

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	۳ weekly		Causes of Deterioration in Historic Buildings and Sites Sustainable Urban Conservation Degrees of Intervention in Building Conservation International Conventions for the Conservation and Management of World Cultural Heritage Adaptive Reuse of Historic Buildings Evaluating the Heritage Significance of Historic Buildings and Sites Semester Exam Integrated Conservation and Planned Conservation Preventive Conservation, Architectural Representation, and Modeling Photogrammetric Techniques and Modeling of Buildings and the Urban Fabric of Cities Agisoft PhotoScan CIM - City Information Management Virtual Reality and the Application of Geographic Information Systems (GIS) in Heritage Conservation Application Final Exam	Scientific Lecture and Homework Scientific Lecture and Homework Scientific Lecture and Homework Scientific Lecture and Homework Scientific Lecture and Homework Scientific Lecture and Homework Scientific Lecture and Homework Scientific Lecture and Homework Scientific Lecture and Homework Scientific Lecture and Homework Scientific Lecture and Homework Scientific Lecture and Homework Project and Report	Daily Daily Day and Homework Daily and Homework Daily and Homework Daily and Homework Daily and Homework Daily and Homework Daily and Homework Daily and Homework Daily and Homework Daily and Homework Daily and Homework Project and Report

11. Course Evaluation	
Evaluation type	**Degree**
Total	100
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

STR317 Reinforced Concrete Structures (1)

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Reinforced Concrete Structures (1) / Third Year
2. Course Code:
STR317
3. Semester / Year:
First/ 2024-2025
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
Total Hours = ٣*١٥ =٧٥ **/ Total Units = 2**
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Dr. Mohammed Shakib Email: mohammed.aljawahery@uomosul.edu.iq
8. Course Objectives

Course Objectives	On successful completion of this course, students will be able to: ● Recognize the design philosophy of reinforced concrete structure (i, ii). ● Understand the difference between the structural behavior of different reinforced concrete structural elements through demonstration experiments and data analysis (i). ● Be able to analyze reinforced concrete structural systems under gravity and lateral Loads (i). ● Be able to design different elements of reinforced concrete structural systems subjected to gravity and lateral loads (i, ii, vi). ● Be able to analyze and design a complete structural system through a comprehensive design project (ii, vi). ● Be able to produce a complete project document and present in a concise and complete manner to include structural drawings and structural calculations(vi, vii).
9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 2 3	٢ weekly	- Recognize the design philosophy of reinforced concrete structure. - The difference between structural behavior	Introduction to Reinforced Concrete Flexural Analysis of Beams (working stress	Problem solving	Quizzes and exams

4 5 6 7 8 9 10 11 12 13 14 15		- Structural behavior of different reinforced concrete structural elements - concrete structure. demonstration - analyze reinforced concrete structural systems under gravity and lateral Loads - design different elements of reinforced concrete - Analyze and design a complete structural system through a comprehensive design project - produce a complete project document and present in a concise and complete manner to include structural drawings and structural calculations	method) Flexural Analysis of Beams (working stress method) Flexural Analysis of Beams (Ultimate) According to ACI Code Flexural Analysis of Beams (Ultimate) According to ACI Code Analysis and Design of Doubly Reinforced Beams Analysis and Design of Doubly Reinforced Beams Analysis and Design of T Beams and Doubly Reinforced Beams Analysis and Design of T Beams and Doubly Reinforced Beams Shear Stresses in Concrete Beams; Design for Shear Shear Stresses in Concrete Beams;		

			Design for Shear Columns Design of Short Columns Subject to Axial Load and Bending Design and Analysis of Eccentrically Loaded Columns Using Interaction Diagrams Design and Analysis of Eccentrically Loaded Columns Using Interaction Diagrams Total		

11. Course Evaluation

Evaluation type	**Degree**
3 quizzes	10
Homework	10
Term exam	20
Final Exam	60
Total	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	none
Main references (sources)	• Darwin, David, Charles William Dolan, and Arthur H. Nilson.Design of concrete structures. New York, NY, USA:: McGraw-Hill Education, 2020. • Hassoun, M. Nadim, and AkthemAl-Manaseer.Structural concrete: theory and design. John wiley& sons, 2020. • Aghayere, A. O. , Limbrunner, George F. (2014) "DESIGN OF REINFORCED CONCRETE"8th ed. Library of Congress, USA.
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

UoM312 English Language Intermediates

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
English- Intermediate
2. Course Code:
UoM312
3. Semester / Year:
First/ 2025-2024
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hours/ 2 ECTS credits
7. Course administrator's name (mention all, if more than one name)
Name: Rawia Marwan dabdoob, Email: : : rawia.danbdoob@uomosul.edu.iq
8. Course **Objectives** : The curriculum integrates a balanced syllabus that supports the four skills of listening, reading, writing and speaking. The curriculum followed an integrative approach that provides linguistic information, grammatical and vocabulary. The curriculum emphasizes on to parts of learning English Language: firstly, 'Everyday English', and secondly, 'Spoken grammar'. Accordingly, the curriculum focused on formal linguistic rules, methods of writing and formulating them, tenses of verbs and their uses, auxiliary verbs, compound sentences, interrogative sentences, tools for affirmation, affirmation and negation sentences. The curriculum also focused on the daily language spoken by the general public in daily life, which included talking about general information, personal preferences, expressing opinion, advice, support and rejection...ect. Besides, the curriculum emphasizes on the way the sentences are pronounced in the English Music tone. In addition, the curriculum included articles to develop reading skills by understanding the general context with related questions about the article.

Course Objectives	On successful completion of this course, students will be able to: ● Remember the words of English language and recall their meanings. (iv) ● Understand others' ideas. (iv) ● Improve skills of communication with others: listening, reading, writing, and speaking. (iv)
9. Teaching and Learning Strategies	
Strategy	•Lecture strategy •Discussion strategy • Cooperative learning strategy

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	• Understanding the basic grammar.	Unit 1: A world of difference Present,	Interactive learning: This approach includes	homework

		• Enriching vocabulary. • Practicing reading and speaking	past, present perfect tenses Auxiliary verbs Questions and negatives Short answers Sounding polite	the use of class discussions, cooperative learning in groups	
2	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	Unite 2: The working week Present and continuous tenses State verbs Passive How often	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	classwork
3	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	Unit 3: Good time, bed Past tenses	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	homework
4	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	Unit 4: Getting it right Modal and related verbs	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	homework
5	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	.Unit 5: Our Changing world Future forms Future possibiliies		homework
6	2	• Understanding the basic grammar. • Enriching vocabulary. • Practicing reading and speaking	Term Exam	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	exam

7	2	• Understanding the basic grammar. • Enriching vocabulary. • Practicing reading and speaking	Unit 6: What matters to me Information questions	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	classwork
8	2	• Understanding the basic grammar. • Enriching vocabulary. • Practicing reading and speaking	Unit 7: Passions and fashions Present perfect Passive Adverbs Time expressions	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	homework
9	2	• Understanding the basic grammar. • Enriching vocabulary. • Practicing reading and speaking	Unit 8: No fear Verb patterns The infinitive The reduced infinitive		
10	2	• Understanding the basic grammar. • Enriching vocabulary. • Practicing reading and speaking	Unit 9: It depends how you look at it Conditionals Might have done/ could have done Should have done	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	homework
11	2	• Understanding the basic grammar. • Enriching vocabulary. • Practicing reading and speaking	Unit 10: All things high tech Noun phrases Possessives Reflexive pronouns and each other	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	homework
12	2	• Understanding the basic grammar. • Enriching vocabulary. • Practicing reading and	Unit 11: Seeing is believing Present and past Modals of probability Looks like /	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	homework

		speaking	looks Expressing disbelief		
13	2	• Understanding the basic grammar. • Enriching vocabulary. • Practicing reading and speaking	Unit 12: Telling it how it is Reported Speech Reported thoughts Reported questions	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	homework
14	2	• Understanding the basic grammar. • Enriching vocabulary. • Practicing reading and speaking	Listening and Reading	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	
15	2	• Understanding the basic grammar. • Enriching vocabulary. • Practicing reading and speaking	Listening and Reading	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	

11. Course Evaluation

Evaluation type	Degree
Homework	15
Classwork	10
Term exam	15
Final exam	60
Total	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	▪ Liz and John Soars (2012) New Headway Intermediate Student's Book Fourth Edition. OXFORD University Press. ISBN-13 : 978-0194770200
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

ARC322 Building Services (Lighting)

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Building Services (Lighting) / Third Year
2. Course Code:
ARC322
3. Semester / Year:
First/ 2024-2025
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
Total Hours = ٣٠ / Total Units = 2
7. Course administrator's name (mention all, if more than one name)
Name: A.M. Ahmed Abdel-Wahab Al-Fakhry Email:ahmed.alfakhry@uomosul.edu.iq
8. Course Objectives

Course Objectives	This course provides students with sufficient knowledge in the field of general engineering construction services. Therefore, there are several objectives that can be achieved, as listed below: 1. Through this course, students will learn how to deal with other engineering disciplines, which are essential in construction. 2. This course provides a sufficient understanding of most engineering services, which is required during the conceptual phase of the building design process, and provides students with sufficient partial qualifications in construction engineering services. 3. This course provides students with effective knowledge, supported by examples and homework assignments, to examine the electrical and mechanical systems that are fundamental to construction and architectural design, and the necessary practical skills. 4. This course provides students with sufficient practical knowledge of terminology and requirements (spatial and structural). 5. This course enhances students' problem-solving skills.
9. Teaching and Learning Strategies	
Strategy	1. Theoretical lectures updated annually based on technological advancements in engineering services, supported by educational videos. 2. Demonstration tools such as light measuring devices, various lighting devices, fire and smoke sensors, and others. 3. Classroom or homework assignments in the form of an application of engineering services systems in projects designed by students. 4. Field visits. 5. Recent research related to the relationship between engineering services and architecture.

10. Course Structure

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

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	2 hours 2	Understanding Basic Concepts: Develop a deep understanding of the fundamental concepts and principles of engineering services design and their applications. Practical Design Skills: Develop the ability to design engineering services applications, especially those on small scales. Critical Evaluation and Analytical Thinking: Enhance the ability to critically and effectively analyze and evaluate engineering services applications of all kinds in existing projects and design proposals, along with other engineering disciplines. Communication Skills: Improve the ability to communicate effectively, both written and verbally, with engineering services engineers, and the ability to present design alternatives, design ideas, and concepts that enhance the development of designed projects. Environmental Responsibility: Understand and apply sustainable design principles in engineering services, improving the overall quality of life. Cooperation and Teamwork: The ability to work within multidisciplinary teams and collaborate effectively with engineering services engineers.	Introduction to Engineering Services The Relationship Between Architecture and Engineering Services Electrical Installations and Electrical Services Systems Interior Lighting Designs 1 Interior Lighting Designs 2 Exterior Lighting Designs 1 Exterior Lighting Designs 2 Fire Alarm and Detection Systems Fire Suppression and Fighting Systems HVAC Systems 1 HVAC Systems 2 Transportation Systems Elevators Transportation Systems Escalators Integration of Engineering Services General Review and Discussion Final Exam	Interactive Learning: This approach includes the use of classroom discussions, workshops, and group activities that promote interaction between students and teachers. Practical Projects: The application of engineering services in student designs allows students to apply their acquired knowledge in a practical setting and helps enhance problem-solving and creative thinking skills. Field Trips and Study Visits: Visits to real-life sites enable students to see the applications of engineering services in practice and in implemented designs, enhancing their understanding of the challenges and opportunities in the practical field.	Daily and semester exams, reports, descriptive homework, and applied engineering services projects in architectural designs.

11. Course Evaluation	
Evaluation type	**Degree**
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.	
Total	100
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Nothing
Main references (sources)	• Electrical Installations, Dr. Muzaffar Al-Nama, Dr. Sinan Attar Bashi, 1982 • Architectural Electrical Services Engineering, Dr. Muzaffar Al-Nama, 2012 • Arabic Lighting Design, Ezzat Baroudi, 2008 3 • Environment and Services by Peter Burberry Dip Arch, MSc, RIBA, FCIOB, London, Basford Limited, 1986 • Architectural Lighting Design, a Practical Guide, Admire Jukanovic, 2018 Building Control Systems, Vaughn Bradshaw, 1985
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	www.erco.com www.zumtobel.com www.dialux.com

ARC324 Architectural Documentation

13. Course Name:	
Architectural Documentation	
14. Course Code:	
ARC 263	
15. Semester / Year:	
Elective Autumn Semester/2023-2024	
16. Description Preparation Date:	
2023-2024	
17. Available Attendance Forms:	
In the class, online	
18. Number of Credit Hours (Total) / Number of Units (Total)	
2/2	
19. Course administrator's name (mention all, if more than one name)	
Dr. Emad Hani Ismaeel emad.hani.ismaeel@uomosul.edu.iq	
20. Course Objectives	
Description	Architectural documentation is a scientific course with theoretical and practical parts, concerned with providing and analyzing information specialized in the field of urban conservation, especially the techniques and technologies of architectural documentation of historical buildings and the built environment. The semester establishes for fundamental base for the conservation and documentation processes, and provides the ability to use different techniques and tools for this purpose.
Course Objectives	The semester seeks to present and discusse the modern and contemporary tools and techniques used to collect and document spatial information and data related to historical constructions and sites, and later used in the activities of preserving the urban heritage, and the ways and mechanisms for digitally representing and extracting them in a variety of formats, while reviewing the characteristics, capabilities, efficiency and shortcomings of these technologies.
Course Outcomes	The student who exceeds the semester will be able to complete the architectural documentation and submit the engineering documents required for the survey and registration processes. He will also be able to learn about a number of advanced devices and technologies recently used in the field of architectural documentation with knowledge of its strengths and weaknesses. On completion of this course, students will be able to demonstrate through practical exercises on cultural heritage properties a basic understanding of the techniques involved in the conservation of cultural heritage; and realize the basic deterioration processes of historic objects.
21. Teaching and Learning Strategies	
Strategy	The strategy is achieved through lectures, e-learning platforms, and giving home and class assignments.
22. Course Structure	

Week	Hours	Required Learning Outcomes		Learning method	Evaluation method
1st	2	Conservation history, process and objectives.		PowerPoint and Electronic	Daily exam

		International charters and organizations. The Heritage of Iraq and its old cities. Iraqi experiments in conservation and documentation.		lecture	
2nd	2	Modern technologies and activities of documentation and urban conservation Urban preservation and the problem of multiplicity of modern technologies for documentation and information management Representation and three-dimensional models in documenting urban heritage Digital engineering models, their types and advantages in documentation and urban conservation activities		PowerPoint and Electronic lecture	Daily exam and Homework
3rd	2	Contact Techniques for 3D Information Acquisition		PowerPoint and Electronic lecture	Daily exam and Homework
4th	2	Photogrammetry		PowerPoint and Electronic lecture	Daily exam and Homework
5th	2	Laser Scanning		PowerPoint and Electronic lecture	Daily exam and Homework
6th	2	Non-Destructive Techniques Infrared Thermography-IR		PowerPoint and Electronic lecture	Daily exam and Homework
7th	2	Global Positioning System – GPS		PowerPoint and Electronic lecture	Daily exam and Homework
8th	2	1st term Exam		PowerPoint and Electronic lecture	Exam
9th	2	360 degrees panorama software, benefits, how to create, case study .		PowerPoint and Electronic lecture	Daily exam and Homework
10th	2	Virtual reality- aims, requirements, interaction types .		PowerPoint and Electronic lecture	Daily exam and Homework
11th	2	VR benefits and limitation, VR systems. ٣D virtual city, Virtual Museums		PowerPoint and Electronic lecture	Daily exam and Homework

12th	**2**	Geographic information system (GIS)		PowerPoint and Electronic lecture	Daily exam and Homework
13th	**2**	Unmanned Aerial Vehicles Robots Documentation of Underwater Heritage		PowerPoint and Electronic lecture	Daily exam and Homework
14th	**2**	3D Printers		PowerPoint and Electronic lecture	Daily exam and Homework
15th	**2**	2nd term Exam		PowerPoint and Electronic lecture	Exam

23. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports .... etc

quizzes	10pt
H.W	5pt
report	5pt
term Exam	20pt
Final Exam	60pt
Total	100pt

24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	• Al-Allaf, Emad Hani, Representation Technologies of the Built Heritage, 2018. • Al-Allaf, Emad Hani, Information modeling and management technology for historical sites and urban heritage buildings, 2018.
Main references (sources)	• Al-Allaf, Emad Hani, Representation Technologies of the Built Heritage, 2018. • Al-Allaf, Emad Hani, Information modeling and management technology for historical sites and urban heritage buildings, 2018. ٢٠١٨
Recommended books and references (scientific journals, reports...)	Al-Rafidain Engineering Journal
Electronic References, Websites	

ARC325 Advanced Computer Applications

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Advanced Computer Applications / Third Year
2. Course Code:
ARC325
3. Semester / Year:
First/ 2024-2025
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
Total Hours = 60 / Total Units = 2
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Reem Ali Talib Email: reemalothman@uomosul.edu.iq
8. Course Objectives Providing students with the knowledge and skills necessary to integrate the use of advanced computer software in visualizing architectural projects. Developing practical skills in visualizing architectural projects realistically. Enhancing students' innovation and creativity through learning various software applications.

Course Objectives	1. Enhancing Technical Skills: Enabling students to use advanced software such as 3ds Max, Lumion, Photoshop, and AutoCAD to develop 3D models, add materials, and create realistic scenes, as well as Google Earth Pro. 2. Creativity in Design: Teaching students how to enhance images and professionally present architectural plans using Photoshop, enhancing the quality of architectural presentations. 3. Developing Integrated Projects: Training students to design architectural posters and logos, helping them present their projects in an attractive and comprehensive manner. 4. Practical Application: Focusing on the practical aspect through the creation of videos and 3D models, enhancing students' understanding of real-world applications in the field of architecture. 5. Visual Communication: Developing students' skills in presenting architectural ideas in an attractive and understandable visual manner.

9. Teaching and Learning Strategies 6. Project-based learning: Students can work on projects that can be applied in real-world situations. This allows them to apply theoretical concepts in real-world contexts, gain practical experience, and prepare them for the job market. 7. Critique and problem-solving: Students are presented with real-life problems or case studies for them to solve using the acquired skills and knowledge, enhancing critical thinking and problem-solving abilities.

Strategy **18. Interactive Lectures** **19. Project-Based Learning** **20. Collaborative Learning** **21. Continuous Assessment**	Application 1. Provide interactive lectures that include open discussions and questions aimed at stimulating critical thinking among students. 2. Assign students practical projects, such as designing 3D models or architectural posters. Provide clear guidelines and specific objectives for each project. 3. Divide students into small groups to work on shared tasks and encourage discussion and exchange of ideas among group members. 3. Use programs such as 3ds Max, Lumion, and Photoshop as teaching tools. Provide practical lessons on how to use these programs. 4. Provide students with periodic feedback on their progress. Use a variety of assessment tools.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 2 3 4 5 6 7 8 9 10 11	Four hours per week	Basic Understanding of the Software Used: - Students will be able to use 3D modeling software. - Students will be able to work with various architectural visualization software programs that integrate with each other. 2. Develop Practical Skills: - Students will acquire the skills necessary to create realistic 2D and 3D models. - They will be able to use multiple	- Architectural poster design basics using Photoshop - Designing an architectural project for a residential complex - Using Google Earth Pro to select a site and define the site boundaries for the purpose of visualizing the project site. - How to render horizontal plans drawn in AutoCAD by creating a printer and exporting it to Photoshop, adding materials, and furnishing the spaces. - Converting 2D horizontal plans of the project into a 3D project using 3ds Max - Exporting the project to Lumion and adding various materials and	Project-based learning: - Assigning students architectural design projects that require the use of various software and tools, encouraging them to work on them independently or in groups, while providing necessary guidance and support. 2. Blended learning by providing e-learning materials such as educational videos, interactive lessons, and recorded lectures. 3. Performance-based assessment by evaluating students based on their performance in	Theoretical and practical lectures with exams, assessments, reports, and preliminary and final presentations of posters and videos.

