28	Course Syllabi – ABET Format
242 AMR -2: Building construction 2	242عمر- 2: تشييد مباني 2

Program/Department	Architectural Engineering Program	Code	AMR

1. Course code number and title	
Course Code	242 AMR -2
Course Title	Building construction 2

2. Credits and contact hours	
Credit Hours	2 (1 , 2 , 1) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	4 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Essam Salah Room No.: Ext.: Email: esabdelmogid@nu.edu.sa
Name of coordinator	Dr. Mohamed Magdy

4. Text book, title, author, and year	
Text Book	---------
Other supplemental materials	Lectures given by the Instructors
	Johu Willey And Sons, Allan, E. Fundamentals of Building Construction 1990.

5. Specific course information		
Catalog description	The aim of this course is to teach the students the building components in detail e.g. foundations, roofs, construction joints, doors and windows, building finishing materials and different modern construction techniques. The theoretical lessons are to be supported by working drawings for a two level building.	
Prerequisites	**242 AMR -1**	
Co-requisites	-	
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Prepare complete working drawings set for a simple two level building
CLO2	Understand how different roofs are constructed, wooden steel ones and also draw them
CLO3	Know where construction and settlement joints are to be placed and how they are drawn.
CLO4	Know joinery works and their implementation in doors and windows
CLO5	Know the building finishing materials and cladding for all different building components.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1			✓								✓					
CLO2	✓		✓								✓					
CLO3	✓		✓								✓					
CLO4	✓		✓								✓					
CLO5	✓															

7. Brief list of topics to be covered	
No.	Topic
1.	**The study of vertical sequence of constructional components for a simple two level building and the preparation of the basic drawings for it (plans, sections elevations……etc..**
2.	**The construction of different roofs (wooden, steel….etc..)**
3.	**Construction and settlement joints.**
4.	**Joinery works and its applications in different types of doors, windows …etc, itsdetails...**
5.	**Building finishing materials and cladding for walls, ceilings, floors and facades.**
6.	**The preparation of working drawings for what are studied in this course.**

2015	Course Syllabi – ABET Format
AE 123-2 : Shadow and perspective	عمر 123-2 : الظل والمنظور

Program/Department	Architectural Engineering Program	Code	AE

1. Course code number and title	
Course Code	AE 123-2
Course Title	Shadow and perspective

2. Credits and contact hours	
Credit Hours	2 (0 , 2 , 1) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	2 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Mohammed Algamadi Room No.: Ext.: Email:maalgamadi@nu.edu.sa
Name of coordinator	Dr. Abdultawab Qahtan

4. Text book, title, author, and year	
Text Book	MARTIN, LESLIE, Architectural Graphics, SECOND EDITION, Mac Millan publishers, London.
Other supplemental materials	Light, Shade and Shadow, E. L. Koller.
	Perspective Sketching: Freehand and Digital Drawing Techniques for Artists & Designers

5. Specific course information	
Catalog description	This course focuses on teaching the techniques of drawing different types of perspectives e.g bird eye view, normal eye view, warm eye view and interior perspectives. It also covers the techniques of casting shadows on elevations, on site plans and on 3D presentation. This will be covered through weekly exercises.
Prerequisites	-
Co-requisites	-
Indicate whether a required, elective, or selected elective	Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Drawing the real perspective of the buildings depending on the horizontal and vertical projections
CLO2	Drop shadows for blocks of buildings in the general location and interfaces
CLO3	Develop the skills of imagination to draw perspective
CLO4	

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1																
CLO2																
CLO3																
CLO4																
CLO5																
							✓				✓					

7. Brief list of topics to be covered	
No.	Topic
1.	Training on perspective drawing techniques. (Types of view points, etc…)
2.	Training on Shadow projections on Architectural drawings, 2 and 3 –Dimensional.
3.	
4.	
5.	
6.	

	Course Syllabi – ABET Format

Program/Department	Architectural Engineering Program	Code	AMR
141 AMR -2: Building construction 1		141عمر- 2: تشييد مباني 1	

1. Course code number and title	
Course Code	141 AMR -2
Course Title	Building construction 1

2. Credits and contact hours	
Credit Hours	2 (1 , 2 , 1) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	4 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Magdy Hamed Room No.: Ext.: Email: …… @nu.edu.sa
Name of coordinator	Dr. Mohamed Magdy

4. Text book, title, author, and year	
Text Book	---------
Other supplemental materials	Lectures given by the Instructors

5. Specific course information		
Catalog description	The aim of this course is to teach the students the building construction stages, basic building components and the different structural systems. Emphasis is to be placed on frame and load bearing structures. Different types of stair cases are to be studied in detail also working drawings for the mentioned topics are to be drawn	
Prerequisites	AE121-2 Architectural Drawings and Presentation	
Co-requisites	-	
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Know the building construction stages
CLO2	Know the different structural systems and the basic constructional components
CLO3	Know the details of the basic building components in foundations, walls and roofs for the structural systems mentioned in Co2
CLO4	Know the application of heat, moisture and sound insulation
CLO5	Draw detailed concrete stair cases

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1	✓		✓								✓					
CLO2	✓		✓								✓					
CLO3	✓		✓								✓					
CLO4	✓		✓								✓					
CLO5	✓		✓								✓					

7. Brief list of topics to be covered	
No.	Topic
1.	Building materials and building construction sequence.
2.	Traditional and modern building construction systems used.
3.	common basic building structural systems, frame and load bearing, foundation, walls, roofs.
4.	Heat, moisture and sound insulation.
5.	Reinforced concrete stair cases
6.	Working drawings for a simple flat or a chalet

	Course Syllabi – ABET Format
AMR 112-3 : Architectural Design Studio 1	**عمر3-112: تصميم معماري1**

Program/Department	**Architectural Engineering Program**	**Code**	**AE**

1. Course code number and title	
Course Code	**AMR 112-3**
Course Title	**Architectural Design Studio 1**

2. Credits and contact hours	
Credit Hours	3 (0 , 6, 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	6 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Essam Salah Room No.: ME 316 Ext.:8145 Email: esabdelmogid@nu.edu.sa
Name of coordinator	Dr. Omer Abuelzein

4. Text book, title, author, and year	
Text Book	Ernst Neufert, Peter Neufert , Neufert's Architects' Data, John Wiley & Sons, (2012 Time saver standards for building types, Joseph De Chiara, Mike Crosbie-------

5. Specific course information	
Catalog description	The architectural design in this course is to be for a simple project e.g. a flat or a house or an art studio. Concentration is to be placed on the building functions, building materials and construction techniques.
Prerequisites	- AMR 111-3 Architectural Basic Design studio - AMR 121-2 Architectural Drawing and Presentation
Co-requisites	-
Indicate whether a required, elective, or selected elective	Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Analyse and study architectural schemes.
CLO2	Design architectural schemes that concentrate on the function, building materials and building techniques.
CLO3	Demonstrate and show a good standard of architectural presentation according to the architectural principals.
CLO4	Apply the knowledge of design elements and principles on this project.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1								1								
CLO2			1		1											
CLO3											1					
CLO4	1															

7. Brief list of topics to be covered	
No.	Topic
1.	An introduction to the design of the building type in question .
2.	The study of the design similar buildings.
3.	The preparation of preliminary design should be made with emphasis on functional design, building materials and building techniques.
4.	The preparation of a complete set of design drawings e.g: site plan, plans, sections, elevations.
5.	The preparation of three dimensional presentation e.g: perspectives and /or a model is to be made.

2015	Course Syllabi – ABET Format		
Program/Department	**Architectural Engineering Program**	**Code**	**AE**
AE 233-2: Theory of Architecture I		**عمر233-2 : نظريات عمارة 1**	

1. Course code number and title	
Course Code	**AE 233-2**
Course Title	**Theory of Architecture I**

2. Credits and contact hours	
Credit Hours	2(2, 0 , 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	2Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Abdultawab Qahtan Room No.: Ext.:8019 Email:amqahtan@nu.edu.sa
Name of coordinator	Dr. Omer Abuelzein

4. Text book, title, author, and year	
Text Book	---------
Other supplemental materials	Lectures given by the Instructors
	Frances D. K. Ching, Architecture: Form, Space and Order
	Ali Rafat, The Encyclopedia of Architectural Design

5. Specific course information		
Catalog description	This course covers the study of the beginning of architecture and how it was developed and influenced by different factors. Emphasis is to be placed on building elements and the process of functional design of buildings, such as hotels, restaurants and office buildings etc.	
Prerequisites	-	
Co-requisites	-	
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Define the architecture and its beginning
CLO2	State the variables of the space configuration
CLO3	Know the building design process
CLO4	Criticise and appraise the functional design of a building
b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.	

