	Ministry of Higher Education **Higher Institute of Engineering and Technology** **Architecture Eng. Department**	

Course Specification

Course Code: ARE 1103 **Course Title: Architectural Drawing & Representation Techniques**

1. Basic information

Program Title	Architecture Engineering Department			
Department offering the program	Architecture Engineering Department			
Department offering the course	Architecture Engineering Department			
Course Code	**ARE 1103**			
Year/level	First year / Second Level			
Specialization	**Major**			
Teaching Hours	Lectures	Tutorial	Practical	Total
	2	5	0	7

2. Course Aims

No.	Aim
1	Provide the students with modern academic and technical skills, to apply and practice in architectural projects. (AM3.1)

3. Course Learning Outcomes (CLOs)

CLO19	Apply new knowledge in architecture projects
CLO24	Deal with the relation between people, buildings, and their surrounding interior and exterior environment
CLO25	Produce designs with the scale of humanity and its needs

4. Course Contents

Topics	Week
Introduction and how to provide entry level visualization	1
How to communicate and design skills for a wide variety of fields	2
Illustrate interior and furniture design for the building	3
How to draw plans	4
How to draw sections	5
How to draw elevations	6
How to draw lay out	7
Develop basic thinking, visualizing and problem-solving skills, in order to apply these skills to a realistic simple creative project	8

How to create the perspective of the project (Bird eye)	10
How to create the perspective of the project (human eye)	11
Shade and Shadows and practice on simple elements	12
Shade and Shadows and practice on the project	13
Practical application on full architecture project – semi final	14
Practical application on full architecture project – final project	15

5. Teaching and Learning methods

Course learning Outcomes (CLOs)	Teaching and Learning Methods											
	Lectures	Assignment	Labs	Research and Reports	Projects	Presentation	Site Visits	Discussion and Dialogue	Brain storm	E-Learning	Self-learning	Modeling and Simulation
CLO19	√	√	-	√	√	-	-	√	-	-	√	-
CLO24	√	√	-	√	-	-	-	-	-	-	√	-
CLO25	√	√	-	-	√	-	-	√	-	-	-	-

6. Students' Assessment

6.1 Students' Assessment Method

No.	Assessment Method	CLOs
1	Attendance	-
2	Written exam	CLO19-CLO24-CLO25
3	Discussions	CLO19 – CLO25
4	Mid Term Exam	CLO19-CLO24
5	Class works	CLO19-CLO24-CLO25
6	Projects	CLO19-CLO25
7	Research	CLO19-CLO24

6.2 Assessment Schedule

No.	Assessment Method	Weeks
1	Attendance	Weekly
2	Written exam	16
3	Discussions	weekly
4	Mid Term Exam	9
5	Class works	weekly
6	Projects	15
7	Research	10

6.3 Weighting of Assessments					
	Assessment Method	**Weights%**	**Weights**	**Weights%**	**Weights**
Teacher Opinion	Discussions	60	60	5	5
	Mid-term exam			20	20
	Class works			15	15
	Projects			15	15
	Research			5	5
Final Exam	Written exam	40	40	40	40
Total		100	100	100	100

7. List of References

- Zell, Mo, "Architectural Drawing Course: Tools and Techniques for 2D and 3D Representation", 2nd Revised ed., Barron's Educational Series, UK, **2018.** ISBN:1438011156
- Edwards, Brian, "Understanding Architecture Through Drawing", 2nd Edition, Taylor & Francis, USA, **2009**. ISBN: 9780415444149
- محمد حلمي، "مبادئ الرسم والتصميم المعماري للمباني"، ط١، دار المراجع العلمية للنشر والتوزيع، مصر، ٢٠٢١.
- ك. ديسي، ثوماس لاسويل، "الاعتبارات الإنسانية في التصميم المعماري"، دار جامعة الملك سعود للنشر، المملكة العربية السعودية، ٢٠١٦. رقم التسجيل: 161107
- محمد عبدالله، "الإظهار المعماري"، مكتبة الأنجلو المصرية، يناير ٢٠٠٠. رقم التسجيل: 9789770511145

8. Facilities required for teaching and learning

Lecture/Classroom
White board
Data show

9. Matrix of Course Content with Course LO's

Topics	Aim	CLO's
Introduction and how to provide entry level visualization	1	CLO19
How to communicate and design skills for a wide variety of fields	1	CLO19
Illustrate interior and furniture design for the building	1	CLO19-CLO24
How to draw plans	1	CLO24-CLO25
How to draw sections	1	CLO24-CLO25
How to draw elevations	1	CLO24-CLO25
How to draw lay out	1	CLO24-CLO25
Develop basic thinking, visualizing and problem-solving skills, in order to apply these skills to a realistic simple creative project	1	CLO19- CLO24-CLO25
How to create the perspective of the project (Bird eye)	1	CLO19-CLO24-CLO25

How to create the perspective of the project (human eye)	1	CLO19-CLO24-CLO25
Shade and Shadows and practice on simple elements	1	CLO19-CLO24-CLO25
Shade and Shadows and practice on the project	1	CLO19-CLO24-CLO25
Practical application on full architecture project – semi final	1	CLO19-CLO24-CLO25
Practical application on full architecture project – final project	1	CLO19-CLO24-CLO25

9. Matrix of Program LOs with Course Los

Program Los		Course Los	
PLO10	Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.	CLO19	Apply new knowledge in architecture projects
PLO12	Produce designs that meet the requirements of building users by understanding the relationship between people and buildings, and between the buildings and their surrounding environment, with the necessity of linking the buildings and the spaces between them to the scale of humanity and its needs	CLO24	Deal with the relation between people, buildings, and their surrounding interior and exterior environment
		CLO25	Produce designs with the scale of humanity and its needs

Title	Name	Signature
Course coordinator	**Dr. Hadeel Mahmoud**	
Head of Department	**Assocc. Prof. Reham Othman**	
Date of Approval	**1/10/2022**	

برنامج الهندسة المعمارية
المعهد العالي للهندسة والتكنولوجيا
بالتجمع الخامس

Course Specification

Course Code: ARE 1101 **Course Title: Building construction 1**

1. Basic information

Program Title	Architecture Engineering			
Department offering the program	Architecture Engineering			
Department offering the course	Architecture Engineering			
Course Code	ARE 1101			
Year/level	first year / Second Level			
Specialization	**Major**			
Teaching Hours	Lectures	Tutorial	Practical	Total
	2	3	-	5

2. Course Aims

No.	Aim
1	choose the best way of building construction to prepare suitable building by understanding the elements of it. (AM5.1)

3. Course Learning Outcomes (CLOs)

CLO 6	Know engineering construction processes to build suitable buildings.
CLO7	specified needs with consideration for cultural, social, economic, environmental, and ethical aspects.
CLO26	Select suitable way of construction to prepare suitable building
CLO27	choose the structural design, construction, technology used

4. Course Contents

Topics	Week
Define terms Of Buildings and its components	1
clear the main elements of the building and its foundations	2
Deep Foundations	3
Illustrated Building materials and building systems (bearing walls, skeleton)	4

Illustrated Building materials and building systems (shell construction and other new structural systems)	5
train the student to draw the constructional details	6
Architectural Bonds, Tools	7
Architectural Wall thickness, Openings.	8
Architectural Bonds, Openings. Lintels and arches	10
Architectural Building materials and types of finishes.	11
Architectural Bonds, Tools	12
Architectural Wall thickness, Openings.	13
Stairs and its type	14,15