12 13 14 15		software programs and integrate them. 3. Present designs professionally and effectively to clients and colleagues. 4. Use of Virtual Reality in Design: - Students will be able to use virtual reality technologies to present designs interactively. 5. Continuous Learning and Self-Development: - Students will be able to keep up with updates in various software programs. 6. Collaboration and Teamwork: - Students will acquire the skills to work in teams and exchange ideas and information effectively.	environmental effects to the project. - Post-production in Photoshop for multiple images resulting from rendering any architectural scene in Lumion - The Blend Mode menu in Photoshop and how to use it for optimal control over the images produced by Lumion - Learn how to design a logo for each project in Photoshop - Learn the Tools menu in Lumion and its most important applications for maximum control. - Post-production using Adobe Photoshop and adding various backgrounds and environmental effects. - Create a video using Lumion and learn how to add various effects. - Animate people and cars by adding motion paths to give scenes more realistic effects. - Produce professional videos. Final Exam	practical projects and the quality of their designs, in addition to providing detailed feedback on the strengths and weaknesses of their work. 4. Collaborative learning by encouraging students to work in teams to solve problems and exchange ideas. 5. Using media such as educational videos and interactive presentations to explain complex concepts. 6. Problem-based learning by presenting students with real-life problems or simulations for them to solve using available techniques and tools.	

11. Course Evaluation

Evaluation type	**Degree**
Total	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if	

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

ARC326 Working Drawings (2)

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Working Drawings (2) / Third Year
2. Course Code:
ARC326
3. Semester / Year:
Second / 2024-2025
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
Total Hours = / Total Units = 2
7. Course administrator's name (mention all, if more than one name)
Name: Talat Ibrahim Al-Ani Email: talaat.alaane@uomosul.edu.iq Meyssa Muafaq/ Eman Khalid/ Sheymma Kheeraldeen
8. Course Objectives • To teach students the principles of designing steel structures, as well as to identify the types of steel structures and how to deal with them as an essential part of architectural design. • To implement clear practical programs that address the technical details of steel structures, without neglecting the standards of architectural beauty. Keeping pace with the developments taking place in developed countries by offering an architectural education program that establishes a foundation based on modern technologies linked to recent developments in engineering and technical fields, particularly with regard to architectural construction and building installations. To enhance the capabilities and skills of graduates by offering specialized continuing education courses and communicating with them to support the achievement of the department's mission.

Course Objectives	• Enhance critical thinking and problem-solving skills, identifying characteristics, constraints, and opportunities.Develop skills for architectural solutions linked to the structural framework of a building. • Appreciate the contextual implications of architectural design ideas and their potential linkage to real-world engineering project solutions.
1. Teaching and Learning Strategies	
Strategy	• Project-based learning: This strategy encourages students to engage in real-life or simulated design projects that require the application of theoretical knowledge to real-world situations. Through this approach, students can develop critical thinking and effective problem-solving skills while gaining valuable practical experience, particularly with structural compositions and their details. • Analysis: In this strategy, students present their designs to the class and receive feedback from their peers and the instructor. This helps foster constructive criticism and opens the door to in-depth discussions about construction and composition principles, improving students' overall analytical and synthesis skills.
2. Course Structure	

Learning through Projects: Site Visits Design Evaluation and Feedback Use of Visual Media and Technology	• Practical application of design skills in real-life projects that simulate professional challenges. • Direct analysis of structural details and their specific composition. • Promoting an interactive studio environment for presenting designs and exchanging constructive feedback. • Using drawings and CAD tools to support the learning process.

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 hours	Understanding Basic Concepts: Develop a deep understanding of the fundamental concepts and principles in the design and analysis of structural and structural detailing. Practical Design Skills: Develop the ability to design realistic and feasible structural design projects. Critical Evaluation and Analytical Thinking: Enhance the ability to critically and effectively analyze and evaluate existing projects and design proposals. Communication Skills: Improve the ability to communicate effectively with other disciplines, including services and construction details for projects. Collaboration and Teamwork: The ability to work within multidisciplinary	Introduction, Definitions, References Review of International Landscape Design Projects History of Landscape Design How to Start a Project Design from its Structural Structure Basics of Executive Drawing for Architectural Projects Design of Structural Networks for Projects Structural Spaces and Their Engineering Specifications Designing Buildings with Realism in Consistency with Executive Designs Details of Outdoor Spaces Design of Executive Details for Projects Under Study Report Discussion Final Exam	Interactive Learning: This approach includes the use of classroom discussions, workshops, and group activities that promote interaction between students and teachers. Practical Projects: Designing realistic projects allows students to apply their acquired knowledge in a practical setting, helping to enhance problem-solving skills and creative thinking. Field Trips and Study Visits: Visiting real-life sites allows students to see real-life structural design applications, enhancing their understanding of the challenges and opportunities in the field. Use of Technology: Digital learning through computer-aided design (CAD) software enhances students' ability to	Theoretical and practical lectures with daily and monthly exams, weekly reports, and preliminary, secondary, and final presentations.
2	2 hours				
3	2 hours				
4	2 hours				
5	2 hours				
6	2 hours				
7	2 hours				
8	2 hours				
9	2 hours				
10	2 hours				
11	2 hours				
12	2 hours				
13	2 hours				
14	2 hours				
15	3 hours				

		teams and collaborate effectively with engineers, architects, and other specialists (structural).		visualize projects and develop complex designs. Assessment and Feedback: Providing regular assessments and constructive feedback from teachers and peers helps students continually improve their work.	

3. Course Evaluation

Evaluation type	**Degree**
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.	

4. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	١-Working Drawings Handbook , Keith Styles , Kindle Edition , 2014 by Architectural Press , USA. ٢-Design of Steel Structures , Mc Graw Hill India , Brand New, International Softcover Edition , 3rd edition 2017 , USA . ٣-Architecture and Construction in Steel , Alan Blanc, Michael Mc Evoy, Roger Plank, ISBN 9780419176602 , Taylor & Francis , 2019 , USA .
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	
Curriculum or description update rate	5%

ARC327 Logic & Design Methodology

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Logic and Methodology of Design
2. Course Code:
ARC 352
3. Semester / Year:
First/ 2024-2025
4. Description Preparation Date:
12/4/2025
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hours/ 2 ECTS credits
7. Course administrator's name (mention all, if more than one name)
Name: Assist Prof Dr. Oday Qusay Alchalabi , Email: odaychalabi@uomosul.edu.iq
8. Course Objectives

Course Objectives	• Enhance students' design skills by following the correct methodology and logical processes. • Outline a design approach that can enhance design creativity after graduation and entry into the job market. • Understand how logic and methodology can improve design and achieve project objectives through clear and logical steps. • Learn the principles of creative thinking and the role of designers and users in the design process. • Learn how the analysis process can help designers initiate and develop new projects.
Learning Objectives	• Identify design problems and decide which problems to begin designing. • Identify the stages of solving a design problem and how to gather and integrate information into the design. • How to rely on the designer's mind to visually match the design thinking process to find logical solutions. • Rely on deduction, induction, guidance, and representation in logical thinking when solving a design problem and developing creative ideas.

9. Teaching and Learning Strategies	
Strategy	• Lecture Strategy • Discussion Strategy • Problem-Solving Strategy • Cooperative Learning Strategy • Visits and Interviews Strategy

Strategy:	**Application**
1. Use of visual media and technology	1. Promote an interactive studio environment for lecture presentations and discussions to reflect a realistic picture of professional challenges.
2. Classroom assignments	2. Enhance understanding through class assignments, including the process of gathering and analyzing information to solve design problems.
3. Field visits	3. Enhance understanding through real-life projects through field

4. Cooperative learning	visits and interviews with designers to expand understanding of design approaches. 4. Rely on brainstorming to solve a specific design problem and provide and develop design solutions and alternatives.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1	2/week	Understanding basic concepts	Introduction, Definitions, Design and Methodology	Interactive learning: This approach includes the use of classroom discussions.	
Week 2	2/week	Understanding the initial design process and its relationship to the designer's mind	Logical Thinking and Its Relationship to Methodology	Interactive learning: This approach includes the use of classroom discussions.	Daily Exam
Week 3	2/week	Thinking and its application mechanisms	What is Thinking and How to Apply It in Design	Interactive learning: This approach includes the use of classroom discussions.	Monthly Exam
Week 4	2/week	Architectural thinking mechanisms	The Principle and Mechanism of Logical Thinking	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	Classroom Homework
Week 5	2/week	Understanding architectural design	The Design Process	Interactive learning: This approach includes the use of classroom discussions.	Classroom Homework
Week 6	2/week	Identifying design needs	Design and Its Basic Needs	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	Monthly Exam
Week 7	2/week	Understanding design theories and processes	Architectural Design Mechanisms	Interactive learning: This approach includes the use of classroom discussions.	Daily Exam
Week 8	2/week	Learning the factors that can influence the design proces	Factors Influencing the Design Process	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	Daily Exam
Week 9	2/week		Term Exam 1		
Week 10	2/week	Knowing the design methodology and how to define it	Design Methodology and Thinking Methods	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	Classwork
Week	2/week	Learning the basic	Types of Design	Interactive learning: This	Daily Exam

11		and subtypes of design methodology	Methodologies	approach includes the use of class discussions, cooperative learning in groups,	
Week 12	2/week	Understanding logic, logical thinking, and the importance of adopting it as part of the design process	Logic and Logical Thinking	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	Discussion
Week 13	2/week	Learning the elements and types of logic	Logic and Its Types	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	Discussion
Week 14	2/week		Term Exam 2		
Week 15	2/week	Report discussion	Seminars		discussion

11. Course Evaluation

Evaluation type	**Degree**
4 quizzes	١٠
١ homework	٥
١ classwork	٥
Term exam١	٧.٥
Term exam٢	٧.٥
Report	5
Final exam	60
Total	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	▪ Methodology of architectural design
Recommended books and references (scientific journals, reports...)	▪ The psychological language of architecture ▪ Rethinking Design and Interiors: Human Beings in the Built Environment
Electronic References, Websites	-------
Course Update	5%

Name and signature of course holder head

Assistant Professor Uday Qusay Alchalabi,

Name and signature of department or branch

Assistant Professor Omar Hazem Kharofa

ARC328 Architecture & Acoustic

University of Mosul College of Engineering Architectural Engineering Department

• Course Name:
Architecture & Acoustic / third level
• Course Code:
ARC328
• Semester / Year:
First/ 2024-2025
• Description Preparation Date:
12/4/2025
• Available Attendance Forms:
Lectures in the classroom
• Number of Credit Hours (Total) / Number of Units (Total)
60 hours/ 2 ECTS credits
• Course administrator's name (mention all, if more than one name)
Name: Assist Prof Dr. Bassam Al-Hafith , Email: bisam.alhafiz@uomosul.edu.iq
• Course Objectives

Course Objectives	• Introduce students to the basic concepts of the relationship between sound and architectural space, and the foundations of architectural acoustics. • Enabling students to understand the mechanisms of sound production, transmission, and propagation within indoor and outdoor spaces. • Analyze the effects of various types of noise and apply noise reduction standards to buildings and urban areas. • Develop applied skills to evaluate the acoustic performance of speech spaces using practical measurement tools and specialized computer software. • Enhance students' ability to select appropriate architectural materials to address acoustic problems and design spaces according to optimal acoustic performance requirements.
Learning Objectives	**• Understand the basic principles of acoustics and their impact on architectural space design.** **• Identify noise sources and analyze their negative impact on the building environment.** **• Apply engineering methods to improve indoor and outdoor acoustic performance.** **• Learn about specialized tools and software for simulating and analyzing acoustic performance.** **• Evaluate speech spaces using basic acoustic performance indicators.**

• Teaching and Learning Strategies	
Strategy	• Lecture Strategy • Discussion Strategy • Problem-Solving Strategy • Cooperative Learning Strategy • Visits and Interviews Strategy

Strategy: 1. Use of visual media and technology	**Application** • Creating an interactive environment for lectures and discussions, simulating real-life challenges in designing the acoustic performance of buildings.

2. Classroom assignments 3. Field visits 4. Cooperative learning	• Implementing practical exercises that include calculating acoustic performance indicators such as reverberation time (RT60) and sound pressure level (SPL) within architectural spaces. • Field evaluation of existing spaces by conducting real measurements and comparing them to approved acoustic performance standards..

- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1 Week 2 Week 3 Week 4 Week 5 Week 6 Week 7 Week 8 Week 9 Week 10 Week 11 Week 12 Week 13 Week 14 Week 15	2/week	Understanding Basic Concepts Understanding the Basics of Sound Phenomenon The Effects and Types of Noise Building Noise Traffic Noise Sound Propagation in Outdoor Space Sound Propagation in Indoor Space Methods for Evaluating Acoustic Performance in Speech Halls Computer Programs Used in Evaluating Acoustic Performance By Report Topic By Report Topic By Report Topic By Report Topic	Introduction: Initial understanding of what is meant by architecture and acoustics How sound is produced, how sound is transmitted and propagated Noise, negative effects of noise, types of noise sources Noise standards in buildings, preferred noise standards Monthly exam Factors affecting the formation and growth of traffic noise Distance effects, enveloping effects, sound reduction methods in outdoor spaces Sound absorption phenomenon, sound-absorbing materials, types of sound absorbers Monthly exam Introduction to acoustic performance evaluation Basic acoustic standards and indicators Practical and field evaluation methods ODEON software EASE software CATT-Acoustic software Seminars Seminars Seminars	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	Daily Exam Monthly Exam Classroom Homework Classroom Homework Monthly Exam Daily Exam Daily Exam Classwork Daily Exam Discussion Discussion discussion

- Course Evaluation

Evaluation type	Degree
4 quizzes	١٠
١ homework	٥
١ classwork	٥
Term exam١	٧.٥
Term exam٢	٧.٥
Report	5
Final exam	60

Total	100
• Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	**Long, M. (2014). *Architectural Acoustics*.**
Recommended books and references (scientific journals, reports...)	**Cowan, J. P. (1994). *Handbook of Environmental Acoustics*.**
Electronic References, Websites	1. **Acoustical Society of America (ASA)** https://acousticalsociety.org/ 2. **ODEON Room Acoustics Software** https://odeon.dk/ 3. **EASE - Enhanced Acoustic Simulator for Engineers** https://www.afmg.eu/en/ease.html 4. **CATT-Acoustic Official Website** https://www.catt.se/ **Institute of Acoustics (IOA)** https://www.ioa.org.uk/
Course Update	5%

STR327 Reinforced Concrete Structures (2)

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Reinforced Concrete Structures / third level
2. Course Code:
STR327
3. Semester / Year:
First/ 2024-2025
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
93 hours/ 7 ECTS credits
7. Course administrator's name (mention all, if more than one name)
Name:fahad akram saeed Email: fahad.akram@uomosul.edu.iq
8. Course Objectives

Course Objectives	**Design of rectangular beams subjected to flexural bending and Shear design for beams moreover, Design of Short Columns Subject to Axial Load and Bending. Design of one-way slab subject to uniform load.**

9. Teaching and Learning Strategies

Strategy	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 some challenging problems to motivate students.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Introduction to Reinforced Concrete	Introduction to Reinforced Concrete	A lecture in the classroom	HW and CW
2	3	Design of singly Reinforced Beams	Design of singly Reinforced Beams	A lecture in the classroom	HW, CW, exam
3	3	Design of singly Reinforced Beams	Design of singly Reinforced Beams	A lecture in the classroom	HW, CW, exam
4	3	Design of Doubly Reinforced Beams	Design of Doubly Reinforced Beams	A lecture in the classroom	HW, CW, exam
5	3	Design of Doubly Reinforced Beams	Design of Doubly Reinforced Beams	A lecture in the classroom	HW, CW, exam
6	3	exam	exam	A lecture in the classroom	HW, CW, exam
7	3	Design of Doubly Reinforced Beams	Design of Doubly Reinforced Beams	A lecture in the classroom	HW, CW, exam
8-9	3	Design of one way slabs Reinforced Beams	Design of one way slabs Reinforced Beams	A lecture in the classroom	HW, CW, exam
10	3	Design of one way slabs Reinforced Beams	Design of one way slabs Reinforced Beams	A lecture in the classroom	HW, CW, exam

11-12	3	exam	exam	A lecture in the classroom	HW, CW, exam
13	3	Design of Short Columns Subject to Axial Load and Bending	Design of Short Columns Subject to Axial Load and Bending	A lecture in the classroom	HW, CW, exam
14	3	Design of Short Columns Subject to Axial Load and Bending	Design of Short Columns Subject to Axial Load and Bending	A lecture in the classroom	HW, CW, exam
15	3	Design and Analysis of Eccentrically Loaded Columns Using Interaction Diagrams	Design and Analysis of Eccentrically Loaded Columns Using Interaction Diagrams	A lecture in the classroom	HW, CW, exam

11. Course Evaluation

Evaluation type	**Degree**
4 quizzes	6
14 homework	7
10 classwork	7
Term exam	15
report	5
Final exam	60
Total	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Calculus I By: ❑ Darwin, David, Charles William Dolan, and Arthur H. Nilson.Design of concrete structures. New York, NY, USA: McGraw-Hill Education, 2020.
Main references (sources)	**Aghayere, A. O., Limbrunner, George F. (2014) "DESIGN OF REINFORCED CONCRETE"8th ed. Library of Congress, USA.**
Recommended books and references (scientific journals, reports...)	-------
Electronic References, Websites	-------

MODULE DESCRIPTION FORM

Course System

Fourth Level

Fourth Level

المستوى الدراسي الرابع (الفصل الاول)									
اسم المتطلب	اسم المقرر		نوع المتطلب	عدد الساعات النظرية	عدد الساعات العملية	عدد الوحدات	المهد ان وجد	رمز المقرر	الملاحظات
	باللغة العربية	باللغة الانكليزية							
متطلبات الجامعة	اخلاقيات المهنة	Professional Ethics	اجباري	2		2		UOMC404	
	اللغة الانكليزية- فوق المتوسط	English Language –Upper Intermediate	اجباري	2		2			
متطلبات القسم	التصميم المعماري (7)	Architectural Design (7)	اجباري	1	8	5	التصميم المعماري(6)	ARC 441	
	تصميم الفضاءات الداخلية	Interior Design	اجباري	1	2	2		ARC 442	
	نظريات التصميم الحضري	Theories of Urban Design	اجباري	2		2		ARC 443	
	العمارة والاستدامة البيئية	Architecture and Environmental Sustainability	اجباري	2		2		ARC 444	
	تصميم المنشات الفولاذية	Design of Steel Structures	اجباري	1	2	2		ARC 445	
	العمارة المحلية	Local Architecture	اختياري	2		2		ARC 461	يختار الطالب مقرر واحد ، عدد الوحدات المطلوبة= 2 وحدة
	اساسيات الحفاظ المعماري	Fundamentals of Architectural Conservation		1	2	2	التوثيق المعماري	ARC 462	
	علم النفس المعماري	Architectural Psychology		2		2		ARC 463	
مجموع ساعات و وحدات الفصل الاول للمستوي الرابع				13	12	19			

المستوى الدراسي الرابع (الفصل الثاني)									
اسم المتطلب	اسم المقرر		اسم المقرر	نوع المتطلب	عدد الساعات النظرية	عدد الساعات العملية	عدد الوحدات	رمز المقرر	الملاحظات
	باللغة العربية	باللغة الانكليزية							
متطلبات الكلية	تكامل المنظومات الهندسية	Engineering systems integration	اختياري	2		2		ENGE438	اجباري لطلبة القسم
متطلبات القسم	التصميم المعماري (8)	Architectural Design (8)	اجباري	1	8	5	التصميم المعماري (7)	ARC 446	
	عمارة الفضاءات الخارجية	Landscape Architecture	اجباري	1	2	2		ARC 447	
	برمجة الفضاءات المعمارية	Architectural Spaces Programming	اجباري	2		2		ARC 448	
	نظرية العمارة	Theory of Architecture	اجباري	3		3		ARC 449	
	العمارة الاسلامية	Islamic Architecture	اجباري	2		2		ARC 450	
	تقنيات البناء المتقدم	Advanced Construction Techniques	اختياري	2		2		ARC 464	يختار الطالب مقرر واحد عدد الوحدات المطلوبة= 2 وحدة
	العمارة المستدامة	Sustainable Architecture		2		2		ARC 465	
	ادارة المشاريع الانشائية	Construction Projects Management		2		2		ARC 466	
	التصميم النباتي	Planting Design		1	2	2		ARC 467	
مجموع ساعات و وحدات الفصل الثاني للمستوي الرابع				13	10	18			