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1							1									
CLO2							1									
CLO3							1									
CLO4			1				1									
CLO5																
			✓				✓									

7. Brief list of topics to be covered	
No.	Topic
1.	The study the beginning of architecture and its developments
2.	The factors that affect architecture.
3.	The architectural design and building elements a) Function (Building elements): main spaces, circulation & services b) Form: Design principles.
4.	The Architectural design process and generating its concept
5.	Functional design for buildings
6.	Application of functional design on a building such as a hotel, office building or a restaurant.

2015	Course Syllabi – ABET Format
AE 281-2 : Drawing by Computer (1)	2-281 : الرسم بالحاسب (1) عمر

Program/Department	Architectural Engineering Program	Code	AE

1. Course code number and title	
Course Code	AE 281
Course Title	Drawing by Computer (1)

2. Credits and contact hours	
Credit Hours	2 (1 , 2 , 1) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	2 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Mohammed Algamadi Room No.: Ext.: Email:amqahtan@nu.edu.sa
Name of coordinator	Dr Abdultawab Qahtan

4. Text book, title, author, and year	
Text Book	Yarwood, A. Introduction to AutoCAD 2009, Elsevier, 2009
Other supplemental materials	Finkelstein, Ellen (2008). AutoCAD® 2009 & AutoCAD LT® 2009 Bible, Wiley Publishing, Inc., Hoboken, N.J
	Yee, R. (2002) Architectural Drawing: A Visual Compendium of Types and Methods, John Wiley & Sons, ISBN-10: 0-471-05540-9
	Manuals of related Programs and Selected web sites.

5. Specific course information	
Catalog description	This course provides an introduction to Computer-Aided Design (CAD). It also introduces drafting concepts pertaining to CAD in general, and in particular to selected drafting packages. Throughout this course, the emphasis is to be placed on two-dimensional drawing techniques.
Prerequisites	-
Co-requisites	-
Indicate whether a required, elective, or selected elective	Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Operate the user interface.
CLO2	Complete exercises using the majority of AutoCAD tools.
CLO3	Produce and edit professional 2D drawings using layers and other tools
CLO4	Plot out drawings to scale and other requirements.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1																
CLO2																
CLO3																
CLO4																
CLO5																
				✓							✓					

7. Brief list of topics to be covered	
No.	Topic
1.	Introduction to Computer-Aided Design (CAD) and its user Interface and Terminology
2.	Examples of submenus and functionality of the various drawing commands (Draw and modify)
3.	Configuration of layers and assigning line types and colours
4.	The use of hatching, dimensions and text commands
5.	The use of Paper Space and Model Space for layout of drawings and printing
6.	

	Course Syllabi – ABET Format
242 AMR -2: Building construction 2	242عمر- 2: تشييد مباني 2

Program/Department	Architectural Engineering Program	Code	AMR

1. Course code number and title	
Course Code	242 AMR -2
Course Title	Building construction 2

2. Credits and contact hours	
Credit Hours	2 (1 , 2 , 1) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	4 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Essam Salah Room No.: Ext.: Email: esabdelmogid@nu.edu.sa
Name of coordinator	Dr. Mohamed Magdy

4. Text book, title, author, and year	
Text Book	---------
Other supplemental materials	Lectures given by the Instructors
	Johu Willey And Sons, Allan, E. Fundamentals of Building Construction 1990.

5. Specific course information		
Catalog description	The aim of this course is to teach the students the building components in detail e.g. foundations, roofs, construction joints, doors and windows, building finishing materials and different modern construction techniques. The theoretical lessons are to be supported by working drawings for a two level building.	
Prerequisites	**242 AMR -1**	
Co-requisites	-	
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Prepare complete working drawings set for a simple two level building
CLO2	Understand how different roofs are constructed, wooden steel ones and also draw them
CLO3	Know where construction and settlement joints are to be placed and how they are drawn.
CLO4	Know joinery works and their implementation in doors and windows
CLO5	Know the building finishing materials and cladding for all different building components.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1			✓								✓					
CLO2	✓		✓								✓					
CLO3	✓		✓								✓					
CLO4	✓		✓								✓					
CLO5	✓															

7. Brief list of topics to be covered	
No.	Topic
1.	**The study of vertical sequence of constructional components for a simple two level building and the preparation of the basic drawings for it (plans, sections elevations……etc..**
2.	**The construction of different roofs (wooden, steel….etc..)**
3.	**Construction and settlement joints.**
4.	**Joinery works and its applications in different types of doors, windows …etc, itsdetails...**
5.	**Building finishing materials and cladding for walls, ceilings, floors and facades.**
6.	**The preparation of working drawings for what are studied in this course.**

	Course Syllabi – ABET Format
AMR 213-3 : Architectural Design Studio 2	**عمر213-3: تصميم معماري2**

Program/Department	**Architectural Engineering Program**	**Code**	**AE**

1. Course code number and title	
Course Code	**AMR 213-3**
Course Title	**Architectural Design Studio 2**

2. Credits and contact hours	
Credit Hours	3 (0 , 6, 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	6 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Nedhal Al tamimi Room No.: ME 310 Ext.:8021 Email: naaltammoda@nu.edu.sa
Name of coordinator	Dr. Omer Abuelzein

4. Text book, title, author, and year	
Text Book	Ernst Neufert, Peter Neufert , Neufert's Architects' Data, John Wiley & Sons, (2012 Time saver standards for building types, Joseph De Chiara, Mike Crosbie-------

5. Specific course information	
Catalog description	The architectural design in this course is to be for a project more complicated than that of the design (1) e.g. a primary school, a health center. Concentration is to be placed on the building form, on natural cooling, and day-lighting in buildings.
Prerequisites	- AMR 112-3 Architectural design (1)
Co-requisites	-
Indicate whether a required, elective, or selected elective	Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Analyse and study architectural schemes.
CLO2	Design architectural schemes that concentrate on the building form, Natural ventilation, cooling, and lighting.
CLO3	Demonstrate and show a very good standard of architectural presentation according to the architectural principals.
CLO4	Apply the knowledge of design elements and principles on this project.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1								1								
CLO2			1		1											
CLO3											1					
CLO4	1															

7. Brief list of topics to be covered	
No.	Topic
1.	An introduction to the design of the building type in question .
2.	The study of the design similar buildings.
3.	The preparation of preliminary design should be made with emphasis on functional design, building materials and building techniques.
4.	The preparation of a complete set of design drawings e.g: site plan, plans, sections, elevations.
5.	The preparation of three dimensional presentation e.g: perspectives and /or a model is to be made.

Course Syllabi – ABET Format

2015	Course Syllabi – ABET Format		
Program/Department	**Architectural Engineering Program**	**Code**	**AE**
AE 271-3 Engineering Mechanics			

1. Course code number and title	
Course Code	**AE 271-3**
Course Title	Engineering Mechanics

2. Credits and contact hours	
Credit Hours	3(3, 0 , 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	3Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Assist . Prof . Dr. Mathkar Alharthi
Name of coordinator	Assist . Prof . Dr. Mathkar Alharthi

3. Instructor's or course coordinator's name	
Name of Instructors	Assist . Prof . Dr. Mathkar Alharthi
Name of coordinator	Assist . Prof . Dr. Mathkar Alharthi
4. Text book, title, author, and year	
Text Book	Engineering Mechanics: Statics, J. L. Meriam, and L. G. Kraige, John Wiley, (2010).
other supplemental materials	
5. Specific course information	
catalog description	Basic concepts and principles of statics. Vector operations. Equilibrium of particles in two and three dimensions. definition of moment and couple; reduction of systems forces; equilibrium of rigid bodies; statically determinate structures including beams, trusses, frames, and machines; internal forces; shear force and bending moment diagrams in beams; friction and its applications, centroid and center of gravity of lines, areas, and volumes; moment of inertia and radius of gyration.
prerequisites	Math -107 Algebra and Analytic geometry
co-requisites	-
indicate whether a required, elective, or selected elective	Core (required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Compute the resultant of a system of concurrent forces, apply and solve equations of equilibrium.
CLO2	Determine the moment and couple, reduce a system of forces and couples.
CLO3	Construct complete free-body diagrams and write appropriate equilibrium equations from the free-body diagram, including the support reactions on a structure.
CLO4	Calculate the forces in truss members; analyze the forces acting on the members of pin-connected frames and machines.
CLO5	Compute the internal forces and moments in members and construct shear force and bending moment diagrams for rigid beams subjected to different loadings
CLO6	Identify the friction and its applications.
CLO7	Compute the centroid and center of gravity of lines, areas, and volumes; moment of inertia and radius of gyration.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1	✓						✓				✓					
CLO2	✓						✓				✓					
CLO3	✓						✓				✓					
CLO4	✓						✓				✓					
CLO5	✓						✓				✓					
CLO6	✓		✓				✓				✓					
CLO7	✓						✓				✓					

