جامعة الموصل
كلية الهندسة
قسم هندسة العمارة

مفردات المناهج للدراسة الأولية
القسم الاول
المقررات للمستويات
الاول والثاني والثالث

العام الدراسي 2022-2021

المستوي الاول – الفصل الاول (الخريفي) – العام الدراسي 2022/2021								
الرمز	المقرر الممهد	الوحدة الدراسية	ساعات الاسبوع		اسم المقرر		نوع المتطلب	
			عملي	نظري	باللغة الانكليزية	باللغة العربية		
UOMC101		3		3	English Language	اللغة الانكليزية	جامعة	مقررات اساسية
UOMC102		3	2	2	Computer	الحاسوب		
ENGC121		3	2	2	Calculus (1)	الرياضيات (1)	كلية	
ENGC123		1	3		Engineering Drawing	الرسم الهندسي		
ARC 141		4	8	1	Architectural Design (1)	التصميم المعماري(1)	قسم	
ARC 142		2	2	1	Freehand Drawing	الرسم اليدوي		
ARC 143		1		1	Art and Architecture	الفن والعمارة		
		17	17	10			المجموع	
		17 Credits						
							جامعة	مقررات اختيارية
							كلية	
ARC 161		2	2	1	Applied Arts	الفنون التطبيقية	قسم	
ARC 162		2	2	1	Model Workshop	ورشة مجسمات		
		4	4	2			المجموع	
		4 Credits						
		19 Credits			المجموع الكلي للوحدات 19 (اجبارية 17 + اختيارية 2)			

Note: Each students must take at least 2 elective credites hours.

University of Mosul

College of Engineering

Department of Architecture

Course Title: Architectural design (1)
Course Number/Type: ARC 141 Core
Credit Hours: 4
(1 Theoritical and 8 laboratory h/week)
Level/Term: 1st level / Fall
Prerequisties: None

Course Description:

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. 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.

Refernces:

1- **Form, Space, Francis Ching,**
2- **Introduction to Architecture Design, Francis ching**
3- **Pattern Language.**

Course Details:

Subject	**Week**
The definition of architecture and architectural education, in general, and the most important possibilities that must be available to the architectural student, from the possibility of drawing, imagining and understanding. The student's definition of basic drawing style, the style of drawing using them and the use of tools in the drawing of certain models and on a paper the size of A3 (vertical lines, horizontal, oblique, concentric circular shapes .... and so on	1
Submission	2
Identify the nature of the planes through the texture, Texture exercises	3

the vertical and horizontal lines and the free manual drawing technique. Training the student through an intensive series of exercises on different font values using a pencil. Developing his expressive ability to draw tools, FreeHand to achieve various linear values. * Pencil exercises with different tools, changing the density of lines, degree of blackening of the pen, shapes of lines and directions ... etc.	
Submission	4
Basic geometrical shapes and geometric derivations (square, circle, triangular, pentagonal, hexagonal and octagonal) and possible variations of geometric shapes, and then the use of these derivatives with simple geometric designs.	5
Submission	6
Definition of the basic principles of two-dimensional design 2D: the concept of composition, its elements, its basic principles, types of configurations ... Applied exercises ... Use the technique of output in collage to facilitate the clarification of the idea. The definition of design elements and the most important design principles of the two-dimensional configurations with exercises to analyze the two-dimensional configurations according to the geometric elements and design principles, as well as prepare a configurable form by the students.	7
Submission	8
Introducing Grid's importance in the organization and creation of two-dimensional formations by adopting geometric shapes as basic units in the formation of the configuration derived from the geometric grid.	9
The introduction of color as a new variable in the composition. Define the color and the color wheel and the color distribution and gradations, color theory and basic principles and the use of poster colors.	10
3D design combinations, the composition is built according to the basic design principles of pre-designed geometric units, and the identification of the design effects resulting from the use of the third dimension in architecture. Learn about the front and side projections of the three-dimensional designs and reflections on the way of showing.	11
Discussion – submission	12
Abstraction and color in dealing with volumetric formations, a real project that the student abstracts into its basic elements and then construct a new composition by reconstructing these elements in a short project through which the concepts that have been designed are applied.	13
The specific project with a 3D composition built from 3D geometric units.	14
Submission	15

Lecturer Name: Head of the department:

Signature: Signature:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Engineering Drawing
Course Number/Type: ENGC123 Core
Credit Hours: 1
(1 lecture and 3 laboratory h/week)
Level/Term: 1st level / Fall
Prerequisties: None

Course Description:
This course develop 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 develop the basic engineering drawing skills in one plane of the students and use drawing tools.
Refernces:
1. Engineering Graphic/ Frederick Gerek, Alva Mitchell. (2014). 2. Engineering Drawing / N. D. Bhatt (2012). 3. Engineering Drawing (Geometric Drawing)/ P.S. Gill (2013). 4. Engineering Graphic/ Shiv Kumar. (2016). 5. Engineering Drawing /S.R. Singhal & O.P. Saxena. (2013). 6. Engineering Drawing / Loop Lai, Ramakant Rana. (2015).
Course Details:

Subject	**Week**
Tools of Engineering Drawing	1
Lettering/ Practices	2
Geometric Constructions (Bisecting a line and an Angle) /Practices	3
/ Drawing of Polygons (Triangles-Pentagon-Hexagon-Octagon) Practices	4
Drawing Tangents/ Practices	5
Drawing Tangents/ Practices	6
Drawing of Ellipse/ Practices	7
1st term Exam	8
Projection Drawings/ Practices	9
Types of Projections (Paralleled Projection)/ Practices	10
Multiview Projection (Orthogonal)/ Practices	11
/ Multiview Projection (Orthogonal)- Principals of Dimensions Practices	12
2nd term Exam	13
Isometric Drawing/ Practices	14
الامتحان النهائي	15

Lecturer Name: Head of the department:

Signature: Signature:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Freehand Drawing
Course Number/Type: ARC 142 Core
Credit Hours: 2
(1 Theoritical and 2 laboratory h/week)
Level/Term: 1st level / Fall
Prerequisties: None

Course Description:

Usually there is theoretical introductory for the way and technique that adopted to draw the subject (model) and later the student began, the master continues to give his notes and correction about student painting through the lecture.

Refernces:

1-Drawing – a creative process, Francis D. K. Ching , john Wiley & sons , inc. , 1990
2-Drawing outdoor, Henry C. Pitz , Watson- Guptill publications , 1965 , New York
3-How to paint and draw, Bodo W. Jaxtheimer, Thames and Hudson, 1962, London.
4-Watercolor technique, Rex Brandt, sixth edition, Reinhold publishing corporation, 1963

Course Details:

Subject	Week
Introductory test to know the student aptitude	1
Simple model consist of cubes – stage 1	2
Simple model consist of cubes – stage 2	3
Advance model consist of cubes – stage 1	4
Advance model consist of cubes – stage 2	5
Simple model consist of circle shapes & cylinders – Stage 1	6
Simple model consist of circle shapes & cylinders – Stage 2	7
Simple model consist of oblique cubes – stage 1	8
Simple model consist of oblique cubes – stage 2	9
Simple model consist of glass bottles – stage 1	10
Simple model consist of glass bottles – stage 2	11
Simple model consist of irregular forms	12
Simple model consist of irregular forms	13
Advance model consist of irregular forms	14
Advance model consist of irregular forms	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Art & Architecture
Course Number/Type: ARC 143 Core
Credit Hours: 1 (1 Theoritical h/week)
Level/Term: 1st level / Fall
Prerequisties: None

Course Description:

The subject is mostly theoretical. This course Concentrating on the different types of compositions which express design unity, Aesthetic judgment and taste tests, Analysis of mass and space, and also the principles of special organization, Analysis of constructional design and materials, Definition of architectural idea, style and creativity, presentation of the most important trends and movements in art and architecture with analysis of the works of pioneers.

Refernces:

1- Architecture, Form, Space and Order / Francis Ching/1996
2- The Art of Color and Design / Maitland Graves/1951
3- Launching Imagination / Mary Stewart/2006
4- 1985/مباديء في الفن والعمارة /شيرين احسان شيرزاد

Course Details:

Subject	Week
Definition of architecture and architect's work, also the relations between architecture and other sciences	1
Elements of design and their application in art and architecture. Basic elements of form (point, line ,plane, volume).	2
Principles of design and their applications in art and architecture,(identically ,similarity, contrast, Gradation, dominance, Balance, unity).	3
Analysis of design elements (line, direction, volume) and their application in art and architecture	4
Architectural form. Characteristics of form	5
Ratio and proportion, golden mean	6
Texture, value, color.	7
Term Exam 1s	8
Architectural composition, types of geometric forms' connections, articulation of forms and corners and their application in art and architecture	9
Architectural design's items (shape and types of shapes, human scale).	10
Constructional compositions and materials.	11
Space and spatial organizations.	12
Elements defining space, Exterior and interior space.	13
Idea and style in architectural design. Architectural styles of pioneers.	14
Term Exam 2nd	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Applied Arts
Course Number/Type: ARC 161 Elective
Credit Hours: 2
(1 Theoritical and 2 laboratory h/week)
Level/Term: 1st level / Fall
Prerequisties: None

Course Description:

Definitions of all kinds of arts specially the applied arts, and thier characteristics which distinguished from the fine arts, and take design elements defination. Also lectures clarify the most importany movements in art like the classic and modern arts through history. They also clarify the arts & architecture relationship with human civilizations. There are 4 practical exercises within the course.

Refernces:

1- Graves, Maitland: "The Art of Color and Design".
2- Rasmussen, S. Eller: "Experiencing Architecture".

Course Details:

Subject	**Week**
Introduction to Applied Arts.	1
Modern & ancient definitions of arts.	2
Exe.1: Three dimensional spatial configuration Using chopsticks.	3
Design principles, formal analysis of natural elements	4
Exe.2: Three dimensional spatial configuration With the application of design principles (Sculpture configuration).	5
Color theories and applications in design	6
Exe.3: Use colors and gradients	7
Golden Ratio.	8
Exe.4: Golden Ratio Exercise	9
Spatial Relation and its Applications	10
Exe.5: Geometric Shapes with Spatial Relation	11
Introduction to decoration	12
Islamic Decoration.	13
Exe.6: Islamic Decoration.	14
Submission	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Model Workshop
Course Number/Type: ARC162 Elective
Credit Hours: 2
(1 lecture and 2 laboratory h/week)
Level/Term: 1st level / Fall
Prerequisties: None

Course Description:	
Definition of the architectural model, and uses of the architectural model, and knowing the materials used to make architectural models and the characteristics of each material, and learning methods of creating three-dimensional models (cubes, pyramids, spherical model, cylindrical shape, ...), and take design elements definition. Also lectures clarify the The golden ratio, Uses of the golden ratio, and the concept of color, the psychological effects of color. There are 4 practical exercises.	
Refernces:	
1- Form, Space, Francis Ching, 2- Introduction to Architecture Design, Francis ching 3- Pattern Language.	
Course Details:	
Subject	**Week**
Definition of the architectural model, Uses of the architectural model	1
Knowing the materials used to make architectural models and the characteristics of each material	2
Exe.1: creating an architectural composition by recycling the materials available at home.	3
Distinguishing between materials and when they are used in architectural models.	4
Distinguish between the types of cutters and adhesives, Determine the risks and degree of safety of shear tools according to the quality.	5
Maintenance of tools and devices used in the work of architectural models.	6
Methods of creating three-dimensional models, How to create 3D cubes.	7
Exe.2: Make cubes with different dimensions.	8
Methods of creating three-dimensional models, How to create a pyramid model, How to create a spherical model, How to create a cylindrical shape.	9

Design Elements, Architectural design principles	10
Exe.3: Make a cartoon model, using the principles of design in composition.	11
The golden ratio, Uses of the golden ratio	12
Exe.4: The work of a three-dimensional formation in which the principles of the golden ratio are clarified and the formation is within the measures of the golden ratio using (squares, rectangles, circles, triangles, ...etc).	13
Color (concepts and properties), The concept of color	14
Color plans (color systems), The psychological effects of color	15

Lecturer Name: Head of the department:

Signiture: Signiture:

المستوى الدراسي (الاول) – الفصل الثاني (الربيعي) – العام الدراسي 2022/2021								
نوع المتطلب	اسم المقرر		نوع المقرر	عدد الساعات النظرية	عدد الساعات العملية	عدد الوحدات	الممهد ان وجد	الرمز
	باللغة العربية	باللغة الانكليزية						
متطلبات الجامعة	اللغة العربية	Arabic Language	اجباري	2		2		UOMC100
	حقوق وحريات	Rights and Freedoms	اجباري	2		2		UOMC103
متطلبات الكلية	الرياضيات(2)	Calculus(2)	اجباري	2	2	3	الرياضيات(1)	ENGC122
	الرسم بمساعدة الحاسوب	Computer Aided Drawing	اجباري		3	1	الرسم الهندسي	ENGC124
	الفيزياء	Physics	اجباري	2		2		ENGE133
	الورشة الهندسية	Engineering Workshop	اجباري	1	2	2		ENGE135
متطلبات القسم	التصميم المعماري (2)	Architectural Design(2)	اجباري	1	8	4	التصميم المعماري (1)	ARC 144
	الرسم المعماري	Architectural Drawing	اجباري	1	2	2		ARC 145
	تركيب المباني (1)	Building Construction(1)	اجباري	1	2	2		ARC 146
المجموع				12	19	20		
مجموع وحدات الفصل الثاني : 20 وحدة اجباري : 20 وحدة اختياري : صفر								

University of Mosul

College of Engineering

Department of Architecture

Course Title: Architectural design (2)
Course Number/Type: ARC144 Core
Credit Hours: 4
(1 lecture and 8 laboratory h/week)
Level/Term: 1st level / Spring
Prerequisties: Architectural design (1)

Course Description:	
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. 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.	
Refernces:	
1- Form, Space, Francis Ching, 2- Introduction to Architecture Design, Francis Ching 3- Pattern Language.	
Course Details:	
Subject	**Week**
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 .	1
Submission	2
Study the space or place to perform the effectiveness according to the human scale, recognition of standard dimensions Standard for the space of	3

activities and furniture required for each of the basic human activities of sleep, food, living and kitchen, the use of expressive expressions of those furniture and the absorption of their sizes in relation to the human.	
Homework	4
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.	5
Homework	6
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.	7
Premier Submission	8
The specific project of housing unit (studio) for one person and with multi-function.	9
Discussion	10
Discussion	11
Discussion , Pre-final submission	12
Final submission	13
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	14
Submission	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Architectural Drawing
Course Number/Type: ARC145 Core
Credit Hours: 2
(1 lecture and 2 laboratory h/week)
Level/Term: 1st level / Spring
Prerequisties: None

Course Description:

Architectural Drawing is language of architects and designers to create 2D and 3D of their work by relying on hand skills in the use of engineering tools and knowledge of architectural symbols. In this course, students will be taught basic architectural drawing, tools, scale, horizontal view, elevations, sections, doors, windows, stairs, and dimensions. In addition, they will be learning how to draw Isometric & Axonometric for the project.

Refernces:

1- Jefferis, A. & Madsen, D. (1996). Architectural Drafting and Design. New York.
2-Dernie, D. (2014). Architectural Drawing. Laurence King Publishing, London.