UOMC404 Professional Ethics

University of Mosul College of Engineering Architectural Engineering Department

• Course Name:
Professional Ethics / Fourth Stage
• Course Code:
UOMC404
• Semester / Year:
Fall semester/2023
• Description Preparation Date:
12/4/2025
• Available Attendance Forms:
Lectures in the classroom
• Number of Credit Hours (Total) / Number of Units (Total)
4 hours/2 units
• Course administrator's name (mention all, if more than one name)
Assistant Lecturer, Abdullah Abdulrahman Al-Sarraf Email: abd.sarraf@uomosul.edu.iq
• Course Objectives

Course Objectives	● Understand the basic ethical principles in architectural practice and identify the theoretical frameworks that guide the professional conduct of architects. ● Analyze ethical issues by examining real-life cases and problems that an architect may encounter in their professional life, and propose solutions that are consistent with ethical and professional principles. ● Evaluate the impact of architectural decisions on society, the environment, and the economy, taking into account the ethical values and social responsibility of the profession. ● Apply standards of professional conduct in various work environments, whether in engineering offices or on construction sites, including relationships with clients, colleagues, and regulatory bodies. ● Develop strategies for making sound ethical decisions in architectural design and project management, taking into account legal, cultural, and social considerations. ● Communicate effectively about ethical issues in architecture, both orally and in writing, demonstrating clarity, logic, and persuasion in discussing professional matters. ● Understand the ethics of using modern technologies, including artificial intelligence, in architecture and their impact on the profession and society.
• Teaching and Learning Strategies	
Strategy	• Interactive Lectures: ● Introducing the basic concepts of professional ethics in architecture. ● Discussing ethical laws and standards relevant to the profession. ● Case Study Analysis: ● Studying real-life cases and hypothetical scenarios that address ethical challenges in architectural practice. ● Encouraging students to analyze ethical issues and propose appropriate solutions in accordance with professional principles. ● Classroom Discussions and Group Work: ● Organizing group discussions on architectural ethical topics to promote the exchange of ideas and opinions. ● Implementing collaborative activities to enhance communication and ethical

	negotiation skills. ● Report Preparation and Research: ● Assigning students to write research reports on topics related to professional ethics in architecture. ● Developing their analytical and academic research skills. ● Project-Based Learning: ● Guiding students toward applying ethical principles in design and engineering projects. ● Enhancing awareness of ethical challenges through working on projects that simulate professional realities. • Final Exams and Assessments: ● Conduct short tests to measure students' understanding of ethical concepts. ● Provide feedback to improve academic performance. ● E-Learning and Modern Technologies: ● Use e-learning platforms such as Google Classroom to share educational resources and conduct virtual discussions. ● Employ digital tools to demonstrate practical examples of professional ethics.

- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Recognize the importance of ethics in architecture and its impact on the profession and society.	Introduction to the Topic and Its Importance	Interactive Lecture – Class Discussion	Student Participation – Interactive Questions
2	4	Understand the basic personal qualities of an architect and their ethical responsibilities.	The Architect: Personal Traits, Duties, and Ethics	Lecture – Case Study – Interactive Dialogue	Quiz – Group Discussion
3	4	Analyze the ethical relationship between an architect and various stakeholders.	Professional Ethics and the Architect's Relationship with Others	Lecture – Interactive Activities	Individual Report Submission
4	4	Understand the ethical values associated with working in engineering offices.	Work Ethics in Engineering Offices	Lecture – Practical Case Studies	Group Discussion – Quiz
5	4	Analyze the ethical issues facing architects in the engineering office environment.	Architect's Ethics in the Engineering Office	Lecture – Interactive Exercises	Written Assessment – Presentation
6	4	Understand the ethical responsibilities of architects on the workplace.	Site Engineering - Duties and Ethics	Lecture – Real-Life Case Analysis	Quiz – Class Participation
7	4	Understand the ethical and legal aspects of engineering contracts.	Engineering Contracts	Lecture – Legal Document Analysis	Theoretical Test – Short Report Submission
8	2	Assess students' understanding of the concepts studied in the first half of the semester.	First Semester Exam	Theoretical Exam	Written Exam
9	4	Apply occupational health and safety principles on the	Occupational Health and Safety on the	Lecture – Practical	Case Study – Quiz

		workplace.	Worksite	Workshop	
10	4	Analyze the ethical challenges in the use of artificial intelligence in architectural design.	Ethics of Using Artificial Intelligence in Architecture	Lecture – Group Discussion – Case Studies	Research Report – Oral Presentation
11	4	Submit research reports on topics of professional ethics in architecture.	Discussion of Student Reports... Part One	Presentation and Discussion	Presentation Evaluation
12	4	Submit research reports on topics of professional ethics in architecture.	Discussion of Student Reports... Part Two	Presentation and Discussion	Presentation Evaluation – Student Participation
13	4	Understand the importance of ethics in architecture and its impact on the profession and society.	Discussion of Student Reports... Part Three	Presentation and Discussion	Student Participation – Interactive Questions
14	4	Recognize the importance of ethics in architecture and its impact on the profession and society.	Introduction to the Topic and Its Importance	Interactive Lecture – Class Discussion	Student Participation – Interactive Questions

- Course Evaluation

Evaluation type	**Degree**
Two quizzes	(10 points)
First semester exam (15 points)	(15 points)
Classroom activities and participation	(5 points)
Research report	(10 points)
Final exam	(60 points)
Total	100

- Learning and Teaching Resources

Wasserman, B., Sullivan, P. and Palermo, G., 2000. Ethics and the Practice of Architecture. New York: John Wiley & Sons.
Spector, T., 2001. The Ethical Architect: The Dilemma of Contemporary Practice. New York: Princeton Architectural Press.
Pelletier, L. and Pérez-Gómez, A. (eds.), 1994. Architecture, Ethics, and Technology. Montreal: McGill-Queen's University Press.
Foxell, S., 2010. Professionalism and Ethics in Architecture. London: RIBA Publishing.
Zerner, C.W., 1995. Building Codes: The Aesthetics of Calvinism in Early Modern Europe. Princeton: Princeton University Press.
Papanek, V., 1971. Design for the Real World: Human Ecology and Social Change. Chicago: Academy Chicago Publishers
Code of Ethics for the Practice of the Engineering Professionhttps://injarch.com/ar/%D8%A7%D9%84%D8%A3%D8%AE%D9%84%D8%A7%D9%82%D9%8A%D8%A7%D8%AA-%D8%A7%D9%84%D9%85%D8%B9%D9%85%D8%A7%D8%B1%D9%8A%D8%A9-%D8%A7%D9%84%D9%85%D9%88%D8%A7%D8%B2%D9%86%D8%A9-%D8%A8%D9%8A%D9%86-%D8%A7%D9%84/?utm_source=chatgpt.com

- English Language –Upper Intermediate

University of Mosul College of Engineering Architectural Engineering Department

• Course Name:
English- Upper Intermediate
• Course Code:
• Semester / Year:
First/ 2025-2024
• Description Preparation Date:
2024
• Available Attendance Forms:
Lectures in the classroom
• Number of Credit Hours (Total) / Number of Units (Total)
60 hours/ 2 ECTS credits
• Course administrator's name (mention all, if more than one name)
Name: Rawia Marwan dabdoob, Email: : : rawia.danbdoob@uomosul.edu.iq
• **Course Objectives** : • Introduce architecture students to the principles and concepts of planning, taking into account the practical importance of planning and the role of the architect in this process. Students should be able to engage with the urban planning process and its elements, including streetscapes, parking design, and master plans, in addition to providing numerous parking spaces around the world as examples of this topic. • Instill an understanding of sustainability in cities through water management, environmental integration with nature, and waste recycling.

Course Objectives	On successful completion of this course, students will be able to: ● Remember the words of English language and recall their meanings. (iv) ● Understand others' ideas. (iv) ● Improve skills of communication with others: listening, reading, writing, and speaking. (iv)
• Teaching and Learning Strategies	
Strategy	•Lecture strategy •Discussion strategy • Cooperative learning strategy
• Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	• Understanding the basic grammar. • Enriching vocabulary. • Practicing reading and speaking	Unit 1: No place like home	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	homework
2	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	Unit 2: Been there, done that!	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	classwork
3	2	• Understanding the	Unit 3:	Interactive learning:	homework

		basic grammar. • Enriching vocabulary. Practicing reading and speaking	What a story!	This approach includes the use of class discussions, cooperative learning in groups	
4	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	Unit 4: Nothing but truth	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	homework
5	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	Unit 5: An eye to the future		homework
6	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	Term exam 1	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	exam
7	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	Unit 6: Making it big	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	classwork
8	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	Unit 7: Getting on together	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	homework
9	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	Unit 8: Going to extremes		
10	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	Unit 9: Forever friends	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	homework
11	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	Unit 10: Risking life and limb	Interactive learning: This approach includes the use of class discussions, cooperative learning in	homework

				groups	
12	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	Unit 11: In your dreams	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	homework
13	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	Unit 12: It's never too late	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	homework
14	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	Listening and Reading	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	
15	2	• Understanding the basic grammar. • Enriching vocabulary. Practicing reading and speaking	Listening and Reading	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups	

- Course Evaluation

Evaluation type	Degree
Homework	15
Classwork	10
Term exam	15
Final exam	60
Total	100

- Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	▪ Liz and John Soars (2016) New Headway Upper-Intermediate Student's Book New Edition. OXFORD University Press.
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

ARC441 Architectural Design (7)

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Architectural Design (7)
2. Course Code:
ARC 441
3. Semester / Year:
1st Semester 2024
4. Description Preparation Date:
2024
5. Available Attendance Forms:
In person - twice a week
6. Number of Credit Hours (Total) / Number of Units (Total):
9 hrs / 5units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Dhuha Abdulgani Al-kazzaz Email: dhuha.kazzaz@uomosul.edu.iq Ghada Mohammed Younis Miqdam Ameen Majeed Baydaa Hanna Saffo Farhan Awad Jasim Amer Abdullah Alazzawi Dr. Sinan Mohammed Ayad Waleed Jalal
8. Course Objectives

Course Objectives	Enhancing the student ability of creative thoughts during formation of architectural works is the main issue of this design course with emphasis on the site, the context, the function, the user, the case study, and the personal vision as external motives of creativity in design. The course objectives are: ● To examine a building integration with its site during the time to perceive how significant and unavoidable the role of site is during designing process. ● To examine a building integration with its function and how significant and unavoidable the role of function is during designing process. ● To improve the student ability to use the site and the surrounding environment as significant factors for creating in architecture. ● To improve the ability to find a creative solution which respond to the user needs and problems. ● Applying a proper concept and design methodology which respect the human factor in architecture. ● To enhance creative thoughts by utilizing the student personal temperaments,

	attitudes, characters to provide an opportunity for students during formation of architectural works. ● To enhance creative thoughts by developing the student knowledge of relevant case studies. ● To improve the student abilities of continuity and insistence in developing a design concept for their significant role in achieving creativity. ● To improve the ability of providing a successful, realistic and meaningful presentation.

9. Teaching and Learning Strategies

Strategy	● Lecture based teaching method ● Project based learning method ● Critic-based learning

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	9	analyze, assess, reco and comparatively evaluate relevant information	Data collection: Precedents Analysis of previous hospital projects	Group discussion	Assignments
2	9	analyze, assess, reco and comparatively evaluate relevant information	Data collection of Design standards and criteria of health facilities in hospital building designs.	Group discussion	Assignments
3	9	analyze, assess, reco and comparatively evaluate relevant information	Site analysis	Group discussion	Assignments
4	9	Apply critical and a imaginative thinking	Day Sketch-1		Class Exam
5	9	Apply knowledge to solve design problem	Discussion of proposals o design concept	Guiding feedba	Continuous evaluation
6	9	Ability to communicat design idea	First submission of Desig concept		Jury assessment system
7	9	Apply knowledge to solve design problem	Design conc development	Guiding feedba	Continuous evaluation
8	9	Apply knowledge to solve design problem	Development of plans (zoning & circulation)	Guiding feedba	Continuous evaluation
9	9	Apply knowledge to solve design problem	Development of plans (building structure)	Guiding feedba	Continuous evaluation
10	9	Ability to communicat and design	Second submission: plans and physical model		Jury assessment system
11	9	Develop imagina and thinking in design	Development of elevation sections	Guiding feedba	Continuous evaluation
12	9	Apply critical and a imaginative thinking	Day Sketch-2		Class Exam
13	9	Ability to communicat	Pre-final submission		Jury assessment

		design			system
14	9	Ability to consider diverse points of view and reach w reasoned conclusions	Solving minor problems: functional, formal & struct	Guiding feedba	Continuous evaluation
15	9	Ability to communicat design	Final submission		Jury assessment system

11. Course Evaluation

Day 30 pts
Precedent analysis reports 4 pts
Functional analysis reports 4 pts
Site analysis reports 2 pts
Design project – concept submission 10 pts
Design project – plan submission 10 pts
Design project – prefinal submission 15 pts
Design project – final submission 15 pts
Attendance + Daily assessment 10 pts
Total 100pts

12. Learning and Teaching Resources

Required textbooks (curricular books, if ar	
Main references (sources)	1- Joseph De Chiara, "Time-Saver Standards for Building Types". 2- Ernst Neufert ,"Neufert Architects' Data".
Recommended books and references (scientific journals, reports…)	3- Philipp Meuser & Christoph Schirmer, "New Hospital Buildings in Germany". 4- Philipp Meuser & Christoph Schirmer, "New Hospital Buildings in Germany". 5- Philipp Meuser "Constructon and Design manual - Hospital and Health Centers". 6- Louis G. Redistone, "Hospitals and Health Care Facilities". 7- Christine Nickl-Weller & Hans Nickl, "Hospital Architecture + Design". 8- Richard Sprow, "Planning Hospitals of the Future".
Electronic Reference Websites	

ARC442 Interior Design

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name / Level
Interior Design (Fourth Year)
2. Course Code:
ARC 442
3. Semester / Year:
1st Semester 2024
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Inside the class, in person
6. Number of Credit Hours (Total) / Number of Units (Total): 3 hrs / 2 units
45 hours/ 2 ECTS credits
7. Course administrator's name (mention all, if more than one name)
Asst. Prof. Dr. Khawola Fayyad Mahmoud Al-Dawodi – khawola.mahmoud@uomosuledu.iq Asst. Prof. Dr. Oday Qusay Abdulqadir Al-Jalabi – odaychalabi@uomosul.edu.iq Assist. Lecturer Dr. Mozahim Mohammed Mustafa – mozahim.hadidi@uomosul.edu.iq Lecturer Amer Abdullah Fathi – amer.alazawi@uomosul.edu.iq Lecturer Anwar Mishaal Shareef – anwr.meshal@uomosul.edu.iq
8. Course Objectives

Course Objectives	Introduce students to the principles of interior design including spatial composition, visual balance, proportion, and functional-aesthetic integration. - Enable students to analyze and develop interior spaces based on user comfort, circulation, and lighting/material applications. - Train students to create complete interior design projects with concept development, site analysis, drawings, materials, and finishes. - Strengthen skills in digital design software such as AutoCAD, Revit (BIM), SketchUp, and 3ds Max for 3D modeling and design analysis. - Integrate sustainability and smart technology into interior design through eco-materials, energy efficiency, and lighting optimization. - Develop presentation and professional communication skills through boards, reports, and visualization tools.

Learning Outcomes:
- Analyze and design interior spaces with scientific and engineering approaches.
- Acquire creative and technical skills for professional interior design.
- Learn technical drawing and 3D modeling using specialized software.
- Foster critical and innovative thinking for balanced functional-aesthetic solutions.
- Enhance understanding of materials and finishes for quality and performance.
- Prepare students for the market with strong communication and project management skills.

9. Teaching and Learning Strategies

Strategy	- Combine theory with practical projects and field training. - Use modern technology for space analysis and visualization. - Encourage interactive learning and group participation. - Address real-world design problems to boost critical and creative thinking. - Focus on professional communication and project presentation.

Implementation Methods:
1. Project-Based Learning (PBL):
- Students develop a complete interior design project in stages: analysis, concept, drawings, modeling, final presentation.
- Feedback provided at each stage by instructors and peers.
- Use software like AutoCAD and SketchUp for professional presentations.
- Final review conducted by internal and external juries.

2. Studio-Based Learning (SBL):
- Students work in a simulated design studio environment.
- One-on-one guidance and design critique sessions are included.
- Encourages creativity, critical thinking, and technical improvement.

3. Problem-Based Learning (PBL):
- Students tackle real challenges such as lighting design, furniture layout, or sustainability.
- Team-based problem solving and data analysis followed by solution proposals.
- Presentations require justification using scientific reasoning.

4. Technology-Enhanced Learning (TEL):
- Use of digital tools and AI in design training.
- Hands-on experience with Revit, 3ds Max, Lumion, and VR.
- Projects integrate VR and AR for immersive visualization.
- Prepares students for a digitally advanced design market.

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Topic	Teaching Method	Assessment Method	Learning Outcomes
2	3	Introduction to Interior Design: Concepts and Fundamentals	Lecture + Analytical Discussions	Short Written Quiz + Participation	Understanding the basic principles of interior design
3	3	Interior Space Analysis: Spatial and Functional Relationships	Project Analysis + Case Studies	Applied Project Analysis + Written Report	Analyze interior spaces and define design relationships
4	3	Use of Color and Lighting in Interior Design	Lecture + Practical Exercises	Practical Exercise + Group Review	Utilize color and lighting to enhance design performance
5	3	Material and Finishes Selection and Their Impact on Function and Aesthetics	Model Display + Material Analysis	Research Report Evaluation + Presentation	Evaluate and select appropriate materials for finishes
6	3	Furniture Design and Interior Space Planning	Design Exercises + Group Reviews	Design Layout + Critical	Develop ability to functionally

				Review	distribute furniture
7	3	Use of Digital Software in Interior Design (AutoCAD, Revit)	Practical Workshop + Software Training	Software Exercise + Practical Evaluation	Master the use of digital design tools
8	3	Sustainable Design and Smart Materials in Interior Spaces	Lecture + Applied Research	Research Report + Group Discussion	Promote sustainable thinking in interior design
9	3	Applied Project (Phase 1): Interior Site Analysis and Concept Development	Review + Design Idea Development	Initial Drawings Review and Evaluation	Analyze and develop a conceptual interior design project
10	3	Applied Project (Phase 2): Development of Preliminary Plans and Drawings	Design Studio Session + Mentor Discussions	Initial Model and Drawing Evaluation	Prepare and present initial drawings for evaluation
11	3	Designing Commercial and Office Spaces: Case Studies and Analysis	Case Study Analysis + Project Presentations	Case Study Review + Group Critique	Understand principles of commercial and office space design
12	3	Designing Residential Spaces: Patterns and Layouts	Applied Design + Critical Evaluation	Individual Project Presentation and Correction	Design residential spaces based on functional patterns
13	3	Digital Visualization and 3D Modeling using 3ds Max and SketchUp	3D Modeling Workshop	3D Model Presentation + Evaluation	Master digital visualization and 3D modeling
14	3	Applied Project (Phase 3): Preparation of Working Drawings and Material Selection	Studio Session + Mentor Reviews	Final Review of Drawings and Implementation	Prepare complete working drawings
15	3	Final Project Preparation and Presentation	Final Project Presentation + Discussion	Final Project Evaluation + Presentation	Present and deliver projects professionally
10. Course Evaluation					
The final grade is out of 100 and is distributed based on tasks assigned to the student, such as daily preparation, quizzes (oral and written), midterm and final exams, reports, and other assignment					

11. Learning and Teaching Resources	
Required textbo (curricular books, if any)	
Main references (source	● ABC of Interior Design – Noor Book ● Material Technology in Interior Design – Tariq Library ● Interior Design – Safa2010 Blog ● Handbook of Lighting Design – WPU Library ● History of Interior Design – WPU Library
Recommended books and references (scientific journals, reports...)	● Interactive Design and its Impact on Interiors and Furniture – JSOS Journal ● The Role of Smart Design in Interior Design and Its Impact on Home Occupants – ResearchGate ● Analysis of Interior Design Patterns and Their Effects on Residential Spaces – GU Journal ● The Role of Interior Space Design in the Quality of Architectural Design – AJSP
Electronic Referenc Websites	● **ArchDaily** – https://www.archdaily.com ● **Dezeen** – https://www.dezeen.com ● **Homestyler** – https://www.homestyler.com ● **Canva - Interior Design AI** – https://www.canva.com ● **OPPOLIA** – https://www.oppoliahome.com

ARC443 Theories of Urban Design

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:

Theories of urban design

2. Course Code:

ARC 443

3. Semester / Year:

First/ 2024-2025

4. Description Preparation Date:

10/4/2025

5. Available Attendance Forms:

Lectures in the classroom

6. Number of Credit Hours (Total) / Number of Units (Total)

hours:30 - units :2

7. Course administrator's name (mention all, if more than one name)

Name:
Faris A. Matloob, Email: faris.matloob@uomosul.edu.iq
Usama H. Ali Email: :usamahumadi@uomosul.edu.iq

8. Course Objectives

Course Objectives	● Provide students with general knowledge of the field of urban design. ● Introduce the main theories related to urban design. ● Equip students with the ability to critique, analyze, and infer. And subsequently, the ability to solve and address problems according to the basic principles of urban design. ● By the end of the course, students will have acquired basic skills related to urban design and development. They will be equipped with design principles that enable them to address various issues and challenges related to the urban environment.