7. Brief list of topics to be covered	
Topic 1	Basic concepts and principles of engineering mechanics
Topic 2	Equilibrium of particles in two and three dimensions
Topic 3	Definition of moment and couple
Topic 4	Equilibrium of rigid bodies
Topic 5	Statically determinate structures including beams, trusses, frames, and machines
Topic 6	Internal forces; shear force and bending moment diagrams in beams
Topic 7	friction and its applications
Topic 8	centroid and center of gravity of lines, areas, and volumes; moment of inertia and radius of gyration

2015	Course Syllabi – ABET Format		
Program/Department	**Architectural Engineering Program**	**Code**	**AE**
AE 234-2: Theory of Architecture II		**عمر234-2 : نظريات عمارة 2**	

1. Course code number and title	
Course Code	**AE 234-2**
Course Title	**Theory of Architecture II**

2. Credits and contact hours	
Credit Hours	2(2, 0 , 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	2Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Abdultawab Qahtan Room No.: Ext.:8019 Email:amqahtan@nu.edu.sa
Name of coordinator	Dr. Omer Abuelzein

4. Text book, title, author, and year	
Text Book	---------
Other supplemental materials	Lectures given by the Instructors
	Lechner, Norbert . 2015. Heating, cooling, lighting : sustainable design methods for architects. by John Wiley & Sons.(chapter 1&2)
	Charles Jencks. The Language of Post Modern Architecture", Dept. of Architectural Engineering, Assiut University**.**

5. Specific course information		
Catalog description	This course includes a review of different architectural trends from modern architecture through late-modernism up to the incorporation of sustainability in architecture. This course focuses mainly on the development of the concept of sustainability in architecture and the ways that the sustainability has been applied to building designs. The rating systems of the sustainability in architecture, such as LEED, is also studied.	
Prerequisites	AE233-2	
Co-requisites	-	
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course
a. Specific outcomes of instruction (student should be able to:)

CLO1	Recognize the different architectural thoughts of architectural trends and the development of these thoughts.
CLO2	State the suitability concept and its development as architectural trend.
CLO3	Analyse the sustainable and green buildings of pioneers of architects to make use of it in architectural design.
CLO4	Criticise and appraise the thoughts of suitability and greening in architectural.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1							1									
CLO2			1				1	1	1							
CLO3			1				1	1	1							
CLO4			1				1	1	1							
CLO5																
			✓				✓									

7. Brief list of topics to be covered	
No.	Topic
1.	Introduction to the architectural trends.
2.	Architectural trends from Modernism to deconstruction with concern on their environmental thoughts.
3.	Sustainability and its relation to architecture trends
4.	Ecology and sustainable design
5.	Design with green and sustainable concepts in KSA
6.	Sustainable Architecture Examples

2015	Course Syllabi – ABET Format
AE 282-2 : Drawing by Computer (2)	2-282 : الرسم بالحاسب 2 عمر

Program/Department	Architectural Engineering Program	Code	AE

1. Course code number and title	
Course Code	AE 282
Course Title	Drawing by Computer (2)

2. Credits and contact hours	
Credit Hours	2 (1 , 2 , 1) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	2 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Mohammed Algamadi Room No.: Ext.: Email:amqahtan@nu.edu.sa
Name of coordinator	Dr Abdultawab Qahtan

4. Text book, title, author, and year	
Text Book	
Other supplemental materials	Yarwood, A. Introduction to AutoCad 2011, 2D & 3D design, ISBN:978-08-096575-8, Elsevier, 2010
	Novitski, B. J. (1999). Rendering Real & Imagined Buildings: The Art of Computer Modeling, Rockport Pub.
	Roskes, Bonnie (2009). Google SketchUp Cookbook, O'Reilly Media, Sebastopol, CA.
	Any reference books or Digital Manuals (included with the programs) related to application programs.

5. Specific course information	
Catalog description	This course covers the basics of 3D architectural modeling and presentation packages through sharing drawing files created by AutoCAD 3D with other presentation programs such as 3D-Max, Rivet, Sketch-Up and Photoshop. Computer-Aided Design and its implementation skills to advanced 3D architectural concepts are also covered through hands-on experience, including 3D modeling, rendering, and Image processing.
Prerequisites	-
Co-requisites	-
Indicate whether a required, elective, or selected elective	Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Operate the user interface for the selected programs.
CLO2	Complete exercises using the majority of modeling and representation program tools.
CLO3	Produce and edit professional 3D drawings for a complete project using texture, light and other rendering tools.
CLO4	Image processing and plot out the drawings to specific scales.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1																
CLO2																
CLO3																
CLO4																
CLO5																
				✓							✓					

7. Brief list of topics to be covered	
No.	Topic
1.	Introduction to the 3D architectural modeling and presentation package programs.
2.	Using the various modeling commands (3D operations, solid editing and elevation handling)
3.	Examples of submenus and functionality of the various program commands in building forms.
4.	Choosing the ideal views and images by adding the lighting effect and camera adjustment commands.
5.	Rendering the views and layout settings for the printing purposes.
6.	

	Course Syllabi – ABET Format
AMR 214-3 : Architectural Design Studio 3	**عمر214-3: تصميم معماري3**

Program/Department	**Architectural Engineering Program**	**Code**	**AE**

1. Course code number and title	
Course Code	**AMR 214-3**
Course Title	**Architectural Design Studio 3**

2. Credits and contact hours	
Credit Hours	3 (0 , 6, 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	6 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Omer Abuelzein Room No.: ME 311 Ext.:8931 Email: oaabuelzein@nu.edu.sa
Name of coordinator	Dr. Omer Abuelzein

4. Text book, title, author, and year	
Text Book	Ernst Neufert, Peter Neufert , Neufert's Architects' Data, John Wiley & Sons, (2012 Time saver standards for building types, Joseph De Chiara, Mike Crosbie-------

5. Specific course information		
Catalog description	The architectural design in this course is to be for a project more complicated than that of the design (2) e.g. museum/gallery sport center. Concentration is to be placed on the artificial ventilation, cooling and lighting of buildings and on structural system alternative.	
Prerequisites	- AMR 213-3 Architectural design (2)	
Co-requisites	-	
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Analyse and study architectural schemes.
CLO2	Design architectural schemes that concentrate on the building artificial ventilation, cooling, and lighting, and on structural system alternative.
CLO3	Demonstrate and show a very good standard of architectural presentation according to the architectural principals.
CLO4	Apply the knowledge of design elements and principles on this project.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1								1								
CLO2			1		1											
CLO3											1					
CLO4	1															

7. Brief list of topics to be covered	
No.	Topic
1.	An introduction to the design of the building type in question .
2.	The study of the design similar buildings.
3.	The preparation of preliminary design should be made with emphasis on artificial ventilation, cooling and lighting and on structural system alternatives.
4.	The preparation of a complete set of design drawings e.g: site plan, plans, sections, elevations.
5.	The preparation of three dimensional presentation e.g: perspectives and /or a model is to be made.

Course Syllabi – ABET Format

ARE 272 : Structural Mechanics		عمر 272 : مكانيكا انشائية	
Program/Department	**Architecture Engineering Program**	**Code**	**ARE**

1. Course number and name	
Course Code	ARE 272
Course Title	Structural Mechanics
2. Credits and contact hours	
Credit Hours	3 (3,0,0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	3 Hours / week for 15 weeks
3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Ahmed Maglad
Name of coordinator	Dr. Ahmed Maglad
4. Text book, title, author, and year	
Text Book	Structural Analysis, 7th edition, 2009 Person Education South Asia Pte Ltd, by Russell C. Hibbeler
other supplemental materials	Kenneth Leet, Chia-Ming Uang, "Fundamentals of Structural Analysis", McGraw-Hill Professional, Last Edition
	R. C. Coates, M. G. Coutie, F. K. Kong, "Structural Analysis", Taylor & Francis, Last Edition.
	Thomas Henry Gordon Megson, "Structural and Stress Analysis", Butterworth-
5. Specific course information	
catalog description	Types of structures, supports and loads. Idealization of structures and loads. Geometric stability and determinacy. Analysis of determinate trusses, beams, plane frames and arches. reaction computations axial force, shear force and bending moment diagrams. Internal force releases. Load-shear-moment relationship. Differential equation of elastic curve. Deflections by integration, moment-area, conjugate-beam and virtual work methods. Influence lines for moving load. Introduction to indeterminate structures (slope-deflection method and moment-distribution method)
prerequisites	ARE 271 Engineering Mechanics
co-requisites	-
indicate whether a required, elective, or selected elective	Core (required)
6. Specific goals for the course	
a. specific outcomes of instruction (student should be able to:)	
CO1	Define and classify the structure into determinate and indeterminate and determine the kinematic degree of freedom
CO2	Analysis of determinate trusses, beams, plane frames and arches.
CO3	Determine Influence lines for moving load.