5. Teaching and Learning methods

Course learning Outcomes (CLOs)	Teaching and Learning Methods											
	Lectures	Assignment	Labs	Research and Reports	Projects	Presentation	Site Visits	Discussion and Dialogue	Brain storm	E-Learning	Self-learning	Modeling and Simulation
CLO 6	√	-	-	-	-	-	-	√	-	-	-	-
CLO7	√	√	-	-	-	-	-	√	-	-	-	-
CLO26	√	√	-	-	-	-	-	√	-	-	-	-
CLO27	√	√	-	-	-	-	-	√	-	-	-	-

6.Students' Assessment

6.1 Students' Assessment Method

No.	Assessment Method	CLos
1	Attendance	-
2	Written exam	CLO7-CLO26-CLO27
3	Discussions	CLO6-CLO7-CLO26-CLO27
4	Mid Term Exam	CLO7-CLO26
5	Class works	CLO7-CLO26-CLO27
6	Projects	-
7	Researches	-
8	Reports	-
9	Presentations	-
10	Quiz	-
11	Skiz	-

6.2 Assessment Schedule

No.	Assessment Method	Weeks

1	Attendance	-
2	Written exam	16
3	Discussions	Weekly
4	Mid Term Exam	9
5	Class works	Weekly
6	Projects	-
7	Researches	-
8	Reports	-
9	Presentations	-
10	Quiz	-
11	Skiz	-

6.3 Weighting of Assessments

	Assessment Method	Weights%	Weights	Weights%	Weights
Teacher Opinion	Discussions	%60	60	%5	5
	Class works			%15	15
	Mid-term exam			%20	20
Final Exam	Written exam	%40	40	%40	40
Total		%100	100	%100	100

7. List of References

- DAVID CHAPELL & ANDREW WILLS,(2019)," The Architect in Practice "RIBA, New york, Wiley-Blackwell ,11TH Edition ISBN 13 978-1118907733 .
- Guedi Capeluto, Carlos Ernesto Ochoa,(2017), Intelligent Envelopes for High-Performance Buildings, Design and Strategy ,Springer Cham,1st Edition, ISBN13 978-3319392547.
- Wilhelm, N.E. (2014). Building Construction. In: Selin, H. (eds) Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures. Springer,6TH ed, Jones & Bartlett Learning,ISBN13 978-1284177312.
- Edward Allen , Joseph Iano(2019); Fundamentals of Building Construction: Materials and Methods , Wiley ,7th Edition,ISBN-13 978-1119446194.

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- محمود احمد على,(2021), سلسلة دليلك فى عالم التنفيذ الجزء الاول والثانى ,دار الكتب العلمية للنشر والتوزيع, القاهرة.

8.Facilities required for teaching and learning

Lecture/Classroom
White board
Data show

9.Matrix of Course Content with Course LO's

Topics	Aim	LO's
Define terms Of Buildings and its components	1	CLO6-CLO7- CLO26
clear the main elements of the building and its foundations	1	CLO6-CLO26
Deep Foundations	1	CLO6-CLO26
Illustrated Building materials and building systems (bearing walls, skeleton)	1	CLO6-CLO26
Illustrated Building materials and building systems (shell construction and other new structural systems)	1	CLO6-CLO26
train the student to draw the constructional details	1	CLO6-CLO7-CLO26
Architectural Bonds, Tools	1	CLO6-CLO7-CLO26
Architectural Wall thickness, Openings.	1	CLO6-CLO7-CLO27
Architectural Bonds, Openings. Lintels and arches	1	CLO7-CLO26-CLO27
Architectural Building materials and types of finishes.	1	CLO6-CLO7-CLO26-CLO27
Architectural Bonds, Tools	1	CLO6-CLO7-CLO26-CLO27
Architectural Wall thickness, Openings.	1	CLO6-CLO7-CLO26-CLO27
Stairs and its type	1	CLO6-CLO7-CLO26

10. Matrix of Program LOs with Course LOs

Program LOs		Course LOs	
PLO3	Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical, and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development.	CLO 6	Know engineering construction processes to build suitable buildings.
		CLO7	specified needs with consideration for cultural, social, economic, environmental, and ethical aspects.
PLO13	Preparing environmentally responsible designs to preserve and rehabilitate the environment through an understanding of the structural design, construction, technology used and associated engineering problems Building designs	CLO26	Select suitable way of construction to prepare suitable building
		CLO27	choose the structural design, construction, technology used

Title	Name	Signature
Course coordinator	**Dr. Hend Ali** **Dr.Hadeel Mahmoud**	
Head of Department	**Assocc. Prof. Reham Othman**	
Date of Approval	**1/10/2022**	

Course Specification

Course Code: ARE 1102 **Course Title: Visual Design & Design Fundamentals**

1. Basic information

Program Title	Architecture Engineering			
Department offering the program	Architecture Engineering			
Department offering the course	Architecture Engineering			
Course Code	ARE 1102			
Year/level	First year /Second level			
Specialization	**Major**			
Teaching Hours	Lectures	Tutorial	Practical	Total
	2	5	-	7

2. Course Aims

No.	Aim
1	Train the students for innovative and creative thinking, describing and solving design problems and requirements (AM2.1)
2	Use aesthetic methods and principles that ensure meeting the needs of present and future generations in terms of social aspects (AM2.2)

3. Course Learning Outcomes (CLOs)

CLO21	Create architectural designs that meet aesthetic and technical requirements
CLO22	Use Adequate knowledge of related fine arts human sciences

4. Course Contents

Topics	Week
Illustrated importance of forms and its principles	1
Studying Point as one of primary architecture elements (properties- uses in architecture).	2
Studying Line as one of primary architecture elements (properties- uses in architecture).	3
Studying from Line to Plane: plane as one of primary architecture elements (properties- uses in architecture).	4
Create Serial planes as an introduction to Volumetric Elements.	5
Educating the principles of architecture drawing.	6
Developing the skills of imagination by using models.	7

Investigates and explores processes involved in perception, Nature of light, Movement, Color, Depth and distance cues.	8
Explore several ideas related to Two- and Three-dimensional forms.	10
Studying organization of Form & Space (Centralized -Linear -Radial)	11
Studying organization of Form & Space (Clustered -Grid)	12
Create models with the organization of Form & Space classifications	13
Design principles and applying on small project	14
Applying organization of forms in project model.	15

5.Teaching and Learning methods

Course learning Outcomes (CLOs)	Teaching and Learning Methods											
	Lectures	Assignment	Labs	Research and Reports	Projects	Presentation	Site Visits	Discussion and Dialogue	Brain storm	E-Learning	Self-learning	Modeling and Simulation
CLO21	√	√	-	-	√	√	-	-	-	-	√	-
CLO22	√	√	-	-	√	√	-	-	-	-	√	-

6. Students' Assessment

6.1 Students' Assessment Method

No.	Assessment Method	LOs
1	Attendance	-
2	Written exam	CL21-CLO22
3	Discussions	-
4	Mid Term Exam	CLO22
5	Class works	CL21-CLO22
6	Projects	CL21-CLO22
7	Researches	-
8	Reports	-
9	Presentations	CL21-CLO22
10	Quiz	-
11	Skiz	-

6.2 Assessment Schedule

No.	Assessment Method	Weeks
1	Attendance	-
2	Written exam	16
3	Discussions	-
4	Mid Term Exam	9
5	Class works	Weekly

6	Projects	13-14
7	Researches	-
8	Reports	-
9	Presentations	Weekly
10	Quiz	-
11	Skiz	-

6.3 Weighting of Assessments

	Assessment Method	Weights%	Weights	Weights%	Weights
Teacher Opinion	Class works	%60	60	%20	20
	Presentation			%5	5
	Project			%15	15
	Mid-term exam			%20	20
Final Exam	Written exam	%40	40	%40	40
Total		%100	100	%100	100