9. Teaching and Learning Strategies

Strategy	-Encourage active student participation through pre-lecture readings and classroom discussions on important elements and principles of urban design and theories. - Promote interactive learning of important theories, elements, and principles of advanced urban design through the implementation of flipped learning, where students explore and research urban design theories, contemporary urban design elements, and new urban design principles, leading to discussions and a deeper understanding of the subject.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Introduction to the subject of urban design, its principles, and characteristics	What is urban design	- Presenting information using modern media. - Interactively explaining the information, reinforced by examples and real-life characteristics. - Encouraging student interactive participation and	- Oral questions - Daily instant tests - Midterm exam - Final exam
2	2	Understanding the principle of closure and its relationship to design	Enclosure and containment		
3	2	Being able to understand and analyze the characteristics of positive and negative space	Positive and negative space		
4	2	Identifying the elements and characteristics that determine the quality of the public realm	Quality of public realm		

5	2	Understanding the characteristics of connections and their properties in urban areas	Making connections	raising questions and comments about the topic.	
6	2	Identifying the characteristics of distinctiveness, character, and identity in urban design	Distinctive-ness		
7	2	Understanding the principle of urban space capabilities and the factors influencing it	Robustness		
8	2	Identifying the characteristic of clarity in urban design and how to enhance it in urban areas	Legibility		
9	2	Providing students with the necessary understanding of the principle of diversity in urban design	Diversity		
10	2	Enhancing students' understanding of cognitive studies in urban design and their impact on urban production	Cognitive Studies		
11	2	Understanding the foundations of spatial organization theory	Spatial Organization		
12	2		Mid-Term Exam		
13	2	Identifying the most prominent theories related to urban design and the characteristics of each	Urban Design Theories 1		
14		Identifying the most prominent theories related to urban design and the characteristics of each	Urban Design Theories 2		
15		Understanding rational approaches in urban design and their characteristics	Rationality in Urban Design		

11. Course Evaluation

Evaluation type	**Degree**
Quizzes: 12 points	12 60
Term Exam points	25
Final exam	60
Interactive contributions	3
Total	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	-Carmona, M. (2021). Public places urban spaces: The dimensions of urban design. Routledge. -BENTLEY, I. 1985. Responsive environments, Routledge

	-DETR & CABE 2000. By Design: Urban Design in the Planning System, Great Britain, Crown -DAVIES, L. 2000. Urban design compendium. London: English Partnership.
Recommended books and references (scientific journals, reports...)	-------
Electronic References, Websites	www.Urban Design Lab.com

ARC444 Architecture and Environmental Sustainability

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Architecture and Environmental Sustainability / fourth level
2. Course Code:
ARC444
3. Semester / Year:
First/ 2024-2025
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
hours:
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Bassam Al-Hafith bisam.alhafiz@uomosul.edu.iq Adil Khalil adil.khalil@uomosul.edu.iq
8. Course Objectives • Introducing students to the fundamentals of environmental engineering and sustainability concepts, with a focus on the relationship between human activities and the natural environment. • Analyzing types of environmental pollution and the impact of design on the environment and society, and developing sustainable architectural and urban solutions. • Enhancing students' capabilities in managing waste and natural resources, and utilizing recycling and environmental conservation techniques. • Developing students' skills in applying green building and renewable energy techniques to support sustainable development projects. • Introducing students to water and air treatment technologies and natural disaster management, and analyzing their role in protecting the environment and public health. • Equipping students with the ability to conduct Environmental Impact Assessment (EIA), while applying sustainability standards in urban planning and design. • Enhancing students' scientific research and academic presentation skills through the preparation of innovative projects and specialized seminars.

Course Objectives	• Enabling students to identify sources of environmental pollution, types of waste, and control mechanisms within engineering contexts. • Developing students' ability to use recycling and clean energy principles to address environmental problems within engineering design. • Providing students with the basic skills to apply environmental impact assessment techniques to real engineering and construction projects. • Enhancing students' understanding of environmental protection policies and laws related to sustainable development, and how to integrate them into professional practice. • Encouraging students to develop applied research projects that contribute to the creation of sustainable solutions to address local and global environmental issues.
9. Teaching and Learning Strategies	
Strategy	• Lecture strategy • Discussion strategy • Problem-solving strategy • Cooperative learning strategy

Strategy: 1. Use of visual media and technology 2. Classroom assignments 3. Discussion groups	Application • Providing an interactive learning studio environment that allows for lectures and lively discussions, simulating real-life professional challenges. • Supporting students' practical understanding through classroom assignments that include calculations and illustrations of water supply and sewage networks and waste disposal systems. • Consolidating knowledge through the implementation of real-life projects inspired by the needs and requirements of the labor market.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Eva met
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	3 weekly	• Learn the basic principles of environmental engineering and the foundations of sustainability and apply them to engineering projects. • Analyze different types of environmental pollution and their impact on the environment and society, while proposing sustainable design solutions. • Develop effective waste management plans, promote a culture of recycling, and sustainable resource use. • Evaluate the importance of biodiversity and the role of environmental engineering in protecting natural ecosystems. • Apply industrial pollution control techniques and adopt green building principles in engineering projects. • Design effective strategies for managing and conserving natural resources using modern technologies. • Identify water and air treatment technologies and evaluate their effectiveness in improving environmental quality.	• Introduction to Environmental and Sustainability Engineering • Environmental Pollution and Design Impacts on the Environment and Society • Waste Management and Recycling Promotion • Biodiversity Protection and Ecosystem Conservation • Industrial Pollution Control and Green Building Technologies • Natural Resource Management and Conservation Technologies • Water and Air Treatment Technologies • Natural Disaster Management and Environmental Response • Renewable Energy and Clean Energy Technologies • Environmental Impact Assessment (EIA) • Sustainable City Planning and Environmental Design • Environmental Policies and Legislation • Research and Innovation Projects in Environmental and Sustainability Engineering • Seminars • Seminars	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	

		• Develop environmental response plans to manage natural disasters and reduce their impacts on society and the environment. • Evaluate renewable energy sources and apply clean energy technologies to achieve environmental sustainability. • Apply Environmental Impact Assessment (EIA) methodologies to prepare environmental reports and analyze sustainable alternatives. • Design development plans for sustainable cities by integrating environmental principles into urban planning. • Interpret national and international environmental policies and analyze the impact of legislation on development projects. • Conduct applied and innovative research in the fields of environmental sustainability and provide advanced technical solutions. • Develop research and scientific presentation skills by delivering seminars on contemporary environmental topics. Develop communication and interactive presentation skills while promoting critical thinking in environmental seminar discussions.			

11. Course Evaluation

Evaluation type	**Degree**
Quizzes	15
Term Exam points	15
Report	10

Final exam	60
Total	100
12.	
Required textbooks (curricular books, if any)	None
Main references (sources)	▪ United Nations Environment Programme (UNEP). "Global Environment Outlook – GEO-6: Healthy Planet, Healthy People."
Recommended books and references (scientific journals, reports...)	• Gilbert M. Masters and Wendell P. Ela • "Introduction to Environmental Engineering and Science" (3rd Edition). • John Randolph and Gilbert Masters • "Environmental Science and Technology: A Sustainable Approach to Green Science and Technology". • Journal of Environmental Management (Elsevier). Sustainability (MDPI).
Electronic References, Websites	▪ https://iccts.moch.gov.iq/wp-content/uploads/2023/09/%D9%85%D8%AF%D9%88%D9%86%D8%A9-%D8%A7%D9%84%D8%B5%D8%B1%D9%81-%D8%A7%D9%84%D8%B5%D8%AD%D9%8A-%D9%81%D9%8A-%D8%A7%D9%84%D9%85%D8%A8%D8%A7%D9%86%D9%8A.pdf ▪ https://www.alnageeb.me/%D8%AA%D9%86%D9%81%D9%8A%D8%B0-%D8%B4%D8%A8%D9%83%D8%A7%D8%AA-%D8%A7%D9%84%D8%B5%D8%B1%D9%81-%D8%A7%D9%84%D8%B5%D8%AD%D9%8A/#google_vignette

ARC445 Design of Steel Structures

University of Mosul College of Engineering Architectural Engineering Department

13. Course Name:
Design of Steel Structures / fourth level
14. Course Code:
ARC445
15. Semester / Year:
First/ 2024-2025
16. Description Preparation Date:
2024
17. Available Attendance Forms:
Lectures in the classroom
18. Number of Credit Hours (Total) / Number of Units (Total)
75 hours/ 6 ECTS credits
19. Course administrator's name (mention all, if more than one name)
Name:fahad akram saeed Email: fahad.akram@uomosul.edu.iq
20. Course Objectives

Course Objectives	1. introduce students to the fundamental design process of steel as a structural member which found in bridges and building structures. 2. The AISC LRFD Code is the design specifications choice used in this course. 3. Understanding the relationship between analysis and design of steel structures by applying gain knowledge from statics, mechanics of solid, and structural analysis further. 4. In this course, the students learn how to analysis the steel members under different loading conditions. In addition to the connection between members.
21. Teaching and Learning Strategies	
Strategy	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.

22. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Introduction to structural steel design. Advantages of steel as a structural material. Disadvantages of steel as a structural material. Steel sections. Stress–strain relationships in structural steel.	Introduction to structural steel design. Advantages of steel as a structural material. Disadvantages of steel as a structural material. Steel sections. Stress–strain relationships in structural steel.	A lecture in the classroom	HW and CW
2	3	ANSI/AISC 360-16 doe definitions. How to used AISCM.	ANSI/AISC 360-16 doe definitions. How to used AISCM.	A lecture in the classroom	HW, CW, exam

3	3	Specifications, loads, and methods of design. Specifications and building codes. Load and resistance factor design (LRFD) and allowable strength design (ASD). Computing combined loads with LRFD expressions. Computing combined loads with ASD expressions.	Specifications, loads, and methods of design. Specifications and building codes. Load and resistance factor design (LRFD) and allowable strength design (ASD). Computing combined loads with LRFD expressions. Computing combined loads with ASD expressions.	A lecture in the classroom	HW, CW, exam
4	3	Tension members. Analysis of tension members. Introduction. Nominal strengths of tension members.	Tension members. Analysis of tension members. Introduction. Nominal strengths of tension members.	A lecture in the classroom	HW, CW, exam
5	3	Net areas. Effect of staggered holes in analysis of tension members.	Net areas. Effect of staggered holes in analysis of tension members.	A lecture in the classroom	HW, CW, exam
6	3	exam	exam	A lecture in the classroom	HW, CW, exam
7	3	Shear lag and effective net areas. Block shear.	Shear lag and effective net areas. Block shear.	A lecture in the classroom	HW, CW, exam
8-9	3	Design of tension members. Selection of sections	Design of tension members. Selection of sections	A lecture in the classroom	HW, CW, exam
10	3	Built-up tension members. Threaded rods. Design of tension members and sag rods in roof trusses.	Built-up tension members. Threaded rods. Design of tension members and sag rods in roof trusses.	A lecture in the classroom	HW, CW, exam
11-12	3	exam	exam	A lecture in the classroom	HW, CW, exam
13	3	Compression members under concentric axial loads. Introduction. Sections used for columns.	Compression members under concentric axial loads. Introduction. Sections used for columns.	A lecture in the classroom	HW, CW, exam
14	3	The Euler formula. Effective length and slenderness ratio.	The Euler formula. Effective length and slenderness ratio.	A lecture in the classroom	HW, CW, exam

15	3	AISC requirements for compression members. Analysis of compression members. Design compressive strength of compression members.	AISC requirements for compression members. Analysis of compression members. Design compressive strength of compression members.	A lecture in the classroom	HW, CW, exam

23. Course Evaluation

Evaluation type	**Degree**
4 quizzes	6
14 homework	7
10 classwork	7
Term exam	15
report	5
Final exam	60
Total	100

24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Structural Steel Design, Jack C. McCormac and Stephen F. Csernak, Pearson Education Limited, 5th edition, 2012.
Main references (sources)	AISC Construction Manual, 14th Edition.
Recommended books and references (scientific journals, reports...)	-------
Electronic References, Websites	-------

ARC461 Local Architecture

University of Mos College of Engineering Architectural Engineering Department

1. Course Name:
Local Architecture / Fourth Year
2. Course Code:
ARC 461
3. Semester / Year:
Second semester/ 2024-2025
4. Description Preparation Date:
12/4/2025
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
Total number of hours = 30 / Total number of units: 2
7. Course administrator's name (mention all, if more than one name)
Name: Asst. Prof. Dr. Ahmed Abdulwahid Thannoon Taha, Email: Ahmadabdulwahid@uomosul.edu.iq
8. Course Objectives

Course Objectives	• Study and understand local architecture in its various forms. • Develop students' skills in understanding local heritage elements. • Instill local architectural design principles and draw inspiration from them in modern architecture. • Build students' capabilities and develop their skills in preserving heritage architecture and drawing inspiration from its elements into their architectural designs after graduation.

9. Teaching and Learning Strategies

Strategy	• Lecture-based learning: The course incorporates lectures, discussions, and teaching and learning strategies for students to learn about local architecture. The course begins with an introduction to the local architecture of the old city of Mosul. Topics are discussed weekly, and lessons last two hours per week. This lecture presents the general characteristics of the traditional architectural style of Mosul and specific details about houses, mosques, and church buildings. • Discussions and Reports: In this strategy, students, in addition to lectures, participate in discussions about the topics covered in class. These discussions allow students to ask questions and share ideas about the architecture being studied. Finally, students are expected to write a report on a specific topic related to local architecture. These reports allow students to delve deeper into specific aspects of a topic and demonstrate their understanding of the subject. Overall, this course's teaching and learning strategies are designed to provide students with a comprehensive understanding of local architecture through lectures, discussions, and independent study.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 hours	1. Gain knowledge of local architecture, encompassing the different styles and	Introduction to Local Architecture What is Local Architecture in Mosul?	Lecture-based learning: This approach includes lectures and	Theoretical and discussion lectures with

2	2 hours	features of buildings in Mosul, through lectures, reading materials, and visual aids such as photos and videos. 2 .Recognize and value the significance of architectural style and its influence on society. 3 .Utilize knowledge and skills in real-life situations and challenges related to architecture, city planning, urban design, interior and exterior spaces, and the preservation of cultural heritage and antiquities. 4 .Practice the profession of architect in accordance with scientific rules and methods. 5 .Draw inspiration from the design features of ancient buildings for future designs. 6. Use knowledge, skills, and creativity to develop new ideas, products, or solutions by incorporating design features from ancient buildings into future designs.	Factors of Origin and Formation	classroom discussions promoting student and faculty interaction. Use of visual media and technology: Using software and presentation tools to support the learning process and familiarize students with local architecture. Field trips and study visits: Field visits to local architecture projects in Mosul enable students to see real-life applications of local designs, enhancing their understanding of the challenges and opportunities in the field. Feedback: Focusing on and discussing local heritage examples to inspire future projects. Report preparation: Preparing and discussing reports on buildings and elements of local architecture.	daily and monthly exams and quarterly reports
3	2 hours		Natural and Cultural Factors Shaping Local Architecture in Mosul		
4	2 hours		A Group of General Characteristics of Local Architecture in Mosul		
5	2 hours		Compatibility with the Principles of Islam and the Cultural Heritage of Other Religions		
6	2 hours		Compatibility with the Climate		
7	2 hours		Sustainability in Local Architecture		
8	2 hours		Prefabrication Technology in Local Architecture		
9	2 hours		Types of Buildings According to Their Function in Local Architecture		
10	2 hours		Residential Buildings (Mosul Heritage House)		
11	2 hours		Religious Buildings (Mosque Buildings, Church Buildings) 1		
12	2 hours		Religious Buildings (Mosque Buildings, Church Buildings) 2		
13	2 hours		Service Buildings (Markets, Inns, Baths) 1		
14	2 hours		Service Buildings (Markets, Inns, Baths) 2		
15	3 hours		Final Exam		

11. Course Evaluation

Evaluation type	Degree
2 quizzes	15
Reports	10
Term exam	15
Final exam	60
Total	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	There are no officially prescribed books.
Main references (sources)	• Thannoon, A.A. (2007), “Popular architecture of old city of Mosul the architecture of the traditional house”, International Conference for Asian and North African Studies (ICANS 38), • M. Mustafa, Y. Daizhizhong," The Characteristics of Architecture Style of the Traditional Houses in the Mosul City-Analytical Study ", American Journal of Engineering and Applied Sciences, 3(2) , 2010. • Abeer Abdullah, Ahmed Dhannoon, “ Pre-Fabrication of Marble Window Frames In Mosul's Traditional Houses”, Al-Rafidain Engineering Journal (AREJ), Vol.26, No.2, October 2021. • Y. Thanoun, A. Sherif, and A. Al Sayegh " Residential buildings in the city of Mosul - models of general documentation ", prepared by the Engineering Construction Office, 1st edition, Mosul, General Directorate of Antiquities and Museums of the Northern Region, Heritage Authority, 1982.
Recommended books and references (scientific journals, reports...)	The Old City of Mosul Architectural Heritage/ Documentation, Sahar Muhammad Yahya, 2023, First edition
Electronic References, Websites	1.UNESCO website (UNESCO) https://whc.unesco.org 2. website Architecture Research https://www.architecture-research.com 3. Historical Studies on Mosul - Mosul Digital Library http://www.mosul-library.org 4. Iraqi Architectural Heritage Site https://www.architecturalheritageiraq.org 5. Old Mosul Blog https://oldmosulblog.com](https://oldmosulblog.com 6.Reviving Cultural Heritage in Iraq websitehttp://heritageiraq.org](http://heritageiraq.org

ARC462 Fundamentals of Architectural Conservation

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Fundamentals of Architectural Conservation / Fourth Year
2. Course Code:
ARC462
3. Semester / Year:
Second semester/ 2024-2025
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
Number of study hours: 3*15= 75 / Number of units: 2
7. Course administrator's name (mention all, if more than one name)
Name: emad hani Email: emad.hani.ismaeel@uomosul.edu.iq
8. Course Objectives