Course Details:

Subject	**Week**
Drawing Scale, Architectural Tools	1
Alphabet of lines, Architectural Symbols & Terminology	2
Architectural Engineering Projection (Orthogonal) of Horizontal Plan	3
Architectural Engineering Projection (Orthogonal) of Horizontal Plan	4
Architectural Drawing of Elevations	5
Architectural Drawing of Sections	6
Architectural Drawing of Sections	7
Writing of Dimensions on the Horizontal Plan	8
Drawing of Stairs	9
1st term Exam	10
Axonometric & Isometric Projection	11
Isometric Projection	12
Circles Drawing in Isometric	13
Curves Drawing in Isometric	14
2nd term Exam	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Buildings Construction (1)
Course Number/Type: ARC146 Core
Credit Hours: 2
(1 lecture and 2 laboratory h/week)
Level/Term: 1st level / Spring
Prerequisties: None

Course Description:	
This course aims at understanding alternative structural systems, relevant construction systems, building materials, building components, The Stages of the construction of the building.	
Refernces:	
1- Building Constructions- By Zuhair M. Saco 2- Building Constructions, Walls and It's Details – By Anees Juaad 3- Civil Engineering for Architects (Poland)	
Course Details:	
Subject	**Week**
An Introduction about building materials and The Stages of the construction of the building , and the components of the building (foundations- Walls- roofs- floors)	1
Construction materials (Brick), building by Brick , constructional Symbols, (Home work)	2
Stone, Types of stones, building by stone, Gypsum. (H.W.)	3
Types of cement and Its properties. Concrete, Types of concrete and Its properties, Concrete components. (Quiz1)	4
A visit to a laboratories and sites under construction, (Report)	5
Light and hollow Concrete and Thermal stone, industry, components, properties, uses. (H.W.)	6
Steel, Aluminum, Plastic materials	7
Term Exam 1st	8
Foundations, and walls (H.W.)	9
Roofs and Floors (H.W.)	10
Vertical circulation elements (Stairs, Ramps, Escalators ,Lifts) (H.W.)	11
Openings (Doors and windows) (Quiz 2)	12
Finishing and Insulation Materials	13
A visit to sites under construction, (Report)	14
Term Exam 2nd	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Computer Aided Drawing
Course Number/Type: ENGC124 Core
Credit Hours: 1
(1 lecture and 3 laboratory h/week)
Level/Term: 1st level / Spring
Prerequisties: ENGC123 Engineering Drawing

Course Description:

Computer Aided Drawing is a scientific course with theoretical and practical parts, concerned with providing specialized information in the field of graphic computer software related to engineering and architectural drawings, especially the AutoCAD software.
The approach of the course is based on explaining the details of the drawing process and the use of the program in sequential and interrelated stages, enabling the user to use the commands gradually, according to the degree of importance of the order, its level of complexity, and the user's need for it according to the level of his capabilities and his ability of dealing with the details, orders and elements of the software.

Refernces:

1- Al-Allaf, Emad Hani, Architectural and Computer Aided Engineering Drawing, 2D Drawing Principles in AutoCAD®, 2018.
2- العلاف، عماد هاني، الرسم المعماري والهندسي بمساعدة الحاسوب، مبادئ الرسم في برنامج AutoCAD® 2018 2D

Course Details:

Subject	Week
AutoCAD software - user interface and initial drawing settings AutoCAD program interface elements Coordinate systems in the program Angle units in the program Drafting Settings: Grid, Snap, Ortho Set Drawing Limits Working with graphic files: • Create a new file • Open previous file • Save the new file • Save another copy of the file - Save As • Import an Import file • Export an Export file Drawing Utilities graphic file services • File Audit • File Recover	1

• Remove unused items Purge • View the properties for the Drawing Properties graphic file Exit the current file - Close Exit the program	
Advanced drawing aids and selection methods Object Snap General commands for Editing items • Undo • Redo • Cut elements • Copy items • Copy objects with Base Point • Paste items • Paste the elements according to their original coordinate • Clear objects • Find Text Objects - Find Visual handling of graphic elements and handling of multiple file windows • Scene Redraw • Scene Regeneration - Regen • Zoom in and out • Scene Offset - Pan • Expand the Clean Screen drawing field Modify the contents of the Toolbars Sort view of multiple files in Windows dropdown list • Cascade arrangement • Tile Horizontal • Tile Vertical	2
Draw basic two-dimensional elements • Line • Ray line • Construction Line • Multiline line • Polyline • Polygon	3

• Rectangle shape • Arc • Circle • Donut • Spline • Ellipse	
Modify tools -first group • Erase • Copy • Move • Mirror • Rotate • Scale • Offset • Rectangular and Polar Array	4
Modify tools - second group • Properties • Match Properties • Stretch • Lengthen • Trim • Extend • Break • Join • Chamfer • Fillet • Explode • Align • Polyline Edit • Mline Edit	5
Application	6
1st term Exam	7
2D Drawing Commands – second group • Point • Modify Point Style	8

• Divide • Measure • Hatch • Gradient • Region • Boundary • Text • Mtext	
Create Block Drawings Insert pre-made graphic blocks Insert a graphic source DWG Reference Insert bitmap image as an external Raster Image Reference External resource management - External reference Dealing with ready-made blocks in Tool Palettes	9
Layers and drawing element settings • Color • Linetype • Line Weight • Text Style	10
Dimensions and measurements • Quick dimensions • Linear dimensions • Aligned dimensions • Measure the arc length • Ordinate coordinates • Polar and angular measurement group • Radius measurement • Jogged distant radius measurement • Diameter dimensions • Angular measure • Baseline dimensions • Continue dimensions • Multileader • Center mark • Jogged Linear	11

• Oblique Measuring Lines • Align Text • Dimension Style	
Main tools • Workspaces • Palettes • Design Center • Spelling correction • Quick Select • Draw Order format • Inquiry • Block Editor • Save the drawing area as a digital image • General program options - Options • Program Assistant from the Help dropdown menu • System Variables	12
Printing and output • Introduction to switching from the Model mode to the Layout mode • Print command from the File dropdown menu	13
Application	14
2nd term Exam	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Engineering Workshop
Course Number/Type: ENGC135 Core
Credit Hours: 2
(1 lecture and 2 laboratory h/week)
Level/Term: 1st level / Spring
Prerequisties: None

Course Description:

The engineering workshop introduces the student to the skills and crafts and dealing with different materials in different crafts and engineering workshops that integrate with the engineering work and get acquainted with the elements of traditional architecture in Mosul and the way to draw and configure them and the materials for implementation and crafts that embody them while learning the engineering basis for drawing the Islamic engineering motifs and the Kufic engineering line and insert it into

Refernces:

- Pictures and documentary plans for the elements of traditional architecture in Mosul from the internet
- carpentry training manual

Course Details:

Subject	**Week**
Workshop drawing Vernacular Architecture Elements in Mosul	1
Workshop drawing Vernacular Architecture Elements - Doors and Gates	2
Workshop drawing Vernacular Architecture Elements - Circular Archs	3
Workshop drawing Vernacular Architecture Elements - Columns & hallway	4
Workshop drawing Vernacular Architecture Elements - Domes and Vaults	5
Environmental Building technologies Workshop	6
Local Building Materials in Vernacular Architecture in Mosul	7
Wall Building workshop with Local Materials and Technologies	8
Vaults Building workshop with Local Materials and Technologies	9
Domes Building workshop with Local Materials and Technologies	10
Gypsum Engraving Workshop	11
Gypsum Engraving Workshop	12
Islamic Geometric Pattern Workshop	13
Islamic Geometric Pattern Workshop	14
Mosaic Workshop - Kufic Geometric Calligraphy	15

Lecturer Name: Head of the department:

Signiture: Signiture:

المستوى الدراسي الثاني (الفصل الاول) الخريفي – العام الدراسي 2022/2021							
نوع المتطلب	اسم المقرر		نوع المقرر	عدد الساعات النظرية	عدد الساعات العملية	عدد الوحدات	الممهد ان وجد	الرمز
	باللغة العربية	باللغة الانكليزية						
متطلبات الجامعة	اللغة الانكليزية- ما قبل المتوسط	English Language- Pre Intermediate	اجباري	1		1		
	التلوث البيئي	Environmental Pollution	اختياري	2		2		UOME
متطلبات الكلية	الاحصاء	Statistics	اجباري	2		2	الرياضيات (1) و (2)	ENGC227
متطلبات القسم	التصميم المعماري (3)	Architectural Design (3)	اجباري	1	8	5	التصميم المعماري(2)	ARC 241
	الرسم والاظهار المعماري	Architectural Presentation and Perspective	اجباري	1	2	2		ARC 242
	تركيب المباني (2)	Building Construction (2)	اجباري	1	2	2	تركيب المباني(1)	ARC 243
	الميكانيك الهندسي	Engineering Mechanics	اجباري	1	2	2		ARC 244
	المساحة	Surveying	اجباري	1	2	2		ARC 245
	مختبر فحص المواد الانشائية	Construction Materials Laboratory	اختياري	1	2	2		ARC 261
	العمارة والعلوم الانسانية	Architecture and Human Science	اختياري	2		2		ARC 263
مجموع وحدات الفصل الاول : 18 وحدة / الاجباري : 16 وحدة / الاختياري : 2 وحدة								

University of Mosul

College of Engineering

Department of Architecture

Course Title: Architectural Design (3)
Course Number/Type:ARC 241/ Core
Credit Hours: 5
(1 Theoretical and 8 Practical h/week)
Level/Term: 2nd level / Fall
Prerequisties: Architectural Design (2)

Course Description:	
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	
Refernces:	
Architecture, form space & order by Francis D. K. Ching Methods of systematic analysis of design in architecture, By D. Mohamed A. Shihab	
Course Details:	
Subject	**Week**
General Introduction	1
Definition and characteristics of the design process	2
The design problematic and how to define it using architectural graphics and drawings	3
Analysis as an interpreting tool clarifying the problem in relation to the composition	4
Analysis using matrices	5
architectural spaces adjacency criteria	6
Day sketch	7
Synthesis – representing matrices using geometrical shapes (the bubble diagram)	8
Synthesis – Zoning	9
Architectural form and its types	10
Interlocking architectural forms	11
Interlocking architectural forms	12
Treatment of architectural form	13
Solid and void	14
Horizontal and vertical elements defining space	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Buildings Construction (2)
Course Number/Type: ARC 243- Core
Credit Hours: 2
(1 Theoretical and 2 Practical hours/week)
Level/Term: 2nd level / Fall
Prerequisties: Buildings Construction (1)

Course Description:

This course initially the basic principles of construction elements constituting architectural spaces and other associate systems common to construction. It introduces students to the various construction phases from concrete foundation to finishing. The course also includes a study of the design and implementation criteria relevant to construction of walls, ceilings, staircases, flooring, insulation and finishing material. Students will be provided with of practical application on vertical and horizontal installation models. (In bearing wall system)

Refernces:

1.198 ,تركيب المباني نظام الجدران الحاملة وتفاصيلها المعمارية), انيس جواد, الجامعة التكنولوجية
2. Ching F." Building Construction" illustrated Wiley 2008 4th ed.
3. Building Construction, Barry vol. 3 1997

Course Details:

Subject	**Week**
Site Safety	1
General introduction of buildings construction	2
Arrangement of built process	3
Construction systems and building division	4
Construction in Bearing wall sys. Advantage& disadvantage	5
Sequences works construction in Bearing wall sys.	6
Foundations ------- insulation horizontal layer instates Materials , properties and kinds	7
Insulation material (Foundations stages)	8
1st term Exam	9
Bearing wall built ---------- Parapet built	10
Opens building (Windows)	11
Opens building (Doors)	12
Insulation material roof finishes	13
Floors finishes -------- remove worst builder	14
1st term Exam	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Engineering Mechanics
Course Number/Type: ARC 244- Core
Credit Hours: 2
(1 Theoretical and 2 Practical h/week)
Level/Term: 2nd level / Fall
Prerequisties: None

Course Description:	
This course covers the resultant of concurrent and non-concurrent force systems, equilibrium of force systems, analysis of trusses, center and moment of inertia of composite areas.	
Refernces:	
1-Engineering Mechanics by F.L. Singer 2-Static and Strength of Materials for Architecture and Building Costruction by Barry Onouye and Kevin Kane.	
Course Details:	
Subject	**Week**
Resultant of Force Systems.	1
Resultant of Concurrent Force Systems.	2
Moment of Force, Couple.	3
Resultant of Non-Concurrent Force Systems.	4
Equilibrium of Force Systems	5
Equations of Equilibrium of Concurrent Force Systems.	6
Free Body Diagram, Types of Supports, Types of Loadings.	7
Equations of Equilibrium of Non-Concurrent Force Systems.	8
Analysis of Trusses	9
Method of Joints.	10
Method of Section.	11
Centroids and Centers of Areas.	12
Centroids of Composite Figures.	13
Moments of inertia.	14
Moments of Inertia of Composite Figures.	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Architectural Presention and Perspective
Course Number/Type: ARC 242-Core
Credit Hours: 2
(1 Theoretical and 2 Practical hours/week)
Level/Term: 2nd level / Fall
Prerequisties: None

Course Description:	
The course introduces students to the fundamental principles of architectural drawings of both perspective and shadows.	
Refernces:	
كتاب منهجي : الظل المنظور -- لمؤلفه عماد أزهر البكري Architectural Graphics by Ching,1996	
Course Details:	
Subject	**Week**
The principles of perspective drawing of cubical forms using rays method.	1
Drawing perspective of stairs and sloping surfaces using rays method.	2
The principles of perspective drawing using measuring points method.	3
Drawing perspective for architectural composition using rays method.	4
The principles of perspective drawing using a circle of vision.	5
Drawing perspective for circle and cylinder using a circle of vision.	6
The principles of one-point perspective drawing.	7
Mid-term exam	8
The principles of drawing shades and shadows for isometric and orthogonal projections of cubical forms	9
Drawing shades and shadows for isometric and orthogonal projections of stairs	10
Drawing shades and shadows for isometric and orthogonal projections of inclined surfaces	11
Drawing shades and shadows for balconies and openings	12
Drawing shades and shadows for circles and cylinders	13
Drawing shades and shadows for architectural composition	14
Final Exam	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Surveying
Course Number/Type: ARC 245-Core
Credit Hours: 2
(1 Theoretical and 2 Practical hours/week)
Level/Term: 2nd level / Fall
Prerequisties: None

Course Description:

The course gives fundamentals of plane surveying and an introduction to mapping science for architects. Topics covered include leveling, together with its field procedure and applications, computation of areas and earth volumes. Computation and determination of point coordinates are also covered through studying methods for horizontal distance measurement, traversing, including its theory, applications, and adjustment. An introduction to photogrammetry is also included. In addition, the course sheds some light on computer aided surveying techniques.

Refernces:

يوسف صيام (1997) , المساحة بالأجهزة الالكترونية , الجامعة الاردنية , عمان , الاردن.
محمود حسني عبد الرحيم & محمد رشاد الدين مصطفى حسين ,(1984)المساحة التفصيلية والطبوغرافية ,الجزء الاول ,دار الراتب الجامعية , بيروت لبنان.
علي شكري، محمود حسني عبدالرحيم &محمد رشاد الدين مصطفى (1999) ,المساحة المستوية :طرق الرفع والتوقيع,منشات المعارف بالإسكندرية ,مصر.
أنور سيالة &مفتاح دخيل (1999) مقدمة علم المساحة، المكتب الجامعي الحديث، الازاريطة ,الاسكندرية.
Barry F. Kavanagh (Surveying): with construction application.3rd edition,Printice Hall, New Jersey ,U.S.A.
Barry F. Kavanagh (Surveying): with construction application.3rd edition, Printice Hall, New Jersey, U.S.A.
7.James Rewashing &Roy H. Wirsching (1985) Theory and Problems of Introductory Surveying, Schumm s Outline Series, McGraw-Hill.