7. List of References

- FRANCIS D. K. CHING, "FORM, SPACE, AND ORDER", Fourth Edition, 2020 ISBN: 9780471752165.
- FRANCIS D. K. CHING, "A Visual Dictionary of Architecture",2011, ISBN: 0470648856.
- STEVEN P. JUROSZEK, "Design Drawing", Third Edition, 2020, ISBN:978-1-119-50859-5

8. Facilities required for teaching and learning

Lecture/Classroom
White board
Data show

9. Matrix of Course Content with Course LO's

Topics	Aim	LO's
Illustrated importance of forms and its principles	1	CLO22
Studying Point as one of primary architecture elements (properties- uses in architecture).	1	CLO22
Studying Line as one of primary architecture elements (properties- uses in architecture).	1	CLO22
Studying from Line to Plane: plane as one of primary architecture elements (properties- uses in architecture).	1	CLO22
Create Serial planes as an introduction to Volumetric Elements.	1	CLO22
Educating the principles of architecture drawing.	1	CL21-CLO22

Developing the skills of imagination by using models.	1	CLO22
Investigates and explores processes involved in perception, Nature of light, Movement, Color, Depth and distance cues.	2	CL21-CLO22
Explore several ideas related to Two- and Three-dimensional forms.	1	CLO22
Studying organization of Form & Space (Centralized -Linear -Radial)	1	CL21-CLO22
Studying organization of Form & Space (Clustered -Grid)	1	CL21-CLO22
Create models with the organization of Form & Space classifications	1	CL21-CLO22
Design principles and applying on small project	2	CL21-CLO22
Applying organization of forms in project model.	2	CL21-CLO22

10. Matrix of Program LOs with Course LOs

Program LOs		Course LOs	
PLO11	Create architectural, urban and planning designs that meet aesthetic and technical requirements using Adequate knowledge of history, related fine arts, culture, local heritage, technologies and human sciences.	CLO21	Create architectural designs that meet aesthetic and technical requirements
		CLO22	use Adequate knowledge of related fine arts human sciences

Title	Name	Signature
Course coordinator	**Assocc. Prof. Reham Othman**	
Head of Department	**Assocc. Prof. Reham Othman**	
Date of Approval	**1/10/2022**	

برنامج الهندسة المعمارية
المعهد العالي للهندسة والتكنولوجيا
بالتجمع الخامس

Course Specification

Course Code: ARE 1104 **Course Title: Theories of Architecture (1)**

1. Basic information

Program Title	Architecture department			
Department offering the program	Architecture department			
Department offering the course	Architecture department			
Course Code	ARE 1104			
Year/Level	First-year / First Semester			
Specialization	**Major**			
Teaching Hours	Lectures	Tutorial	Practical	Total
	4	-	-	4

2. Course Aims

No.	Aim
1	Provide the students with modern academic and technical skills, cultural knowledge of history, fine arts, and local and international heritage. (AM3.1)

3. Course Learning Outcomes (CLOs)

CLO12	Practice research techniques and methods of investigation as an inherent part of learning.
CLO22	use Adequate knowledge of history, related fine arts, culture, local heritage, technologies, and human sciences

4. Course Contents

Topics	Week
Architecture definition &Basics, Anthropometry (HUMAN) Measurements	1
Elements of Architecture: utilization- Service - Movement (vertical- horizontal)- Lighting - construction -Ventilation– aesthetic- a process	2
data gathering: HUMAN (Measurements & Anthropometry) & Residential unit spaces	3
Primary Elements: Point - Line -From Line to Plane -Planar Elements -Volumetric Elements	4
Form Primary Shapes -Primary Solids - Regular & Irregular Forms - Transformation of Form -Articulation of Form	5
Form & Space: Unity of Opposite- Form Defining Space)	6
Horizontal & Vertical Elements Defining Space	7
Organization: Organization of Form & Space (Spatial - Centralized - Linear - Radial - Clustered - Grid)	8
Qualities of Architectural Space	10
Ordering Principles: (Axis -Symmetry -Hierarchy - Datum)	11
Ordering Principles: (-Rhythm -Repetition -Transformation)	12
Proportion & Scale Theories of Proportion :(Golden Section-Classical Orders)	13
Proportion & Scale Theories of Proportion	14
Modular-Anthropometry-Scale)	15

5. Teaching and Learning methods

Course Learning Outcomes (Los)	Teaching and Learning Methods											
	Lectures	Assignment	Labs	Research and Reports	Projects	Presentation	Site Visits	Discussion and Dialogue	Brainstorm	E-Learning	Self-learning	Modeling and Simulation
CLO12	√	√	-	√	-	√		√	√		√	
CLO22	√	√	-	√	-	√		√	√		√	

6. Students' Assessment

6.1 Students' Assessment Method

No.	Assessment Method	LOs
1	Attendance	----------
3	Discussions	CLO12-CLO22
4	Mid Term Exam	CLO12-CLO22
5	Researches	CLO12-CLO22
6	Presentations	CLO12-CLO22
7	Quiz	CLO12-CLO22
8	Written exam	CLO12-CLO22

6.2 Assessment Schedule

No.	Assessment Method	Weeks
1	Attendance	-
3	Discussions	weekly
4	Mid Term Exam	9
5	Researches	4 & 12
6	Presentations	4 & 12
7	Quiz	3 & 11
8	Written exam	16

6.3 Weighting of Assessments

	Assessment Method	Weights%	Weights
Teacher Opinion	Discussions	5%	5
	Mid-term exam	20%	20
	Presentations	10%	10
	Researches	10%	10
	Quiz	5%	5
Final Exam	Written exam	50%	50
Total		100%	100

7. List of References

- Ching, Francis D.K.(2014), Architecture Space, Form, and Order, 4th Edition. ISBN-13: 978-1118745083.
- Donald Watson (Author), Michael J. Crosbie (Author) (2004): Time Saver Standards for Architectural Design Data. Publisher: McGraw Hill ISBN-13: 978-0071432054.
- Emst Neufert Architects, Data, The Alden Group Ltd. Oxford and Northampton – (3rd Edition) – 2002
- K. Michael Hays (Editor2000), Architecture Theory since 1968. Publisher: The MIT Press, ISBN-13: 978-0262581882.
- De Bono, E., Serious Creativity) 1992): Using the Power of Lateral Thinking to Create New Ideas, Harper Collins, Publisher: Harpercollins. ISBN-13: 978-0887305665

8. Facilities required for teaching and learning

Lecture hall
Whiteboard
Classroom
Data show

9. Matrix of Course Content with Course LO's

Topics	Aim	LO's
Architecture definition &Basics, Anthropometry (HUMAN) Measurements	1	CLO12- CLO22
Elements of Architecture: utilization- Service - Movement (vertical-horizontal)- Lighting - construction -Ventilation– aesthetic- a process	1	CLO12- CLO22
data gathering: HUMAN (Measurements & Anthropometry) & Residential unit spaces	1	CLO12- CLO22
Primary Elements: Point - Line -From Line to Plane -Planar Elements -Volumetric Elements	1	CLO12- CLO22
Form Primary Shapes -Primary Solids - Regular & Irregular Forms - Transformation of Form -Articulation of Form	1	CLO12- CLO22
Form & Space: Unity of Opposite- Form Defining Space)	1	CLO12- CLO22
Horizontal & Vertical Elements Defining Space	1	CLO12- CLO22
Organization: Organization of Form & Space (Spatial - Centralized - Linear - Radial - Clustered - Grid)	1	CLO12- CLO22
Qualities of Architectural Space	1	CLO12- CLO22
Ordering Principles: (Axis -Symmetry -Hierarchy - Datum)	1	CLO12- CLO22
Ordering Principles: (-Rhythm -Repetition -Transformation)	1	CLO12- CLO22
Proportion & Scale Theories of Proportion :(Golden Section-Classical Orders)	1	CLO12- CLO22
Proportion & Scale Theories of Proportion :(Modular-Anthropometry-Scale)	1	CLO12- CLO22