Course Objectives	**1. Learn the most important theories in the field of preserving historic buildings and sites.** **2. Identify the most important causes of deterioration of historic buildings and structures.** **3. Learn the most important methods for assessing the heritage value of historic buildings, sites, and existing urban environments.** **4. Learn about preventive conservation mechanisms and procedures and utilize modern digital technologies in the maintenance of historic buildings and structures.**

9. Teaching and Learning Strategies

Strategy	Using lectures, periodic scholarly discussions, report presentations, and site visits. Upon successful completion of this semester, students will be able to: 1. Utilize the basic principles of architectural heritage conservation. 2. Prepare well-designed reports for the management of historic buildings. ٣. Learn about cultural heritage management and cultural heritage legislation. ٤. Learn about the impact of cultural heritage management on cultural heritage conservation and tourism. ٥. Learn about the communication process in cultural heritage and its preservation. ٦. Learn about the historical development and current status of cultural heritage studies in Iraq and the world.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Utilize the basic principles of architectural heritage conservation	Causes of deterioration in historical buildings and sites	Scientific lecture and homework	My day and homework
2	3	Utilize the basic principles of architectural heritage conservation	Sustainable urban conservation	Scientific lecture and homework	My day and homework
3	3	Utilize the basic principles of architectural heritage	Degrees of intervention in building	Scientific lecture and homework	My day and

		conservation	conservation		homework
4	3	Utilize the basic principles of architectural heritage conservation	International Conventions for the Preservation and Management of World Cultural Heritage	Scientific lecture and homework	My day and homework
5	3	Adaptive reuse of the historic building	Adaptive reuse of the historic building	Scientific lecture and homework	My day and homework
6	3	Prepare well-designed reports for the management of historic buildings	Assessing the heritage significance of historic buildings and sites	Scientific lecture and homework	My day and homework
7	3	Semester exam	Semester exam	exam	
8	3	Learn about cultural heritage management and cultural heritage legislation	Integrated conservation and planned conservation	Scientific lecture and homework	My day and homework
9	3	Learn about cultural heritage management and cultural heritage legislation	Preventive conservation, architectural representation and models	Scientific lecture and homework	My day and homework
10	3	Learn about cultural heritage management and cultural heritage legislation	Photogrammetric techniques and creating models of buildings and the urban fabric of cities	Scientific lecture and homework	My day and homework
11	3	Learn about the communication process in cultural heritage and its preservation	Agisoft PhotoScan CIM - City Information Management	Scientific lecture and homework	My day and homework
12	3	Learn about the communication process in cultural heritage and its preservation	Virtual Reality and Information Systems Application	Scientific lecture and homework	My day and homework
13	3	. Learn about the historical development and current status of cultural heritage studies in Iraq and the world	GIS Geography in Heritage Preservation Application	Scientific lecture and homework	My day and homework
14	3	. Learn about the historical development and current status of cultural heritage studies in Iraq and the world	Presentation of the practical project	Project and report	Project and report
15	3	Application and final exam	Application and final exam	Final exam	Final exam
11. Course Evaluation					

Evaluation type	Degree
Homework: 10% Daily Participation: 10% Midterm Exam: 10% Final Report: 20% Final Exam: 50%	
12. Learning and Teaching Resources	
Main References (Sources)	Fielden, B. (2003). Conservation of Historic Buildings. London: Architectural Press.
Recommended supporting books and references (scientific journals, reports...)	Al-Allaf, Emad Hani, (2018). Information modeling and management technology for historical sites and urban heritage buildings.
Recommended supporting books and references (scientific journals, reports...)	Al-Allaf, Emad Hani, (2018). Information modeling and management technology for historical sites and urban heritage buildings.
Electronic references, websites	مستوعبات البحوث في المنصات العلمية: • https://www.researchgate.net/ • https://scholar.google.com/ • https://www.academia.edu/ https://www.jstor.org/

ARC463 Architectural Psychology

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Architectural Psychology - Level 4
2. Course Code:
ARC 463
3. Semester / Year:
Autumn/2023-2024
4. Description Preparation Date:
18/4/2025
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours/ 2 ECTS credits
7. Course administrator's name (mention all, if more than one name)
Name: Assi. Prof. Nasma Maan Mohammed Thabit, Email: nasma.thabet@uomosul.edu.iq
8. Course Objectives • Develop an understanding of the basic principles of architectural psychology. • Key experiments measuring the negative impact of poor design on humans. • Cultivate an understanding of the theoretical connections between architecture and the psychological factors influencing architecture.

Course Objectives	• Develop an understanding of the basic principles of architectural psychology that measure the negative impact of faulty design on humans and instill an understanding of the theoretical connections between architecture and the psychological factors influencing architecture.

9. Teaching and Learning Strategies • Lecture strategy • Discussion strategy • Problem-solving strategy • Cooperative learning strategy

Strategy Using Visual Media and Technology 2. Classroom Assignments 3. Field Visits	1. Promoting an interactive studio environment for lecture presentations and discussions to reflect a realistic picture of professional challenges. 2. Enhancing understanding through classroom assignments. 3. Enhancing understanding through implemented real-life projects that reflect the job market.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	Two hours per week	Understand basic concepts	Theoretical definitions of architectural psychology	Interactive learning: This approach includes the use of classroom discussions.	HW and CW
2	Two hours per week	Definition of theoretical connections	Health architecture and negative environmental impacts	Interactive learning: This approach includes the use of classroom discussions.	HW, CW, exam

3	Two hours per week	Definition of theoretical connections	Indoor environmental quality	Interactive learning: This approach includes the use of classroom discussions.	HW, CW, exam
4	Two hours per week	Definition of theoretical connections	Psychological Implications of Design Elements and Principles + Daily Test	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	HW, CW, exam
5	Two hours per week	Definition of theoretical connections	The role of architecture in changing behavior	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	HW, CW, exam
6	Two hours per week	Definition of theoretical connections	Meanings of geometric shapes + questionnaire	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	HW, CW, exam
7	Two hours per week	Definition of theoretical connections	Architectural character and the most important architectural design considerations	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	HW, CW, exam
8	Two hours per week	Definition of theoretical connections	Architectural Character + Daily Test	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	HW, CW, exam
9	Two hours per week	Definition of theoretical connections	Psychological factors affecting architecture + thermal comfort	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	HW, CW, exam
10	Two hours per week	Monthly test			HW, CW, exam
11	Two hours per week	Definition of theoretical connections	Causes of sick building syndrome	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	HW, CW, exam
12	Two hours per week	Definition of theoretical connections	The most important experiments that measure the negative impact of incorrect design on humans	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	HW, CW, exam
13	Two hours	Semester test			HW, CW, exam

	per week				
14	Two hours per week	Discussion	Submitting and discussing reports	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	HW, CW, exam
15	Two hours per week	Discussion	Seminars	Interactive learning: This approach includes the use of class discussions, cooperative learning in groups,	HW, CW, exam

11. Course Evaluation

Evaluation type	**Degree**
Daily Assessment + 2 Daily Exams + Extracurricular Activities	10
Monthly exam	10
Semester exam	20
Final exam	60
Total	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Psychological Language in Architecture (Introduction to Architectural Psychology), Author: Dr. Al-Harith Abdul Hamid Hassanlik
Main references (sources)	Human Considerations in Architectural Design, King Saud University Press, Author: K.M. Dicey, Thomas Lasswell, Translated by: Abdulaziz bin Saad Al-Muqrin, 1437 AH.
Recommended books and references (scientific journals, reports...)	Many as needed for each topic.
Electronic References, Websites	Many as needed for each topic.
Curriculum or description update rate	% 18

ENGE438 Engineering systems integration

University of Mosul College of Engineering Architectural Engineering Department

• Course Name:
Engineering systems integration
• Course Code:
ENGE438
• Semester / Year:
Spring Semester /2023-2024
• Description Preparation Date:
2023-2024
• Available Attendance Forms:
Lectures in the classroom
• Number of Credit Hours (Total) / Number of Units (Total)
Total number of hours = 45 / Total number of units: 3
• Course administrator's name (mention all, if more than one name)
Name: dr.Iqbal Salim Younus Email: ekbal.alsoofee@uomosul.edu.iq Abdullah Alsarraf Obuai Alwazzan abd.sarraf@uomosul.edu.iq engobuai2013@uomosul.edu.iq
• Course Objectives

Course Objectives	The course aims to provide students with advanced creative skills to use Building Information Management (BIM) applications and software in architectural drawing and design, such as Revit or other advanced software. It also provides students with the tools and techniques to use these software in the field of architecture and urban planning. Revit is a design and construction software that not only manages drawings but also includes information management—information that enables the automatic generation of drawings and reports, design analysis, schedule simulation, facility management, and cost analysis—enabling any construction team to make informed decisions.

• Teaching and Learning Strategies

Strategy	The main strategy that will be followed in this module is to guide students to build architectural design projects in the Revit program. Developing the talent of solving problems in completing projects and preparing their working drawing sets. This is done through theoretical lectures and practical application under supervision in the computer laboratory.

• Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Knowledge and understanding of basic concepts: Develop a deep understanding of the concept of Building Information Modeling (BIM), its uses, the BIM process, and its	Introduction to Building Information Modeling (BIM) technology and Autodesk Revit software and their features.	A lecture in the classroom. Interactive learning: This approach includes giving a practical lecture to students and using classroom discussions, as well as using computer labs for practical application, and group activities that enhance interaction between students and	Classroom application (computer lab training) and homework, as well as daily, monthly, and online exams. Report

		most important applications.		teachers.	preparation (modeling application for an architectural project).
2	3	The student learns about the types of drawing tools and methods of modifying shapes with the help of a computer.	Preparing the Revit program for engineering work	A lecture in the classroom. Modeling realistic projects; applying the acquired knowledge in a practical environment, which helps in designing architectural projects, with regular assessments and feedback provided by teachers to continuously improve students' outputs	
3-4	٦	The student learns the methods of drawing 3D BIM models.	- Drawing and preparing walls and structural framework.	A lecture in the classroom. Assigning students to work in groups to complete a specific modeling task helps prepare them to work within engineering teams in the job market.	
5	3	The student distinguishes between 2D and 3D and understands the nature of drawing with the help of BIM technologies.	-Drawing floors and ceilings		
6	3	Develop their skills in drawing and architectural engineering modeling Revit Architecture	-Basics of drawing doors, windows and furniture placement	A lecture in the classroom An application for modeling an integrated architectural project, giving the student the freedom to choose the project.	
7	3	Develop their skills in creating and modifying Family libraries.	-Basics of drawing vertical movement means (modeling stairs, handrails, and ramps)		
8	3		- Drawing curtain walls		
9-10	6		-Create detail annotations (text, marks, dimensions, key notes), prepare and export engineering drawings, tables of quantities and specifications		
11	3		Mass - Conceptual Mass		
12	3		-Learn the materials, final		

			project presentation, and camera.		
13-14	6	Develop their skills in applying different dimensions of BIM, such as the fifth dimension, project cost estimation, to achieve sustainable development.	Report discussion.		
15	3		Final exam.		

- Course Evaluation

Evaluation type	**Degree**
2 Quizzes	١0 pts.
Monthly Exam	15 pts.
5 Classwork	15 pts.
3 homework	5 pts
Report	5 pts
Final Exam	5٠ pts.
Total	١٠٠ pts.

- Learning and Teaching Resources

Required textbooks (curricular books, if any)	None
Main references (sources)	**1- BIM Design: Realising the Creative Potential of Building Information Modelling** **2- The BIM Manager's Handbook: Guidance for Professionals in Architecture, Engineering, and Construction.** **3- Building Information Modeling: Why? What? How?** **4- Design Integration Using Autodesk Revit 2024: Architecture, Structure and MEP.** **5- Autodesk Revit Architecture 2015: No Experience Required: Autodesk Official Press.**
Recommended books and references (scientific journals, reports...)	▪ ***Exploring Autodesk Revit MEP 2017, 4th Edition*** ▪ ***AECMACAZINE Magazine*** *https://aecmag.com/visualisation/ai-and-the-future-of-arch-viz/*
Electronic References, Websites	▪ *BIM Today Magazine* https://www.pbctoday.co.uk/news/ ▪ *ARCHITECTMAGAZINEL website* https://www.architectmagazine.com/architecture-continuing-education/ ▪ *Pbctoday website* ▪ https://www.pbctoday.co.uk/news/

ARC446 Architectural Design (8)

University of Mosul College of Engineering Architectural Engineering Department

25. Course Name:
Architectural Design (8) / Fourth Level
26. Course Code:
ARC 446
27. Semester / Year:
2nd Semester / 2024
28. Description Preparation Date:
2024
29. Available Attendance Forms:
In person - twice a week
30. Number of Credit Hours (Total) / Number of Units (Total):
9 hrs / 5units
31. Course administrator's name (mention all, if more than one name)
Name: Dr. Dhuha Abdulgani Al-kazzaz Email: dhuha.kazzaz@uomosul.edu.iq Ghada Mohammed Younis Miqdam Ameen Majeed Baydaa Hanna Saffo Farhan Awad Jasim Amer Abdullah Alazzawi Dr. Sinan Mohammed Ayad Waleed Jalal
32. Course Objectives

Course Objectives	Enhancing the student ability of creative thoughts during formation of architectural works is the main issue of this design course with emphasis on the site, the context, the function, the user, the case study, and the personal vision as external motives of creativity in design. The course objectives are: • To examine a building integration with its site during the time to perceive how significant and unavoidable the role of site is during designing process. • To examine a building integration with its function and how significant and unavoidable the role of function is during designing process. • To improve the student ability to use the site and the surrounding environment as significant factors for creating in architecture. • To improve the ability to find a creative solution which responds to the user needs and problems. • Applying a proper concept and design methodology which respects the human factor in architecture. • To enhance creative thoughts by utilizing the student personal temperaments, attitudes, and characters to provide an opportunity for students during formation of architectural works. • To enhance creative thoughts by developing the student knowledge of relevant case studies. • To improve the student abilities of continuity and insistence in developing a design concept for their significant role in achieving creativity. • To improve the ability of providing a successful, realistic and meaningful

	presentation.

33. Teaching and Learning Strategies

Strategy	• Lecture based teaching method • Project based learning method • Critic-based learning

34. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	9	analyze, assess, recc and comparatively evaluate relevant information	Data collection: Precedents Analysis of previous university buildir projects	Group discussion	Assignments
2	9	analyze, assess, recc and comparatively evaluate relevant information	Data collection of Design standards and criteria of health facilities in universi building designs.	Group discussion	Assignments
3	9	analyze, assess, recc and comparatively evaluate relevant information	Site analysis	Group discussion	Assignments
4	9	Apply critical and a imaginative thinking	Day Sketch-1		Class Exam
5	9	Apply knowledge to solve design problem	Discussion of proposals c design concept	Guiding feedba	Continuous evaluation
6	9	Ability to communicat design idea	First submission of Desig concept		Jury assessment system
7	9	Apply knowledge to solve design problem	Design conc development	Guiding feedba	Continuous evaluation
8	9	Apply knowledge to solve design problem	Development of plans (zoning & circulation)	Guiding feedba	Continuous evaluation
9	9	Apply knowledge to solve design problem	Development of plans (building structure)	Guiding feedba	Continuous evaluation
10	9	Ability to communicat and design	Second submission: plans and physical model		Jury assessment system
11	9	Develop imaginat and thinking in design	Development of elevation sections	Guiding feedba	Continuous evaluation
12	9	Apply critical and imaginative thinking	Day Sketch-2		Class Exam
13	9	Ability to communicat design	Pre-final submission		Jury assessment system
14	9	Ability to consider diverse points of view and reach w reasoned conclusions	Solving minor problems: functional, formal & struct	Guiding feedba	Continuous evaluation
15	9	Ability to communicat design	Final submission		Jury assessment system

35. 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, reports .... etc

Day Sketches 30 pts Precedent analysis reports 4 pts Functional analysis reports 4 pts Site analysis reports 2 pts Design project – concept submission 10 pts Design project – plan submission 10 pts Design project – prefinal submission 15 pts Design project – final submission 15 pts Attendance + Daily assessment 10 pts Total 100pts	
36. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	1- Joseph De Chiara, "Time-Saver Standards for Building Types". 2- Ernst Neufert ,"Neufert Architects' Data".
Recommended books and references (scientific journals, reports...)	3- Sibylle Kramer, 2010, "Colleges & Universities – Educational Spaces". 4- Katy Lee, 2011, "University Architecture".
Electronic References, Websites	

ARC447 Landscape Architecture

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name: Landscape Design
2. Course Code:
ARC 477
3. Semester / Year:
Second/ 2024-2025
4. Description Preparation Date:
12/4/2025
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
45 hours/ 2 ECTS credits
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Ahmed Yousif Al-Omary, Email: ahmed.alomary @uomosul.edu.iq
8. Course Objectives

Course Objectives	Develop an understanding of the principles and theories in outdoor space design. Enhance practical skills in outdoor space design. Foster creativity and design thinking. Instill an understanding of environmental sustainability in outdoor space design.
9. Teaching and Learning Strategies	
Strategy	**Project-Based Learning:** This strategy encourages students to engage in real or simulated design projects that require applying theoretical knowledge in practical scenarios. Through this approach, students can effectively develop critical thinking and problem-solving skills while gaining valuable hands-on experience. **Analysis and Critique:** In this strategy, students present their designs to the class and receive feedback from peers and the instructor. This helps enhance their ability to provide and receive constructive criticism and opens the door for in-depth discussions about design principles and creative choices, ultimately improving students' communication and presentation skills.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1	3/hr/w	Develop a deep understanding of the fundamental concepts and principles in landscape design, including history, theories, and current practices.	Introduction, Definitions, References	**Interactive Learning:** This approach involves the use of classroom discussions, workshops, and group activities that enhance interaction between students and instructors.	Theoretical and practical lectures with daily and monthly exams, weekly reports, and preliminary, midterm, and final presentations.
Week 2	3/hr/w		Review of International Landscape Design Projects		
Weeks 3	3/hr/w	**Practical Design**	History of	Practical projects:	

and 4		**Skills:** Develop the ability to design realistic landscape projects that consider aesthetics, functionality, and sustainability.	Landscape Design How to Start Landscape Design Fundamentals of Natural Architecture	Designing real-world projects allows students to apply the knowledge they have gained in a practical environment, which helps enhance problem-solving skills and creative thinking.	
Weeks 5 ,6,7,8	3/hr/w	Critical assessment and analytical thinking: Enhancing the ability to analyze and critically evaluate existing projects and design proposals in an effective manner.	Furniture and site furnishings Water in outdoor spaces Interactive spaces	Field trips and study visits: Visiting real sites allows students to see the applications of landscape design in the real world, enhancing their understanding of the challenges and opportunities in the field.	
Weeks 9,10,11,12	3/hr/w	Communication skills: Improving the ability to communicate effectively, both in writing and verbally, and the ability to present designs and ideas clearly to different audiences.	Sustainable outdoor space design Outdoor space details	Use of technology: Digital learning through computer-aided design (CAD) software and virtual reality (VR) tools enhances students' ability to visualize projects and develop complex designs.	
Weeks 13,14,15	3/hr/w	Environmental responsibility: Understanding and applying sustainable design principles, using resources in a way that preserves the environment and improves the quality of public life. Collaboration and teamwork: The ability to work within multidisciplinary teams and collaborate effectively with	Outdoor space design Report discussion Final exam	Assessment and feedback: Providing regular assessments and constructive feedback from teachers and peers, helping students continuously improve their work.	

		engineers, planners, and other specialists.			

Course Evaluation : Distribution of the grade out of 100 based on the tasks assigned to the student, such as daily preparation, daily and oral exams, monthly and written exams, reports, etc.