Course Details:

Subject	**Week**
Introduction, basic parts of surveying	1
Drawing scale	2
Methods of distance measuring on plain surface	3
Chain surveying	4
Recognizes mistakes and faults in measurements	5
Leveling (leveling instrument)	6
Longitudinal and cross section	7
Contour lines	8
Drawing of topographic maps	9
Theodolite, total station	10
Measurement of angles	11
Traversing	12

Site planning to set up triangulation operation	13
Calculate Area and volumetric quantity	14
Compute quantity by using different methods	15
Course Description: Practical part	
Subject	**Week**
1- Knows about Laboratory Of Surveying. 2 Knows how to organize a Field Book	1
3-Apply distance measuring by foot and tape. 4- Drawing to various scales.	2
5- Use a tape to measure angles 6- Undertake a survey by tape and draw a map.	3
7-Practice distance measuring on level and sloping ground 8- Draw area surveyed.	4
9- Knows types of leveling instrument used.	5
10- Knows sources of error in a level survey. 11- Reduces levels by height of instrument method.	6
12- Reduces levels by rise and fall method. 13- Understands instrument adjustment.	7
14- Survey and draws a cross-section.	8
15- Draws the longitudinal and cross sections, construction lines and side slopes.	9
16- Computes the area and volumes by squares. 17- Prepares maps of contour lines from survey data	10
18- Measurements and calculations procedure to make maps by using electronically instruments.	11
19- Measurements internal angle of triangular network with side of length not less than 100 meter.	12
20- Calculates angle corrections for triangulation network.	13
21- Calculate of complete rotational vectors and side length coordinates for variable triangulation network.	14
22- Undertake Site Training on triangulation(example on rectangle shape)	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Construction Materials Laboratory
Course Number/Type: ARC 261-Core
Credit Hours: 2
(1 Theoretical and 2 Practical h/week)
Level/Term: 2nd level / Fall
Prerequisties: None

Course Description:	
Mechanical Properties of construction materials, including composition, specification, and experimental test of building materials.	
Refernces:	
Varghese P.C. (2015). Building Materials Paperback, second edition, Prentice Hall India Learning Private Limited; 283 pp. American Society for Testing and Materials (ASTM) British Standards (BS) Iraqi Standard Specifications	
Course Details: This course deals with the composition, specifications, and uses of construction materials. This study supports by experimental tests of building materials.	
Subject: Theoritical Part	**Week**
Introduction of Concrete, composition and properties	1
Portland cement, types of cement according to the ASTM specifications	2
Chemical composition of cement	3
Physical properties of Portland cement, consistency of cement and setting time, False and Flash set of Portland cement	4
Heat of hydration and min. w/c ratio for full hydration, Soundness of cement	5
Fine and course aggregates properties	6
Mid Term Exam	7
Sieve analysis of aggregate, Max. Agg. Size, Fineness Modulus, Average Sieve Size	8
Combined Aggregate analysis, Alkali-reaction aggregate	9
Aggregate air voids and solid contents	10
Reinforcement steel, production, behavior of stress-strain curve	11
Concrete bloks, types, production, and physical properties	12
Clay bricks, types, production, and physical properties	13
Thermistone, types, production, and physical properties	14
Tiles, types, production, and physical properties	15

Subject: Practical Part	**Week**
Writing a good technical report	1
Tests for ordinary portland cement (Normal consistency)	2
Tests for ordinary portland cement (Setting time)	3
Tests for ordinary portland cement (Compressive strength and effect of curing conditions on strength)	4
Tests for ordinary portland cement (Tensile strength)	5
Sieve analysis of coarse aggregates	6
Sieve analysis of fine aggregates	7
Midterm exam	8
Tests for aggregates - Specific gravity - Unit weight	9
Tests for aggregates - Moisture content	10
Tests for aggregates - Absorption	11
Tests for clay and concrete blocks	12
Tests for tiles	13
Tensile test and modulus of elasticity for steel	14
Final Exam	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Architecture and Human Science
Course Number/Type: ARC 263 -Elective
Credit Hours: 2 (2 Theoretical h/week)
Level/Term: 2nd level / Spring
Prerequisties: None

Course Description:
-The course introduces students to the fundamental principles of architecture and human sciences. -The subject aims is defined theoretical links to architecture and the humanities,human values and the specificity of the architectural product, the nature of the interaction between humans and the place, philosophy of beauty and its relationship to human emotion in architecture.
Refernces:
١-الاعتبارات الانسانية في التصميم المعماري، دار جامعة الملك سعود للنشر، المؤلف ك.م. ديسي ، ثوماس لاسويل، ترجمة : عبد العزيز بن سعد المقرن ، السنة ١٤٣٧. ٢-اللغة السيكولوجية في العمارة (المدخل في علم النفس المعماري) ، المؤلف : د. الحارث عبدالحميد حسنليك.
Course Details:

Subject	**Week**
Introduction and theoretical links to architecture and the humanities.	1
Human values and the specificity of the architectural product.	2
The nature of the interaction between humans and the place.	3
The philosophy of beauty and its relationship to human emotion in architecture.	4
The effect of the architectural form on achieving visual excitement.	5
The role of building material, in terms of its texture and luster, to achieve visual tension.	6
The effect of colors on changing the psychological character of the user.	7
Architecture between the requirements of need and idealism of theorizing.	8
The type of buildings and its effect on human behavior.	9
The human space and its types.	10
Monthly exam + initial discussion of reports.	11
Expulsive and attractive spaces.	12
Static and variable spaces.	13
Discuss reports.	14
The final exam.	15

Lecturer Name: Head of the department:

Signiture: Signiture:

المستوى الدراسي الثاني (الفصل الثاني) الربيعي – العام الدراسي 2022/2021								
نوع المتطلب	اسم المقرر		نوع المقرر	عدد الساعات النظرية	عدد الساعات العملية	عدد الوحدات	الممهد ان وجد	الرمز
	باللغة العربية	باللغة الانكليزية						
متطلبات الجامعة	تقنيات المعلومات	Information Technology	اختياري	2		2		UOME
متطلبات الكلية	السلامة العامة	Puplic Safty	اجباري	2		2		ENGE229
متطلبات القسم	التصميم المعماري(4)	Architectural Design (4)	اجباري	1	8	5	التصميم المعماري(3)	ARC 246
	تركيب المباني (3)	Building Construction (3)	اجباري	1	2	2	تركيب المباني(2)	ARC 247
	تاريخ العمارة (1)	History of Architecture (1)	اجباري	2		2		ARC 248
	مقاومة المواد	Strength of Material	اجباري	1	2	2	الميكانيك الهندسي	ARC 249
	الرسم المعماري بمساعدة الحاسوب	Computer Aided Architectural Drawing	اجباري	1	2	2		ARC 250
	التوثيق المعماري	Architectural Documentation	اختياري	1	2	2		ARC 262
مجموع وحدات الفصل الثاني : 19 وحدة / الاجباري : 15 وحدة / الاختياري : 4 وحدة								

University of Mosul

College of Engineering

Department of Architecture

Course Title: Architectural Design (4)
Course Number/Type: ARC 246- Core
Credit Hours: 5
(1 Theoretical and 8 Practical h/week)
Level/Term: 2nd level / Spring
Prerequisties: Architectural Design (3)

Course Description:

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

Refernces:

8- Architecture, form space & order by Francis D. K. Ching
9- Methods of systematic analysis of design in architecture, By D. Mohamed A. Shihab

Course Details:

Subject	**Week**
Enclosure	1
Day sketch	2
Openings	3
Spatial relationships	4
Types of spatial organization	5
Movement – accessibility	6
Day sketch	7
Movement patterns ,Entrances	8
Scale	9
Proportion	10
Ordering principles/ Axes,	11
Hierarchy, datum	12
Symmetry and dominance	13
Rhythm, repetition	14
Rendering and final submission	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Buildings Construction (3)
Course Number/Type: ARC 247- Core
Credit Hours: 2
(1 Theoretical and 2 Practical h/week)
Level/Term: 2nd level / Spring
Prerequisties: Buildings Construction (2)

Course Description:

This course initially the basic principles of construction elements constituting architectural spaces and other associate systems common to construction. It introduces students to the various construction phases from concrete foundation to finishing. The course also includes a study of the design and implementation criteria relevant to construction of walls, ceilings, staircases, flooring, insulation and finishing material.

Refernces:

1. تركيب المباني (البناء الهيكلي وتفاصيله المعمارية) .1987
2. رأفت, علي الأبداع الانشائي , مرآزابحاث انتركونسلت , الجيزة .1998
3. Building Construction vol. 3 1997
4. Building Construction vol. 5 1997
5. Ching F." Building Construction" illustrated Wiley 2008 4th ed.
6. Working drawing handbook
7. Foster Jack Stroud "Structure and Fabric" part 2 Bats ford academic, London 1985

http://www.greatbuildings.com/, https://www.vitruvio.ch/, https://www. bluffton.edu/~sullivanm/, https:// en.structurae.de/structures/

Course Details:

Subject	Week
Skeleton build system advantage and disadvantage	1
Elements of skeleton building	2
Kinds of construction grid	3
kinds of columns /kinds of girder	4
Foundations in skeleton building	5
Roofs and Floors concrete slap	6
Precast buildings system introduction	7
Precast buildings systems main elements	8
precast Roofs floors concrete (1)	9
precast Roofs floors concrete (2)	10
Vertical communication elements 1 type of stairs	11
2 elevators	12
3 escalators	13
Chimneys	14
theoretical test	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: History of Architecture(1)
Course Number/Type: ARC 248- Core
Credit Hours: 2 (2 Theoretical h/week)
Level/Term: 2nd level / Spring
Prerequisties: None

Course Description:	
The Course Deals with the evolution of architecture in Iraq in the ancient times and architecture in the Arab countries (Egypt) and neighboring countries (Greece) and to clarify the effects of mutual design among them.	
Refernces:	
- سليمان ,عامر "العراق في التاريخ القديم " . موجز التاريخ الحضاري , (بغداد ,1983) -Mallowan, M.E." Nimrud and its remains".2Vols.(London.1958). -Lehner, Mark, "The complete pyramids", 1997 Thames and Hudson Ltd. London -Fletcher, Banister, "A history of Architecture on the comparative method ",1930	
Course Details:	
Subject	**Week**
Iraq's ancient architecture - the general characteristics-Sumerian cities	1
Sumerian architecture (temples and palaces architecture)	2
Architecture of the ancient Babylonian (temples and palaces architecture)	3
Assyrian architecture - the general characteristics	4
Assyrian architecture (temples architecture)	5
Assyrian architecture (palaces architecture)	6
Babylonian modern architecture (cities, temples and palaces)	7
Mid-term exam	8
Ancient Egyptian architecture - the general characteristics	9
Ancient Egyptian architecture –Egyptian Colums	10
Ancient Egyptian architecture –temples	11
Ancient Egyptian architecture –The funereal Architecture (pyramids)(tombs carved in the mountains)	12
Greek Architecture – The general characteristics-Orders	13
Greek Architecture –Buildings	14
Final Exam	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Strength of Materials
Course Number/Type:ARC 249- Core
Credit Hours: 2
(1 Theoretical and 2 Practical h/week)
Level/Term: 2nd level / Spring
Prerequisties: Engineering Mechanics

Course Description:	
This course covers the analysis of internal forces and moments in bodies, simple stresses and simple strains in structural elements, shear and moment in beams, analysis of rigid frames, shear force and bending moment diagrams in beams and rigid frames.	
Refernces:	
1- Strength of Materials by F.L. Singer **2-** Statics and Strength of Materials for Architecture and Building Construction by Barry Onouye and Kevin Kane.	
Course Details:	
Subject	**Week**
Simple Stresses	1
Axial Stress, Shearing Stress.	2
Bearing Stress.	3
Simple Strain	4
Stress-Strain Diagram.	5
Hook's Law.	6
Shear and Moment in Beam.	7
Shear Force Diagram, Bending Moment Diagram.	8
Semi-Graphical Method.	9
Stresses in Beams.	10
Flexural Formula.	11
Maximum Bending Stresses.	12
Analysis of Rigid Frames.	13
Axial Force, Shear Force and Bending Moment in Rigid Frames.	14
Shear Force Diagram and Bending Moment Diagram for Rigid Frames.	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Islamic Arts
Course Number/Type: ARC 264- Elective
Credit Hours: 2 (2 Theoretical h/week)
Level/Term: 2nd level / Spring
Prerequisties: None

Course Description:	
Art is a language used by man to express what is in his essential self. There is a set of intellectual principles in the Islamic faith that accommodate the principles of Islamic arts. And this was evident in the design and creation of a collection of architectural and sculptural masterpieces. Art appeared in the Islamic world, providing a stylistic unity. It was the use of a common style of writing, decoration, engineering and wall decorations.	
Refernces:	
In Islamic Arts by Zaki Muhammad Hassan	
Course Details:	
Subject	**Week**
Defining Islamic Art, The importance of Islamic art	1
History of Islamic Art, The genesis of Islamic art	2
Characteristics of Islamic art	3
Intellectual principles of Islamic arts	4
Attributes of Islamic Art	5
Philosophy of Islamic art	6
Term exam. 1	7
Islamic art techniques	8
Types of Islamic art	9
Types of Islamic Applied Arts	10
Calligraphy	11
Literary and literary arts	12
Term exam. 2	13
Islamic Decoration	14
Application of Islamic arts in Islamic architecture	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Architectural Documentation
Course Number/Type:ARC 262- Elective
Credit Hours: 2
(1 Theoretical and 2 Practical h/week)
Level/Term: 2nd level / Spring
Prerequisties: None

Course 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.	
Refernces:	
• Al-Allaf, Emad Hani, Representation Technologies of the Built Heritage, 2018. العلاف، عماد هاني، تكنولوجيا إعادة تمثيل التراث العمراني، 2018 • Al-Allaf, Emad Hani, Information modeling and management technology for historical sites and urban heritage buildings, 2018. العلاف، عماد هاني، تكنولوجيا نمذجة وإدارة المعلومات للمواقع التاريخية ومباني التراث العمراني، 2018	
Course Details:	
Subject	**Week**
Conservation history, process and objectives. International charters and organizations. The Heritage of Iraq and its old cities. Iraqi experiments in conservation and documentation.	1
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	2
Contact Techniques for 3D Information Acquisition	3
Photogrammetry	4
Laser Scanning	5
Non-Destructive Techniques	6

Infrared Thermography-IR	
Global Positioning System – GPS	7
1st term Exam	8
360 degrees' panorama software, benefits, how to create, case study .	9
Virtual reality- aims, requirements, interaction types .	10
VR benefits and limitation, VR systems. 3D virtual city, Virtual Museums	11
Geographic information system (GIS)	12
Unmanned Aerial Vehicles Robots Documentation of Underwater Heritage	13
3D Printers	14
2nd term Exam	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Computer Aided Architectural Drawing
Course Number/Type: ARC 250- Core
Credit Hours: 2
(1 Theoretical and 2 Practical h/week)
Level/Term: 2nd level / Spring
Prerequisties: None

Course Description:

Computer Aided Drawing is a scientific course with theoretical and practical parts, concerned with providing specialized information in the field of graphic computer software related to engineering and architectural drawings, especially the AutoCAD software.
The approach of the course is based on explaining the details of the drawing process and the use of the program in sequential and interrelated stages, enabling the user to use the commands gradually, according to the degree of importance of the order, its level of complexity, and the user's need for it according to the level of his capabilities and his ability of dealing with the details, orders and elements of the software

Refernces:

Al-Allaf, Emad Hani, 3D models in computer aided drawing software- AutoCAD software, 2018.
Al-Allaf, Emad Hani, Rendering in AutoCAD software, 2018.
العلاف، عماد هاني، النماذج ثلاثية الأبعاد في برمجيات الرسم بمساعدة الحاسوب - برنامج AutoCAD، 2018
العلاف، عماد هاني، الإظهار المعماري في برنامج الأوتوكاد في برنامج AutoCAD، 2018

Course Details:

Subject	Week
Thickness, Elevation, Orbit, 3D views, UCS	1
Modeling 1 Poly Solid, Trace, Box,Wedge ,Cone,Sphere,Cylinder,Torus,Pyramid	2
Modeling 2 Extrude ,Press Pull,Revolve ,Sweep,Loft,3D Polyline,Helix,Planer,Solid,3D Face	3
Modeling 3 Meshes ,Revolved mesh,Tabulated mesh,Ruled mesh,Edge mesh,Network ,urface	4
3D Operations Gizmo,3D Move,3D Rotate,3D Scale,3D Align,3D Mirror ,3D Array ,Interfere,Slice,Thicken,Convert to Solid,Convert to Surface	5
Solid Editing Union,Subtract,Intersect,Solid Edit, Extrude Face,Move Face ,Rotate Face,Offset Face,Taper Face,Delete Face,Copy Face,Color Face,Copy Edge,Color Edge	6

Chamfer Edge,Fillet Edge,Imprint Edges,Separate,Shell ,Clean,Check	
Application	7
1st term Exam	8
Render Render Settings rendering process, Rendering Procedure, The final destination for the scene processing process, Image saving settings - Output File Name, Image resolution settings and characteristics, Managing preset display process methods, Improve processing and visibility	9
Render Material Material Browser, Inclusion of cladding and finishing materials in the AutoCAD program, Library of materials for cladding and finishing in AutoCAD, Texture Materials window, Designation and inclusion of cladding materials on the surfaces of the figures, Control libraries of cladding materials , Mapping	10
Modifying materials Create the texture material, Characteristics of cladding materials, General characteristics, Glossiness level refinement, Highlights, Reflectivity, Transparency, Translucency, Refraction, Cutout, Self Illumination, Bump Map - The roughness of the material	11
Lights Point Light, Spot Light , Distant Light, Web Light, Natural Light, Render Environment, Sun & Sky, Sky Background, Sun Properties, Geographic Location	12
Views and Interaction Camera, Walk & Fly , Motion Path Animation, Background, Fog and Depth Cueing, Work Spaces, Palettes and 3D Blocks	13
Application	14
2nd term Exam	15

Lecturer Name: Head of the department:

Signiture: Signiture:

المستوى الدراسي الثالث (الفصل الاول) الخريفي – العام الدراسي 2022/2021								
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	مبادئ التصميم الهندسي	Principles of Engineering Design	اختياري	2		2		ENGE337	اجباري لطلبة القسم
متطلبات القسم	التصميم المعماري(5)	Architectural Design (5)	اجباري	1	8	5	التصميم المعماري(4)	ARC 341	
	الرسوم التنفيذية(1)	Working Drawings(1)	اجباري	1	4	3	تركيب المباني(3)	ARC 342	
	خدمات المباني (1)	Building Services (1)	اجباري	2		2		ARC 343	
	الخرسانة المسلحة (1)	Reinforced Concrete (1)	اجباري	1	2	2		ARC 344	
	مبادئ التخطيط	Principles of Planning	اجباري	2		2		ARC 345	
	تقنيات الاظهار المعماري بالحاسوب	Computer Aided Architectural Presentation	اجباري	1	2	2		ARC 346	
مجموع وحدات الفصل الاول للمستوي الثالث 18 وحدة – الاجباري 16 وحدة والاختياري 2 وحدة				10	16	18			

University of Mosul

College of Engineering

Department of Architecture

Course Title: Principles of Geometric design
Course Number/Type: ENGE337/Core
Credit Hours: 2 (2 lecture hours/week)
Level/Term: 3rd level /Fall
Prerequisties:

Course Description:

A Core course in which the student learns the basic principles of engineering design in general, design principles, and the steps and stages through which engineering products are designed in all disciplines. In this course, the student learns the design thinking process to produce engineering designs that meet the design needs according to engineering standards and codes and a sequential design system. The student is introduced to the basic elements of engineering design, which represent the focus of the course, in addition to the stages of engineering design and global design. The course also contains some principles related to the design process, such as creativity, engineering codes, and design for all. This course is considered one of the courses related to engineering sciences and is essential for developing capabilities in how to start engineering design and how to harmonize between standards and design and functional requirements, customer requirements and the need for design.

Refernces:

1- Ertas, A. & Jones, J. (1996). The Engineering Design Process. 2nd ed. New York, N.Y., John Wiley & Sons, Inc
2- Yousef Haik, Sangarappillai Sivaloganathan, Tamer M. Shahin (2018) Engineering Design Process.
3- The Strategic Designer: Tools & Techniques for Managing the Design Process وDavid Holston (2011)

Course Details:

Subject	Week
Introducing the course and general terms that will be circulated during the semester and getting to know the division of the degree and exams and the activities required during the semester	1
Definition of engineering design, its elements and requirements	2
The basic stages of engineering design for all engineering disciplines	3
The research stage	4
The Design requirements stage	5
The feasibility study stage	6
The idea and concept stage	7
Initial design stage	8
Detailed design and full characterization stage	9
The plan and design tools	10
Implementation and final manufacturing stage	11
Design creativity, its components and characteristics	12
Design concepts and ideas	13
International engineering codes and standards	14
Universal engineering design and design for everyone	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Architectural design 5
Course Number/Type: ARC 341/Core
Credit Hours: 5 (1 theory 8 practical)
Level/Term: 3rd level /Fall
Prerequisties: Architectural design 4

Course Description:

Design of a Multi-Family Housing Complex in Mosul City
The course initially introduces the basics of architectural design for a multi-family multi-storey housing complex.

Objectives:

To make students of architecture familiar with principles and concepts of planning taking into consideration the importance of planning process and the role of architect within this process. Students should be able to deal with urban planning process and its elements including street and parking design and master plans besides introducing many world-wide experiments within this subject.

- Systematic introduction to issues related with the design of human habitat, its components and space standards. The objective of the studio will be on understanding residential spaces in both the urban and traditional contexts.
- To train students for undertaking design of multi-story buildings, frame structure, considering site planning, structures, services, etc.
- Study architecture prevalent in Iraq (Mosul city) and its local character and characteristic elements of design.
- Green: Demonstration of world-leading sustainability principles
- Global: Understanding of and interprets the past, present and future of the city, iconic, defining the identity and character of different Neighborhoods on 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, the social needs of the families and whole community.

Refernces:

1. Joseph De Chiara, Julius Panero, Time-Saver Standards for Housing and Residential Development
2. Polservice , 1982 Housing Technical Standards & Codes of Practice

Course Details:

Subject	Week
Introduction to multi family housing	1
Analysis of similar examples	2
Site analysis	3
Design concept and primary idea formulation	4
Discussion	5

Discussion	6
First submission	7
Details of plans	8
Elevations and visual aspect	9
Details	10
Pre- Final submission	11
Discussion	12
Discussion	13
Final presentation settings	14
Final submission	15

Lecturer Name:

Signiture:

Head of the department:

Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: working drawing 1
Course Number/Type: ARC 351/Core
Credit Hours: 3 (4 Practical+1 theoritical)
Level/Term: 3rd level / Fall
Prerequisites: Building Construction 3 ARC 342

Course Description:

Educate the student how design the working drawing sheet , Educate other related construction systems by theoretical and practical studying (exercises and field visits) , so the student should be able to work , read the working and architectural drawings and learn the technical details of their own.

Refernces:

1. building construction vol. 3
2. building construction vol. 5
3. structure and fabric
4. working drawing handbook
5. **التصميمات و الرسوم التنفيذية / د. مجدي تمام**
6. التصميمات التنفيذية / د. هشام علي-

Course Details:

Subject	**Week**
Definition of building construction material and the relationship between initial ideas and planned Executive and to all the terms of reference.	1
How to set up the chart of the Executive and the standards of the scheme, as well as special symbols chart Executive.	2
First submission: A detailed explanation of the physical layout of the level of sections and plans and interfaces, as architectural details.	3
Detailed explanation of the planned construction and structural details.	4
Discussion	5

Discussion	6
Detailed explanation of the plan and details.	7
Day sketch	8
Second submission: Detailed explanation of the method of construction-ready systems and various Construction.	9
Architectural details and construction of the building ready at the level of ceilings and walls, the work of the link between the prefabricated pieces (ready).	10
Discussion	11
Discussion	12
Discussion	13
Discussion	14
Final submission	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Building services 1
Course Number/Type: ARC 343
Credit Hours: 2 theoretical hours/week
Level/Term: 3rd level / Fall
Prerequisties: -

Course Description:

The course is parted into five sections. Each section addresses a certain part of plumbing. The first section lunges the scope of plumbing and plumbing equipment. The second section subjects water supply system. Water supply is the provision of water by public utilities commercial organizations, community endeavors or by individuals, usually via a system of pumps and pipes. A water supply system: Water storage facilities such as reservoirs, water tanks, or water towers. Smaller water systems may store the water in cisterns or pressure vessels. Tall buildings may also need to store water locally in pressure vessels in order for the water to reach the upper floors. A pipe network for distribution of water to the consumers, which may be private houses, and other usage points. The third section addresses the types of plumbing pipes. Plumbing uses different types of pipes. Each type of pipes has essential usage according to its specific characteristics. Besides, Plumbing uses types of valves, tanks, and other apparatuses to convey fluids. The fourth section explains sewage or domestic wastewater. Connections to the sewers, underground pipes, are generally found downstream of the water consumers, but the sewer system is considered to be a separate system, rather than part of the water supply system. Sanitary sewer is an underground carriage system specifically for transporting sewage from house through pipes to treatment facilities or disposal. Sanitary sewers are part of an overall system called a sewage system or sewerage. Separate sanitary sewer systems are designed to transport sewage alone.

Refernces:

1- Plumbing Complete: Expert Advice from Start to Finish, Book by Rex Cauldwell.

2- Ultimate Guide: Plumbing, Updated 5th Edition, Book

Course Details:

This course delivers an essential knowledge to students in a certain specialize in engineering field. Plumbing is any system that conveys fluids for a wide range of applications. It involves installing and maintaining pipes that carry: water and sewerage. Hence, there are many attributable goals that are aimed to fulfill as mentioned below:

1.Studying plumbing provides the student with the efficient knowledge to be partially enough qualified in building engineering services

2. Technically, studying plumbing introduces students to plumbing facilities especially domestic plumbing.

3.This course promotes skills solving problems in students.

4.This course provides the students with examples and homework that give a glance at practical skills and technical equipment.

5.Since the majority of plumbing work is carried out on new domestic, commercial and retail constructions, it is considered great career with lots of job prospects. It provide an opportunity for a successful job for those who want to become self-employed.

Subject	Week
Introduction: the scope of plumbing	1
Plumbing equipment and plumbing fixture	2
Water supply system: 1. General water distribution network 2. Conditions of designing general water distribution network	3

Types of general water distribution network	
Water supply system: 1. Steps of accomplish the water supply system 2. Types of water distribution network 3. Types of water tanks Conditions of tanks	4
Water supply system: 1. Calculations of water demands in a building. 2. Determining pipe size Calculating the average of water usage in a building.	5
Water supply system: 1. Design the water distribution network in buildings 2. Using traditional pipes and methods Using PEX system	6
Types of plumbing pipes: 1. types of supply water pipes 2. Accessories of supply water system 3. Types of valves and their implementations. 4. Types of equipment that used in fixing plumping system. Seminar Reports Submission and Presentation	7
Sewage or domestic wastewater: 1. Components of sewage system 2. Types of sewage systems in a building: One Pipe System 3. Types of sewage systems in a building: Two Pipe System Seminars Presentation	8
Sewage or domestic wastewater: 1. Steps of accomplish the sewage systems in a building. 2. Testing the sewage systems in a building. 3. Calculating the sizes and length of sewage pipes. Seminars Presentation	9
Storm-water and the drain system: 1. Types of roof drainage systems 2. Rainwater harvesting system in a building. The garbage disposal system: 1. Types of garbage. Systems of garbage disposal in a building.	10
Seminars Presentation	11
C.W.: Drawing water supply system and sewage for house plane. Seminars Presentation	12
Seminars Presentation	13
Seminars Presentation	14
Seminars Presentation	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Reinforced Concrete 1
Course Number/Type: ARC 344/Core
Credit Hours: 2 (3 lecture hours/week)
Level/Term: 3rd level / Fall
Prerequisties: -

Course Description:

Analysis and Design of rectangular beams subjected to flexural bending and Shear design for beams moreover, Design and analysis of Short Columns Subject to Axial Load and Bending.

Refernces:

10- Ibrahim A., Mahmood M. (2008) "DESIGN OF REINFORCED CONCRETE
11- STRUCTURE", 1st ed. Diyala University .
12- Nilson A. , Darwin D. , Dolan C. (2004) "DESIGN OF CONCRETE STRUCTURES ", 30 th ed. , McGraw Higher Education , USA
13- Aghayere, A. O. , Limbrunner, George F. (2014) "DESIGN OF REINFORCED CONCRETE"8th ed. Library of Congress, USA.

Course Details:

Subject	Week
Introduction to Reinforced Concrete	1
Flexural Analysis of Beams (working stress method)	2
Flexural Analysis of Beams (working stress method)	3
Flexural Analysis of Beams (Ultimate) According to ACI Code	4
Flexural Analysis of Beams (Ultimate) According to ACI Code	5
Analysis and Design of Doubly Reinforced Beams	6
Analysis and Design of Doubly Reinforced Beams	7
Analysis and Design of T Beams and Doubly Reinforced Beams	8
Analysis and Design of T Beams and Doubly Reinforced Beams	9
Shear Stresses in Concrete Beams; Design for Shear	10
Shear Stresses in Concrete Beams; Design for Shear	11
Columns	12
Design of Short Columns Subject to Axial Load and Bending	13
Design and Analysis of Eccentrically Loaded Columns Using Interaction Diagrams	14
Design and Analysis of Eccentrically Loaded Columns Using Interaction Diagrams	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Principle of Planning
Course Number/Type: ARC345/Core
Credit Hours: 2 (2 lecture and 0 laboratory hours/week)
Level/Term: 3rd level / Fall
Prerequisties:

Course Description:
The course initially introduces the principles of planning concerning on urban planning as the level that most connected to architecture with focusing on site elements and evolution of human settlements.
Refernces:
1. Gallin, Arthur B., The Urban Pattern, Van Nostrand Reinhold Co. 2.Aldewachi, Momtaz, Introduction to Urban Planning , Cihan University. 3.Chapin, F. Stewart, Urban Land use Planning, University of Illinois 4. Mortada, Hisham, ,Traditional Islamic Principles of Built Environment, Routledge Curzon .
Course Details:

Subject	**Week**
Introduction and Basic Definitions.	1
The Emergence of Human Settlements in Ancient Civilizations.	2
Medieval Towns , The Islamic City.	3
Modern Theories and Ideas of Urban Planning.	4
Contemporary and Sustainable Cities.	5
Elements of Urban Areas/ Streets.	6
Technical Aspects of Streets' Planning.	7
Technical Aspects of Walk Ways' Planning.	8
Technical Aspects of Car Parking's Planning.	9
Urban Land Use Patterns , The Residential Use.	10
Urban Land use Patterns , The Commercial and Industrial Use.	11
Open Spaces and Water Fronts.	12
The Master Plans with Review of Iraqi Experiment.	13
Introduction to Urban Renewal.	14
The Iraqi Experiment of Urban Renewal.	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Computer Aided Architectural Presentation
Course Number/Type: ARC 346/Core
Credit Hours: 2 (1 lecture and 2 laboratory hours/week)
Level/Term: 3rd level / Fall
Prerequisties:

Course Description:

The course is concerned with applying the latest techniques used in computer aided architectural presentation by learning about drawing and rendering techniques by using 3d Max and Corona render software to reach a computer aided architectural presentation that is as close to realism as possible. In addition to getting acquainted with the most important techniques to assist in architectural presentation through the use of Adobe Photoshop software.
The course develops students' design skills and creative thinking through design and formal alternatives that students learn about during work, as well as the architectural presentation of various projects and in various environmental conditions.