CO4	Determine Beam Deflections and Rotations.
CO5	Analyze of continuous beam and frames using slope-deflection method
CO6	Analyze of continuous beam and frame by the moment-distribution method

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CO	SO																
	a	b	c	d	e	f	g	h	i	j	k						
CO1	✓				✓						✓						
CO2	✓				✓						✓						
CO3	✓				✓						✓						
CO4	✓				✓						✓						
CO5	✓				✓						✓						
CO6	✓				✓						✓						
CO																	

7. Brief list of topics to be covered

Topic 1	Types of structures, supports and loads. Idealization of structures and loads.
Topic 2	Stability and Determinacy of structures.
Topic 3	Analysis of determinate trusses, beams, plane frames and arches.
Topic 4	Influence lines for moving load.
Topic 5	Beam Deflections and Rotations.
Topic 6	Analyze of continuous beam and frames using slope-deflection method
Topic 7	Analyze of continuous beam and frame by the moment-distribution method
Topic 8	

2015	**Course Syllabi – ABET Format**
AMR 122-1 : Freehand Sketching	**عمر122 -1 : الرسم الحر**

Program/Department	**Architectural Engineering Program**	**Code**	**AE**

1. Course code number and title	
Course Code	AE 122-1
Course Title	Freehand Sketching

2. Credits and contact hours	
Credit Hours	1 (0 , 2 , 1) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	2 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Mohammed Algamadi Room No.: Ext.: Email:maalgamadi@nu.edu.sa
Name of coordinator	Dr. Abdultawab Qahtan

4. Text book, title, author, and year	
Text Book	Architect's Sketches Dialogue and design.
Other supplemental materials	Freehand: Sketching Tips and Tricks Drawn from Art
	Freehand Drawing and Discovery: Urban Sketching and Concept Drawing for Designers
	Perspective Sketching: Freehand and Digital Drawing Techniques for Artists & Designers

5. Specific course information	
Catalog description	This course focuses on developing the "thinking hand of the designer" through explorations in freehand sketching. Students will be introduced to freehand drawing conventions and techniques through weekly assignments and record their individual growth in a required sketchbook. Methods of representation will include narrative storyboard perspectives, conceptual diagramming, plan/section/elevation linkage, landform, site and planted form representation and axonometric projection. Sketching opportunities through in-class field-trips to contemporary houses of interest, one-on-one instruction and peer review discussion will structure the learning.
Prerequisites	-
Co-requisites	-

Indicate whether a required, elective, or selected elective	Core (Required)

6. Specific goals for the course

a. Specific outcomes of instruction (student should be able to:)

CLO1	Theoretical and practical foundations to achieve a manual drawing skills without the use of engineering tools.
CLO2	Expression ratios and relations Fine
CLO3	Expression on the optical properties
CLO4	Expression of light and shadow falling on the shapes.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1																
CLO2																
CLO3																
CLO4																
CLO5																
							✓				✓					

7. Brief list of topics to be covered

No.	Topic
1.	Developing the capabilities and skills of freehand three-dimensional drawing.
2.	Realization ratios and Fine relations for models and architectural elements.
3.	Expression of the optical properties of the models and architectural elements.
4.	Acquire the skills to use in different colors and Manifesting expression of the models and architectural elements.
5.	
6.	

2015	Course Syllabi – ABET Format		
Program/Department	**Architectural Engineering Program**	**Code**	**AE**
351AE-2 : Urban planning		**351عمر - 2: التخطيط الحضري**	

1. Course code number and title	
Course Code	**351AE-2**
Course Title	**Urban planning**

2. Credits and contact hours	
Credit Hours	2 (2, 0 , 1) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	3 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Yaser Khaled Abdulrahman Al-Sakkaf Room No.: Ext.: Email:
Name of coordinator	Dr. Nedhal Al-Tamimi

4. Text book, title, author, and year	
Text Book	---------
Other supplemental materials	Contemporary urban planning" Second edition, Levy, M John, prentice Hall, Englewood Cliffs, 1991
	"Approaches to planning: Introducing current planning theories, concepts and Issues" Second edition, Alexander, R. Ernest, Gordon and Breach publishers, 1992
	أنظمة البناء والعمران , الإدارة العامة للتخطيط العمراني. أمانة مدينة الرياض

5. Specific course information	
Catalog description	This course aims at introducing fundamental concept in planning; city planning theories and processes, including its importance and relationship to the built environment. The course studies the main characteristics and components of the city and the evolution and development, such as city forms, neighbourhoods, urban systems; land use planning. The explanation of the theories, strategies and regulations of the urban planning at the local ,regional and national levels coupled by a practical exercise on an urban site within Najran city.
Prerequisites	-
Co-requisites	-
Indicate whether a required, elective, or selected elective	Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Know the history and the development of urban planning.
CLO2	Learn the current urban planning theories.
CLO3	Know the regulations and limitations of urban planning.
CLO4	Know and analyze urban planning polices and strategies at the local, regional and the national levels.
CLO5	Apply the knowledge acquired on a pilot scheme within Najran city

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1			✓													
CLO2								✓								
CLO3										✓						
CLO4								✓								
CLO5										✓						

7. Brief list of topics to be covered	
No.	Topic
1.	The definitions and the history of urban planning.
2.	The current urban planning theories.
3.	The regulations and limitations of the urban planning.
4.	Urban planning policies and strategies at the local, regional and the national levels..
5.	The implementation of a pilot urban planning project within Najran city.

	Course Syllabi – ABET Format		
Program/Department	**Architectural Engineering Program**	**Code**	**AE**
Working Drawings		AE344-2	

1. Course number and name	
Course number	AE344-2
Course name	**Working Drawings**

2. Credits and contact hours	
Credit Hours	2 (1,4 , 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	

3. Instructor's or course coordinator's name	
Name of Instructors	
Name of coordinator	

4. Text book, title, author, and year	
Text Book	Husain, S.K. (2006). Textbook Of Water Supply And Sanitary Engineering, Publisher: Oxford & Ibh, 3rd Edition
Other supplemental materials	K. S. Rangwala and P. S. Rangwala. 2009. Water supply and sanitary engineering.Edition: Twenty Third Edition.

5. Specific course information	
Catalog description	The explanation of the contents of working drawings and terminologies used. The preparation of the basic set of working drawings (architectural, sewage and waste disposal systems and sanitary fittings, and electromechanical) for a multi- story building.
Prerequisites	
Co-requisites	
Indicate whether a required, elective, or selected elective	Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Prepare the working drawings for architectural, sewage and waste diposal systems and sanitary fittings, electrical and electromechanical installations and fittings.
CLO2	Know the basic knowledge needed for each working drawing sheet
CLO3	Read the working drawings sheets.
CLO4	

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1	√									√	√					
CLO2	√									√	√					
CLO3	√									√	√					
CLO4																
CLO5																

7. Brief list of topics to be covered	
No.	Topic
1.	The definition of and the terminologies that used in preparation of working drawings.
2.	The preparations of architectural working drawings that is to say, plans, sections, elevations, finishing specifications tables, and samples of doors and windows
3.	The preparation of working drawings for sewage and waste disposal system and sanitary fittings.
4.	The preparation of working drawings for electromechanical installations and fittings
5.	The preparation of working drawings for electrical installations and fittings

	Course Syllabi – ABET Format
AMR 315-3 : Architectural Design Studio 4	**عمر3-315: تصميم معماري4**

Program/Department	**Architectural Engineering Program**	**Code**	**AE**

1. Course code number and title	
Course Code	**AMR 315-3**
Course Title	**Architectural Design Studio 4**

2. Credits and contact hours	
Credit Hours	3 (0 , 6, 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	6 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Yasser Al sayaf Room No.: ME 317 Ext.: Email: yaserkhaled@nu.edu.sa
Name of coordinator	Dr. Omer Abuelzein

4. Text book, title, author, and year	
Text Book	Ernst Neufert, Peter Neufert , Neufert's Architects' Data, John Wiley & Sons, (2012 Time saver standards for building types, Joseph De Chiara, Mike Crosbie-------

5. Specific course information		
Catalog description	The architectural design in this course is to be for a project more complicated than that of the design (3) e.g. a Commercial center, civic center. Concentration is to be placed on the electromechanical systems in buildings. And on sewage disposal systems and on water and electricity supplies.	
Prerequisites	- AMR 214-3 Architectural design (3)	
Co-requisites	-	
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Analyse and study architectural schemes.
CLO2	Design architectural schemes that concentrate on electromechanical systems in buildings. And on sewage disposal systems and on water and electricity supplies.
CLO3	Demonstrate and show a very good standard of architectural presentation according to the architectural principals.
CLO4	Apply the knowledge of design elements and principles on this project.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1								1								
CLO2			1		1											
CLO3											1					
CLO4	1															

7. Brief list of topics to be covered	
No.	Topic
1.	An introduction to the design of the building type in question.
2.	The study of the design similar buildings.
3.	The preparation of preliminary design should be made with emphasis on electromechanical systems in buildings. And on sewage disposal systems and on water and electricity supplies.
4.	The preparation of a complete set of design drawings e.g: site plan, plans, sections, elevations.
5.	The preparation of three dimensional presentation e.g: perspectives and /or a model is to be made.