Evaluation type	**Degree**
report	5
Day sketches	10
Concept submission	10
Mid-course submission	20
Final submission	25
Final exam	30
Total	100

11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	" Foundations of landscape architecture : integrating form and space using the language of site design" Norman Booth "Site Engineering for Landscape Architects" "Landscape and Urban Planning" "Journal of Landscape Architecture"
Recommended books and references (scientific journals, reports...)	"Landscape Architecture: A Manual of Environmental Planning and Design" by Barry Starke and John Ormsbee Simonds – A book that covers multiple aspects of landscape design from both theoretical and practical perspectives. "Landscape and Urban Planning" journal – A scientific journal that publishes research and studies on landscape and urban planning and design. "Site Engineering for Landscape Architects" by Steven Strom, Kurt Nathan, and Jake Woland – A book that focuses on the engineering techniques essential for landscape design. "Journal of Landscape Architecture" – A journal dedicated to publishing research and articles on innovations and developments in landscape design.
Electronic References, Websites	**Visualizing Architecture**: A website that provides explanations and images of various architectural projects, helping to better understand designs and new ideas. **Architizer**: This website covers architecture news and modern technologies, showcasing architectural projects, providing a rich source of both practical and theoretical information. **Freecadapps**: A specialized website offering a library of CAD blocks and files that can be used in landscape design projects.

	Arc Space: Offers detailed articles and projects in the fields of architecture and landscape design, highly beneficial for students and architects. **Architecture Week**: A specialized magazine that provides a wide range of articles and designs relevant to architecture students and architects.
Curriculum or description update ratio	5%

ARC448 Architectural Spaces Programming

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Architectural Spaces Programming / Fourth Year
2. Course Code:
ARC448
3. Semester / Year:
Second semester/ 2024-2025
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
(2) hours per week / (2) units
7. Course administrator's name (mention all, if more than one name)
Name: rana mahfodh Email:
8. Course Objectives

Course Objectives	**● Increase students' methodological knowledge of planning the design process according to modern scientific methods.** **● Analyze real-world projects to discover their objectives and application locations.** **● Learn how to interpret a functional program based on functional and spatial relationships.**
9. Teaching and Learning Strategies	
Strategy	● A theoretical course that includes previous programming methods and the process of solving design problems, as well as the course related to aspects of design products (function; performance methods, analysis, goal setting, performance requirements, programming concepts, synthesis evaluation and development),

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 hours	Understanding the design process using modern scientific methods. Analysis of real-life projects to discover their objectives and application areas. Analysis of functional programs and understanding of functional relationships.	Introduction, definition, programming considerations. Domains of architectural programming, generating design problems. Steps of the design process, design constraints. Design process methodology. The concept of architectural programming, the Bina model. Concept formation in programming and design, the Doric framework for programming. Functional program steps/activities, relationships,	Understanding and analysis	Semester exam

			and zoning. Architectural programming representations, diagrams, and matrices. Site analysis steps, evaluation of alternatives. Architectural programming thinking in relation to the types of design process. Programming case study and design concept formulation. Programming report discussion. Semester exam.		
2	2 hours				
3	2 hours				
4	2 hours				
5	2 hours				
6	2 hours				
7	2 hours				
8	2 hours				
9	2 hours				
10	2 hours				
11	2 hours				
12	2 hours				
13	2 hours				
14	2 hours				
15	2hours				

11. Course Evaluation

Evaluation type	**Degree**
	The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

12. Learning and Teaching Resources	
	Pena, W. & S., Parshall, PROBLEM SEEKING, An Architectural Programming Primer, (4th Ed), John Wiley & Sons Ltd. New York, 2003. Duerk P. Donna, Architectural Programming: Information Management for Design, Wiley, 17.09.1993 - 272 Seiten.

ARC449 Theory of Architecture

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Theory of Architecture
2. Course Code:
ARC 449
3. Semester / Year:
Spring / 2024-2025
4. Description Preparation Date:
12/4/2025
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
٤٥ hours/ ٣ ECTS credits
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Asma Al-Dabbagh, Email: asma.dabbagh@uomosul.edu.iq
8. Course Objectives

Course Objectives	The course aims to present a theoretical framework of the main architectural movements and their secondary sub-divisions, with their main characteristics and practices.
9. Teaching and Learning Strategies	
Strategy	It depends on the ability to identify changes in ideologies through three centuries, so enhancing the ability to differentiate between them, and applying them in design.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	An ability to define causes of changes	Backgrounds of Modern Architecture, Revivalism, Eclecticism	A lecture in the classroom	Direct exam
2	3	An ability to define principles of deferent approaches	The Beginning Strands of Modern Architecture, Art Nouvea, De Stijl & Constructivism, Futurism	A lecture in the classroom	Direct exam
3	3	An ability to define principles of deferent approaches	Expressionism, The Chicago School of Architecture, Organic Architecture/ Frank Lloyd Wright	A lecture in the classroom	Direct exam
4	3	An ability to define principles of deferent approaches, and to compare between them	International Style & the Bauhaus School, The Architecture of Functionalism, New Objectivitism	A lecture in the classroom	Direct exam
5	3	An ability to define principles of deferent approaches, and to compare between them	The Architecture of Le- Corbusier, The Architecture of Ludwig Mies	A lecture in the classroom	Direct exam

6	3	An ability to define principles of deferent approaches, and to compare between them	The deficiencies of Modern Architecture, Crises of Modern Architecture	A lecture in the classroom	Direct exam
7	3	An ability to define principles of deferent approaches, and to compare between them	The Architecture of Brutalism, Archigram & Metabolism	A lecture in the classroom	Direct exam
8-9	3	An ability to define principles of deferent approaches, and to compare between them	Exam.	A lecture in the classroom	Direct exam
10	3	An ability to define principles of deferent approaches, and to compare between them	Late-Modern Architecture/ Theories & Practices	A lecture in the classroom	Direct exam
11-12	3	An ability to define principles of deferent approaches, and to compare between them	Late-Modern Architecture/ Theories & Practices	A lecture in the classroom	Direct exam
13	3	An ability to define principles of deferent approaches, and to compare between them	Late-Modern Architecture/ Theories & Practices	A lecture in the classroom	Direct exam
14	3	An ability to define principles of deferent approaches, and to compare between them	Post-Modern Architecture/ Theories & Practices	A lecture in the classroom	Direct exam
15	3	An ability to define principles of deferent approaches, and to compare between them	Post-Modern Architecture/ Theories & Practices	A lecture in the classroom	Direct exam

11. Course Evaluation

Evaluation type	**Degree**
2 quizzes	12
Term exam	28
Final exam	60
Total	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	None
Main references (sources)	Changing Ideals in Modern Architecture/ Peter Collins Modern Architecture since 1900/ William Curtis Architecture Today/ Charles Jencks International Style in Architecture/ Shereen Sherzad
Recommended books and references (scientific journals, reports...)	-------
Electronic References, Websites	-------

ARC450 Islamic Architecture

University of Mosul College of Engineering Architectural Engineering Department

- Course Name:

Islamic Architecture / Fourth Year

- Course Code:

ARC 450

- Semester / Year:

First/ 2024-2025

- Description Preparation Date:

12/4/2025

- Available Attendance Forms:

Lectures in the classroom

- Number of Credit Hours (Total) / Number of Units (Total)

Total Hours = 30 / Total Units = 2

- Course administrator's name (mention all, if more than one name)

Name: Asst. Prof. Dr. Ahmed Abdulwahid Thannoon Taha, Email: Ahmadabdulwahid@uomosul.edu.iq

- Course Objectives

Course Objectives	• Study and understand Islamic architecture and its characteristics. • Develop students' skills in understanding Islamic architecture's formal, functional, and structural elements. • Identify the types of functional buildings in Islamic architecture.

- Teaching and Learning Strategies

Strategy	• Lecture-based learning • Field visits • Use of visual media and technology • Feedback • Report preparation and discussion

- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 hours	Gain knowledge about Islamic architecture, including the various styles and characteristics of buildings in Mosul, through lectures, reading materials, and visual aids such as photos and videos. Understand and	Definition of Islamic architecture, factors of formation (natural and cultural factors) General characteristics of Islamic architecture, characteristics related to the principles of the Islamic religion	Lecture-based learning: This approach involves lectures and classroom discussions that promote interaction between students and instructors.	Theoretical and discussion lectures with daily and monthly exams and quarterly reports Field Trips and Study Visits: Field visits to Islamic architecture projects in
2	2 hours		Characteristics related to the climatic environment Characteristics related to the formal and functional concepts that characterize Islamic architecture.		
3	2 hours		The most important functional patterns in Islamic architecture First, religious buildings (the mosque). The main components of a mosque building are the prayer area,		

		appreciate the significance of Islamic architecture and its impact on society. Apply knowledge and skills to real-life situations and problems in the fields of architecture, city planning, urban planning, interior and exterior spaces, and the preservation of cultural heritage and antiquities. Practice the profession of architect in accordance with scientific rules and methods. Draw inspiration from the design features of ancient buildings for future designs Use knowledge, skills, and creativity to develop new ideas, products, or solutions by incorporating design features from ancient buildings into future designs	mihrab, minbar, courtyard, wall, and minaret. Secondary components of a mosque (ablution areas, Quran reading pulpit, prayer areas for dignitaries)	Use of visual media and technology: Using programs and display tools to support the educational process and introduce Islamic architecture.	Mosul enable students to see real-life applications of Islamic architectural designs, enhancing their understanding of the challenges and opportunities in the field. Feedback: Focus on and discuss examples of Islamic heritage. Report Preparation: Prepare and discuss reports on buildings and elements of Islamic architecture.
4	2 hours		Main types of mosques: Arabic-style mosques, Iwan-style mosques, and Ottoman-style mosques Religious buildings (Madrassa) Architectural characteristics of a madrasa Famous examples of Islamic madrasas		
5	2 hours		Second: Service buildings (markets, khans, crown palaces) -Markets, definition of markets, location of markets - Khanats, definition of khans, architectural characteristics		
6	2 hours		- Crown palace, definition, architectural characteristics		
7	2 hours		Service buildings (baths, hospitals)		
8	2 hours		- Baths, definition, architectural characteristics		
9	2 hours		- hospitals, definition, architectural characteristics		
10	2 hours		Third: Residential buildings (traditional Islamic houses)		
11	2 hours		Residential buildings (Islamic places)		
12	2 hours		Fourth: Sufi buildings (khanqah, ribat, zawiya, tekke)		
13	2 hours		Fifth: Funeral buildings (shrine, shrine, shrine, rawda)		
14	2 hours		Sixth: Water utility buildings (Water fountain building, bridges, water meters)		
15	3 hours		Final Exam		

- Course Evaluation

Evaluation type	**Degree**
2 quizzes	15
Reports	10
Term exam	15
Final exam	60
Total	100

• Learning and Teaching Resources	
Required textbooks (curricular books, if any)	There are no officially prescribed books
Main references (sources)	1. Islamic Architecture, John. D. Hoag, 2. Islamic Architecture, Form, Function, and Meaning, Robert Hillenbrand. 3. Development of Mosque Architecture, Study of the Role of Adaptation in the Development of Mosques in the First Century AH, Ahmed Abdul Wahid Dhannoon. 4. Dictionary of Islamic Peoples' Architecture, Ali Thuwaini
Recommended books and references (scientific journals, reports...)	• Islamic Art and Architecture (1250-1800), Sheila Blair, Jonathan Bloom • Arab-Islamic Architecture in Iraq, Part One, Issa Suleiman and others • Encyclopedia of Islamic Architecture, Abdul Rahim Ghaleb
Electronic References, Websites	• **Islamic Architecture" website**https://www.islamic-architecture.org This website is dedicated to studying Islamic architecture and covers various aspects of it worldwide. It contains articles, case studies, and photographs illustrating the architectural styles that developed in various Islamic regions. • **Website of the Center for Islamic Architecture – University of Islamic Architecture Studies**https://www.islamic-architecture.org.uk This center offers in-depth resources and studies on Islamic architecture from historical and artistic perspectives. The website includes videos, research articles, and digital exhibits on the history of Islamic architecture and its development. • **The website of the Museum of Islamic Architecture**https://www.islamicart.museum It features numerous digital exhibits on Islamic architecture and related arts. Visitors can enjoy viewing photographs and exhibitions of distinctive buildings and architectural projects from the Islamic world.

ARC464 Advanced Construction Technique

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Advanced Construction Technique / Fourth Year
2. Course Code:
ARC464
3. Semester / Year:
Second semester/ 2024-2025
4. Description Preparation Date:
2025
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
Total number of hours = 30 / Total number of units: 2
7. Course administrator's name (mention all, if more than one name)
Name: Assistant Professor Dr. Omar Hazem Kharufa Email: omar.kharufa@uomosul.edu.iq
8. Course Objectives Develop an understanding of principles and theories in structural topics and construction techniques. Develop practical skills in structural design. Instill creativity and design thinking.

Course Objectives	**● Enhance critical thinking and problem-solving skills, identifying characteristics, constraints, and opportunities.** **● Develop effective communication and presentation skills.** **● Appreciate the cultural, social, and historical contexts of architectural design.**
9. Teaching and Learning Strategies	
Strategy	1. Project-based learning: This strategy encourages students to engage in real-world or simulated design projects that require applying theoretical knowledge to practical scenarios. Through this approach, students can develop critical thinking and effective problem-solving skills while gaining valuable practical experience. ٢. Analysis and Critique: In this strategy, students present their designs to the class and receive feedback from their peers and the instructor. This helps foster constructive criticism and opens the door to in-depth discussions about design principles and creative choices, improving students' overall communication and presentation skills.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 hours	Understanding Basic Concepts: Develop a deep understanding of the fundamental concepts and principles of building design. Practical Design Skills: Develop the	Nanotechnology in architecture	Interactive learning: This approach includes the use of class discussions, workshops, and group activities that promote interaction between students	Theoretical and practical lectures with daily and monthly exams, weekly reports, and preliminary, secondary,
2	2 hours		Design of tall buildings		
3	2 hours		Types of building structures		
4	2 hours		Deconstructive architecture		
5	2 hours		Folded architecture techniques		

6	2 hours	ability to design complex architectural projects. Critical Evaluation and Analytical Thinking: Enhance the ability to critically and effectively analyze and evaluate existing projects and design proposals. Communication Skills: Improve the ability to communicate effectively, both written and verbally, and the ability to clearly present designs and ideas to various audiences.	Sustainable architecture	and teachers.	and final presentations.
7	2 hours		Architecture of the future		
8	2 hours		Bioarchitecture techniques		
9	2 hours		Smart architecture technologies		
10	2 hours		Mud architecture		
11	2 hours		Concepts related to construction techniques		
12	2 hours		Cortical structures		
13	2 hours		Inflatable structures		
14	2 hours		Domes and vaults		
15	2hours		Discuss the report Final exam		

11. Course Evaluation

Evaluation type	Degree
	The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

12. Learning and Teaching Resources

ARC465 Sustainable Architecture

University of Mosul College of Engineering Architectural Engineering Department

(not opened)

ARC466 Construction Projects Management

University of Mosul College of Engineering Architectural Engineering Department

(not opened)

ARC467 Planting Design

University of Mosul College of Engineering Architectural Engineering Department

(not opened)

MODULE DESCRIPTION FORM

Course System

Fifth Level

Fifth Level

المستوى الدراسي الخامس (الفصل الاول)									
اسم المتطلب	اسم المقرر		نوع المتطلب	عدد الساعات النظرية	عدد الساعات العملية	عدد الوحدات	الممهد ان وجد	رمز المقرر	الملاحظات
	باللغة العربية	باللغة الانكليزية							
متطلبات الكلية	الادارة الهندسية	Engineering Management	اجباري	2		2		ENGC525	
	الاقتصاد الهندسي	Engineering Economy	اجباري	2		2		ENGC526	
متطلبات القسم	مشروع التخرج(1)	Graduation Project (1)	اجباري	2	6	5	التصميم المعماري(7)	ARC 541	
	التصميم الحضري	Urban Design	اجباري	2	6	5	نظريات التصميم الحضري	ARC 542	
	التخمين والمواصفات	Estimation and Specifications	اجباري	2		2		ARC 543	
	التصميم بمساعدة الحاسوب	Computer Aided Design	اجباري	1	2	2		ARC 544	
	متطلبات السلامة في المباني	Building Safety Requirements	اختياري	2		2		ARC 561	يختار الطالب مقرر واحد عدد الوحدات المطلوبة = 2 وحدة
	تطبيقات حاسوبية	Computer Applications		1	2	2		ARC 562	
	التفاصيل المعمارية	Architectural Details		1	2	2		ARC 563	
	نظريات النقد المعماري	Theories of Architecture Criticism		2		2		ARC 564	
مجموع ساعات و وحدات الفصل الاول للمستوي الخامس				11	18	20			

المستوى الدراسي الخامس (الفصل الثاني)									
اسم المتطلب	اسم المقرر		نوع المتطلب	عدد الساعات النظرية	عدد الساعات العملية	عدد الوحدات	الممهد ان وجد	رمز المقرر	الملاحظات
	باللغة العربية	باللغة الانكليزية							
متطلبات الكلية	هندسة البيئة و الاستدامة	Environmental Engineering and Sustainability	اختياري	3		3		ENGE536	اجباري لطلبة القسم
	انظمة البناء الذكي	Smart Building Systems	اختياري	3		3		ENGE539	اجباري لطلبة القسم
متطلبات القسم	مشروع التخرج(2)	Graduation project (2)	اجباري	1	14	8	مشروع التخرج(1)	ARC 545	
	السلوك وممارسة المهنة	Professional Practice	اجباري	2		2		ARC 546	
مجموع ساعات و وحدات الفصل الثاني للمستوي الخامس				9	14	16			

ENGE525 Engineering Management

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Engineering Management
2. Course Code:
ENGE525
3. Semester / Year:
2025-2024 Autumnal
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
Total number of hours = 32 / Total number of units: 2
7. Course administrator's name (mention all, if more than one name)
Name: Dr.mozahim hadidi Email: mozahim.hadidi@uomosul.edu.iq
8.Course Objectives : Develop a beginner's understanding of engineering management and its meaning. Develop skills through practical tests on a specific engineering management topic, such as marketing.

Course Objectives	● 1. Understanding modern management concepts in general and project management a focused manner, which will enable students to acquire the necessary skills and knowledge to manage projects according to a well-established scientific methodology. ● 2. Understanding the vocabulary required within the framework of project managemer in accordance with what is globally recognized as a specific language that enables students to achieve management objectives.

9.Teaching and Learning Strategies :

The main strategy used in delivering this course is to encourage students to engage in exercises while simultaneously honing and expanding their critical thinking skills. This will be achieved through interactive classes and lessons, and by considering simple experiments that involve some sampling activities of interest to students.

Strategy	1. Learning through practice 2. Field visits, if possible 3. Design evaluation and feedback
Application	• Practical application of management skills in real-life projects that simulate professional challenges • Daily and monthly tests

10.Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 hours per week	Understanding basic concepts Engineering management skills	• Management components • Basic organizational	Interactive Learning: This approach includes the use	**Theoretical lectures with daily and monthly exams and weekly reports**

2 3 4 5 6 7 8 9 10 11 12 13 14 15		Critical evaluation and analytical thinking Communication skills Collaboration and teamwork	functions within the engineering project management approach • A brief overview of the system concept • Some of the skills required in engineering project management, with an emphasis on soft skills (organizational skills) • (Communication Skills) • (Organizational Skills) • Some of the skills required in engineering project management, with a focus on soft skills • (Leadership Skills) • (Adaptive Skills) • (Negotiation Skills) • Various project management tools and techniques. • Introduction to engineering project management, characteristics, and basic concepts. • Success factors and causes of project failure. • Knowledge areas related to project management according to the PMBOK. • SQCT objectives. • Stakeholder analysis matrix. • WPS (Work Process	of classroom discussions, workshops, and group activities that promote interaction between students and teachers. Daily exercises and reports Field trips and study visits Use of technology: Digital learning. Assessment and feedback: Providing regular assessments and constructive feedback from teachers and peers helps students continually improve their work.	

			Framework). • Project schedule (critical path) • Network diagram • Practical exercise in managing a virtual project • Final exam		

11.Course Evaluation	
Evaluation type	**Degree**
The grade distribution is out of 40 for the annual effort and 60 for the final exam, so the total is 100. The annual effort consists of daily and monthly exams, reports, and daily assessments.	

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	None
Main references (sources)	**1. Project management: The basics of success by: Eugene G. Spiegle** **2. Project management: principles and practices by: M. Pete Spinner** **3. Principles of management with a focus on business administration, Prof. Dr. Khalil Mohammed Al-Shamaa**
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

ENGE526 Engineering Economy

University of Mosul College of Engineering Architectural Engineering Department

Course Description

1. Course Name:	
Engineering Economics / fifth level	
2. Course Code:	
ENGE526	
3. Semester / Year:	
Second Semester / 2024/2025	
4. Description Preparation Date:	
19 / 4 / 2025	
5. Available Attendance Forms:	
Theoretical Lecturers and Tutorials	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30 hours / 2 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Rakan Farooq Qasim Email: Ra_fa99@yahoo.com	
8. Course Objectives	
Course Objectives	1- ntroducing the student to the importance of studying the engineer economics course. 2- Introducing the student to the importance of controlling costs Engineering projects. 3- Training students to conduct economic studies Comparisons a alternatives.
9. Teaching and Learning Strategies	
Strategy	Theoretical , Practical , Tutorial and Field lecturers

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Learning	General concepts of engineering economics and sustainability	Learning and discussion	Discussion
2,3,4	2 for each week	Learning and solving problems	Costs, annual cost bonus and inflation	Learning and discussion	Discussion and homework
5,6	2 for each week	Learning and solving problems	Compound interest and economic relations	Learning and discussion	Discussion and homework
7,8	2 for each week	Learning and solving problems	Analysis of cash flow and time value of capital	Learning and discussion	Discussion and homework
9,10,11	2 for each week	Learning and solving problems	Comparisons and alternatives - present value -	Learning and discussion	Home works

			future value - internal rate of return		
12,13	2 for each week	Learning and solving problems	Consumption - ways to find extinction	Learning and discussion	Home works
14,15	2 for each week	Learning	Economic feasibility of projects and sensitivity analysis	Learning and discussion	Discussion and homework

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, reports .... etc.

12. Learning and Teaching Resources	
Required textboo (curricular books, any)	Engineering economics
Main referenc (sources)	Project Evaluation
Recommended books and references (scientific journals, reports...)	
Electronic Referenc Websites	

ARC541 Graduation Project (1)

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Graduation Project (1)
2. Course Code:
ARC541
3. Semester / Year:
2025-2024 Autumnal
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
2 theoretical + 6 practical (8) / number of units (5)
7. Course administrator's name (mention all, if more than one name)
Name: dr.hafedh yahya Email: hafedh.yahya@uomosul.edu.iq dr.hassan kasim Email: hassan.kasim@uomosul.edu.iq
8. Course Objectives

Course Objectives	• The ability to identify, define, formulate, and solve engineering problems by applying th principles of engineering, science, and mathematics. • The ability to produce engineering designs that meet desired needs within given constraints by applying analysis and synthesis processes in the design process. • The ability to establish and implement appropriate measurements and tests with quality assurance, analyze and interpret results, and apply engineering judgment to reach conclusions. • The ability to work effectively within teams, set goals, plan activities, meet deadlines, a manage risk and uncertainty.

9. Teaching and Learning Strategies

Strategy	• Gather information and data about the project from various relevant sources, including books, scientific references, examples and models of implemented buildings, and review relevant governmental and non-governmental institutions. • Analyze data and information and identify pros and cons using a SWOT analysis strategy. • Make design decisions based on the information analysis.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	٢hours of theory + 6 hours of practical	The ability to identify, define, formulate, and solve engineering problems by applying the principles of engineering, science, and mathematics.	Project components and elements	جمع المعلومات	المناقشة
٢			Users	المراقبة والتحليل	المناقشة
٣			Similar examples	المراجعة والتحليل	تقديم تقرير
٤					
٥		Ability to establish and perform appropriate measurements and tests	Career programme	Collect information	Discussion
٦				Analyze	Discussion

		with quality assurance, analyze and interpret results, and exercise engineering judgment to reach conclusions.		examples	
٧			Surveying programme	Data collection	Submit a report
٨				Review and evaluation	
٠			Project website	Data collection	Presentation, display and discussion of results
١٠				Analysis	
١١				Evaluation	
١٢		The ability to produce engineering designs that meet required needs within given constraints by applying analysis and synthesis processes in the design process.	Design principle and decision making	Analysis and evaluation	Discussions and presenting results
١٣					
١٤					
١٥		Ability to work effectively within teams, set goals, plan events, meet deadlines, and manage risk and uncertainty.	Final evaluation	Analysis and evaluation	Discussions and presenting results
١٦				Analysis and evaluation	

11. Course Evaluation

Evaluation type	**Degree**
Grades are distributed out of 100 based on the tasks assigned to the student: Daily preparation: 10% Daily and oral exams: 20% Monthly exams: 20% Report submission: 50%	

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	None
Main references (sources)	• Neufert, Ernst and Peter . Architect's Data . Oxford Brookes University. • **Time Saver Standards for Building Types . McGraw-Hill.**
Recommended books and references (scientific journals, reports...)	Site analysis by Tariq Farouk Abu Auf
Electronic References, Websites	• http://www.archiprix.net / • www.arcspace.com • www.archiseek.com • www.a-matter.com • www.byggeinfo.dk www.architactic.com/en/index.html

ARC542 Urban Design

University of Mosul College of Engineering Architectural Engineering Department

37.	Course Name:
	Urban Design – Fifth Stage
38.	Course Code:
	ENAR-50
39.	Semester / Year
	Autumn Semester/2023−2024
40.	Description Preparation Date:
	2023−2024
41.	Available Attendance Forms:
	Inside the Studio, online
42.	Number of Credit Hours (Total) / Number of Units (Total)
	10/ 6
43.	Course administrator's name (mention all, if more than one name)
	Name : Assist. Prof. Mazin Jaber Omar Email: mazinjaber@uomosul.edu.iq Name : Dr. Usama Humadi Email: usamahumadi@uomosul.edu.iq Name: Dr. Faris Matloob Email: faris.matloob@uomosul.edu.iq Name: Dr. Khalid Jamal Aldeen Email: khalid.j.aldeen@uomosul.edu.iq Name: Dr. Ahmad Tohala Email: ahmadtohala@uomosul.edu.iq Name: Ubay Taha Alwazan Email: engobuai2013@uomosul.edu.iq
44.	Course Objectives
	Course Objectives: The chapter focuses on the role of urban design within the context of urban planning and emphasizes Distinguished curricula, specialized perspectives and scientific method for studying this discipline. The class equips specialist knowledge and skills in the field of urban design theory; Study the elements affecting urban design such as flexibility, sustainability and handling In addition to exposure to scientific research methods related to the study of the environment Urbanism.
45.	Teaching and Learning Strategies
Strategy	1. Project-based learning: This strategy encourages students to engage in real design or simulation projects that require the application of theoretical knowledge on the ground. Through this approach, students can develop critical thinking and problem-solving skills effectively while gaining valuable practical experience, especially with regard to structural structures and their details. 2. Analysis: In this strategy, students present their designs in front of the classroom and receive feedback from their classmates and the teacher. This helps to enhance the capacity for constructive criticism and opens the door to in-depth discussions on the principles of

	construction and synthesis, improving students' general analysis and synthesis skills.

46. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	10	Understanding Key Concepts: Develop a deep understanding of key concepts and principles in urban design	Introduction to Urban Design	Interactive learning: This approach includ the use of	Theoretical lectures with daily and monthly exams, class assignments, reports and discussions with students.
Second	10		Collect data related to the project	Classroom discussions,	
Third	10	Practical design skills: Develop the ability to design realistic and implementable urban projects. Critical	Project data analysis	workshops, and group activities that promote interaction between studen and teachers.	
Fourth	10		Evaluation of data, standards and metrics		
Fifth	10		Initial idea concepts to present design proposal	Scientific report help students expand their perceptions through researc	
Sixth	10	Evaluation and Analytical Thinking: Enhance the ability to critically and effectively analyze and evaluate existing projects and design proposals.	A comprehensive model of proposed design alternative(1)	Use of technolo through researc and developmer	
Seventh	10		A comprehensive model of the proposed design alternative(2)	Assessment an feedback: Provi regular assessments ar constructive feedback by teachers and peers, helping students continuously improve their wo	
Eighth	10		Land use model for the proposed design alternative		
Ninth	10	Communication skills: Improving the ability to communicate effectively with other disciplines of services and	The initial idea of the proposed design		

Tenth	10	details of projects.	alternative(1)		
Eleventh	10	Collaborations and teamwork: Ability to work in multidisciplinary teams and	The initial idea of the proposed design alternative(2)		
Twelfth	10	collaborate effectively with engineers, architects, and other specialists (constructionists).	Elevations models for the proposed design alternative		
Thirteenth	10				
Fourteenth	10		Section models for the proposed design alternative		
Fifteenth	10		Perspectives models for the proposed design alternative Developing the final presentation of the project		
			Discussion Final Exam		

47. 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, reports .... etc

Day-sketches	**5pts**
Visits reports	**5pts**
Multidisciplinary design project	**25pts**
Term Project Presentation	**40pts**
Final Project Presentation	**25pts**
Total	**100pts**

48. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	• **URBAN DESIGN: A TYPOLOGY OF PROCEDURES AND PRODUCTS :Jon Lang** • **Urban Design Guidelines: PB's PlaceMaking Group** • **Housing Technical Standard and Codes of Practice", Report Two- Polservice - 1982 - Ministry of Housing and Construction - Iraq.** • **Thurthar New Town, 1985, "The Determinate of The Planning Process, The Formulation of The Master Plan and Conceptual Urban Design Elements", Doxiadis Associates – Consultants on Development and Ekistics.**
Main references (sources)	• **Urban Design Guidelines: PB's PlaceMaking Group**
Recommended books and references (scientific journals, reports…)	• **Housing Technical Standard and Codes of Practice", Report Two- Polservice - 1982 - Ministry of Housing and Construction - Iraq.**
Electronic References, Websites	**Ach net.com : Pinterest.com**

ARC543 Estimation and Specifications

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Estimates and technical specifications
2. Course Code:
ARC543
3. Semester / Year:
2025-2024 Autumnal
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
30 /٢
7. Course administrator's name (mention all, if more than one name)
Name: Raed Salim Ahmad Email: raeedalnumman@uomosul.edu.iq
8. Course Objectives

Course Objectives	● Understanding Estimation Criteria: Providing students with the knowledge necessary estimate the initial cost of architectural and construction projects, based on a range factors such as materials used, labor, and required tools. ● Teaching Technical Specification Preparation: Introducing students to the methods preparing detailed technical specifications for projects, including identifying technica requirements for materials, implementation, and quality. ● Cost and Budget Analysis: Training students to analyze the components of the total cost of projects, prepare budgets for various projects, and estimate costs at various project stages. ● Achieving Efficiency and Quality in Implementation: Developing students' understanding of the importance of adhering to technical specifications to achieve quality and efficiency in implementation while avoiding errors and delays.

9. Teaching and Learning Strategies	
Strategy	Linking Theory and Practice: Offering a combination of theoretical lectures covering fundamentals and concepts, along with practical workshops where students prepare realistic estimates and provide specifications for hypothetical or actual projects. Cooperative Learning: Dividing students into teams to estimate costs for actual projects and prepare technical specifications, enhancing teamwork and professional interaction. Informative Assessment: Adopting an internship assessment system that continuously monitors student performance through small tests and short projects to improve understanding and application.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 hours per	Understanding estimation criteria	General Definitions	**Interactive learning: This**	**Theoretical and practical lectures**
2		and cost estimation	Basis of Cost		

	week	at different project stages.	Estimates	**approach includes the use of classroom discussions and group activities that promote interaction between students and teachers.**	**with daily and monthly exams and reports.**
3		And cost estimation at different project stages.	Types of Estimates / Actual Cost		
4		With the necessary knowledge to estimate the initial cost of architectural and construction projects.	Construction Materials and Unit Measurements / Brick		
5		With the necessary knowledge to estimate the initial cost of architectural and construction projects.	Construction Materials and Unit Measurements / Plaster		
6		With the necessary knowledge to estimate the initial cost of architectural and construction projects.	Construction Materials and Unit Measurements / Concrete		
7		With the necessary knowledge to estimate the initial cost of architectural and construction projects.	Construction Materials and Unit Measurements / I-Beam Section		
8		With the necessary knowledge to estimate the initial cost of architectural and construction projects.	Testing		
9		Developing students' understanding of the importance of adhering to technical specifications to achieve quality and efficiency ...Analysis of the	Specifications and Bills of Quantities		

		components of the total cost of projects.			
10		Analysis of the components of the total cost of projects.	Depreciation		
11		Understanding estimation criteria	Standard Specifications		
12		and cost estimation at different project stages.	Technical Specifications		
13		And cost estimation at different project stages.	Bills of Quantities and Prices		
14		With the necessary knowledge to estimate the initial cost of architectural and construction projects.	Total Contract Costs		
15					

11. Course Evaluation

Evaluation type	**Degree**
2 Quizzes	١0 pts.
Monthly Exam	15 pts.
5 Classwork	15 pts.
3 homework	5 pts
Report	5 pts
Final Exam	5٠ pts.
Total	١٠٠ pts.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	None
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

ARC544 Computer Aided Design

University of Mosul College of Engineering Architectural Engineering Department

49. Course Name:
Computer Aided Design
50. Course Code:
ARC 544
51. Semester / Year:
1st Semester 2024
52. Description Preparation Date:
2024
53. Available Attendance Forms:
Weekly In-person lectures
54. Number of Credit Hours (Total) / Number of Units (Total)
3hrs / 3units
55. Course administrator's name (mention all, if more than one name)
1- Name: Dr. Dhuha Abdulgani Al-kazzaz Email: dhuha.kazzaz@uomosul.edu.iq 2- Name: Aseel Ibraheem
56. Course Objectives

Course Objectives	• Introduce students to the concept of computational design methods highlighting its role in the architectural design process. • Introduce students to algorithmic design thinking using rules to describe information, defined in a logical sequence to generate design ideas. • Understanding computational design as the set of methods borrowed from fields such as computer science, mathematics, and geometry, applied to solving design problems. • Introduce students to the concept of generative design approach such shape grammars, case-based design, genetic algorithms, etc. • Introduce students to the simulation-based building design as the guiding principle behind form generation through performative simulation processes. • Introduce students to the BIM as the guiding method in current architecture practice. • Achieve a comprehensive understanding of the application of digital tools in the context of architecture. • Explore a range of global architectural projects, providing examples of advanced digital design methods. • Bridging the Gap between academic theories and architecture practice.
57. Teaching and Learning Strategies	
Strategy	• Lecture based teaching method • Classroom Questioning and Discussions • Using Video as a Teaching Tool

58. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Acquiring new knowledge	Introduction to computation design: types and function	Lecture and discussion	none
2	3	Acquiring new	Generative Design Method	Lecture and	none

		knowledge		discussion	
3	3	Understanding digital design thinking and methods	Generative Design Method Shape grammars	Lecture and discussion	none
4	3	Understanding digital design thinking and methods	Generative Design Method Genetic Algorithms	Lecture and discussion	Quiz
5	3	Understanding digital design thinking and methods	Generative Design Method Parametric Design	Lecture and discussion	none
6	3	Understanding digital design thinking and methods	Simulation techniques in Architectural Design	Lecture and discussion	none
7	3	Understanding digital design thinking and methods	Virtual reality techniques in Architectural Design	Lecture and discussion	none
8	3		Midterm Exam		Exam
9	3	Acquiring new knowledge	Machine Learning techniqu in Architectural Design	Lecture and discussion	none
10	3	Identify digital design strategies in practice	Building Information Modelling	Lecture and discussion	none
11	3	Identify digital design strategies in practice	Building Information Modelling	Lecture and discussion	none
12	3	Identify digital design strategies in practice	Application of Generative Design Practice	Discussion	Quiz
13	3	Identify digital design strategies in practice	Application of Generative Design in Practice	Discussion	

59. 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, reports .... etc

Mid-term exam 30
Quiz 10
Final exam 60

60. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	1. Architecture's New Media - Principles, Theories, and Methods of Computer-Aided Design. By Yehuda E. Kalay 2. Algorithmic architecture. by Kostas Terzidis 3. Computational Design: Technology, Cognition and Environments. By Rongrong Yu, Ning Gu, Michael J. Ostwald.
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	https://papers.cumincad.org/

ARC445 Building Safety Requirements

University of Mosul College of Engineering Architectural Engineering Department

(not opened)

ARC561 Computer Applications

University of Mosul College of Engineering Architectural Engineering Department

(not opened)

ARC562 Architectural Details

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Architectural Details / fifth level
2. Course Code:
ARC562
3. Semester / Year:
2025-2024 Autumnal
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours/ 2 ECTS credits
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Omar Hazim Kharoofa Email: Omar.kharufa@uomosul.edu.iq Talat Ibrahim Al-Anee talaat.alaane@uomosul.edu.iq
8. Course Objectives 1. Teach students to design architectural details with functional characteristics and how to deal with problems that arise in building components, such as moisture infiltration, heat transfer within the building, or passive sound transmission. These problems are addressed as part of the building's architectural design. 2. Teach students to design and modify architectural details with structural and compositional characteristics and how to deal with problems that arise in structural components of the building, such as expansion joints, structural movements in the general structure of the building, building foundations, etc., and how to address such details in the architectural and structural design of the building as an integrated unit. 3. Enhance the capabilities and skills of graduates by offering specialized continuing education courses and communicating with them to support the achievement of the department's mission.

Course Objectives	● Enhance detailed thinking and problem-solving skills, identifying characteristics related to the level of architectural detail. ● Develop skills related to architectural solutions related to structural detail solutions and environmental comfort treatments for buildings. ● Appreciate the contexts of ideas related to architectural design and the possibility of linking them to realistic solutions for engineering projects through the study of architectural details and the possibility of their application.
9. Teaching and Learning Strategies	
Strategy	• Project-based learning: This strategy encourages students to engage in real-life or simulated design projects that require the application of theoretical knowledge to real-world situations. Through this approach, students can develop detailed architectural thinking skills through effective problem-solving while gaining valuable practical experience, particularly with regard to detailed structures at all levels (structural or environmental). • Analysis: In this strategy, students study architectural detail designs in front of the class and receive feedback from their peers and the instructor. This helps enhance the ability to offer constructive criticism and opens the door to in-depth discussions about sound thinking principles and how to deal with details scientifically, thus improving students' overall analytical and synthesis skills.
10. Course Structure	
Strategy:	Application

• Learning through projects: • Field visits • Design evaluation and feedback • Use of visual media and technology	• Practical application of design skills in real-life projects that simulate professional challenges. • Live analysis of architectural details and their specific composition. • Promoting an interactive studio environment for presenting designs and exchanging constructive feedback. • Using drawings and CAD tools to support the learning process.

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	2 hours per week	Understanding Basic Concepts: Develop a deep understanding of the fundamental concepts and principles in the design and analysis of structural and structural detailing. Practical Design Skills: Develop the ability to design architectural details that are functionally relevant to the purpose for which they are intended, ensuring they are realistic and feasible. Critical Evaluation and Analytical Thinking: Enhance the ability to effectively analyze and evaluate design projects based on their architectural details. Communication Skills: Improve the ability to communicate effectively with other disciplines, including services and construction details for projects. Collaboration and Teamwork: The ability to work within multidisciplinary teams and collaborate effectively with engineers, architects, and other specialists.	Introduction, Definitions, References Review of design projects through the fine-grained level of detail for each function. How to begin thinking about the process through its detailed composition. Basics of executive drawing for architectural projects and drawing their specialized details. Design of architectural details for each design level. Architectural details and their engineering specifications. Design of buildings realistically in line with executive designs. Design of executive details for the projects under study. Report discussion. Final exam.	Interactive Learning: This approach includes the use of classroom discussions, workshops, and group activities that promote interaction between students and teachers. Practical Projects: Discussing real-life projects allows students to apply their acquired knowledge in a practical setting, helping to enhance problem-solving skills and creative thinking. Field Trips and Study Visits: Visits to real sites enable students to see real-life applications of architectural detail design, enhancing their understanding of the challenges and opportunities in the field. Use of Technology: Digital learning through computer-aided design (CAD) software enhances students' ability to visualize architectural details and develop designs. Assessment and Feedback: Regular assessments and constructive feedback from teachers and peers help students	**Theoretical and practical lectures with daily and monthly exams, weekly reports, and preliminary, secondary, and final presentations.**

				continually improve their work.	