Refernces:

1- A Fascinating journey into the world of 3D Graphics with 3ds Max. By Iftikhar Abbasov
2- Autodesk 3D Max Design- The Designer's Handbook. By Marcello Femi, AIA
3- Corona Render 1.3. By Giao Trinh

Course Details:

Subject	Week
Introducing the 3ds Max program and the program's drawing board, adjusting the basic settings, in addition to getting to know the main menus in the program.	1
Learn the basic commands and commands used in 3ds Max.	2
Learn how to dra two dimensional geometric shapes and Edit spline applications.	3
Learn how to creat advanced and 3D architectural models.	4
Edit poly applications.	5
Ready-made models used in architectural and construction works AEC Extended.	6
Get to know the modifiesr list and the most important modifiers used.	7
Presenting an exterior design project using instructions, orders and rates.	8
Learn about Corona render software and how to install it in 3ds Max.	9
Adjust Corona render settings.	10
Recognize the types and forms of Corona light and how to choose, adjust and define the appropriate lighting to control it.	11
Learn how to put cameras and Corona camera, how to adjust the main setting for them, and how to choose the appropriate shot.	12
1 Learn how to add Corona material and their types using the Material editor and how adjust them, in addition to getting to know the Corona material library, in addition to the method of manufacturing different materials.	13

The way to insert the different blocks within the 3ds Max program and the way to insert them with their own material, in addition to identifying the most important sites from which the different blocks can be obtained. Post production using Adobe Photoshop software program and adding different backrounds and environmental effects.	14
Presenting a presentation for an exterior and interior design project using Corona render.	15

Lecturer Name: Head of the department:

Signiture: Signiture:

المستوى الدراسي الثالث (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 الجامعة	اللغة الانكليزية- المتوسط	English Language - Intermediate	اجباري	2		2			
متطلبات القسم	التصميم المعماري(6)	Architectural Design (6)	اجباري	1	8	5	التصميم المعماري(5)	ARC347	
	تاريخ العمارة (2)	History of Architecture(2)	اجباري	2		2		ARC348	
	الخرسانة المسلحة (2)	Reinforced Concrete (2)	اجباري	1	2	2	الخرسانة المسلحة(1)	ARC349	
	خدمات المباني(2)	Building Services(2)	اجباري	2		2		ARC350	
	الرسوم التنفيذية(2)	Working drawings (2)	اجباري		4	2		ARC351	
	المنطق ومنهجية التصميم	Design Logic & Methodology	اجباري	1		1		ARC352	
	تطبيقات التخطيط والاسكان	Planning Applications And Housing	اختياري	1	2	2	مبادئ التخطيط	ARC361	
	نظم التحكم البيئي	Environmental Control System		2		2		ARC362	
	التشريعات العمرانية	Architectural Legislations		2		2		ARC363	
مجموع وحدات الفصل الثاني للمستوي الثالث 18 وحدة (16 اجبارية +2 اختيارية)				11	14	18			

University of Mosul

College of Engineering

Department of Architecture

Course Title: English Language - Intermediate
Course Number/Type: / Core
Credit Hours: 2 theoretical hours/week
Level/Term: 3rd level / Spring
Prerequisties: -

Course Description:

First of all, Headway's trusted methodology combines solid grammar and practice, vocabulary development, and integrated skills with communicative role-plays and personalization. It is a perfectly-balanced syllabus, and packed with new material. It builds student confidence and enhances fluency in speaking. Authentic material from a variety of sources enables students to see new language in context, and a range of comprehension tasks, language and vocabulary exercises, and extension activities practise the four skills that support the four skills of language learning: listening, reading, writing and speaking. The curriculum provides two important parts of learning the English language: the first is the 'Everyday English' and the second part is 'Spoken grammar' sections practise real-world speaking skills. The curriculum also provides detailed information about the grammar of the language and how to write it, which is mentioned in each unit in the book units mentioned independently at the end of the book to provide models for students to analyze and imitate.

Refernces:

1- Liz and John Soars (2012) New Headway Intermediate Student's Book Fourth Edition. OXFORD University Press. ISBN-13 : 978-0194770200

Course Details:

The New Headway book's curriculum includes a range of topics and Up-to-date material with global appeal. style. 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 curriculunm emphyzises 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 articale. Besides, this course includes New – iTutor DVD-ROM included in Student Book for interactive home study. Moreovere, New – iChecker CD-ROM included in Workbook for workbook audio, self-tests, and links to online tests and practice. .

Subject	Week
Unit 1: A world of difference Present, past, present perfect tenses Auxiliary verbs Questions and negatives Short answers Sounding polite	1
Unite 2: The working week Present and continuous tenses	2

State verbs Passive How often	
Unit 3: Good time, bed Past tenses	3
Unit 4: Getting it right Modal and related verbs	4
.Unit 5: Our Changing world Future forms Future possibiliies	5
Unit 6: What matters to me Information questions	6
Unit 7: Passions and fashions Present perfect Passive Adverbs Time expressions	7
Unit 8: No fear Verb patterns The infinitive The reduced infinitive	8
Unit 9: It depends how you look at it Conditionals Might have done/ could have done Should have done	9
Unit 10: All things high tech Noun phrases Possessives Reflexive pronouns and each other	10
Unit 11: Seeing is believing Present and past Modals of probability Looks like / looks Expressing disbelief	11
Unit 12: Telling it how it is Reported Speech Reported thoughts Reported questions	12
Listening and Reading	13
Listening and Reading	14
Listening and Reading	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Architectural design 6
Course Number/Type: ARC 341/Core
Credit Hours: 5 (1 theory 8 practical)
Level/Term: 3rd Level/ Spring
Prerequisties: architectural design 5

Course Description:

The course initially introduces the basics of architectural design for a building within community or sector centre level .

Objectives:

To introduce concepts of function, structure in design process through projects (secondary school, shopping center and clcture center) and to learn how to a apply design methodology for those complicated projects

Understanding of the basic architectural principles in the design of buildings, interior spaces, and sites. Understanding of the fundamentals of visual perception and the principles and systems of order that inform two- and three-dimensional design Understanding of the natural and built site characteristics in the development of a program and the design of a project. Understanding of the basic principles and appropriate application and performance of building functions and construction

Refernces:

1. Joseph De Chiara, Julius Panero, Time-Saver Standards for Housing and Residential Development
2. Polservice , 1982 Housing Technical Standards & Codes of Practice

Course Details:

	Week
Introduction buildings within community or sector centre	1
Analysis of similar examples	2
Site analysis	3
Design concept and primary idea formulation	4
Discussion	5
Discussion	6
First submission	7
Details of plans	8
Elevations and visual aspect	9
Details	10
Pre- Final submission	11
Discussion	12
Discussion	13
Final presentation settings	14
Final submission	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: History of Architecture (2)
Course Number/Type: ARC348/Core
Credit Hours: 2 (2 theory hours lecture /week)
Level/Term: 3rd level / Spring
Prerequisties: -

Course Description:

- Inform students about the development of European Architecture from pre-Roman age until Renaissance and Baroque.
- Enhance the concept of architectural interactions between European civilizations and others, specially with Arabic-Islamic civilizations.
- Analysing historical examples according to architectural theories of Design.
- Free-hand architectural drawings analysis

Refernces:

14- Fletcher, Banister, ***A History of Architecture on the Comparative Method*****, R.I.B.A. London**

1- Mansbridge, John, ***Graphic History of Architecture***, B.T. Bastsofrd Ltd., London, 1967.

Course Details:

Subject	Week
Introduction to the history of European Architecture	1
Greek Architecture: Architectural characters & Orders	2
Greek Architecture: Temples	3
Roman Architecture: Architectural characters	4
Roman Architecture: Temples & Pantheon	5
Roman Architecture: Other Building types	6
Interaction between Roman and Eastern Architecture	7
Early Christian Architecture	8
Byzantine Architecture	9
Romanesque Architecture:	10
Mid Term Exam	11
Gothic Architecture:	12
Early Renaissance Architecture	13
High Renaissance Architecture	14
Baroque Architecture	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Reinforced Concrete (2)
Course Number/Type: ARC 349/Core
Credit Hours: 2 (1 lecture and 2 laboratory hours/week)
Level/Term: 3rd level / Spring
Prerequisties: ARC 344 Reinforced Concrete (1)

Course Description:

An introduction to the reinforced concrete structure, Characteristics of reinforced concrete elements, concrete and reinforcing steel Grades, Loading types and load combinations. Analysis and design of different structural elements subjected to flexure and shear using load and resistance factor design method (LRFD). Analysis and design of continuous one-way slabs and beams using the ACI coefficients method. Analysis and design of two-way slabs using coefficients method. Analysis and design of wall and spread footings. The above topics will be covered according to the American Building Code Requirements.

Refernces:

No textbook is required for this course. The given lectures will cover the required subjects. In addition to the lectures, the student can make use of the following references:

Design of Concrete Structures by Nilson, Darwin, and Dolan.

1. Reinforced concrete Mechanics and Design 6th Edition by Wight and MacGregor.
2. Design of Reinforced Concrete, Jack McCormac and Russell Brown.
3. ACI-318-14M, Building Code Requirements 2014, American Concrete Institute.
4. ASCE 7-10, Minimum Design Loads for Buildings and Other Structures.

Course Details:

Subject	Week
Introduction to concrete structures.	1
Loads on structures and design methodology.	2
Introduction to ASCE 7-10	3
Introduction to ACI 318	4
Introduction to ACI coefficient method for analysis of continuous one-way slabs and beams.	5
Analysis and design of continuous one-way slabs.	6
Analysis and design of continuous one-way slabs-Cont.	7

Analysis and design of continuous beams.	8
Analysis and design of continuous beams-Cont.	9
Introduction to analysis and design of two-way slabs using the ACI coefficient method.	10
Analysis and design of two-way slabs.	11
Analysis and design of two-way slabs-Cont.	12
Introduction to footings.	13
Analysis and design of wall footing.	14
Analysis and design of spread footing.	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Building services 2
Course Number/Type: ARC 350/Core
Credit Hours: theoretical: 2 huors weekly
Level/Term: 3rd level / Spring
Prerequisties:

Course Description:
Introduction to engineering services and why does the architects should learn and understand the engineering services . Basic information about electricity power and how its generate , supply and distribution . Describes the electricity energy consumption calculations , electrical installations systems and types . presents types of various electrical systems in buildings . Interior lighting design calculations concentrated on (lumen method) , lighting fixtures , types and their affects on interior design , other lighting characteristics like types of Glare and method to avoid it , color temperature of lamps and its biological effects on humans and space , color rendering of lamps . Describes some of light fixture types according to light direction and distribution. Covers some of the remaining building services which in major touch with architectural design (fire detection and alarm system , conveying systems including elevators , escalators and their types and design requirements).
Refernces:
1 - التأسيسات الكهربائية ، د. مظفر النعمة ، د. سنان عطار باشي 1982 2 - هندسة الخدمات الكهربائية المعمارية ، د. مظفر النعمة 2012 3 - تصميم الانارة العربي ، عزت بارودي 2008 4- Environment and Services By Peter Burberry Dip Arch,Msc,RIBA,FCIOB, London,Basford Limited,1986. 5- Architectural Lighting Design, a practical guide , Admire Jukanovic 2018 6- Building Control Systems , Vaughn Bradshaw
Course Details:

Subject	**Week**
Introduction to Building services	1
Electricity energy consumption calculation	2
Electricity load distribution in buildings + Electricity installation systems	3
Lighting design (lumen method)	4
Interior lighting design (1)	5
Interior lighting design (2)	6
Interior lighting design (3)	7

Exterior lighting design and Media architecture	8
Fire detection and Alarm system	9
Firefighting and suppression	10
Conveying systems (Elevators)	11
Conveying systems (Escalators)	12
Project of small house design (working drawings of electricity installations)	13
Building systems integration	14
General preview and discussion	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: working drawing 2
Course Number/Type: ARC 351/Core
Credit Hours: 4
laboratory hours/week)
Level/Term: 3rd level / Spring
Prerequisites:

Course Description:	
Introducing iron designs and how to deal with Steel sections of various types and shapes, in addition to teaching students how to form and shape Steel structures with relatively large areas and dealing with details related to the details, as well as identifying the features of different architectural spaces designed from Steel sections.	
Refernces:	
1. - building construction vol. 3 2. - building construction vol. 5 3. - structure and fabric 4. - working drawing handbook 5. - Steel Structures Design 6. - introduction to structural engineering **7.** - Design of Steel Structures	
Course Details:	
Subject	**Week**
Structural comparison between the traditional structure and the unconventional structure in terms of the structural system of steel structures.	1
Explain the types of structural systems for steel structures.	2
Structural Steel system (a type of iron truss) with structural details specific to this type.	3
Steel structural system (type of cable or wire drawn) with structural details of this type.	4
Explanation of iron systems in general.	5

The first presentation: a detailed presentation of the general planning and at the level of the departments (plans, facades, and sections), and with architectural details.	6
Explanation of electrical plans in detail and for architectural horizontal plans.	7
practical test .	8
Modern methods of construction (shell building systems and suspended structural systems).	9
discussions	10
discussions	11
The second presentation: a detailed presentation of the method of prefabricated construction and the various construction systems (steel systems with their details).	12
discussions	13
discussions	14
Final presentation	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Logic & Methodology of design
Course Number/Type: ARC 352 /Core
Credit Hours: 1 (1 lecture hours/week)
Level/Term: 3rd level / semester 2
Prerequisties:

Course Description:
A core course through which the student learns the logic and methodology of design processes. Introducing the importance of logic and methodology in design in general is one of the topics that play an important role in the design process, clarifying the basic design principles, processes and factors involved in making the design, and their practical application in the design. In addition to in-depth information on design and thinking processes, inference and analysis, depending on the results to employ the correct methodology of design depending on the inputs and outputs of the project.
Refernces:
1- Methodology of architectural design 2- The psychological language of architecture 3- Rethinking Design and Interiors: Human Beings in the Built Environment
Course Details:

Subject	**Week**
Introduction to the course and its definition and some of its terms	1
What is design as a mental and logical process	2
What is thinking and how to apply it in design	3
The principle and mechanism of logical thinking	4
The design process	5
The needs and design	6
The Design process theories	7
Factors affecting the design process	8
The design methodology and method of thinking	9
Types of design methodologies	10
Logic and logical thinking	11
logic elements	12
Evaluation and development process	13
Analytics	14
Integrated steps of the design process	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Planning Application and Housing
Course Number/Type: ARC361/Elective
Credit Hours: 2 (1 lecture and 2 laboratory hours/week)
Level/Term: 3rd level / Spring
Prerequisties: ARC345 principles of planning

Course Description:
The housing subject in the second semester aims at introducing the student to the concept of housing from the psychological, social, urban, economic and urban aspects, and looking at (the house or housing) as an urban unit within the urban fabric of the city as a whole, as well as looking at the housing sector as an economic sector that constitutes an essential and important part of the country's economies Its role is to address the housing deficit and its problems, and to raise its reality to the highest level in terms of construction and civilization.
Refernces:
1. Barker Review of Land Use Planning: Final Report – Recommendations, Norwich, 2. Brimly,'Housing market models and planning', Town Planning Review 3.Chapin, F. Stewart, Urban Land use Planning, University of Illinois 4. Mortada, Hisham, ,Traditional Islamic Principles of Built Environment, Routledge Curzon .
Course Details:

Subject	**Week**
Housing Basics: Definitions of Important Terms	1
Housing need and housing demand	2
Housing balance and housing deficit-	3
Types of housing standards and their descriptions	4
Population Densities: Definitions	5
Housing densities and their relationship to degrees of urbanization and urban environments.	6
Methods of controlling population densities	7
Housing policies and programs	8
The housing market and the factors of active market forces in it	9
The importance of the financing policy in the field of housing	10
Components of the residential urban fabric: characterization & analysis.	11
Movement networks and urban spaces network.	12
The Master Plans	13
The Master Plans with Review of Iraqi Experiment.	14
The Master Plans with Review of Arabic Experiment.	15

Lecturer Name: Head of the department:

Signiture: Signiture:

University of Mosul

College of Engineering

Department of Architecture

Course Title: Environmental Control Systems
Course Number/Type: ARC 362/ Elective
Credit Hours: 2 (2 lecture hours/week)
Level/Term: 3rd level /Fall
Prerequisties:

Course Description:

Course is concerned with studying the environmental aspects in terms of climate, the use of new and renewable energy sources such as the sun and wind, in addition to the use of plants and environmentally friendly building materials, the optimal exploitation of the surrounding environment, and identification of strategies for environmental control systems, Passive Control System, in terms of cooling, heating, ventilation, thermal mass and evaporative cooling, which provide the maximum Thermal comfort and safety for designing buildings in a manner that respects the environment, in addition to demonstrating the role of environmental control in rationalizing energy consumption, minimizing negative environmental impacts, and providing an environmentally friendly indoor environment, through which it is possible to achieve sustainable, environmentally friendly buildings.
The climate consultant program will also be used for the purpose of understanding the local climate of the area in which any project is located when analyzing the site, identifying climatic analyzes for different regions, and identifying the most important strategies and environmental control systems that can be relied upon in designing buildings in different climatic zones.