2015	Course Syllabi – ABET Format		
Program/Department	**Architectural Engineering Program**	**Code**	**AE**
373 AE-2: Thermo and Fluid Mechanics		**373 عمر-2 :ميكانيكا حرارية و موائع**	

1. Course code number and title	
Course Code	**373 AE-2**
Course Title	**Thermo and Fluid Mechanics**

2. Credits and contact hours	
Credit Hours	2 (2 , 0, 0) Credit Hours (theory , Lab/practical, tutorial)
Contact Hours	2 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Abdelbai Osman Room No.: E 225 Ext.:7165 Email:aomustafa@nu.edu.sa
Name of coordinator	Dr. Yaser El-Saqaf

4. Text book, title, author, and year	
Text Book	"Engineering Thermo Fluids; Thermodynamics, Fluid Mechanics, and Heat Transfer", Mahmoud Massoud, 2005.
Other supplemental materials	Lectures hands-out given by the Instructor

5. Specific course information		
Catalog description	The course is a combination of three major topics correlated together, i.e. Thermodynamics, Fluid Mechanics and Heat Transfer. Students should learn and understand the basic science of such topics and acquire the importance of thermal energy in the daily life. Moreover, students are required to understand the transfer of thermal energy through the fluids of liquids and gases and they also should know the concept of energy conservation.	
Prerequisites	PHYS 105-4	
Co-requisites	-	
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course

a. Specific outcomes of instruction (student should be able to:)

CLO1	To state and define the fundamentals of thermodynamics.
CLO2	To acquire and understand the concepts of thermodynamics laws in addition to the equation of state and their application in the daily life and building technology.
CLO3	To describe fluid and fluid properties in both static and flow behavior.
CLO4	To demonstrate and understand mass and fluid conservation equations and their application in building technology.
CLO5	To state, understand and analyze the modes of heat transfer through solids and fluids while considering the calculations of thermal insulation.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1	✓			✓												
CLO2	✓		✓		✓				✓							
CLO3	✓		✓	✓												
CLO4							✓		✓							
CLO5	✓		✓				✓		✓							

7. Brief list of topics to be covered

No.	Topic
1.	Introduction to thermo-fluids, Fundamentals of thermodynamics, Energy sources and conversion, types of energy in thermodynamics i.e. heat and work, Equation of conservation, first law of thermodynamics, second law of thermodynamics. Equations of State. Examples related to buildings.
2.	Static fluids and Fluid properties i.e. density, pressure and viscosity. Fluids in motion, Flow rates (mass flow and volumetric flow), fluid velocity.
3.	Continuity equation. Moving Fluids and pressure, Bernoulli's Equation.
4.	Modes of heat transfer through solids and fluids, heat transfer by conduction and heat insulation, heat transfer by convection, heat transfer by radiation, heat transfer by combined modes.
5.	
6.	

	Course Syllabi – ABET Format
AMR 334-2 : History of Islamic Architecture	عمر2-334: تاريخ عمارة اسلامية

Program/Department	Architectural Engineering Program	Code	AE

1. Course code number and title	
Course Code	**AMR 334-2**
Course Title	**History of Islamic Architecture**

2. Credits and contact hours	
Credit Hours	2 (2 , 0, 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	2 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Omer Abuelzein Room No.: ME 311 Ext.:8931 Email: oaabuelzein@nu.edu.sa
Name of coordinator	Dr. Omer Abuelzein

4. Text book, title, author, and year	
Text Book	Fletcher's , S., A History of Architecture , 19 edition , London : The Butterworth Group, 1987.

5. Specific course information	
Catalog description	The course covers the architecture during the time of the Prophet and his caliphates, Umayyad and the Abbasid era, Architecture in Al Andalusia, Architecture in Fatimid, Ayobi, Seljuk, Muslims Architecture in Persia, in Indian subcontinent, and Ottoman empire.
Prerequisites	None
Co-requisites	None
Indicate whether a required, elective, or selected elective	Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Identify values and architectural ideas and concepts in the ancient Muslim States.
CLO2	Understand the development and evolution of architecture in Muslims States through time.
CLO3	Understand the factors influenced the architecture in Muslims States..

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	E	f	g	h	i	j	k	1	2	3	4	5
CLO1					1											
CLO2						1										
CLO3						1										

7. Brief list of topics to be covered	
No.	Topic
1.	The architecture during the time of the prophet and his caliphates
2.	The architecture during the time of the Umayyad State.
3.	The architecture during the time of the Abbasid State.
4.	The architecture during the time of Umayyad in Al Andalusia,
5.	The architecture during the time of the Fatimid.
6.	The architecture during the time of the Ayobi State.
7.	The architecture during the time of the Seljuk State
8.	The architecture during the time of the Ottoman empire.
9.	The Muslims Architecture in Persia, and in Indian subcontinent

	Course Syllabi – ABET Format
352AMR-2 : Climatic Design	352عمر-2 : التصميم المناخي

Program/Department	Architectural Engineering Program	Code	AE

1. Course code number and title	
Course Code	**352AMR-2**
Course Title	**Climatic Design**

2. Credits and contact hours	
Credit Hours	2 (2 , 0 , 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	2 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Nedhal Al-Tamimi Room No.: ME-331 Ext.: 8021 Email: naaltamimi@nu.edu.sa
Name of coordinator	Dr. Abdul Tawab Qahtan

4. Text book, title, author, and year	
Text Book	هاشم الموسوي، العمارة والمناخ، دار الحامد للنشر والتوزيع، عمان، الأردن 2007
	Olgyay, Victor. Design with Climate. Princeton: Princeton University Press, 1963
Other supplemental materials	Notes given by the course instructor
	علي رأفت، ثلاثية الابداع المعماري – البيئة والفراغ ، مطابع الشروق – القاهرة، 2000
	Givoni, B. Man, Climate and Architecture. London: Applied Science Publishers LTD, 1976
	G. Z. Brown, Sun, Wind & Light: Architectural Design Strategies, Wiley, the University of Michigan 2007

5. Specific course information		
Catalog description	This course explores the effect of climatic factors on buildings, and thermal comfort and its effect on the human productivity.the course Also covers the passive concept and energy efficiency in building design. A case study to cover the above-mentioned topics is to be executed for a building in the hot arid region of the KSA	
Prerequisites	PHYS 105-4 : Advanced Physics	
Co-requisites	---	
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Identify the climate elements specially in hot arid climate
CLO2	Identify the thermal comfort elements and their effect on the human performance.
CLO3	Analyze the relationship between design, climate and indoor environment
CLO4	Apply passive design strategies in building design solutions (real study)
CLO5	Determine the methods of energy efficient design.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1								✓								
CLO2								✓								
CLO3			✓													
CLO4			✓		✓											
CLO5										✓						

7. Brief list of topics to be covered	
No.	Topic
1.	Study of climate elements as determinants of building design. (focus on KSA climate)
2.	Thermal comfort principles and its elements
3.	Indoor environment
4.	Passive design strategies (Building form, orientation, envelope, shading…etc.)
5.	The study of energy saving concept
6.	Introduction to the importance of using the environmental simulation tools.
7.	Research study to investigate the impact of climate condition on indoor environment

	Course Syllabi – ABET Format		
Program/Department	**Architectural Engineering Program**	**Code**	**AE**
Working Drawings design		**AE345-2**	

1. Course number and name	
Course number	**AE345-2**
Course name	**Working Drawings design**

2. Credits and contact hours	
Credit Hours	2 (1,4 , 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	

3. Instructor's or course coordinator's name	
Name of Instructors	
Name of coordinator	

4. Text book, title, author, and year	
Text Book	Husain, S.K. (2006). Textbook Of Water Supply And Sanitary Engineering, Publisher: Oxford & Ibh, 3rd Edition
Other supplemental materials	K. S. Rangwala and P. S. Rangwala. 2009. Water supply and sanitary engineering.Edition: Twenty Third Edition.

5. Specific course information	
Catalog description	The preparation of designed working drawings for a chosen architectural details of specific building.
Prerequisites	343AMR-2
Co-requisites	
Indicate whether a required, elective, or selected elective	Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Prepare detailed designed working drawings for architectural and sanitary components.
CLO2	Give practical solutions for design problems
CLO3	Prepare the shop drawings for the contractor.
CLO4	

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1			√	√							√					
CLO2			√	√							√					
CLO3			√	√							√					
CLO4																
CLO5																

7. Brief list of topics to be covered	
No.	Topic
1.	The design of the details of elevation design elements for a chosen workings drawings. The design of the details of the external and/or internal cladding .
2.	The design of the details of the floors, artificial ceilings, doors, staircases, mechanical works and the furniture.
3.	The design of the details of the site plan ie: fountains, platforms, pavements, green fields……etc.
4.	The design of the details of the sanitary installations and fittings.
5.	