11. Course Evaluation	
Evaluation type	**Degree**
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	None
Main references (sources)	1-Architectural Detailing - Function, Constructability, Aesthetics , Publication date 2021 Topics Architectural drawing – Detailing Publisher New York : Wiley , USA. 2-Working Drawings Handbook , Keith Styles, Andrew Bichard , SBN 9780750663724 Published September 4, 2004 by Routledge , UK , 2004 3-Architectural Working Drawings: Residential and Commercial Buildings , William P. Spence , John Wiley & Sons , USA , 2000 **4-The Professional Practice of Architectural Working Drawings , Osamu A. Wakita, Hon. A.I.A. , Copyright © 2003 by John Wiley & Sons, Inc., New York. All rights reserved.**
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

ARC563 Theories of Architecture Criticism

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Theory of Architectural Criticism
2. Course Code:
ARC 564
3. Semester / Year:
Fall / 2024-2025
4. Description Preparation Date:
12/4/2025
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours/ 2 ECTS credits
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Asma Al-Dabbagh, Email: asma.dabbagh@uomosul.edu.iq
8. Course Objectives

Course Objectives	The aims of this course are to give a theoretical conception about criticism definition, importance and classifications, as well as to understand criticism methodologies, classified as contextual and textual, so as to improve the ability to analyze the architectural written text from critical point of view, practice architectural criticism, and improving architectural practicing depending on criticism theories, finally to express his/her hypothetical conception about design to others .

9. Teaching and Learning Strategies

Strategy	Understanding the architectural criticism, importance and classifications. Understanding the criteria of architectural criticism . Understanding the methods of architectural criticism .

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	An ability to define principles of deferent methodologies	Definition of criticism, importance and classification .	A lecture in the classroom	Direct exam
2	2	An ability to define principles of deferent methodologies	Components of critical process .	A lecture in the classroom	Direct exam
3	2	An ability to define principles of deferent methodologies	Criteria of critical process .	A lecture in the classroom	Direct exam
4	2	An ability to define principles of deferent methodologies	Secondary activities within critical process .	A lecture in the classroom	Direct exam
5	2	An ability to define principles of deferent methodologies	Contextual methods / Doctrine	A lecture in the classroom	Direct exam
6	2	An ability to define principles of deferent methodologies	Systemic /Typed	A lecture in the classroom	Direct exam
7	2	An ability to define principles of deferent methodologies	Psychology/ Sociological	A lecture in the classroom	Direct exam

8-9	2	An ability to define principles of deferent methodologies	Textual methods	A lecture in the classroom	Direct exam
10	2	An ability to define principles of deferent methodologies	Phenomenology	A lecture in the classroom	Direct exam
11-12	2	An ability to define principles of deferent methodologies	Structuralism	A lecture in the classroom	Direct exam
13	2	An ability to define principles of deferent methodologies	Structuralism	A lecture in the classroom	Direct exam
14	2	An ability to define principles of deferent methodologies	Exam	A lecture in the classroom	Direct exam
15	2		Discussion	A lecture in the classroom	Direct exam

11. Course Evaluation

Evaluation type	**Degree**
2 quizzes	12
Term exam	28
Final exam	60
Total	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	None
Main references (sources)	Jido, Yanar Hassan, 1993, **"Modern Ideological Schools and Architecture – A Research in Architectural Criticism Criteria"**, Al-Talee'a Publishing House, Beirut, Lebanon. Sharp, Dennis, Dec. 2005 **"Criticism in Architecture"** Architectural Criticism and Journalism: Global Perspective, International Seminar, Kuwait. Wayne Attoe " **Architecture and Critical Imagination** " 1977
Recommended books and references (scientific journals, reports...)	-------
Electronic References, Websites	-------

ENGE536 Environmental Engineering and Sustainability

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Environmental Engineering and Sustainability / fifth level
2. Course Code:
ENGE536
3. Semester / Year:
second/ 2024-2025
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
hours:
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Bassam Al-Hafith bisam.alhafiz@uomosul.edu.iq Dr. Husain Salman hussein.salman@uomosul.edu.iq
8. Course Objectives • Introducing students to the fundamentals of environmental engineering and sustainability concepts, with a focus on t relationship between human activities and the natural environment. • Analyzing types of environmental pollution and the impact of design on the environment and society, and developing sustainable architectural and urban solutions. • Enhancing students' capabilities in managing waste and natural resources, and utilizing recycling and environmental conservation techniques. • Developing students' skills in applying green building and renewable energy techniques to support sustainable devel projects. • Introducing students to water and air treatment technologies and natural disaster management, and analyzing their r protecting the environment and public health. • Equipping students with the ability to conduct Environmental Impact Assessment (EIA), while applying sustainability standards in urban planning and design. • Enhancing students' scientific research and academic presentation skills through the preparation of innovative projec specialized seminars.

Course Objectives	• Enabling students to identify sources of environmental pollution, types of waste, and mechanisms within engineering contexts. • Developing students' ability to use recycling and clean energy principles to address enviro problems within engineering design. • Providing students with the basic skills to apply environmental impact assessment techni real engineering and construction projects. • Enhancing students' understanding of environmental protection policies and laws rel sustainable development, and how to integrate them into professional practice. • Encouraging students to develop applied research projects that contribute to the cre sustainable solutions to address local and global environmental issues.

9. Teaching and Learning Strategies	
Strategy	• Lecture strategy • Discussion strategy • Problem-solving strategy • Cooperative learning strategy
Strategy:	Application

1. Use of visual media and technology 2. Classroom assignments 3. Discussion groups	• Providing an interactive learning studio environment that allows for lectures and lively discussions, simulating real-life professional challenges. • Supporting students' practical understanding through classroom assignments that includ calculations and illustrations of water supply and sewage networks and waste disposal sy • Consolidating knowledge through the implementation of real-life projects inspired by the and requirements of the labor market.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning meth
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	3 weekly	• Learn the basic principles of environmental engineering and the foundations of sustainability and apply them to engineering projects. • Analyze different types of environmental pollution and their impact on the environment and society, while proposing sustainable design solutions. • Develop effective waste management plans, promote a culture of recycling, and sustainable resource use. • Evaluate the importance of biodiversity and the role of environmental engineering in protecting natural ecosystems. • Apply industrial pollution control techniques and adopt green building principles in engineering projects. • Design effective strategies for managing and conserving natural resources using modern technologies. • Identify water and air treatment technologies and evaluate their effectiveness in improving environmental quality. • Develop environmental response plans to manage natural disasters and reduce their impacts on society and the environment. • Evaluate renewable energy sources and apply clean energy technologies to achieve environmental sustainability. • Apply Environmental Impact	• Introduction to Environmental and Sustainability Engineering • Environmental Pollution and Design Impacts on the Environment and Society • Waste Management and Recycling Promotion • Biodiversity Protection and Ecosystem Conservation • Industrial Pollution Control and Green Building Technologies • Natural Resource Management and Conservation Technologies • Water and Air Treatment Technologies • Natural Disaster Management and Environmental Response • Renewable Energy and Clean Energy Technologies • Environmental Impact Assessment (EIA) • Sustainable City Planning and Environmental Design • Environmental Policies and Legislation • Research and Innovation Projects in Environmental and Sustainability Engineering • Seminars • Seminars	Interactive lear This approach includes the us class discussio cooperative lea in groups,

		Assessment (EIA) methodologies to prepare environmental reports and analyze sustainable alternatives. • Design development plans for sustainable cities by integrating environmental principles into urban planning. • Interpret national and international environmental policies and analyze the impact of legislation on development projects. • Conduct applied and innovative research in the fields of environmental sustainability and provide advanced technical solutions. • Develop research and scientific presentation skills by delivering seminars on contemporary environmental topics. Develop communication and interactive presentation skills while promoting critical thinking in environmental seminar discussions.		

11. Course Evaluation

Evaluation type	**Degree**
Quizzes	15
Term Exam points	15
Report	10
Final exam	60
Total	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	None
Main references (sources)	▪ United Nations Environment Programme (UNEP). "Global Environment Outlook – GEO-6: Healthy Planet, Healthy People."
Recommended books and references (scientific journals, reports...)	• Gilbert M. Masters and Wendell P. Ela • "Introduction to Environmental Engineering and Science" (3rd Edition). • John Randolph and Gilbert Masters • "Environmental Science and Technology: A Sustainable Approach to Gr Science and Technology". • Journal of Environmental Management (Elsevier).

	Sustainability (MDPI).
Electronic References, Websites	▪ https://iccts.moch.gov.iq/wp-content/uploads/2023/09/%D9%85%D8%AF%D9%88%D9%86%D8%A9-%D8%A7%D9%84%D8%B5%D8%B1%D9%81-%D8%A7%D9%84%D8%B5%D8%AD%D9%8A-%D9%81%D9%8A-%D8%A7%D9%84%D9%85%D8%A8%D8%A7%D9%86%D9%8A.pdf ▪ https://www.alnaqeeb.me/%D8%AA%D9%86%D9%81%D9%8A%D8%B0-%D8%B4%D8%A8%D9%83%D8%A7%D8%AA-%D8%A7%D9%84%D8%B5%D8%B1%D9%81-%D8%A7%D9%84%D8%B5%D8%AD%D9%8A/#google_vignette

ENGE539 Smart Building Systems

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Smart building systems
2. Course Code:
ENGC 539
3. Semester / Year:
First/ 2024-2025
4. Description Preparation Date:
12/4/2025
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
45 hours/ 3 ECTS credits
7. Course administrator's name (mention all, if more than one name)
Name: Omar Hazem Kharoufa - Maysaa Muwaffaq Younis, Email: Maysaa.moffeq@uomosul.edu.iq , omar.kharufa@uomosul.edu.iq
8. Course Objectives

Course Objectives	Learn about the concept of smart architecture and smart buildings, their generations, components, and features. Learn about the most important smart systems attached to smart buildings, which enable them to improve their functional and environmental performance. Learn about the concept of smart cities and their components, which represent an important solution for achieving sustainable urban development and keeping pace with the modern technological developments witnessed by contemporary societies.

9. Teaching and Learning Strategies

Strategy	١.Learning based on analyzing smart building models. This strategy encourages students to explore smart building projects as global models. This requires applying theoretical knowledge to practical scenarios, enabling students to add appropriate smart systems based on the project's function. 2. Analysis and Critique: In this strategy, students present their reports on analyzing the smart features of buildings to the class and receive feedback from their peers and the teacher. This helps enhance the ability to offer constructive criticism, which improves students' overall communication and presentation skills.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Interactive Learning: This approach includes the use of class discussions, workshops, and group activities that promote interaction between students	Introduction to the concept of intelligence, artificial intelligence, and smart architecture	A lecture in the classroom	Theoretical lectures with daily and monthly exams, reports and discussions with students

		and teachers.			
2	3	Interactive Learning: This approach includes the use of class discussions, workshops, and group activities that promote interaction between students and teachers.	The concept of smart buildings, their features, and classification of smart buildings and the first generation	A lecture in the classroom	Theoretical lectures with daily and monthly exams, reports and discussions with students
3	3	Interactive Learning: This approach includes the use of class discussions, workshops, and group activities that promote interaction between students and teachers.	Second and third generation smart buildings and their features The impact of smart architecture on the design process Daily quiz	A lecture in the classroom	Theoretical lectures with daily and monthly exams, reports and discussions with students
4	3	Interactive Learning: This approach includes the use of class discussions, workshops, and group activities that promote interaction between students and teachers.	Components of smart systems within buildings and water in outdoor spaces	A lecture in the classroom	Theoretical lectures with daily and monthly exams, reports and discussions with students
5	3	Interactive Learning: This approach includes the use of class discussions, workshops, and group activities that promote interaction between students and teachers.	Homework Review of global projects that represent models and applications of smart architecture,	A lecture in the classroom	Theoretical lectures with daily and monthly exams, reports and discussions with students
6	3	Interactive Learning: This approach includes the use of class discussions, workshops, and	Smart envelopes: characteristics, importance, and types	A lecture in the classroom	Theoretical lectures with daily and monthly exams, reports and discussions with students

		group activities that promote interaction between students and teachers.			
7	3	Assessment and Feedback: Regular assessments and constructive feedback from teachers and peers help students continually improve their work.	Smart envelopes: characteristics, importance, and types	A lecture in the classroom	HW, CW, exam
8-9	3	Interactive Learning: This approach includes the use of class discussions, workshops, and group activities that promote interaction between students and teachers.	Smart materials	A lecture in the classroom	HW, CW, exam
10	3	The student learned how to find the areas of specific shapes by applying integrals	Smart cities	A lecture in the classroom	HW, CW, exam
11-12	3	The student learned how to find the volumes of specific shapes by applying integrals	Smart cities	A lecture in the classroom	HW, CW, exam
13	3	Assessment and Feedback: Regular assessments and constructive feedback from teachers and peers help students continually improve their work.	Smart cities	A lecture in the classroom	HW, CW, exam
14	3	Practical Projects: Students are tasked with	Report discussion	A lecture in the classroom	HW, CW, exam

		proposing a number of intelligent systems they have learned about in the course using architectural diagrams			
15	3		Final exam	A lecture in the classroom	HW, CW, exam

11. Course Evaluation	
Evaluation type	**Degree**
2 quizzes	12
homework	5
Report	5
Term exam	18
Final exam	60
Total	100

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	▪ **SMART MATERIAL.IN ARCHITECTURE , Birkhäuser – Publishers for Architecture , ISBN10:37643** ▪ **Smart buildings. Our future is smart.,2021** ▪ **The concept of "Local Smart Architecture": An Approach to Appropriate Local Sustainable Building "Faysal M. Abo-elazm, Shimaa M. AliInternational Journal of Cultural Heritage http://iaras.org/iaras/journals/ijchISSN: 2367-90501Volume 2, 2017** **خصائص المدن الذكية وامكانية تطبيقها , ايمان علي ناجي ,اطروحة ماجستير ,جامعة صنعاء كلية الهندسة,**
Main references (sources)	▪ **Advancements in smart building envelopes: A comprehensiv https://www.sciencedirect.com/journal/energy-and-buildings**
Recommended books and references (scientific journals, reports...)	▪ **- Smart Materials: A Revolution in Architecture, Yasaman Hosseini, Siamak Panahi** ▪ **Everything You Wanted to Know About Smart Cities,** Saraju P. Mohanty**,IEEE Consumer Electronics Magazine 5(3):60-70**
Electronic References, Websites	

ARC545 Graduation project (2)

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Graduation project (2)
2. Course Code:
ARC545
3. Semester / Year:
2025-2024 Autumnal
4. Description Preparation Date:
٢٠٢٥/٠٣/٨
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
1 theoretical + 6 practical (14) / Number of units (8)
7. Course administrator's name (mention all, if more than one name)
Name: hafedh yahya Email: hafedh.yahya@uomosul.edu.iq
8. Course Objectives

Course Objectives	• The ability to identify, define, formulate, and solve engineering problems by applying the princip of engineering, science, and mathematics. • The ability to produce engineering designs that meet desired needs within given constraints by applying analysis and synthesis processes in the design process. • The ability to establish and implement appropriate measurements and tests with quality assurance, analyze and interpret results, and apply engineering judgment to reach conclusions. • The ability to work effectively within teams, set goals, plan activities, meet deadlines, and mana risk and uncertainty.
9. Teaching and Learning Strategies	
Strategy	• Gather information and data about the project from various relevant sources, including books, scientific references, examples and models of implemented buildings, and review relevant governmental and non-governmental institutions. • Analyze data and information and identify pros and cons using a SWOT analysis strategy. • Make design decisions based on the information analysis.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	١ hour of theory + 14 hours of practical	The ability to identify, define, formulate, and solve engineering problems by applying the principles of engineering, science, and mathematics.	Building the design idea	Feedback	Discussion
٢			Website design solutions	Feedback	Discussion
٣			Integrate the project into the site	Feedback	Provide diagrams
٤					
٥		Ability to establish and perform appropriate	Ground floor plans	Feedback	Discussion
٦				Feedback	Discussion
٧			Floor plans	Feedback	Provide diagrams

٨		measurements and tests with quality assurance, analyze and interpret results, and exercise engineering judgment to reach conclusions.		Feedback	
٩			Clips	Feedback	Presentation and discussion of plans
١٠				Feedback	
١١				Feedback	
١٢		The ability to produce engineering designs that meet required needs within given constraints by applying analysis and synthesis processes in the design process.	Facades and exterior design	Feedback	Presentation and discussion of plans
١٣					
١٤					
١٥		Ability to work effectively within teams, set goals, plan events, meet deadlines, and manage risk and uncertainty.	Final evaluation	Analysis and evaluation	Presentation and discussion of plans
١٦				Analysis and evaluation	

11. Course Evaluation

Evaluation type	**Degree**
Grade distribution out of 100 is based on the tasks assigned to the student. Daily preparation: 10% Daily exams: 10% Regular assessments: 20% Final project submission and discussion: 60%	

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	None
Main references (sources)	• Neufert, Ernst and Peter . Architect's Data . Oxford Brookes University. **• Time Saver Standards for Building Types . McGraw-Hill.**
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	• http://www.archiprix.net / • www.arcspace.com • www.archiseek.com • www.a-matter.com • www.byggeinfo.dk www.architactic.com/en/index.html

ARC546 Professional Practice

University of Mosul College of Engineering Architectural Engineering Department

1. Course Name:
Professional Practice
2. Course Code:
ARC546
3. Semester / Year:
2025-2024 Autumnal
4. Description Preparation Date:
2024
5. Available Attendance Forms:
Lectures in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
a
7. Course administrator's name (mention all, if more than one name)
Name: Email:
8. Course Objectives

Course Objectives	
9. Teaching and Learning Strategies	
Strategy	
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	١hour of theory + 14 hours of practical	The ability to identify, define, formulate, and solve engineering problems by applying the principles of engineering, science, and mathematics.	Building the design idea	Feedback	Discussion
٢			Website design solutions	Feedback	Discussion
٣			Integrate the project into the site	Feedback	Provide diagrams
٤					
٥		Ability to establish and perform appropriate measurements and tests with quality assurance, analyze and interpret results, and exercise engineering judgment to reach conclusions.	Ground floor plans	Feedback	Discussion
٦				Feedback	Discussion
٧			Floor plans	Feedback	Provide diagrams
٨				Feedback	
٠			Clips	Feedback	Presentation and discussion of plans
١٠				Feedback	
١١				Feedback	

١٢ ١٣ ١٤		The ability to produce engineering designs that meet required needs within given constraints by applying analysis and synthesis processes in the design process.	الواجهات والتشكيل الخارجي	التغذية الراجعة	Presentation and discussion of plans
١٥ ١٦		Ability to work effectively within teams, set goals, plan events, meet deadlines, and manage risk and uncertainty.	التقييم النهائي	التحليل والتقييم التحليل والتقييم	Discussions and final evaluation

11. Course Evaluation	
Grade distribution out of 100 is based on the tasks assigned to the student. **Daily preparation: 10%** **Daily exams: 10%** **Regular assessments: 20%** **Final project submission and discussion: 60%**	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	None
Main references (sources)	• Neufert, Ernst and Peter . Architect's Data . Oxford Brookes University. **• Time Saver Standards for Building Types . McGraw-Hill.**
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	• http://www.archiprix.net / • www.arcspace.com • www.archiseek.com • www.a-matter.com • www.byggeinfo.dk www.architactic.com/en/index.html