Refernces:

1- The green studio handbook, Environmental Strateries for Schematic Design. By Alison G. Kwok and Walter Grondzik, 2018.
2- Heating, Cooling, Lighting Sustainable Design Mwthods for Architects by Norbert Lechner, 2009.

Course Details:

Subject	Week
An introduction to environmental control systems and the most important determinants that must be studied when designing buildings, starting with the the site design strategies.	1
Learn about the international green building rating systems.	2
Environmental analysis by using Climate consultant program.	3
Insulating materials as environmental control system.	4
Green walls/ Facades as environmental control system.	5
Green roofs as environmental control system.	6
Double skin walls and dynamic facades as environmental control system.	7
Glazing technology as environmental control system.	8
Lighting as environmental control system.	9
Shading devices as environmental control system.	10
Energy production strategies as environmental control system.	11
Natural ventelation using the wind and gravity as environmental control system.	12
Passive solar heating strategies as environmental control system.	13

Passive cooling strategies as environmental control system.	14
Use water and recycling waste strategies as environmental control system.	15

Lecturer Name: Head of the department:

Signiture: Signiture:

جامعة الموصل
كلية الهندسة
قسم هندسة العمارة

مفردات المناهج للدراسة الأولية
القسم الثاني
للمرحلة الرابعة والخامسة

العام الدراسي 2022-2021

مفردات المنهج – المرحلة الرابعة

الفصل الاول و الفصل الثاني

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:4th.

Code No.	Title of Subject	Credits	First semester		Second semester	
			Theoretic H/W	Practical H/W	Theoretic H/W	Practical H/W
ENAR-401	Architectural Design	**14**	**2**	**10**	**2**	**10**
ENAR-402	Interior Design	**2**	**1**	**3**	**-**	**-**
ENAR-403	Landscape Design	**2**	**-**	**-**	**1**	**3**
ENAR-404	Islamic Architecture	**4**	**2**	**-**	**2**	**-**
ENAR-405	Advanced Building Techniques	**2**	**2**	**-**	**-**	**-**
ENAR-406	Theories of Architecture	**4**	**2**	**-**	**2**	**-**
ENAR-407	Housing	**4**	**2**	**-**	**2**	**-**
ENAR-408	Theories of Urban design	**4**	**2**	**-**	**2**	**-**
ENAR-409	Architecture & climate	**2**	**2**	**-**	**-**	**-**
ENAR-410	Architecture Acoustic	**2**	**-**	**-**	**2**	**-**
ENAR-411	Programming Architectural Spaces	**2**	**-**	**-**	**2**	**-**
ENAR-412	Design of Steel structures	**2**	**-**	**-**	**2**	**-**
Total		**44**	**15**	**13**	**17**	**13**
			28H/W		**30**H/W	

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:4th.

Detailed Description of Architectural Design

Title of Subject	**Architectural Design**	**Theoretic Hour/week**	**Practical Hour/week**
		2	**10**
		Credits:	**14**
Code No.			**ENAR-401**
Offering Semester	**First semester** □	**Second semester** □	**Yearly** ■
Course Objective	At the end of the year, the student has to know how to design complex buildings with complex systems regarding function, services, occupants and users, and how to relate the system's buildings to their direct and indirect urban context.		
Course Description			
Textbook			
References	References with the subjects of certain selected building types such as Hospitals, Court Houses, Libraries, and mixed use mega- structures complexes.		
Course Assessments	**Yearly work**	**Final Exam**	
	%100	**%0**	

Course Weekly Outline

Week	Topics Covered	Notes
1	Project Assignments/ Introduction	
2	Functional Programs & Site Selection Groups	
3	Analysis of Functional Programs Groups	
4	Analysis of Precedents and similar examples Individual	
5	Initial Ideas & Concepts/ Discussions Individual	
6	Development of Concept	
7	Initial Presentation+ Ground Floors	
8	Criticism & Development	
9	Criticism & Development	
10	Initial Presentation+ Elevations	
11	Criticism & Development	
12	Criticism & Development	
13	Pre- final Presentation	
14	Development	
15	Final Submission	
16		
Half-Year Break		
17	. Project Assignments/ Introduction	
18	18 Functional Programs & Site Selection Groups	
19	Analysis of Functional Programs Groups	
20	Analysis of Precedents and similar examples Individual	
21	Initial Ideas & Concepts/ Discussions Individual	
22	Development of Concepts	
23	Initial Presentation+ Ground Floors	
24	Criticism & Development	
25	Criticism & Development	
26	Initial Presentation+ Elevations	
27	Criticism & Development	
28	Criticism & Development	
29	Pre- final Presentation	
30	Development	
31	Final Submission	
32		

Lecturer Name: Head of the department:

Signature: Signature:

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:4th.

Detailed Description of Interior Design

Title of Subject	**Interior Design**	**Theoretic Hour/week**	**Practical Hour/week**
		1	**3**
		Credits:	**2**
Code No.	**ENAR-402**		
Offering Semester	**First semester** ■	**Second semester** □	**Yearly** □
Course Objective	To provide a comprehensive understanding of the major aspects of Interior Architecture, And encourage student to use creative methods to solve Interior design challenge		
Course Description	Design studio allows students to create creative interiors with spatial qualities that are habitable for people on all levels of experience: aesthetically, functionally, and psychologically. With comfort and efficiencyInterior , architecture study of the relationships within the building enclosures; architectural planes, aspects of layout, furnishing, vertical and horizontal circulation among interior spaces, properties of interior materials, space lighting and acoustics.		
Textbook			
References	Interior Design Illustration ,Van Nostrand Reinhold Co.,1987. Francis D.K. Ching, --Joseph DeChiara, Time-Saver Standards for Interior Design and Space Planning, 2nd Edition ,McGraw Hill, 2001		
Course Assessments	**Course work**	**Final Exam**	
	70 %	**30 %**	

Course Weekly Outline

Week	Topics Covered	Notes
1	Introduction ,definitions , references	Start 1st project.
2	Review of previous years students projects	
3	Review of international interior design projects	
4	How to start interior Design	
5	Interior Space Analysis &Requirement	Start 2nd project
6	A Design Vocabulary ,Form ,Shape	
7	Texture ,Light, ,Color	
8	Interior Design Principles,	
9	Interior Design Elements, ceilings ,walls	
10	,floors, Doors, Windows ,Staircases	
11	Furniture ,Accessories	
12	Integration of HVAC . Systems with interior Design	
13	Interior Design Materials	
14	Visual Design, Attentions ,Illusions	
15	Students reports discussion	
16	Interior Design Project final discussion	
	Half-Year Break	
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Lecturer Name: Head of the department:

Signature: Signature:

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:4th.

Detailed Description of Landscape Design

Title of Subject	**Landscape Design**		**Theoretic Hour/week**	**Practical Hour/week**
			1	**3**
			Credits:	**2**
Code No.	**ENAR-403**			
Offering Semester	**First semester** □	**Second semester** ■	**Yearly** □	
Course Objective	To provide a comprehensive understanding of the major aspects of Landscape Architecture, And encourage student to use creative methods to solve landscape design challenges.			
Course Description	Comprehensive application of landscape design skills. Design studio allow students to apply theories and principles of landscape architecture to their own projects. These projects are developed according to certain scale requirements cover areas such as urban open spaces,.introducing theories, principles and examples of contemporary landscape architecture with emphasis on landscapes for hot arid environments; site analysis and landscape evaluation; , site design; ; theory, process, materials, features and design elements; appropriate plant materials, structures, pavements and street furniture, grading, drainage and irrigation.			
Textbook				
References	1-MUTLOCH, J.L., Introduction to Landscape Design, John Wiley & Sons, 2001 2-Theodore D., Site Design and Construction Detailing, John Wiley & Sons, 1991			
Course Assessments	**Course work**	**Final Exam**		
	70 %	**30 %**		

Course Weekly Outline

Week	Topics Covered	Notes
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Half-Year Break		
17	Introduction ,definitions , references	Start 1st project.
18	Review of pervious years students projects	
19	Review of international landscape design projects	
20	How to start landscape Design	
21	History of garden design,	Start 2nd project
22	Site analysis	
23	Site furniture and fixture	
24	Plant material	
25	Planting design	
26	Water in Landscape design	
27	Gardens types	
28	Energy conservation through landscape design	
29	Information technology in landscape architecture	
30	Landscape detailing	
31	Students reports discussion	
32	Landscape Design Project final discussion	

Lecturer Name: Head of the department:

Signature: Signature:

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:4th.

Detailed Description of Islamic Architecture

Title of Subject	**Islamic Architecture**	**Theoretic Hour/week**	**Practical Hour/week**
		2	
		Credits:	**4**
Code No.	**ENAR-404**		
Offering Semester	**First semester** □	**Second semester** □	**Yearly** ■
Course Objective	to build a wide information and a database about historical Islamic Architecture, its theory and applications, Islamic cities , building types, features, elements and arts., which is a source of inspiration for new architecture and simulation to the present time with an identity		
Course Description	Studying Islamic Architectural in tow aspects, first the theory of Islamic Architectural and its reference Islamic religion (principles and rules of architecture) and the second focal point on the theory application in Islamic cities, building types, features, elements, arts, examples		
Textbook			
References			
Course Assessments	**Yearly work**	**Final Exam**	
	%40	**%60**	

Course Weekly Outline

Week	Topics Covered	Notes
1	Definition of the topic. And requirements, the report.	
2	Theory of Islamic Architecture ,Structure basis of the theory of Islamic architecture, the principles of belief.	
3	Cosmic link(community spirit), Unity, Science and innovation.	
4	Worship and its impact on architecture	
5	The principles and purposes of AlShariah (Islamic jurisprudence)	
6	System of ethics and Beauty - Islamic Ethics	
7	the rules of the formation of physical infrastructure, Quran and Sunnah	
8	Rights and Provisions of the construction law and jurisprudence	
9	Physical models of civilization, Mecca, the Grand Mosque Kaaba of Mecca -	
10	Prophet's Mosque in Medina	
11	Al-Aqsa Mosque, Dome of the Rock mosque	
12	Examination and identification of reporting	
13	Impact of the environment (place and time)Style in Islamic architecture	
14	Impact of the environment (place and time) Style in Islamic architecture Impact of the environment (place and time) Style in Islamic architecture	
15	The first type - the ancient cities of developed - Medina - City of Damascus The second type - the regions - Basra - Kufa	
16	The third type - cities designed - Baghdad - Samarra Fundamental rights that have affected the social behavior of the built environment	
Half-Year Break		
17	Types of buildings in Islamic architecture, The mosque and the urban fabric of the city, mass, shape and Planning, Types of mosques in the city planning	
18	Types of planning (design) historic mosques, Arabic type	
19	Seljuk type, Ottoman type,Ewan type.	
20	Components of the mosque,	
21	Mosque form	
22	Models of mosques ,Examples	
23	Schools	
24	Residential buildings, housing the Islamic	
25	Bathroom ,Public building	
26	Discussion of the types of buildings in medieval Islamic architecture	
27	Elements ,Almihrab	
28	Examination	
29	Almanara	
30	Domes, vaults and vaults, columns	
31	Surface Treatment ,Aesthetic elementsEnvironmental elements	
32	Reports Discussion	

Lecturer Name: Head of the department:

Signature: Signature:

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:4th.

Detailed Description of Advanced Building Techniques

Title of Subject	**Advanced Building Techniques**	**Theoretic Hour/week**	**Practical Hour/week**
		2	
		Credits:	**2**
Code No.	**ENAR- 405**		
Offering Semester	**First semester** ■	**Second semester** □	**Yearly** □
Course Objective	Discuss and provides the basic concepts of: building construction, building structures, building materials, new technologies in Architectural design.		
Course Description	This course aims at understanding advanced building Techniques; prefabrication and modular structures. Advanced building construction systems, new materials and responsive technologies ,sky scrapers (structural & climatically) analysis.		
Textbook			
References	- The Sky Scrapers, by/ Ken Yeang – 1996/1999 Understanding Structures, by Fuller Moore – 1999- Structural Design In Architecture, by James Waly - 1996 -		
Course Assessments	**Yearly work**	**Final Exam**	
	% 40	**% 60**	

Course Weekly Outline

Week	Topics Covered	Notes
1	Technology concept & Technology in Architecture	
2	Building Techniques	
3	Building structures	
4	Techtonic & Atechtonic in Architecture	
5	The sky scrapers (history & environment)	
6	The sky scrapers (structure& construction)	
7	Pre-cast & pre-stress beams	
8	Shell structure	
9	Space frame structure	
10	Tent & Cable structure	
11	Folding Architecture	
12	Sustainable Architecture	
13	Intelligent Architecture	
14	Engineering services technology	
15	Fire safety in buildings	
16	Green Architecture	
Half-Year Break		
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Lecturer Name: Head of the department:

Signature: Signature:

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:4th.

Detailed Description of Theories of Architecture

Title of Subject	**Theories of Architecture**			**Theoretic Hour/week**	**Practical Hour/week**
				2	
				Credits:	**4**
Code No.	**ENAR-406**				
Offering Semester	**First semester** □		**Second semester** □		**Yearly** ■
Course Objective	On successful completion of this module, students should be able to: 1. Demonstrate familiarity with the basic geographical and chronological framework of the architectural trends of Modern, Late-Modern, Post-Modern and Deconstructive Architecture. 2. Demonstrate familiarity with the major monuments of these trends and some knowledge of the relationships between buildings and the societies that produced them. 3. Think clearly and critically about architecture and express ideas in a structured and coherent way, with reference to contemporary and historical examples. 4. Demonstrate skill and confidence in ordered and coherent expression, both written and spoken.				
Course Description					
Textbook					
References	Changing Ideals in Modern Architecture/ Peter Collins Modern Architecture since 1900/ William Curtiz Architecture Today/ Charles Jencks · شيرزاد إحسان شيرين /العمارة في العالمي الاسلوب				
Course Assessments	**Yearly work**		**Final Exam**		
	%40		**%60**		

Course Weekly Outline

Week	Topics Covered	Notes
1	Backgrounds of Modern Architecture	
2	The Beginning Strands of Modern Architecture	
3	Revivalism	
4	The Chicago School of Architecture	
5	The Architecture of the Art Nouvea	
6	The Architecture of Expressionism	
7	Organic Architecture/ Frank Lloyd Wright	
8	De Stijl & Constructivism	
9	International Style & the Bauhaus School	
10	The Architecture of Le- Corbusier	
11	The Architecture of Functionalism	
12	Examination	
13	The Architecture of Brutalism	
14	Archigram & Metabolism	
15	Presentation and Discussion of Reports	
16		
Half-Year Break		
17	Crises of Modern Architecture.	
18	The Issue of Communication in Modern Arch	
19	Backgrounds of Late-Modern & Post-Modern Arch.	
20	Late-Modern Architecture/ Theories & Practices	
21	Late-Modern Architecture/ Theories & Practices	
22	Late-Modern Architecture/ Theories & Practices	
23	Late-Modern Architecture/ Theories & Practices	
24	Post-Modern Architecture/ Theories & Practices	
25	Post-Modern Architecture/ Theories & Practices	
26	Post-Modern Architecture/ Theories & Practices	
27	Post-Modern Architecture/ Theories & Practices	
28	The architecture of Deconstruction/ Theory & Practices	
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31	Presentation and Discussion of Reports	
32		

Lecturer Name: Head of the department:

Signature: Signature:

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:4th.