	Course Syllabi – ABET Format		
Program/Department	**Architectural Engineering Program**	**Code**	**AE**
AE 121-2 : Architectural Drawing and Presentation		**الرسم والإظهار المعماري 121-2 عمر :**	

1. Course number and name	
Course number	**AE 121-2**
Course name	**Architectural Drawing and Presentation**

2. Credits and contact hours	
Credit Hours	2 (0 , 4 , 1) (theory , Lab/practical , tutorial)
Contact Hours	4 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Assis. Prof. Dr. Mohammed Magdy
Name of coordinator	Assis. Prof. Dr. Nedhal Altamimi .

4. Text book, title, author, and year	
Text Book	----------
Other supplemental materials	Ching, Frank (Francis D.K.), Architectural Graphics, Van Nostrand Reinhold, NewYork, 4th ed. John Wiley, New York 2003
	Hugh C. Browning, The Principles of Architectural Drafting, Watson-Guptill Publications; 1st ed. (1996)
	Notes provided by the instructor.
	Ernst Neufert, Peter Neufert , Neufert's Architects' Data, John Wiley & Sons, (2012)

5. Specific course information		
Catalog description	This course is concerned with architectural drawing techniques of different presentation methods including instrument used, types of line, drawing scales, architectural lettering, projections for different bodies, isometric drawings. However, the main concept of the course is to teach students the different symbols used by architects to recognize, indicate and represent architectural plans, elevations sections and architectural projects.	
Prerequisites	Preparatory Year	
Co-requisites	-----	
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Use engineering instruments professionally.
CLO2	Create hand sketched detail and assembly drawings according to standards.
CLO3	Produce high quality and neat architectural drawings.
CLO4	Develop students' skills in representing architectural drawings and design concepts.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1											✓					
CLO2							✓				✓					
CLO3							✓				✓					
CLO4							✓				✓					
CLO5	-	-	-	-	-	-	-	-	-	-	-					
	-	-	-	-	-	-	-	-	-	-	-					

7. Brief list of topics to be covered	
No.	Topic
1.	Mastering the use of various drawing tools.
2.	Orthogonal projections.
3.	Architectural language and symbols.
4.	Draw plans and furniture, sections, elevations.
5.	Represent drawings and architectural projects.

	Course Syllabi – ABET Format		
Program/Department	**Architectural Engineering Program**	**Code**	**AE**
348AE 2 : Electrical systems in buildings	**348عمر-2 :النظم الكهربائية في المبانى**		

1. Course number and name	
Course number	348AMR- 2
Course name	Electrical systems in buildings

2. Credits and contact hours	
Credit Hours	2 (2 , 0 , 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	2 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Akram Elmitwally
Name of coordinator	Dr. Nedhal Altamimi

4. Text book, title, author, and year	
Text Book	Mechanical and electrical systems in buildings, Richard R. Jains, William K.Y. Tao.-4th ed.
Other supplemental materials	

5. Specific course information		
Catalog description	This course describes and introduces students to electrical engineering and electrical technology in buildings. It will provide the students with the basics in electricity, electric circuits, electric generation, electrical distribution systems and the electrical equipment. Besides, the student will learn how to read electrical plans and how to perform basic calculations for electrical installation systems. Also, the students are introduced to electrical system protection and fire warning systems.	
Prerequisites	non	
Co-requisites	non	
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Recognize the general features of electrical systems.
CLO2	Study the main principles of circuits, transformer, and motor.
CLO3	Perform basic calculations of electrical installations.
CLO4	Recognize basics of protection and warning systems in buildings.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1	✓				✓											
CLO2	✓				✓											
CLO3	✓				✓											
CLO4	✓				✓											
CLO5	✓				✓											
	✓				✓											

7. Brief list of topics to be covered	
No.	Topic
1.	Basics of electricity and electric circuits.
2.	Electrical installations (trunks and conduits, junction boxes, switches, sockets,…)
3.	power circuits in buildings, cable cross section calculations, drop voltage calculations
4.	Basics of electrical protection in buildings.
5.	Wiring and electrical diagrams in buildings.
6.	Fire alarm systems, construction and operation.

	Course Syllabi – ABET Format		
Program/Department	**Architectural Engineering Program**	**Code**	**AE**
Sanitary Engineering		**CE 371-3**	

1. Course number and name	
Course number	**CE 371-3**
Course name	**Sanitary Engineering**

2. Credits and contact hours	
Credit Hours	**Credits : 3 (2,2,0)**
Contact Hours	3 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Prof. AHMED HELMY
Name of coordinator	Dr. Magdi

4. Text book, title, author, and year	
Text Book	Husain, S.K. (2006). Textbook Of Water Supply And Sanitary Engineering, Publisher: Oxford & Ibh, 3rd Edition
Other supplemental materials	K. S. Rangwala and P. S. Rangwala. 2009. Water supply and sanitary engineering.Edition: Twenty Third Edition.

5. Specific course information		
Catalog description	Source of water supply; quantity of water and wastewater; quality of water supply; drinking water standard; water treatment system; coagulation-flocculation; sedimentation; filtration; disinfection; softening; iron and manganese removal; taste and odor removal; collection and distribution of water; characteristics of wastewater; effluent standard; wastewater collection; wastewater treatment processes	
Prerequisites		
Co-requisites		
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Understand the quantity and quality of water and wastewate
CLO2	Understand the collection system, treatment system and distribution system of water.
CLO3	Understand wastewater treatment system.
CLO4	

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1																
CLO2																
CLO3																
CLO4																
CLO5																

7. Brief list of topics to be covered	
No.	Topic
1.	
2.	
3.	
4.	
5.	

2015	Course Syllabi – ABET Format		
Program/Department	**Architectural Engineering Program**	**Code**	**AE**
451AE-2: Housing		**451عمر-2: الإسكان**	

1. Course code number and title	
Course Code	**451AE-2**
Course Title	**Housing**

2. Credits and contact hours	
Credit Hours	2 (2, 0 , 1) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	2 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Yaser Khaled Abdulrahman Al-Sakkaf Room No.: Ext.: Email:
Name of coordinator	Dr. Nedhal Al-Tamimi

4. Text book, title, author, and year	
Text Book	---------
Other supplemental materials	Lectures given by the Instructors
	المدينة ومشاكل الإسكان.- أبرمز ، تشارلز منشورات دار الأفاق الجديدة ، بيروت.1974
	تطور الإسكان في المملكة العربية السعودية خلال الفترة من 1950-1983م .فادان ، يوسف
	" الإسكان الميسر ". باهمام ، علي

5. Specific course information		
Catalog description	The explanation of the housing variables. Housing issues i.e. economic, socio-cultural, and environmental ones. Housing regulations, policies and strategies at the national and international levels. Also alternative applications for housing projects and rectification methods. This will be supported by a case study for an existing housing project.	
Prerequisites	351AE-2 Urban Planning	
Co-requisites	-	
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Know housing and its different basic variables
CLO2	Know the main housing problems and their causes and the negative results that occur
CLO3	Know the housing regulations and bye-laws
CLO4	Know housing polices and strategies at the local, regional and the national levels.
CLO5	Apply some alternatives to housing projects and rectify them.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1			✓													
CLO2					✓											
CLO3										✓						
CLO4											✓					
CLO5										✓						

7. Brief list of topics to be covered	
No.	Topic
1.	The definition of housing and its basic variables.
2.	Housing problems, their effect, and the solutions of these problems.
3.	Housing regulations and bye-laws
4.	National and international housing policies and strategies.
5.	Alternative solutions for housing projects (green - sustainable -environment) and rectification methods.

	Course Syllabi – ABET Format		
Program/Department	**Architectural Engineering Program**	**Code**	**AE**
Illumination and Acoustics (AMR 447-2)			

1. Course code number and title	
Course Code	***(AMR 447-2)***
Course Title	***Illumination and Acoustics***

2. Credits and contact hours	
Credit Hours	2(2, 0 , 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	2Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Abdultawab Qahtan Room No.: Ext.:8019 Email:amqahtan@nu.edu.sa
Name of coordinator	

4. Text book, title, author, and year	
Text Book	Walter_T._Grondzik,_Alison_G._Kwok. 2015. Mechanical and electrical Equipment for Building. John Wiley & Sons, Inc.
	Lechner, Norbert . 2015. Heating, cooling, lighting : sustainable design methods for architects. by John Wiley & Sons.
Other supplemental materials	Lectures given by the Instructors
	▪ *الاضاءة والصوتيات في العمارة، سعود صادق حسن، مطابع جامعة الملك سعود، الرياض*