10. Matrix of Program LOs with Course LOs

Program LOs		Course LOs	
PLO5	Practice research techniques and methods of investigation as an inherent part of learning.	CLO12	Practice research techniques and methods of investigation as an inherent part of learning.
PLO11	Create architectural, urban, and planning designs that meet aesthetic and technical requirements using Adequate knowledge of history, related fine arts, culture, local heritage, technologies, and human sciences.	CLO22	use Adequate knowledge of history, related fine arts, culture, local heritage, technologies, and human sciences

Title	Name	Signature
Course coordinator	Dr. Rania Badawy	
Head of Department	Dr. Reham Osman	
Date of Approval	1-10-2022	

برنامج الهندسة المعمارية
المعهد العالي للهندسة والتكنولوجيا
بالتجمع الخامس

	Ministry of Higher Education **Higher Institute of Engineering and Technology** **Architecture department**	

Course Specification

Course Code: CVE 1131 **Course Title:** Surveying

1. Basic information

Program Title	Architecture Engineering Program			
Department offering the program	Architecture Engineering department			
Department offering the course	Civil Engineering Department			
Course Code	CVE 1131			
Year/level	first year / second level (1st Semester)			
Specialization	**Minor**			
Teaching Hours	Lectures	Tutorial	Practical	Total
	2	2	-	4

2. Course Aims

No.	Aim
1	Use data analysis and surveying of architectural sites (AM 1.1)
2	Train the students on how to use cadastral tools to determine site dimensions, innovative and creative thinking, describing and solving design problems and requirements (AM2.1)

3. Course Learning Outcomes (CLOs)

CLO2	Solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.by applying engineering fundamentals, basic science, and mathematics.
CLO16	Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools.

4. Course Contents

Topics	Week
Introduction to surveying and mapping: Historical background, definitions and branches of surveying science.	1
Measurements units, Map Scale	2
Direct and indirect methods of distance measurements by classical and electronic methods.	3
Directions and angles measurements using theodolites. computation of traverses.	4
Areas calculations (regular and irregular parcel shapes) by using mathematical, mechanical and graphical methods.	5
Introduction to vertical control. Different methods for height difference determination.	6
Ordinary levelling: survey level and survey staff.	7

Longitudinal levelling	8
cross section levelling	10
grid levelling and contour lines	11
Volume computations and earthwork	12
kinds and sources of errors in surveying measurement	13-14
revisions	15

5. Teaching and Learning methods

Course learning Outcomes (LOs)	Teaching and Learning Methods											
	Lectures	Assignment	Labs	Research and Reports	Projects	Presentation	Site Visits	Discussion and Dialogue	Brain storm	E-Learning	Self-learning	Modeling and Simulation
CLO2	√	√	√	√		√					√	
CLO16						√					√	

6. Students' Assessment

6.1 Students' Assessment Method

No.	Assessment Method	CLOs
1	Attendance	-----
2	Reports	CLO2,CLO15
3	Quiz	CLO2
4	Mid-term Exam	CLO15
5	Presentations	CLO2,CLO16
6	Written exam	CLO2,CLO15,CLO16

6.2 Assessment Schedule

No.	Assessment Method	Weeks
1	Attendance	Weekly
2	Reports	Bi-weekly
3	Quiz	4 & 10
4	Mid-term Exam	9
5	Presentations	13
6	Written exam	16

6.3 Weighting of Assessments					
	Assessment Method	**Weights%**	**Weights**	**Weights%**	**Weights**
Teacher Opinion	Reports	40%	40	5%	5
	Presentations			5%	5
	Quiz			10%	10
	Mid-term exam			20%	20
Final Exam	Written exam	60%	60	60%	60
Total		100%	100	100%	100

7. List of References

[1] De, Alak. *Plane Surveying*. S. Chand Publishing, 2000.

[2] Napoles, E., and M. Berber. "Precise formula for volume computations using contours method." *Boletim de Ciências Geodésicas* 24 (2018)

8. Facilities required for teaching and learning

Lecture/
White board
Classroom
Data show
Laboratory Usage

9. Matrix of Course Content with Course LO's

Topics	Aim	CLOs
Introduction to surveying and mapping: Historical background, definitions and branches of surveying science.	1,2	CLO2
Measurements units, Map Scale	1	CLO2,CLO16
Direct and indirect methods of distance measurements by classical and electronic methods.	1,2	CLO2, CLO16
Directions and angles measurements using theodolites. computation of traverses.	2	CLO2
Areas calculations (regular and irregular parcel shapes) by using mathematical, mechanical and graphical methods.	2	CLO2, CLO16
Introduction to vertical control. Different methods for height difference determination.	2	CLO2, CLO16
Ordinary levelling: survey level and survey staff.	1	CLO16
Longitudinal levelling	1	CLO16
cross section levelling	1,2	CLO2 , CLO16
grid levelling and contour lines	2	CLO16

Volume computations and earthwork	2	CLO16
kinds and sources of errors in surveying measurement	1,2	CLO2
revisions	1,2	CLO2 ,CLO16

10. Matrix of Program LOs with Course Los

Program LOs		Course LOs	
PLO1	Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.	CLO2	Solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.by applying engineering fundamentals, basic science, and mathematics.
PLO8	Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools.	CLO16	Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools.

Title	Name	Signature
Course coordinator	**Dr. Ahmad Hamdy Ibrahim**	
Head of Department	**Assocc. Prof. Reham Othman.**	
Date of Approval	**1/10/2022**	

برنامج الهندسة المعمارية
المعهد العالي للهندسة والتكنولوجيا
بالتجمع الخامس

Ministry of Higher Education
Higher Institute of Engineering and Technology
Architecture Eng. department

Course Specification

Course Code: HUM 1302 Course Title: Technical reports writing

1. Basic information

Program Title	Architecture Engineering			
Department offering the program	Architecture Engineering			
Department offering the course	Architecture Engineering			
Course Code	HUM 1302			
Year/level	First year /Second Level			
Specialization	Minor			
Teaching Hours	Lectures	Tutorial	Practical	Total
	2	1	0	3

2. Course Aims

No.	Aim
1	Prepare project documents and provide developing expertise to the studnt's work and decision making (AM5.2)

3. Course Learning Outcomes (CLOs)

CLO12	Practice research techniques and methods of investigation as an inherent part of learning.
CLO16	Communicate effectively verbally and in writing by Selecting the most appropriate form in which to present information

4. Course Contents

Topics	Week
Definition of technical writing and Overview of International Database for scientific research	1
Elements of Ethics in Scientific Writing and levels of plagiarism	2
Styles of writing	3

Steps of technical writing	4
Elements of technical writing	5
Paper Structure I	6
Paper Structure II	7
Structure of Figures	8
Structure of Tables	10
Abbreviations, Formatting	11
How to write References	12
Resume writing	13
Presentation Skills I	14
Presentation Skills II	15

5. Teaching and Learning methods

Course learning Outcomes (LOs)	Teaching and Learning Methods											
	Lectures	Assignment	Labs	Research	Projects	Presentation	Site Visits	Discussion	Brain storm	E-Learning	Self-learning	Modeling and simulation
CLO12	√	-	-	-	-	-	-	-	-	√	√	-
CLO16	√	-	-	√	-	-	-	-	-	-	√	-