Detailed Description of Housing

Title of Subject	**Housing**		**Theoretic Hour/week**	**Practical Hour/week**
			2	**2**
			Credits:	**4**
Code No.	**ENAR-407**			
Offering Semester	**First semester** □	**Second semester** □	**Yearly** ■	
Course Objective	Making behavioral changes for students after they had understood Basics of Housing, main topics like: Housing as an Economic sector, Planning Indicators :(FAR) , (PC),(O.R.)in H.Planning.Practical planning of Residential urban fabric			
Course Description	Definitions & Discussion of Housing Need, H.Demand, H.Densities, H.Standards & types. Definitions & Discussion of Components of Residential urban fabric With their Comprehensive View & philosophy. As a requirement, student should present a report about one of main housing topics during the course			
Textbook	• "Housing in Iraq - Problems - Policies - Programs", 1958 – Doxiadis Associates - Consulting Engineers - Republic of Iraq. مدينة الثرثار الجديدة، 1987، تقرير المخطط الأساس النهائي"، حزيران، مجموعة اتحاد دوكسيادس. الهيئة النعمة،مازن جابر :" دراسة تخطيطية عمرانية لحي السكن العربي الجمهورية العراقية – المركزية للمدن الجديدة المعاصر مع مقترح تصميمي لمحلة سكنية نموذجية" رسالة مقدمة الى مركز التخطيط الحضري والاقليمي / جامعة بغداد لنيل درجة الماجستير سنة 1990- بغداد			
References	صالح، د. الهذلول، 1986، (نمو وتطور المحيط العمراني المعاصر في المملكة العربية السعودية) ، من بحوث الرياض – المؤتمر الثامن للمدن العربية. طارق، والي، 1986، (القيم الإسلامية في بناء المجتمعات) من بحوث (الإسكان في المدينة الإسلامية)- القاهرة "مدينة البكر الصناعية – في خور الزبير – التصميم الأساسي" – 1975 – هيئة تخطيط المدينة الصناعية وزارة البلديات – مديرية التخطيط والهندسة العمة – بغداد. حاتم، حازم الصوفي، 1988، (مفهوم الفضاء الحضري في المدينة العربية)، رسالة ماجستير مقدمة الى كلية الهندسة، جامعة بغداد.			
Course Assessments	**Yearly work**	**Final Exam**		
	%40	**%60**		

Course Weekly Outline

Week	Topics Covered	Notes
1	Housing and housing projects : historical view	
2	housing problem in Iraq	
3	housing strategies in Iraq	
4	main concepts in housing design	
5	Criteria's of urban housing design in Iraq	
6	classification of human needs in housing	
7	urban housing patterns in Iraq	
8	report discussion: stage 1	
9	façade of urban housing patterns in Iraq	
10	examination	
11	The development of Urban Housing pattern : environmental view	
12	report discussion: stage 2	
13	The development of Urban Housing pattern :social view	
14	The development of Urban Housing pattern : resident psychological view	
15	report discussion: stage 3	
16	report discussion: stage 3	
Half-Year Break		
17	Housing as an Economic sector, Dwelling Units as economic goods	
18	Housing Need - Definition & Discussion, How to estimate housing need	
19	Housing demand - Definition & Discussion, How to estimate housing demand	
20	& Housing Shortage - Definition & Discussion, Housing Stock - Definition	
21	Housing Standards - Definition & Discussion, Types of H. Standards, Norms of H. Standards in Iraq & other countries	
22	Housing Density – Definition, Types & Discussion,How to estimate net residential Density,How to estimate gross residential Density	
23	Control of Housing Densities	
24	Planning Indicators :(FAR) , (PC),(O.R.),Housing Policies - Definition & Discussion,Housing Programs - Definition & Discussion	
25	monthly exam	
26	Housing Market - Definition & Discussion,Market Factors that affect Housing Economy,Financial Policies for Housing Sector	
27	philosophy & Components of Residential urban fabric,Comprehensive View	
28	Dwelling Unit - Definition & Discussion,Factors that affect physical shape of Functions & D.U,Housing Street - Definition	
29	monthly exam	
30	Networks of movements,Vehicular Networks,Pedestrian Networks	
31	Open Spaces urban Networks	
32	Final Exam	

Lecturer Name: Head of the department:

Signature: Signature:

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:4th.

Detailed Description of Theories of Urban Design

Title of Subject	**Theories of Urban Design**		**Theoretic Hour/week**	**Practical Hour/week**
			2	**2**
			Credits:	**4**
Code No.	**ENAR-408**			
Offering Semester	**First semester** □	**Second semester** □	**Yearly** ■	
Course Objective	It helps the students to understand the theories of the built environment& to conduct with the urban design problems			
Course Description				
Textbook				
References	Urban Space , Emerging Concepts Of Urban Design, Concepts Of Urban Design Theories			
Course Assessments	**Yearly work**	**Final Exam**		
	%40	**%60**		

Course Weekly Outline

Week	Topics Covered	Notes
1	Sources of urban design theories	
2	Natural models	
3	Utopian-ideal models	
4	Models derived from the arts and sciences	
5	Planning theories	
6	Functional theories	
7	Normative theories	
8	Figure-ground theories	
9	Linkage theories	
10	Place theories	
11	Behavior trends	
12	Structulisim trends	
13	Spacesyntax trends	
14	Deconstructioalisim trends	
15	Ratioalisim trends	
16	Course Exam	
Half-Year Break		
17	Urban space concept	
18	Urban space concept	
19	Urban space design	
20	Urban space design	
21	Space Edges	
22	Space – Mass relation	
23	Space – Mass relation	
24	Functions of Urban Soace	
25	The Square	
26	The Formation of Square	
27	The Street	
28	The Formation of Street	
29	The size of Urban Space	
30	Report discussion	
31	Report discussion	
32	Course Exam	

Lecturer Name: Head of the department:

Signature: Signature:

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:4th.

Detailed Description of Architecture & climate

Title of Subject	**Architecture & climate**		**Theoretic Hour/week**	**Practical Hour/week**
			2 hours	
			Credits:	**2**
Code No.	**ENAR-409**			
Offering Semester	**First semester** ■	**Second semester** □	**Yearly** □	
Course Objective	In general, the aim behind the course is to realize Mutually beneficial between buildings' design and its climate, to make indoor conditions comfortable and healthful with no or less climatic pollution.			
Course Description	The Definition of climate's elements and life buildings circle, climate zones, climatic pollution and Global warming. Environmental architectural theories, Sustainable theories, renewable energy, Integrated Design applied in principles and strategies of Sustainability. Autodesk Ecotect analysis 2011.			
Textbook				
References	- الوكيل ، شفق العوضي؛ سراج، محمد عبدالله، (1985)، "المناخ وعمارة المناطق الحارة"، الطبعة الثانية، القاهرة. - Rovers, Ronald; Kimman, Jacques; Ravesloot, Christoph; (2010); "Towards 0-Impact Buildings and the Built Environments"; Techne Press, The Netherlands. - Kwok, Alison G.& Grondzik, Walter T., 2007,"The Green Studio Handbook-Environmental strategies for schematic design", First edition and. Published by Elsevier Inc. - Lechner, Norbert; (2001),"Heating, Cooling, Lighting- Design Method for Architects", John Wiley & Sons, New York.Inc.,Second Edition. - Binggeli, Corky,(2003),"Building systems for interior designers", John Wiley & Sons, Inc. New Jersey.			
Course Assessments	**Yearly work**		**Final Exam**	
	40 %		**60 %**	

Course Weekly Outline

Week	Topics Covered		Notes
1	Introduction by Giving a glance on realize balance between two variable things which is climate and architecture and the importance of finding optimally relationship between them. Main Climatic types and its classifications Global warming and greenhouse gas emissions GHG.		
2	Giving a glance on the environmental architectural theories over the ages and focusing on sustainable environmental design.		
3	Climate's elements and explaining integrated design through Life cycle building.		
4	Planning and designing decisions for building according to conceptual, principles and strategies of sustainable design.	principles and strategies of the sustainable sites.	
5		Principles and strategies of thermal comfort and Solved problems.	
6			
7		Principles and strategies of Indoor Environment quality. Ventilation, Daylight, Systems Lighting acoustical Performance and Visual Quality.	
8			
9		Principles and strategies of Energy Efficiency. Building performance , on Site Renewable Energy and Low Levels of CO2 and Solved problems.	
10			
11		principles and strategies of Materials resources.	
12		principles and strategies of Water Efficiency.	
13	Applying principles and strategies of sustainable design in AUTODESK ECOTECT ANALYSIS 2011 (measure and improve environmental design factors early on with our conceptual building performance analysis software)		
14			
15			
16	Applying a report (analysis for international buildings that achieved principles and strategies of sustainable design).		

Lecturer Name: Head of the department:

Signature: Signature:

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:4th.

Detailed Description of Architectural acoustic

Title of Subject	**Architectural acoustic**	**Theoretic Hour/week**	**Practical Hour/week**
		2	**0**
		Credits:	**2**
Code No.	**ENAR-410**		
Offering Semester	**First semester** □	**Second semester** ■	**Yearly** □
Course Objective	This course aims at understanding the physical properties of sound and light and their impact on the design of building systems; introduction to illumination, Day lighting, lighting fixtures and lighting systems in buildings; building's design requirements of illumination; and Lighting calculation methods and measurement techniques.		
Course Description	Acoustical design of building spaces and noise control; methods of treatment and selection of appropriate finishing materials to fulfill standard specifications of internal acoustical and lighting environments. Introduction of architectural acoustics calculations and measurement techniques.		
Textbook	Architectural acoustics “principles and design” madan mehia & others prentice hall NJ.1999		
References			
Course Assessments	**Yearly work**	**Final Exam**	
	%40	**%60**	

Course Weekly Outline

Week	Topics Covered	Notes
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Half-Year Break		
17	Introduction to the wave phenomena	
18	Relationship (human – sound & space)	
19	Spl & IL with examples	
20	Sound ray diagram analysis & design	
21	Sound reflection – diffusion & diffraction	
22	Calculation the area of reflectors	
23	Reverberation times	
24	Solved problems	
25	Recommendation for acoustical design	
26	Resonance & sound insulation	
27	Sound absorption & air borne noise	
28	Sound absorption materials & properties	
29	Resilient materials	
30	Introduction to vibration Natural frequency – forced frequency driving	
31	Frequency, Solved problem	
32		

Lecturer Name: Head of the department:

Signature: Signature:

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:4th.

Detailed Description of Programming Architectural Spaces

Title of Subject	**Programming Architectural Spaces**	**Theoretic Hour/week**	**Practical Hour/week**
		2	
		Credits:	**2**
Code No.	**ENAR - 411**		
Offering Semester	**First semester** □	**Second semester** ■	**Yearly** □
Course Objective	Increasing methodological knowledge for students to planning design process according to scientific and recent methods, with analytical application for real projects to discover its Goals and positions of application .		
Course Description	Theoretical course which include Previous Methods and Programming and The Process of Design Problem Solving, also the course related with aspects of design products (function; Performance Methods, Analysis, Goals Delineation, Performance Requirements, Programming Concepts, Synthesis Evaluation and Development), (form; Formal Methods, Berkal and Boss Strategy, and Greg Lynn Strategy), and (expression; Peter Eisenman Strategy, and Al-nijaidy Strategy)		
Textbook			
References	Architectural Programming) by Duerk((Structure of Design Process) by Al-Nijaidy (Animate Form) by Lynn (The Contrived Architectural Form in Design Methodology Framework) by Shubbar		
Course Assessments	**Yearly work**	**Final Exam**	
	%40	**%60**	

Course Weekly Outline

Week	Topics Covered	Notes
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Half-Year Break		
17	Introduction and Importance	
18	The Process of Design Problem Solving	
19	Previous Methods and Programming	
20	Performance Methods	
21	Analysis	
22	Analysis	
23	Goals Delineation	
24	Performance Requirements	
25	Programming Concepts	
26	Synthesis Evaluation and Development	
27	Formal Methods	
28	Formal Methods - Berkal and Boss Strategy	
29	Formal Methods – Greg Lynn Strategy	
30	Peter Eisenman Strategy	
31	Al-nijaidy Strategy	
32	Discussion	

Lecturer Name: Head of the department:

Signature: Signature:

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:4th.

Detailed Description of Design of Steel Structures Course

Title of Subject	**Design of Steel Structures**	**Theoretic Hour/week**	**Practical Hour/week**
		2	
		Credits:	**2**
Code No.	**ENAR-412**		
Offering Semester	**First semester** □	**Second semester** ■	**Yearly** □
Course Objective	This course aims at studying the properties of structural steel, steel sections and design concepts. In addition, the course discusses in details the design of main structural elements such as tension and compression members, beams and welded connection for tension members. These help to understand the behaviors of steel structures.		
Course Description	The course covers the design of axially loaded tension members, design of eccentrically and concentrically loaded compression members, design the beams and the welded connections, according to the B.S manual of steel construction.		
Textbook	"Design in Structural Steel" by John E. Loathers ' Manual of Steel Construction "		
References	"Applied Structural Steel Design" by Leonard Spiegel and George F. Limb runner		
Course Assessments	**Yearly work**	**Final Exam**	
	%40	**%60**	

Course Weekly Outline

Week	Topics Covered	Notes
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Half-Year Break		
17	Design of axially loaded member.	
18	Calculation of reduced area ,holes on line .	
19	Calculation of reduced area with staggered holes .	
20	Problems and application .	
21	Design of axially loaded compression member .	
22	Effective length and slenderness ratio .	
23	Axial compression stress and problems .	
24	Design of eccentrically loaded compression member .	
25	Un-axial and biaxial moment compression member ,design formula	
26	Design of beam, bending and shear stresses.	
27	Buckling and crushing stresses .	
28	Combined stresses, deflection calculation .	
29	Problems and applications.	
30	Design of joints, welded joint.	
31	Axially loaded welded joint.	
32	Problems and applications.	

Lecturer Name: Head of the department:

Signature: Signature:

مفردات المنهج – المرحلة الخامسة

الفصل الاول و الفصل الثاني

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:5th.

Code No.	Title of Subject	Credits	First semester		Second semester	
			Theoretic H/W	**Practical** H/W	**Theoretic** H/W	**Practical** H/W
ENAR-501	Thesis(2)	**9**	**-**	**-**	**2**	**14**
ENAR-502	Urban and Architectural Design	**7**	**2**	**10**	**-**	**-**
ENAR-503	Thesis(1)	**5**	**2**	**6**	**-**	**-**
ENAR-504	Architectural Criticism Theories	**2**	**2**	**-**	**-**	**-**
ENAR-505	Contemporary Iraqi Architecture	**2**	**2**	**-**	**-**	**-**
ENAR-506	Contemporary Arab Architecture	**2**	**-**	**-**	**2**	**-**
ENAR-507	Specifications & Estimation	**2**	**2**	**-**	**-**	**-**
ENAR-508	Professional Practice	**2**	**-**	**-**	**2**	**-**
Total		**31**	**10**	**16**	**6**	**14**
			26 H/W		**20** H/W	

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College of Engineering

Architectural Engineering Dept.