5. Specific course information		
Catalog description	Introduction to basic phenomena, and concepts of Architectural lighting and acoustics. Daylighting, lighting measurements, instruments and methods Electrical light sources, lighting system, and design methods, quantity and quality of illumination. Acoustical properties of materials and constructions. Room acoustics and noise control. Measuring method and equipment. Acoustic design of auditoria. Impact of acoustical and lighting system on Architectural design. Computer applications.	
Prerequisites	AMR348-2	
Co-requisites	-	
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	State Physics of Light, Acoustics, and instrumentations.
CLO2	Analysis of indoor environment from a daylighting and artificial lighting
CLO3	Design optimum lighting for indoor spaces (classroom, etc.)
CLO4	Identify acoustics of Enclosed Spaces. (rooms, auditorium)
CLO5	State different possibilities of noise control.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1								1								
CLO2					1											
CLO3											1					
CLO4	1															
CLO5			1													

7. Brief list of topics to be covered	
No.	Topic
1	Introduction to the course. Physics of Light, Color, and vision
2	Luminaries and lamps
3	Lighting system design procedures
4	Calculation and measurement techniques
5	Evaluation of interior lighting quality
6	Daylighting strategies
7	Noise sources and instrumentation
8	Noise control criteria and regulations
9	Room acoustics, walls, barriers and enclosures
10	Checking the acoustical design of auditorium
11	Acoustical materials and structures
12	Vibration and noise control systems for buildings

	Course Syllabi – ABET Format
AE-2 : Mechanical equipment installation in buildings	**عمر-2 : التركيبات الميكانيكية فى المباني**

Program/Department	**Architectural Engineering Program**	**Code**	**AE**

1. Course code number and title	
Course Code	**AE-2**
Course Title	**Mechanical equipment installation in building**

2. Credits and contact hours	
Credit Hours	2(2 , 0 , 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	2 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Assist . Prof . Dr. Fathy Elnaggar
Name of coordinator	Assist . Prof . Dr. Fathy Elnaggar

4. Text book, title, author, and year	
Text Book	F.C. McQuiston and J.D. Parker, Heating, Ventilating, and Air Conditioning Analysis and Design, John Wiley & Sons, Inc. 5th Edition, 2000.
Other supplemental materials	Class notes and other supplementary materials.

5. Specific course information		
Catalog description	The course will explore the fundamentals of HVAC systems, the understanding of psychometrics, which deals with the properties of moist air and the presentation of air conditioning processes in the psychrometric chart. This course addresses some of the common basic elements of HVAC systems and the types of systems that are used to meet the requirements of different building types and economic considerations. Since HVAC is used to maintain not only an acceptable level of thermal comfort within a space but also a healthy environment, the conditions that provide a comfortable and healthy indoor environment for humans are introduced.	
Prerequisites		
Co-requisites	-	
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course

a. Specific outcomes of instruction (student should be able to:)	
CLO1	Apply the concepts of psychometrics and thermodynamics to heating and cooling analysis.
CLO2	Use basic concepts from heat transfer to determine heat gained or lost from a building.
CLO3	apply good engineering practice to meet the requirements for air quality control and comfort
CLO4	must understand the ethical responsibility associated with the design of a good HVAC system
CLO5	

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1	1															
CLO2	1															
CLO3											1					
CLO4						1										
CLO5																
	✓					✓					✓					

7. Brief list of topics to be covered	
No.	Topic
1.	Air Conditioning systems
2.	Moist air systems and processes, applications of psychometrics to the HVAC process
3.	Heat transmission in buildings, conduction heat transfer through the building envelope, estimating heat loss or gain.
4.	Space heat loads, estimating heating requirements for a space or building, internal heat generation
5.	Indoor air quality, design comfort conditions.
6.	Methods for estimating the space heat gains and the cooling loads

4	Course Syllabi – ABET Format		
Program/Department	**Architectural Engineering Program**	**Code**	**AE**
111AE-3 : Basic Architectural Design Studio		**111عمر-3 : أسس التصميم المعماري**	

1. Course number and name	
Course number	**111AMR-3**
Course name	**Basic Architectural Design Studio**

2. Credits and contact hours	
Credit Hours	3 (1 , 4 , 1) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	5 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Abdultawab Qahtan Room No.: Ext.:8019 Email:amqahtan@nu.edu.sa
Name of coordinator	Dr. Omer Abuelzein

4. Text book, title, author, and year	
Text Book	---------
Other supplemental materials	Lectures given by the Instructors
	Ching, Francis D.K (1996) Form, Space and Order, Van Nostrand Reinhold Company
	Baker, Geoffrey (1996) Design Strategies in Architecture, Van Nostrand Reinhold Company
	Ernst Neufert, Peter Neufert , Neufert's Architects' Data, John Wiley & Sons, (2012)

5. Specific course information	
Catalog description	The course is an introduction to basic design and basic concepts of beauty in the context of architectural engineering. Through a series of studies and exercises, students can learn, understand, analyse and apply basic principles and elements of architectural design. Subsequently the student could express the function in a small-scale projects.
Prerequisites	-
Co-requisites	-
Indicate whether a required, elective, or selected elective	Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	State the basic 2D&3Dimintional architectural design elements.
CLO2	Design a 2D&3Dimintional composition by manipulating the architectural design elements in creative manners.
CLO3	Demonstrate ergonomic and anthropometric aspects in an architectural context.
CLO4	Apply the knowledge of design elements and principles, ergonomics and anthropometrics in a small-scale project.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1							1									
CLO2							1									
CLO3							1									
CLO4			1				1									
CLO5																
			✓				✓									

7. Brief list of topics to be covered	
No.	Topic
1.	Introduction to basic architectural design
2.	2Dimintional Design Elements (point, line, plane, color & texture).
3.	3Dimintional Design Elements
4.	Anthropometrics and Ergonomics
5.	Small-scale project

51	Course Syllabi – ABET Format
463 AMR -1: Professional Practice in Architecture	463عمر- 1: ممارسة مهنة العمارة

Program/Department	Architectural Engineering Program	Code	AMR

1. Course code number and title	
Course Code	463 AMR -1
Course Title	**Professional Practice in Architecture**

2. Credits and contact hours	
Credit Hours	1 (1 , 0 , 1) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	1 Hour / week for 14 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Nedhal Ahmed Mahmood Al-Tamimi Room No.: ME310 Ext.: 8021 Email: naaltamimi@nu.edu.sa
Name of coordinator	Dr.

4. Text book, title, author, and year	
Text Book	---------
Other supplemental materials	Lectures given by the Instructors
	Architects Essentials of starting a design firm by Peter Piven and B. Perhins 2003
	Johu Willey And Sons, Allan, E. Fundamentals of Building Construction 1990.

5. Specific course information		
Catalog description	**This course contains the study of the different fields of the architectural engineering practice, professional ethics and the rules and the regulation that organize the profession.**	
Prerequisites		
Co-requisites	-	
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Know the jobs that can apply for and practice.
CLO2	Practice the profession as it should be.
CLO3	Participate in the development and advancement of the profession.
CLO4	Collaborate and participate in group works.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1						✓										
CLO2						✓										
CLO3							✓									
CLO4							✓									

7. Brief list of topics to be covered	
No.	Topic
1.	The different jobs that could be taken by the architectural engineer.
2.	The societies and the councils that organize the profession.
3.	The consultancy offices.
4.	Regulations and rules that govern the professional practice.

	Course Syllabi – ABET Format
AMR 131-2 : History of Architecture	عمر2-131: تاريخ عمارة

Program/Department	Architectural Engineering Program	Code	AE

1. Course code number and title	
Course Code	**AMR 131-2**
Course Title	**History of Architecture**

2. Credits and contact hours	
Credit Hours	2 (2 , 0, 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	2 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Omer Abuelzein Room No.: ME 311 Ext.:8931 Email: oaabuelzein@nu.edu.sa
Name of coordinator	Dr. Omer Abuelzein

4. Text book, title, author, and year	
Text Book	Fletcher's , S., A History of Architecture , 19 edition , London : The Butterworth Group, 1987.

5. Specific course information	
Catalog description	The course covers prehistoric architecture, Egyptian, Mesopotamian, Greek, Romans and Byzantines architecture. It also covers the middle ages, the renaissance era and the modern architecture.
Prerequisites	
Co-requisites	
Indicate whether a required, elective, or selected elective	Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Identify values and architectural ideas and concepts in the ancient civilizations
CLO2	Understand the development and evolution of architecture through time.
CLO3	Understand the factors influenced the architecture of old civilizations.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1					1											
CLO2						1										
CLO3						1										

7. Brief list of topics to be covered	
No.	Topic
1.	An introduction to the history of architecture .
2.	The study of prehistory architecture.
3.	The study of architecture of ancient ages mainly before Crist.
4.	The study of the architecture of civilizations after Crist until the modern architecture.

	Course Syllabi – ABET Format		
Program/Department	**Architectural Engineering Program**	**Code**	**AE**
Graduation Project I GP1 (491AE-2)			

1. Course code number and title	
Course Code	(491AE-2)
Course Title	Graduation Project I GP1

2. Credits and contact hours	
Credit Hours	2(0, 4 , 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	4Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Abdultawab Qahtan Room No.: Ext.:8019 Email:amqahtan@nu.edu.sa
Name of coordinator	Dr. Omer Abelzein

4. Text book, title, author, and year	
Text Book	
Other supplemental materials	
	▪

5. Specific course information		
Catalog description	This is the first phase of the graduation project, during which students select to design one of the four technical services that are: structural system, air conditioning, electrical and lighting, and construction management and building construction system. Each student/s is required to propose a topic and prepare a detailed, valuable dissertation with all the necessary illustrations.(proposal, literature review and methodology)	
Prerequisites	ARE 316-3- -Design5	
Co-requisites		
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course

a. Specific outcomes of instruction (student should be able to:)	
CLO1	Recall the knowledge of writing a professional architectural technical report.
CLO2	Understand the knowledge of architectural engineering concepts, principles, and procedures.
CLO3	Conduct enough literature review in the project domain.
CLO4	Investigate different issues of architectural engineering
CLO5	Work effectively as a team member.
CLO6	Act responsibly.
CLO7	Act ethically when asked to execute duties.
CLO8	Communicate effectively in oral and practical exercises.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1	√				√		√		√	√						
CLO2	√		√	√	√		√	√		√						
CLO3	√		√	√	√		√			√	√					
CLO4				√	√	√	√				√					
CLO5			√		√											
				√												
				√												
						√										
							√									

7. Brief list of topics to be covered	
No.	Topic
1	– Students re-confirm the previous registration for GP I subject. – Students choose team member for the project – maximum is three members in a team. – Students view the list of available GP projects and information. – Students select the GP project and approach respective supervisor.
2	– Supervisor approves student/s to commence project. – Students submit the GP Title Application Form (appendix 0) to the graduate project coordinator. – Students must attend GP briefing.
3	– Students progressively fulfill GP activities e.g. from amending the chosen design project through writing the technical report to finalizing the technical drawings and report. – Students regularly meet their supervisors at least once a week. – Each student must complete the logbook after each meeting.
4	– Students submit the Interim Report and must assure that their report precisely complies with all the formatting requirements (e.g. layout, font size, references, etc.) together with sets of design and technical drawings. – The GP Committee announces the students list for the presentation of the project. – Students are informed about the presentation time by their supervisors.
5	– Project presentation.

	Course Syllabi – ABET Format		
Program/Department	**Architectural Engineering Program**	**Code**	**AE**
Graduation Project II GP2 (492AE-2)			

1. Course code number and title	
Course Code	(492AE-2)
Course Title	Graduation Project II GP2

2. Credits and contact hours	
Credit Hours	4(0, 8 , 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	8Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Nedal Altamimi Room No.: Ext.:8019 Email:amqahtan@nu.edu.sa
Name of coordinator	Dr. Omer Abelzein

4. Text book, title, author, and year	
Text Book	
Other supplemental materials	
	▪

5. Specific course information	
Catalog description	This is the second phase of the graduation project, during which students select to design one of the four technical services that are: structural system, air conditioning, electrical and lighting, and construction management and building construction system. The selected service should be designed on the architectural technical design produced in GP1. Each student/s is required to prepare a detailed, valuable dissertation with all the necessary illustrations.
Prerequisites	
Co-requisites	
Indicate whether a required, elective, or selected elective	Core (Required)

6. Specific goals for the course

a. Specific outcomes of instruction (student should be able to:)

CLO1	Design a system, component or process with defined constraints.
CLO2	Solve engineering problems and implement designed solution.
CLO3	Collect and analyze data, and draw conclusions though experiments while testing a project.
CLO4	Investigate different issues of architectural engineering
CLO5	Use techniques, skills and modern engineering tools necessary for engineering practice.
CLO6	Act responsibly and work effectively as a team member.
CLO7	Act ethically when asked to execute duties.
CLO8	Communicate effectively in oral and practical exercises.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1	√				√		√		√	√						
CLO2	√		√	√	√		√	√		√						
CLO3	√		√	√	√		√			√	√					
CLO4				√	√	√	√				√					
CLO5			√		√											
				√												
				√												
						√										
							√									

7. Brief list of topics to be covered

No.	Topic
1	– Students re-confirm the previous registration for GP II subject. – Student decide which building service to research on. – Students choose team member for the project – maximum is three members in a team. – Students approach their respective supervisors.
2	– Supervisor approves student/s to commence project. – Students submit the GP Title Application Form to the graduate project coordinator. – Students must attend GP briefing.
3	– Students progressively fulfill GP activities e.g. from amending the chosen design project through simulation stages to finalizing the writing of the dissertation. – Students regularly meet their supervisors at least once a week. – Each student must complete the logbook after each meeting.
4	– Students submit the Interim dissertation and must assure that their dissertation precisely complies with all the formatting requirements (e.g. layout, font size, references, etc.) together with sets of design and technical drawings. – The GP Committee announces the students list for the presentation of the project. – Students are informed about the presentation time by their supervisors.
5	– Dissertation presentation and discussion.

Course Syllabi – ABET Format

	Course Syllabi – ABET Format		
Program/Department	**Civil Engineering Program**	**Code**	**CE**
CE 222-3 : Geotechnical Engineering		**همد222-3 :هندسة جيوتقنية**	

1. Course code number and title	
Course Code	**CE 222-3**
Course Title	**Geotechnical Engineering**

2. Credits and contact hours	
Credit Hours	3 (3 , 0 , 0)Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	3 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Assistant Professor. Abdullah Al-Homidy
Name of coordinator	Assistant Professor . Esam Salah

4. Text book, title, author, and year	
Text Book	Principles and Practices of Soil Mechanics and Foundation Engineering, (2015), by V.N.S Murhty.
Other supplemental materials	Foundation Design , Principles and Practices ,(2001), 2nd Edition by Coduto
	▪

5. Specific course information		
Catalog description	This course is covering (a) the physical and geotechnical properties of soils and their measurements,(b) the types of foundations used to support structures in different soils, (c) the bearing pressure and capacity of shallow foundations, (d) the criteria for selecting the appropriate foundation types and (e) the conditions and the constraints for soil braced cuts	
Prerequisites		
Co-requisites	-	
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Study the concepts of geotechnical engineering
CLO2	Study the physical and geotechnical properties of soils
CLO3	Select the appropriate type of foundations
CLO4	Compute the bearing pressure and bearing capacity of shallow foundations
CLO5	Design spread foundation

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	i	j	k	1	2	3	4	5
CLO1	√															
CLO2	√							√								
CLO3	√							√								
CLO4	√										√					
CLO5	√		√								√					

7. Brief list of topics to be covered	
No.	Topic
1	Introduction of geotechnical engineering
2	Physical properties of soils
3	Classification of soils
4	Geotechnical properties of soils
5	Types of foundations and criteria for selecting the appropriate foundations
6	Bearing pressure and capacity of shallow foundations.
7	Design spread foundation

	Course Syllabi – ABET Format		
Program/Department	**Architectural Engineering Program**	**Code**	**AE**
ARE 316-3 : Architectural Design Studio 5		**عمر3-315: تصميم معماري5**	

1. Course code number and title	
Course Code	**ARE 316-3**
Course Title	**Architectural Design Studio 5**

2. Credits and contact hours	
Credit Hours	3 (0 , 6, 0) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	6 Hours / week for 15 weeks

3. Instructor's or course coordinator's name	
Name of Instructors	Dr. Omer Abuelzein Room No.: ARE 311 Ext.:8931 Email: oabuelzein@gmail.com
Name of coordinator	Dr. Omer Abuelzein

4. Text book, title, author, and year	
Text Book	Ernst Neufert, Peter Neufert , Neufert's Architects' Data, John Wiley & Sons, (2012 Time saver standards for building types, Joseph De Chiara, Mike Crosbie

5. Specific course information		
Catalog description	Design5 project should be of medium complication proposed by the student and approved by the instructor. Concentration is to be placed beside a high standard of an architectural design and a comprehensive professional report on the knowledge of and spatial requirements and types of the mechanical systems, the electrical systems, the structural systems and the construction management for the chosen architectural design	
Prerequisites	Architectural Studio Design 4	
Co-requisites		
Indicate whether a required, elective, or selected elective		Core (Required)

6. Specific goals for the course	
a. Specific outcomes of instruction (student should be able to:)	
CLO1	Know how to write a professional architectural technical report.
CLO2	Apply all the architectural knowledge the student acquired on design 5 project.
CLO3	Apply all the technical knowledge the student acquired on design 5 project
CLO4	Defend his ideas and decisions.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

CLO	Student Outcomes (SOs)											PEO				
	a	b	c	d	e	f	g	h	I	j	k	1	2	3	4	5
CLO1					1											
CLO2			1													
CLO3			1													
CLO4							1									

7. Brief list of topics to be covered	
No.	Topic
1.	Theoretical lessons on how to write a professional architectural technical report.
2.	Theoretical lessons on technical solutions in buildings.
3.	Preparation of a complete set of architectural drawings together with the technical drawings.