6.Students' Assessment

6.1 Students' Assessment Method

No.	Assessment Method	LOs
1	Attendance	----------
2	Mid Term Exam	CLO16 -CLO12
3	Research	CLO16
4	Final Exam	CLO16 -CLO12

6.2 Assessment Schedule

No	Assessment Method	Weeks
1	Attendance	weekly
2	Mid Term Exam	9
3	Research	4,6,11,13
4	Written Exam	16

6.3 Weighting of Assessments					
	Assessment Method	**Weights%**	**Weights**	**Weights%**	**Weights**
Teacher Opinion	Mid Term Exam	50	50	20	20
	Research			30	30
Final Exam	Written exam	50	50	50	50
Total		100	100	100	100

7. List of References

[1] Morgan, K. & McCart A. (2015). Technical Writing Process. (3d Edition). Publisher : Technical Writing Process. ISBN-10 : 0994169310

[2] Alley,M. (2018). The Craft of Scientific Writing.(4th edition). Publisher : Springer. ISBN-10 : 1441982876

[3] Paul F. & Jeremy H.(2003)Writing Engineering Specifications (2nd Edition) Routledge. ISBN : 0415263026

8. Facilities required for teaching and learning

Lecture hall
White board
Data show

9. Matrix of Course Content with Course LO's

Topics	Aim	LO's
Definition of technical writing and Overview of International Database for scientific research	1	CLO12 -CLO16
Elements of Ethics in Scientific Writing and levels of plagiarism	1	CLO16
Styles of writing	1	CLO16
Steps of technical writing	1	CLO12 -CLO16
Elements of technical writing	1	CLO12 -CLO16
Paper Structure I	1	CLO16
Paper Structure II	1	CLO12
Structure of Figures	1	CLO12
Structure of Tables	1	CLO12 -CLO16
Abbreviations, Formatting	1	CLO16
How to write References	1	CLO12 -CLO16
Resume writing	1	CLO12 -CLO16

13	Presentation Skills I	1	CLO12 -CLO16
14	Presentation Skills II	1	CLO12 -CLO16

10. Matrix of Program LOs with Course LOs

Program LOs		Course LOs	
PLO5	Practice research techniques and methods of investigation as an inherent part of learning.	CLO12	Practice research techniques and methods of investigation as an inherent part of learning.
PLO8	Communicate effectively verbally and in writing by Selecting the most appropriate form in which to present information	CLO16	Communicate effectively verbally and in writing by Selecting the most appropriate form in which to present information

Title	Name	Signature
Course coordinator	**Dr. Yasmin Talaat Ismail**	
Head of Department	**Assoc Prof. Dr. Reham Othman**	
Date of Approval	**1/10/2022**	

برنامج الهندسة المعمارية
المعهد العالي للهندسة والتكنولوجيا
بالتجمع الخامس

Course Specification

Course Code: ARE 1203 **Course Title: History of Architecture 1**

1. Basic information

Program Title	Architecture Engineering			
Department offering the program	Architecture Engineering			
Department offering the course	Architecture Engineering			
Course Code	ARE 1203			
Year/level	first year / Second Level			
Specialization	**Major**			
Teaching Hours	Lectures	Tutorial	Practical	Total
	4	-	-	4

2. Course Aims

No.	Aim
1	Provide the students with cultural knowledge of history, fine arts, and local and international heritage, to design and implement more inclusive architectural and urban projects. (AM3.1)

3. Course Learning Outcomes (CLOs)

CLO21	Analyse the history of architecture that meet aesthetic and technical elements of Architecture
CLO22	use Adequate knowledge of history, related fine arts, culture, local heritage, technologies and human sciences

4. Course Contents

Topics	Week
Introduction to the history of architecture through the ages	1
Architectural thought and design philosophy throughout the ages	2
Identity of different peoples + handing over models of pre-civilization buildings	3
Research and discussion about ancient civilizations	4

Ancient Civilizations and its architectural thoughts	5
The ancient Egyptian civilization and the factors affecting it	6
Ancient Egyptian Civilization (Funeral Buildings)	7
Research for ancient Egyptian Civilization and its buildings	8
Ancient Egyptian Civilization principles	10
Ancient Egyptian Civilization (Religious Buildings)	11
Classical Civilizations (Greek - Roman) and its thoughts	12
Architecture in the era of the dawn of Christianity its architecture thoughts	13
Research and discussion about Byzantine	14
Byzantine architecture and its architecture thoughts	15

5. Teaching and Learning methods

Course learning Outcomes (LOs)	Teaching and Learning Methods											
	Lectures	Assignment	Labs	Research and Reports	Projects	Presentation	Site Visits	Discussion and Dialogue	Brain storm	E-Learning	Self-learning	Modeling and Simulation
CLO21	√	√	-	√	-	√	-	√	√	-	-	-
CLO22	√	√	-	√	-	√	-	√	√	-	√	-

6. Students' Assessment

6.1 Students' Assessment Method

No.	Assessment Method	Los
1	Attendance	-
2	Written exam	CLO21-CLO22
3	Discussions	CLO21-CLO22
4	Mid Term Exam	CLO21-CLO22
5	Class works	CLO21-CLO22
6	Projects	-
7	Researches	CLO21-CLO22
8	Reports	-
9	Presentations	CLO21-CLO22
10	Quiz	-
11	Skiz	-

6.2 Assessment Schedule		
No.	**Assessment Method**	**Weeks**
1	Attendance	-
2	Written exam	16
3	Discussions	Weekly
4	Mid Term Exam	9
5	Class works	twice
6	Projects	-
7	Researches	3Times
8	Reports	-
9	Presentations	3Times
10	Quiz	-
11	Skiz	-

6.3 Weighting of Assessments					
	Assessment Method	**Weights%**	**Weights**	**Weights%**	**Weights**
Teacher Opinion	Discussions	%50	50	%5	5
	Class works			%5	5
	Researches			%10	10
	Presentations			%10	10
	Mid-term exam			%20	20
Final Exam	Written exam	%50	50	%50	50
Total		%100	100	%100	100

7. List of References

- رنا اسماعيل اليسير,(2019),تاريخ العمارة بين القديم والحديث,دار اثراء للنشر والتوزيع, العدد الرابع ISBN 9957780128.
- قبيلة المالكى, (2016) تاريخ العمارة عبر العصور, دار المنهج للنشر والتوزيع,عمان,العدد السابع عشر.
- توفيق عبدالجواد,(2008), تاريخ العمارة والفنون فى العصور الاولى, متبة الانجلو المصرية.
- توفيق عبدالجواد, (1984), العمارة وحضارة مصر الفرعونية,مكتبةالانجلو المصرية.

8. Facilities required for teaching and learning

Lecture/Classroom
White board
Data show

9. Matrix of Course Content with Course LO's

Topics	Aim	LO's
Introduction to the history of architecture through the ages	1	CLO21-CLO22
Architectural thought and design philosophy throughout the ages	1	CLO21-CLO22
Identity of different peoples + handing over models of pre-civilization buildings	1	CLO21-CLO22
Research and discussion about ancient civilizations	1	CLO21-CLO22
Ancient Civilizations and its architectural thoughts	1	CLO21
The ancient Egyptian civilization and the factors affecting it	1	CLO21
Ancient Egyptian Civilization (Funeral Buildings)	1	CLO21-CLO22
research for ancient Egyptian Civilization and its buildings	1	CLO21-CLO22
Ancient Egyptian Civilization principles	1	CLO21-CLO22
Ancient Egyptian Civilization (Religious Buildings)	1	CLO21-CLO22
Classical Civilizations (Greek - Roman) and its thoughts	1	CLO21-CLO22
Architecture in the era of the dawn of Christianity its architecture thoughts	1	CLO22
Research and discussion about Byzantine	1	CLO21-CLO22
Byzantine architecture and its architecture thoughts	1	CLO21-CLO22

10. Matrix of Program LOs with Course Los

Program LOs		Course Los	
PLO11	Create architectural, urban and planning designs that meet aesthetic and technical requirements using Adequate knowledge of history, related fine arts, culture, local heritage, technologies and human sciences.	CLO21	Analyse the history of architecture that meet aesthetic and technical elements of Architecture
		CLO22	use Adequate knowledge of history, related fine arts, culture, local heritage, technologies and human sciences

Title	Name	Signature
Course coordinator	**Dr. Hend Ali**	

Head of Department	**Assocc. Prof. Reham Othman**	
Date of Approval	**1/10/2022**	

برنامج الهندسة المعمارية
المعهد العالي للهندسة والتكنولوجيا
بالتجمع الخامس

Course Specification

Course Code: ARE 1201 **Course Title: Building construction 2**

1. Basic information

Program Title	Architecture Engineering			
Department offering the program	Architecture Engineering			
Department offering the course	Architecture Engineering			
Course Code	ARE 1201			
Year/level	first year / Second Level			
Specialization	**Major**			
Teaching Hours	Lectures	Tutorial	Practical	Total
	2	3	-	5

2. Course Aims

No.	Aim
1	Provide the students with the capacity to know types of building finishing and their ability to choose the suitable to building (AM5.1)

3. Course Learning Outcomes (CLOs)

CLO26	Categories the types of finishing in building
CLO27	Choose the suitable finishing in building.

4. Course Contents

Topics	Week
Introduction about stairs and its types	1
Illustrated stairs in Building and its structural systems	2
Illustrated how to draw plans of stairs in Building and its structural systems	3
Illustrated how to draw sectional of stairs in Building and its structural systems	4
Explain special modeling of stairs	5
Illustrated Damp proofing, Heat and sound insulation,	6
Illustrated how to draw Expansion and settlement joints	7
Illustrated Carpentry work in the building (doors-windows) details .	8

How to draw Carpentry work in the building (doors-windows) details .	10
Discussion about finishing details	11
Wooden floor details and construction	12
Illustrated architectural sanitary drawings	13
Illustrated principles of architectural drawings	14
follow up project presentation	15

5. Teaching and Learning methods

Course learning Outcomes (CLOs)	Teaching and Learning Methods											
	Lectures	Assignment	Labs	Research and Reports	Projects	Presentation	Site Visits	Discussion and Dialogue	Brain storm	E-Learning	Self-learning	Modeling and Simulation
CLO26	√	√	-	√	-	√	-	√	√	-	√	-
CLO27	√	√	-	√	-	-	-	-	√	-	-	-

6. Students' Assessment

6.1 Students' Assessment Method	
Assessment Method	**Los**
Attendance	-
Written exam	CLO26 -CLO27
Discussions	CLO26-CLO27
Mid Term Exam	CLO26
Class works	CLO26 -CLO27
Projects	-
Researches	CLO26 -CLO27
Reports	-
Presentations	CLO26 -CLO27
Laboratory	-
Quiz/Skiz	-

6.2 Assessment Schedule

No.	Assessment Method	Weeks
1	Attendance	-
2	Written exam	16
3	Discussions	Weekly
4	Mid Term Exam	9
5	Class works	weekly
6	Projects	-

7	Researches	6-12
8	Reports	-
9	Presentations	6-12
10	Quiz	-
11	Skiz	-

6.3 Weighting of Assessments

	Assessment Method	Weights%	Weights	Weights%	Weights
Teacher Opinion	Discussions	%60	60	%3	3
	Class works			%12	12
	Researches			%3	3
	Presentations			%2	2
	Mid-term exam			%20	20
Final Exam	Written exam	%40	40	%40	40
Total		%100	100	%100	100

7. List of References

- DAVID CHAPELL & ANDREW WILLS,(2019),” The Architect in Practice ”RIBA, New york, Wiley-Blackwell ,11TH Edition ISBN 13 978-1118907733
- Guedi Capeluto, Carlos Ernesto Ochoa,(2017), Intelligent Envelopes for High-Performance Buildings, Design and Strategy ,Springer Cham,1st Edition, ISBN13 978-3319392547.
- Wilhelm, N.E. (2014). Building Construction. In: Selin, H. (eds) Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures. Springer,6TH ed, Jones & Bartlett Learning,ISBN13 978-1284177312.
- Edward Allen , Joseph Iano(2019); Fundamentals of Building Construction: Materials and Methods, Wiley, 7th Ed, ISBN13978-1119446194.
- Dennis J. Hall, Nina M. Giglio;(2016), Architectural Graphic Standards, Mitchell, American Institute of ArchitectS, McGraw Hill ,12th Ed, ISBN13 978-0071772938.
- محمود احمد على,(2021) , سلسلة دليلك فى عالم التنفيذ الجزء الاول والثانو دار الكتب العلمية للنشر والتوزيع, القاهرة.

8. Facilities required for teaching and learning

Lecture/Classroom
White board
Data show

9. Matrix of Course Content with Course LO's

Topics	Aim	LO's
Introduction about stairs and its types	1	CLO26
Illustrated stairs in Building and its structural systems	1	CLO26
Illustrated how to draw plans of stairs in Building and its structural systems	1	CLO26-CLO27
Illustrated how to draw sectional of stairs in Building and its structural systems	1	CLO26-CLO27
Explain special modeling of stairs	1	CLO27
Illustrated Damp proofing, Heat and sound insulation,	1	CLO26-CLO27
Illustrated how to draw Expansion and settlement joints	1	CLO26-CLO27
Illustrated Carpentry work in the building (doors-windows) details .	1	CLO26
How to draw Carpentry work in the building (doors-windows) details.	1	CLO26-CLO27
Discussion about finishing details	1	CLO26-CLO27
Wooden floor details and construction	1	CLO26-CLO27
Illustrated architectural sanitary drawings	1	CLO26-CLO27
Illustrated principles of architectural drawings	1	CLO26-CLO27
follow up project presentation		CLO26-CLO27

10. Matrix of Program PLOs with Course CLos

Program PLOs		Course LOs	
PLO13	Preparing environmentally responsible designs to preserve and rehabilitate the environment through an understanding of the structural design, construction, technology used and associated engineering problems Building designs.	CLO26	Categories the types of finishing in building
		CLO27	Choose the suitable finishing in building.

Title	Name	Signature
Course coordinator	**Dr. Hend Ali**	

Head of Department	**Assocc. Prof. Reham Othman**	
Date of Approval	**1/10/2022**	

برنامج الهندسة المعمارية
المعهد العالي للهندسة والتكنولوجيا
بالتجمع الخامس

Course Specification

Course Code: ARE 1202 **Course Title: Architectural Design (1)**

1. Basic information

Program Title	Architecture Engineering			
Department offering the program	Architecture Engineering			
Department offering the course	Architecture Engineering			
Course Code	ARE 1202			
Year/level	First year /Second level			
Specialization	**Major**			
Teaching Hours	Lectures	Tutorial	Practical	Total
	-	7	-	7

2. Course Aims

No.	Aim
1	Produce innovative design engineering solutions in architecture engineering design at the local level (AM1.2)
2	Train the students for innovative and creative thinking, describing and solving design problems and requirements (AM2.1)
3	Use principles that ensure meeting the needs of present and future generations in terms of social, cultural and environmental aspects (AM2.2)

3. Course Learning Outcomes (CLOs)

CLO23	Produce designs that meet the requirements of building users
CLO24	Deal with the relation between people, buildings, and their surrounding environment
CLO25	Produce designs with the scale of humanity and its needs

4. Course Contents

Topics	Week
Introduction of the project	1
Research (Analysis of Similar projects) + Skiz for zoning	2
Layout of the project to show circulation and main elements.	3
How to deal with simple projects which has simple constrains (layout and pre- plan)	4-5

Emphasize design integrations with surrounding environment. (layout and pre- plan)	6
Relations between spaces in building (plans)	7
Sections and heights of building (huminites scale)	8
Skiz (Layout + Ground and first floor plan)	9
Matching of plans – form -sections	10
Elevations and respect the location style	11
Presentation principles for the project	12
Match the whole project	13
Semifinal project	14
Final project	15

5. Teaching and Learning methods

Course learning Outcomes (LOs)	Teaching and Learning Methods											
	Lectures	Assignment	Labs	Research and Reports	Projects	Presentation	Site Visits	Discussion and Dialogue	Brain storm	E-Learning	Self-learning	Modeling and Simulation
CLO23	√	-	-	-	√	-	-	√	-	-	√	-
CLO24	√	-	-	√	√	√	-	√	-	-	-	-
CLO25	√	-	-	-	√	-	-	√	-	-	√	-

6. Students' Assessment

6.1 Students' Assessment Method

Assessment Method	LOs
Attendance	-
written exam	CLO23-CLO24-CLO25
Discussions	CLO23-CLO24-CLO25
Mid Term Exam	CLO23-CLO24-CLO25
Class works	-
Projects	CLO23-CLO24-CLO25
Researches	CLO24
Reports	-
Presentations	CLO24
Quiz	-
Skiz	CLO23-CLO24-CLO25

6.2 Assessment Schedule

No.	Assessment Method	Weeks
1	Attendance	-

2	Written exam	16
3	Discussions	Weekly
4	Mid Term Exam	9
5	Class works	-
6	Projects	Weekly
7	Researches	2
8	Reports	-
9	Presentations	2-14-15
10	Quiz	-
11	Skiz	6-11

6.3 Weighting of Assessments

	Assessment Method	Weights%	Weights	Weights%	Weights
Teacher Opinion	Discussions	%60	60	%10	10
	Researches			%5	5
	Presentation			%5	5
	Project			%15	15
	Skiz			%5	5
	Mid-term exam			%20	20
Final Exam	Written exam	%40	40	%40	40
Total		%100	100	%100	100

7. List of References

- Joseph De Chiara (Author, Editor), Michael J. Crosbie (Author, Editor),Time-Saver Standards for Building Types 4th Edition , ISBN: 0070163871
- Ernst Neufert (Author), Peter Neufert (Author) ,Bousmaha Baiche (Editor), Nicholas Walliman(Editor), "Neufert s Architects Data 4th Edition", published by Wiley–Blackwell, 2012, ISBN: 9781405192538
- FRANCIS D. K. CHING, "FORM, SPACE, AND ORDER", Fourth Edition, 2020.
- STEVEN P. JUROSZEK, "Design Drawing", Third Edition, 2020, ISBN: 9780471752165.

8. Facilities required for teaching and learning

Lecture/Classroom
White board
Data show

9.	Matrix of Course Content with Course LO's	
Topics	**Aim**	**LO's**

Introduction of the project	2	CLO24
Research (Analysis of Similar projects) + Skiz for zoning	2	CLO24
Layout of the project to show circulation and main elements.	1-2-3	CLO24
How to deal with simple projects which has simple constrains (layout and pre- plan)	1-2-3	CLO23- CLO25
Emphasize design integrations with surrounding environment. (layout and pre-plan)	1-2-3	CLO22
Relations between spaces in building (plans)	1-2-3	CLO23-CLO24-CLO25
Skiz (Layout + Ground and first floor plan)	1-2-3	CLO23-CLO24-CLO25
Sections and heights of building (huminites scale)	1-2-3	CLO23-CLO24-CLO25
Matching of plans – form -sections	1-2-3	CLO23-CLO24-CLO25
Elevations and respect the location style	1-2-3	CLO23-CLO24-CLO25
Presentation principles for the project	1-2-3	CLO23-CLO24-CLO25
Match the whole project	1-2-3	CLO23-CLO24-CLO25
Semifinal project	1-2-3	CLO23-CLO24-CLO25
Final project	1-2-3	CLO23-CLO24-CLO25

10. Matrix of Program LOs with Course LOs

Program LOs		Course LOs	
PLO12	Produce designs that meet the requirements of building users by understanding the relationship between people and buildings, and between the buildings and their surrounding environment, with the necessity of linking the buildings and the spaces between them to the scale of humanity and its needs.	CLO23	Produce designs that meet the requirements of building users
		CLO24	Deal with the relation between people, buildings, and their surrounding environment
		CLO25	Produce designs with the scale of humanity and its needs

Title	Name	Signature
Course coordinator	**Assocc. Prof. Reham Othman**	
Head of Department	**Assocc. Prof. Reham Othman**	

Date of Approval	**1/10/2022**

Course Specification

Course Code: CVE 1231 **Course Title: Theory of structure**

1. Basic information

Program Title	Architecture Engineering Program			
Department offering the program	Architecture Engineering Program			
Department offering the course	Civil Engineering Department			
Course Code	CVE 1231			
Year/level	First year / Second level (1st Semester)			
Specialization	**Minor**			
Teaching Hours	Lectures	Tutorial	Practical	Total
	4	2	-	6

2. Course Aims

No.	Aim
1	Train the students for solving problems of structure analysis (AM2.1).
2	Provide the students the knowledge and expertise to analysis of structure using several techniques (AM3.1).

3. Learning Outcomes (CLOs)

Clo1	Identify and formulate complex engineering problems by applying engineering fundamentals.
Clo2	Solve complex engineering problems by applying basic science, and mathematics.

4. Course Contents

Topics	Week
Introduction theory of structure, and stability equations	1
Determination of reactions for beams without intermediate hinges.	2
Determination of reactions for beams with intermediate hinges	3
Determination of internal forces for beams without intermediate hinges.	4
Determination of internal forces for beams with intermediate hinges.	5

Determination of reactions for Frames without inclined members.	6
Determination of reactions for Frames with inclined members.	7
Determination of internal forces for Frames without inclined members.	8
Determination of internal forces for Frames with inclined members.	10
Determination of reactions for trusses	11
Define the force for all the truss members by goint method	12
Define the force for all the truss members by section method	13-14
Revision	15

5. Teaching and Learning methods

Course learning Outcomes (LOs)	Teaching and Learning Methods											
	Lectures	Assignment	Labs	Research and Reports	Projects	Presentation	Site Visits	Discussion and Dialogue	Brain storm	E-Learning	Self-learning	Modeling and Simulation
CLO1	√	√		√								
CLO2	√	√										

6. Students' Assessment

6.1 Students' Assessment Method

No.	Assessment Method	CLos
1	Attendance	-------
2	written exam	Clo1, clo2
3	Discussions	-
4	Mid Term Exam	Clo1, clo2
5	Class works	-
6	Projects	-
7	Researches	-
8	Reports	Clo1, clo2
9	Presentations	-
10	Quiz	Clo1, clo2
11	Skiz	-

6.2 Assessment Schedule

No.	Assessment Method	Weeks

1	Attendance	Weekly
2	Written exam	16
3	Discussions	-
4	Mid Term Exam	9
5	Class works	-
6	Projects	-
7	Researches	-
8	Reports	Bi-weekly
9	Presentations	-
10	Quiz	4 & 10
11	Skiz	-

6.3 Weighting of Assessments

	Assessment Method	Weights%	Weights	Weights%	Weights
Teacher Opinion	Reports / sheets	40%	40	10%	10
	Quiz			10%	10
	Mid-term exam			20%	20
Final Exam	Written exam	60%	60	60%	60%
Total		100%	100	%100	100

7. List of References

[1] Farkas, József, and Károly Jármai. Analysis and optimum design of metal structures. CRC Press, 2020.
[2] Megson, Thomas Henry Gordon. Structural and stress analysis. Butterworth-Heinemann, 2019.
[3] Kassimali, Aslam. Structural analysis. Cengage Learning, 2018.
[4] El Dakhekhni, Theory of Structures.
[5] Ramamrutham, Hand Book of Civil Engineering.
[6] West, Fundamentals of Structural Analsis.

8. Facilities required for teaching and learning

Lecture/Classroom
White board
Data show

9.Matrix of Course Content with Course LO's

Topics	Aim	Los
Introduction theory of structure, and stability equations	1	Clo1, clo2
Determination of reactions for beams without intermediate hinges.	1-2	Clo1, clo2
Determination of reactions for beams with intermediate hinges	1-2	Clo1, clo2
Determination of internal forces for beams without intermediate hinges.	1-2	Clo1, clo2
Determination of internal forces for beams with intermediate hinges.	2	Clo1, clo2
Determination of reactions for Frames without inclined members.	2	Clo1, clo2
Determination of reactions for Frames with inclined members.	2	Clo1, clo2
Determination of internal forces for Frames without inclined members.	2	Clo1, clo2
Determination of internal forces for Frames with inclined members.	2	Clo1, clo2
Determination of reactions for trusses	2	Clo1, clo2
Define the force for all the truss members by goint method	2	Clo1, clo2
Define the force for all the truss members by section method	2	Clo1, clo2
Revision	1-2	Clo1, clo2

9. Matrix of Program LOs with Course Los

Program Los		Course Los	
Plo1	Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.	Clo1	Identify and formulate complex engineering problems by applying engineering fundamentals.
		Clo2	Solve complex engineering problems by applying basic science, and mathematics.

Title	Name	Signature
Course Coordinator	**DR. Nesrin Ali.**	
Head of Department	**Prof. Dr. Reham Othman.**	

Date of Approval	**1-10-2022**

Course Specification

Course Code: Are 1204 Course Title: Environmental Design & Control

1. Basic information

Program Title	Architecture Engineering			
Department offering the program	Architecture Engineering			
Department offering the course	Architecture Engineering			
Course Code	ARE 1204			
Year/level	first year /Second Level			
Specialization	Major			
Teaching Hours	Lectures	Tutorial	Practical	Total
	1	2	0	3

2. Course Aims

No.	Aim
1	Provide the students with the capacity to prepare flexible and ecologically responsible designs by enabling them to conceive the basic concepts of sustainable architecture (AM5.1)

3. Course Learning Outcomes (CLOs)

CLO9	Utilize contemporary technologies, codes of practice and standards.
CLO10	Utilize the quality guidelines, health and safety requirements, environmental issues.
CLO26	Prepare environmentally responsible designs to preserve and rehabilitate the environment

4. Course Contents

Topics	Week
Introduction to Bio climatic architecture	1
classification of climatic zones	2
human thermal comfort	3
Environmental factors effecting architecture design: Sun :	4
Solar path, Sun Angles, Solar Azimuth	5
Environmental factors effecting architecture design: Sun :	6
Environmental factors effecting architecture design: wind	7

Environmental factors effecting architecture design: humidity	8
Environmental Challenges & Sustainable Solutions	10
Fundamental science and engineering principles of various green technologies employed for water, waste and energy sectors	11
Best practices in buildings regarding environmental design	12
Energy and Environmental Design rating systems LEED ,BAREAM	13
Energy and Environmental Design rating systems : ,WELL & GREEN STAR Green Pyramid, QSAS, PRS & ARZ	14
Energy and Environmental Design rating systems : QSAS, PRS & ARZ	15

5. Teaching and Learning methods

Course learning Outcomes (LOs)	Teaching and Learning Methods											
	Lectures	Assignment	Labs	Research	Projects	Presentation	Site Visits	Discussion	Brain storm	E-Learning	Self-learning	Modeling and simulation
CLO9	√		-	√	-		-	√	√	√	√	
CLO10	√		-		-	√	-		√			
CLO26	√	√	-	√	-	√	-					

6. Students' Assessment

6.1 Students' Assessment Method

No.	Assessment Method	LOs
1	Attendance	----------
2	Mid Term Exam	CLO9-CLO10-CLO26
3	Researches	CLO9-CLO10
4	Presentations	CLO26
5	Written Exam	CLO9-CLO10-CLO26

6.2 Assessment Schedule

Assessment Method	Weeks
Attendance	weekly
Mid Term Exam	9
Researches	8,14
Presentations	15
Written Exam	16

6.3 Weighting of Assessments

	Assessment Method	Weights%	Weights	Weights%	Weights
Teacher Opinion	Mid Term Exam	50	50	20	20
	Researches			20	20
	Presentations			10	10
Final Exam	Written exam	50	50	50	50
Total		100	100	100	100

7. List of References

[1] Tracy B., Vicky L. (2016). Design for Sustainability: A Practical Approach, Taylor & Francis Press, ISBN: 0-080-43004

[2] Catalina S., John L. (2017). Smart Energy Control Systems for Sustainable Buildings Guide to Green Building Rating Systems , Springer International Publishing

[3] Blokdyk G. (2021). Control Environment A Complete Guide. 5STARCooks ,1st edition, ISBN-10 : 0655948600

8. Facilities required for teaching and learning

Lecture hall
White board
Data show

9.Matrix of Course Content with Course LO's

Topics	Aim	LO's
Introduction to Bio climatic architecture	1	CLO9-CLO10-CLO26
classification of climatic zones	1	CLO10-CLO26
human thermal comfort	1	CLO9-CLO10
Environmental factors effecting architecture design	1	CLO9-CLO10-CLO26
Solar path, Sun Angles, Solar Azimuth	1	CLO9-CLO10-CLO26
Environmental factors effecting architecture design: Sun :	1	CLO9-CLO10-CLO26
Environmental factors effecting architecture design: wind	1	CLO9-CLO10-CLO26
Environmental factors effecting architecture design: humidity	1	CLO9-CLO10-CLO26
Environmental Challenges & Sustainable Solutions	1	CLO10-CLO26
Fundamental science and engineering principles of various green technologies employed for water, waste and energy sectors	1	CLO9-CLO10-CLO26

Best practices in buildings regarding environmental design	1	CLO9-CLO10
Energy and Environmental Design rating systems LEED, BAREAM	1	CLO9-CLO10-CLO26
Energy and Environmental Design rating systems: WELL & GREEN STAR Green Pyramid, QSAS, PRS & ARZ	1	CLO9-CLO10-CLO26

9. Matrix of Program LOs with Course LOs

Program LOs		Course LOs	
PLO4	Utilize contemporary technologies, and environmental issues	CLO9	Utilize contemporary technologies, codes of practice and standards.
		CLO10	Utilize the quality guidelines, health and safety requirements, environmental issues.
PLO13	Preparing environmentally responsible designs to preserve and rehabilitate the environment through an understanding of the environmental design	CLO26	Prepare environmentally responsible designs to preserve and rehabilitate the environment

Title	Name	Signature
Course coordinator	**Dr. Yasmin Talaat Ismail**	
Head of Department	**Assoc Prof. Dr. Reham Othman**	
Date of Approval	**1/10/2022**	

برنامج الهندسة المعمارية
المعهد العالي للهندسة والتكنولوجيا
بالتجمع الخامس