Stage:5th.

Detailed Description of Thesis (2)

<table>
<tr><td rowspan="3">Title of Subject</td><td colspan="3" rowspan="3">Thesis(2)</td><td>Theoretic Hour/week</td><td>Practical Hour/week</td></tr>
<tr><td>2</td><td>14</td></tr>
<tr><td>Credits:</td><td>9</td></tr>
<tr><td>Code No.</td><td colspan="5">ENAR-501</td></tr>
<tr><td>Offering Semester</td><td colspan="2">First semester □</td><td colspan="2">Second semester ■</td><td>Yearly □</td></tr>
<tr><td>Course Objective</td><td colspan="5">This studio begins with a presentation of the ARC-400 program document with clear indication of the intent and direction of emphasis. Having been reviewed and approved by a senior project committee, This project design is undertaken to its completion. The project must exhibit a comprehensive mastery of architectural design, reflecting the knowledge and skills acquired during four years of study in architecture. It aims to develop student's ability to conduct with the building and dealing with the design problems</td></tr>
<tr><td>Course Description</td><td colspan="5">It’s a practical course for a single semester, 16 hours weekly depending on the first course and deals with the design problem as a whole from data collection up to final design</td></tr>
<tr><td>Textbook</td><td colspan="5"></td></tr>
<tr><td>References</td><td colspan="5"></td></tr>
<tr><td rowspan="2">Course Assessments</td><td colspan="2">Yearly work</td><td colspan="3">Final Exam</td></tr>
<tr><td colspan="2">%30</td><td colspan="3">%70</td></tr>
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Course Weekly Outline

Week	Topics Covered	Notes
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Half-Year Break		
17	Concept generation for design proposal	
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20	First presentation	
21	Functional modeling for design proposal	
22		
23		
24	Elementary presentation	
25	Elevations modeling for design proposal	
26		
27	Sections modeling for design proposal	
28	Pre final presentation	
29	Perspective modeling for design proposal	
30		
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32	Final presentation	

Lecturer Name: Head of the department:

Signature: Signature:

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:5th.

Detailed Description of Urban and Architectural Design

Title of Subject	**Urban and Architectural Design**		**Theoretic Hour/week**	**Practical Hour/week**
			2	**10**
			Credits:	**7**
Code No.				**ENAR-502**
Offering Semester	**First semester** ■	**Second semester** □	**Yearly** □	
Course Objective	It aims to develop student's ability to conduct with the urban design problems, Application of traditional and modern urban design theories and methods constitutes the backbone of the course. Focus is on the solution of urban spatial problems and urban rehabilitation. Examination of case studies is undertaken at the scale of a district within the city. Action area projects are chosen from adjacent urban areas to allow easy accessibility for data collection and actual site analysis.			
Course Description	It's a theoretical & practical course for a single semester , 12 hours weekly concentrate on the student's practice urban design problems			
Textbook				
References				
Course Assessments	**Yearly work**		**Final Exam**	
	%40		**%60**	

Course Weekly Outline

Week	Topics Covered	Notes
1	Data collection of project	
2	Data analysis of project	
3	Data assessment and calibration	
4	Concept generation for design proposal	
5	Mass modeling for design proposal	
6	Land use modeling for design proposal	
7	Land use modeling for design proposal	
8	Elementary presentation	
9	Elevations modeling for design proposal	
10	Elevations modeling for design proposal	
11	Sections modeling for design proposal	
12	Pre final presentation	
13	Perspective modeling for design proposal	
14	Perspective modeling for design proposal	
15	Perspective modeling for design proposal	
16	Final presentation	
Half-Year Break		
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Lecturer Name: Head of the department:

Signature: Signature:

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:5th.

Detailed Description of Thesis(1)

Title of Subject	**Thesis(1)**	**Theoretic Hour/week**	**Practical Hour/week**
		2	**6**
		Credits:	**5**
Code No.	**ENAR-503**		
Offering Semester	**First semester** ■	**Second semester** □	**Yearly** □
Course Objective	This course aim to develop student's ability to conduct studies that precedes the design processes as; information collection, information analysis ,then conclusions relating to building design problem which will use later as basis for creating ideas, design decisions on the thesis project (2).		
Course Description	This course interested in the process of preparing thesis (design project) report .it focus at this stage on research aspect, so that the thesis in fifth class is more inclusive and deeper than in previous classes compared to project design standard, which will include detailed studies on, planning and design of the project in all its aspects, as well as study of systems for services and environmental compatibility and methods of construction and installation of buildings to suit the specificity of each project.		
Textbook	Does not have a textbook, but several references(books and articles)		
References			
Course Assessments	**Yearly work**	**Final Exam**	
	%70	**%30**	

Course Weekly Outline

Week	Topics Covered	Notes
1 2 3	Architecture and planning analytical study of the project and information collection, maps, this include: - The importance of the project in the city, and the approximate initial size of the project in comparison with similar examples. - Site selection and give alternatives, justifications of choice. - Study of the site, dimensions, size, neighborhood, the surrounding land uses, roads and entrances, the environmental study and construction of the site; determine the objectives of solving the problems of the site Analyzing the physical elements of the site. Site Analysis/ analyzing the non-physical elements of the site. Studying the architectural Concepts related to the site contents. - The initial submission of the first stage (location and size).	
4 5 6	Aanalytical study design of the project include: An analytical study of similar examples of local, Arab and international (the study of theory familiar to understand the nature of the project ,relationships of different parts to each other and recognize the problems with the design). - Study the components of the project and the relationship between these components. Analyzing the relationship between Spaces according to the movement and clustering. Analyzing the relationships between the project spaces by using Matrix. The Bubble Diagram of the project and the spatial zoning schemes. Site Analysis - Analytical Study of the platform and space required external and internal - Study of furniture and basic supplies for the project.- Presentation	
7 8	The special problem,Each student is directed to study a new trend (linked to his project) like high tech. and Sustainable Architecture	
9 10	Study systems include: - A structural study (structural systems used in this type of projects, forms materials, and the impact of the proposed materials on the form of product identity, and the relationship to the city. - Study of environmental (impact of the environment on the project and the project's impact on the surrounding environment) Study of engineering services systems on the project (services, electrical, air conditioning, entrances and exits of safety and security). - The initial submission of the third stage (of structural systems and services).	
11 12 13	Spatial zoning on the site to offer solutions and design alternatives include: - Submission of the pre-final (with the site analysis and identification of the main entrances and traffic regulations required within the site). - An initial zoning of the components of the project on the site, finding alternatives to preliminary design ideas.	
14 15 16	Final submission of a thesis.	

Lecturer Name: Head of the department:

Signature: Signature:

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:5th.

Detailed Description of Architectural Criticism Theories

Title of Subject	**Architectural Criticism Theories**	**Theoretic Hour/week**	**Practical Hour/week**
		2	
		Credits:	**2**
Code No.	**ENAR-504**		
Offering Semester	**First semester** ■	**Second semester** □	**Yearly** □
Course Objective	Increasing student's knowledge about the process of architectural criticism according to previous and recent methods.		
Course Description	Theoretical course related with studying definition , importance and methods of architectural critic .		
Textbook			
References	جدو ، ينار (المذاهب الفكرية الحديثة والعمارة :بحث في مناهج النقد المعماري)1993 الدهوي ، سهى (سلطة النص في النقد المعماري الاكاديمي) 2007 الغذامي ،عبدالله (تشريح النص) 1987 بونتا، خوان بابلو (العمارة وتفسيرها: دراسة للمنظومات التعبيرية في العمارة) 1996 -(Architectural Criticism and Journalism : Global Perspectives) proceeding of international seminar 2005		
Course Assessments	**Yearly work**	**Final Exam**	
	%40	**%60**	

Course Weekly Outline

Week	Topics Covered	Notes
1	Definition , importance and classifications (field, class ,nature of aims, nature, and fact)	
2	Aspects of critical process and it's affecting factors .	
3	Criticism Criteria .	
4	Sub activities in criticism process .	
5	Classifications of criticism ….(contextual and textual criticism).	
6	Contextual criticism …. Ethical approach .	
7	Psychological approach	
8	Social approach .	
9	Phenomenological method .	
10	Textual criticism…. Semiology	
11	Structuralism .	
12	Deconstruction .	
13	Examination	
14	Discussion	
15	Discussion	
16	Discussion	
Half-Year Break		
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Lecturer Name: Head of the department:

Signature: Signature:

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:5th.

Detailed Description of Contemporary Iraqi Architecture

Title of Subject	**Contemporary Iraqi Architecture**	**Theoretic Hour/week**	**Practical Hour/week**
		2	
		Credits:	**2**
Code No.	**ENAR-505**		
Offering Semester	**First semester** ■	**Second semester** □	**Yearly** □
Course Objective	The definition of changes happened in modern Iraqi architecture specifically after 1921 . Perception the modern architectural styles through studying special characteristic for each style , which are represented by special projects that presented by pioneers Iraqi architects or foreigners architects which designed known special projects in Iraq .		
Course Description	The subject is theoretical and it is continual during the first semester /two hours weekly.		
Textbook			
References	Modern architecture in iraq / Akeel N.Mulla Hiwaish / Baghdad / 1988		
Course Assessments	**Yearly work**	**Final Exam**	
	%40	**%60**	

Course Weekly Outline

Week	Topics Covered	Notes
1	General introduction about Iraqi architecture before 1921	
2	The period of establishing the modern Iraqi architecture	
3	The effective factors on Iraqi built environment changes	
4	International factors on modern architecture in Iraq	
5	Modern architectural styles in Iraq,Local traditional architecture style	
6	Modern architectural styles in Iraq,Abstracted traditional architecture style	
7	Modern architectural styles in Iraq,Decorated traditional architecture style	
8	Modern architectural styles in Iraq,Traditional architecture sympathy with international trend style	
9		
10	Modern architectural styles in Iraq ,Architecture sympathy with international trends style	
11	Local particularity between tradition and modernism	
12	Discussion of modernism architectural samples	
13	Discussion of modernism architectural samples	
14	Discussion of modernism architectural samples	
15	Quiz	
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Half-Year Break		
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Lecturer Name: Head of the department:

Signature: Signature:

Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:5th.

Detailed Description of Contemporary Arab Architecture

Title of Subject	**Contemporary Arab Architecture**	**Theoretic Hour/week**	**Practical Hour/week**
		2	
		Credits:	**2**
Code No.	**ENAR-506**		
Offering Semester	**First semester** □	**Second semester** ■	**Yearly** □
Course Objective	Building a database for Contemporary Arab architecture (theory and practice) and the pursuit of identity and create a balance between authenticity and heritage on the one hand and modern techniques and the expression of time and place.		
Course Description	An article Theory two hours a week dealing with two axes, first the theory and directions of contemporary architecture in Arabian countries and reality of urbanization in the Arab countries and its identity, and intellectual and philosophical architects ideas of contemporary Arab architecture and Axis II of the application and architecture examples.		
Textbook			
References			
Course Assessments	**Yearly work**	**Final Exam**	
	%40	**%60**	

Course Weekly Outline

Week	Topics Covered	Notes
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Half-Year Break		
17	Definition of the topic. And requirements, the report.	
18	Architecture since the end of the nineteenth century to World War I (Ottoman)	
19	Architecture since World War I and World War II (colonialism)	
20	Architecture since World War I and World War II (colonialism)	
21	Traditionalists People ,Architecture without architects	
22	Architect Hassan Fathy and the most work	
23	Directed projects within the People's Architecture	
24	Traditional, conservative trend ,Quiz	
25	Examples of projects	
26	The New classical Islamic Architecture	
27	Contemporary modern trend	
28	Test	
29	Contemporary Architects	
30	High-Tec Trend	
31	Architecture in the Arab Gulf ,Examples and projects	
32	Reports Discussion	

Lecturer Name: Head of the department:

Signature: Signature:

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College of Engineering

Architectural Engineering Dept.

Stage:5th.

Detailed Description of Specifications & Estimation

Title of Subject	**Specifications & Estimation**	**Theoretic Hour/week**	**Practical Hour/week**
		2	
		Credits:	**2**
Code No.	**ENAR-507**		
Offering Semester	**First semester** ■	**Second semester** □	**Yearly** □
Course Objective	The primary objective of the Specifications & Estimation course is to give every student awareness and understanding of the conceptual framework and knowledge base of practice in order to facilitate the transition from professional school to professional practice		
Course Description	This subject covers the various aspects of estimating of quantities of items of works involved in buildings. This also covers the rate analysis, valuation of properties and preparation of reports for estimation of various items. At the end of this course the student shall be able to estimate the material quantities, prepare a bill of quantities, make specifications and prepare tender documents. Student should also be able to prepare value estimates		
Textbook			
References	Specifications & Cost Estimate By Nasir Al- Assady , Univ. Of Baghdad Standard Methods for Preparing Bills of Quantities in civil, Services and architectural works, By Khalid Mohamed Hadeed, Baghdad , 2003		
Course Assessments	**Yearly work**	**Final Exam**	
	%30	**%70**	

Course Weekly Outline

Week	Topics Covered	Notes
1	General definitions	
2	Cost Estimates Basis	
3	Types of Estimation/ actual cost	
4	Building Material & Unit Measurements/ Brick	
5	Building Material & Unit Measurements/ Plastering	
6	Building Material & Unit Measurements/ Concrete	
7	Building Material & Unit Measurements/ I Beam section	
8	Wastes in Building Materials/ Quizzes	
9	Specifications & Bills of Quantities	
10	Standard Specifications	
11	technical Specifications	
12	Semester exam	
13	Bills of Quantities & Prices	
14	Total Bills of Contract Costs	
15	Contract ors Suggested Alternatives	
16	General Preview	
Half-Year Break		
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Lecturer Name: Head of the department:

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Mosul University

College of Engineering

Architectural Engineering Dept.

Stage:5th.

Detailed Description of Professional Practice

Title of Subject	**Professional Practice**		**Theoretic Hour/week**	**Practical Hour/week**
			2	
			Credits:	**2**
Code No.	**ENAR-508**			
Offering Semester	**First semester** □	**Second semester** ■	**Yearly** □	
Course Objective	The primary objective of the Professional Practice course is to give every student awareness and understanding of the conceptual framework and knowledge base of practice in order to facilitate the transition from professional school to professional practice, and an understanding of the role of the architect in society.			
Course Description	The course presents an overview contemporary context and complexities of architectural practice and the varied and evolving roles and responsibilities of the architect with an emphasis on the characteristics of best practices. the course focuses on architects, clients, and society, developing an understanding of professionalism through an examination of the development of the profession; educational preparation; internship; laws pertaining to registration; client relationships; ethics and professional judgment, diversity issues in practice; organizational and management issues including firm formation, legal organization, firm structure.			
Textbook	Environmental physics in construction,(its application in architectural design),Erich Schild,Granada,2002			
References	Professional Practice and Code of Prof. Ethics by Nasir Majeed Al Asady The Law & the Internal System of Iraqi Engineers Union General conditions for contracting, Ministry of Local Government			
Course Assessments	**Yearly work**	**Final Exam**		
	%30	**%70**		

Course Weekly Outline

Week	Topics Covered	Notes
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Half-Year Break		
17	General definitions.	
18	The architect and his basic duties	
19	The making of the architect and his obligation	
20	Elements of the building felid	
21	Grading of architect	
22	Professional organizations	
23	Code of professional ethics	
24	The architect and his services	
25	Methods of paying the architect	
26	Selection of the architect	
27	Architectural competitions	
28	Semester exam	
29	Architectural professional services agreement	
30	Types of contracts	
31	Bidding and contracting legal document	
32	General conditions	

Lecturer Name: Head of the department:

Signature: Signature: