



Architecture Engineering

Courses Specification



Ministry of Higher Education Higher Institute of Engineering and Technology at Mancalla Established by Ministerial Resolution No. (2354) of 2019 Architectural Engineering Program



1. Basic Information:

Course T	itle (according to the	bylaw)	Engineerin	g Mathematics (1)		
Course C	ode (according to the	bylaw)	BS011			
Department/s participating in offering the course			Basic Science Department			
Number	of credit hours/points	of the course (ac	cording to the bylaw)			
Lecture Tutorial /			/ Laboratory	Total contact		
	2		2	4		
Course	Гуре		□ Compulsory	☐ Elective		
Academ	ic level at which the o	ourse is taught	Preparatory Year			
Academ	ic Program		All Program			
Faculty/	Institute		Higher Institute of Engineering and Technolog at Manzalla			
Univers	ity/Academy		Manzalla Academy			
Name of Course Coordinator			Dr. Hamouda Abu Eldahab			
Course Specification Approval Date		16 August 2025				
Course :	Specification Approve	il	Institute Council ?	No. (12) on 16 August 2025		

2. Course Overview (Brief summary of scientific content)

Differentiation and Integration: Function Concept - Function Classification - Inverse Function - Elementary Functions (Trigonometric, logarithmic, Exponential, Hyperbolic and its inverse functions)-Limits - limits theorem - mean value theorem-Derivation, derivation rules - First function derivations - Series theorem - Barometric derivation - higher order derivation - partial derivation - applications on the differentiation - l'Hopital rule -Taylor expansion - Maglauten Series - Curve drawing - Maximum and Minimum values - unlimited integration - integration theorem and properties.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be at				
Code	Text	Code	Text			
		CLOI	Illustrate the concept of function and its classification for different types such as trigonometric, exponential, logarithmic functions and polynomials. Apply the concepts of linear algebra.			
		CLO2	Identify the concepts of limits and continuity.			
Identify, formulate, and solve complex engineering problems by	CLO3	Illustrate the derivative of trigonometric, exponential logarithmic functions and polynomials.				
AL.	A1. applying engineering fundamentals, basic science, and mathematics.	CLO4	Apply the binomial theorem to expand algebraic expressions, and Perform the algebraic operations on complex numbers.			
	CLO5	Explain the mathematical operations of matrices and recognize the solutions of linear systems.				
		CLO6	Apply mathematical techniques for modeling, solving and analyzing real problems.			

4. Teaching and Learning Methods

□ Face to face lecture	☐ Site visit
☐ Online education	Self-learning
□ Tutorial / Exercise	☐ Presentation
□ Group discussion	Mini project
☐ Laboratory	Research and reporting (self-learning) Bruidsforming

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Course Schedule

			Expected number of the Learning Hours					
No, of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discu ssion groups/)	Training (Practical /Clinical/)	Self- learning (Tasks/ Assignments / Projects/)	Other (to be determ ned)		
1-2	Revision in the basic definitions of mathematics. Function Concept and classification.	10	4	4	2			
3-4	Limits - limits theorem. Continuity.	10	4	4	2			
5	Elementary Functions (Trigonometric, logarithmic, Exponential, Hyperbolic and its inverse functions)	5	2	2	E			
6	Derivation, derivation rules - First function derivations, higher order derivation, Explicit and parametric differentiation.	5	2	2	ī			
7	Binomial theorem	5	2	2	1			
8		Mid	Term Exam					
9	Theory of equations	5	2	2	1			
10	Partial fractions.	5	2	2	1			
JE:	Complex numbers.	5	2	2	1			
12	Determinates and Solving linear system.	5	2	2	1			
13	Matrices concept, operation on matrices, Inverse of matrix.			2	1			
14-15	Applications on the differentiation. Integration theorem and properties.			4	2			
16		(a) EP	inal Exam					

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5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	9	6%
2.	Mid-Term Examination	8	27	18%
3.	Final Examination	(As Schedule)	90	60%
4.	Lab Exam	(As Schedule)		10.00
5.	Activities and assignments	Every week	24	16%
6.	Final Oral Exam (if exists)	and y week	-	10%

6. Learning Resources and Supportive Facilities

100	The main (essential) reference			
Learning resources	for the course (must be written in full according to the scientific documentation method)	Marvin L., Bittinger, David J. Ellenbogen, Scoot A. Surgent, Calculus and its applicationsm Tenth Edition, Pearson Education, 2012.		
(books,	Other References	Lecture notes.		
scientific references, etc.) *	Electronic Sources (Links must be added)	Website		
	Learning Platforms (Links must be added)	https://tms.manzalancademy.edu.eg/		
	Other (to be mentioned)			
o I				
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.		
equipment	Supplies	Whiteboards		
for	Electronic Programs	Microsoft Office program, Mathematica		
teaching	Skill Labs/ Simulators	- Program manufamilien		
NO. C. (1) (1) (1) (1) (1)				
and	Virtual Entis			

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Lec.	T/L		Course	Learning	outcom	es "CLO"	5 ²⁹
	Topics	Lieu.	1715	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6
1-2	Revision in the basic definitions of mathematics. Function Concept and classification.	4	4	х					
3-4	Limits - limits theorem. Continuity,	4	4	x	х				
5	Elementary Functions (Trigonometric, logarithmic, Exponential, Hyperbolic and its inverse functions)	2	2	х		х			
6	Derivation, derivation rules - First function derivations, higher order derivation, Explicit and parametric differentiation.	2	2	x		х			
3	Binomial theorem	2	2		_		X	-	
8			N	did Term	Exam				
9	Theory of equations	2	2	X		X	_		_
10	Partial fractions,	2	2	X	-		-		
11	Complex numbers.	2	2		-	-	X	-	_
12	Determinates and Solving linear system.	2	2				***	х	Х
13	Matrices concept, operation on matrices, Inverse of matrix.	2	2/		3			х	x
4-15	Applications on the differentiation. Integration theorem and properties.	4		X	3)			
16	2.10.000		180	Final Es	nor A				

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7.2. Teaching and learning matrix with CLOs:

- 11 - 11 - 1 - 1 - 1	Course Learning outcomes "CLO's"							
Teaching and Learning Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO		
Face to face lecture	X	X	X	X	X	X		
Tutorial / Exercise	X	X	X	X	X	X		
Group discussion			X					
Self-Learning	-							
Research and reporting					X	X		
Brain storming	X		X		X			

7.3. Student assessment matrix with CLOs:

t		Cour	urse Learning outcomes "CLO's"						
Assessment Methods	CLO1	CLO2	CLO3	CLO4	CL05	CLO6			
Final written exam	X	X	X	X	X	X			
Mid-term Exam	Х	X	X	X					
Quizzes	X	X	X	X	X	X			
Research assignments	X	X	X		X	X			
In-class questions (formative assessment)	х	х	X	X		х			

Course coordinator:

Name	Signature	Academic Year	
Dr. Humouda Abu Eldahab	Sorts	2025-2026	

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Ouf		2025-2026

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1. Basic Information:

Course Title (according to the bylaw)		3	Physics (1)		
Course Code (according to the bylaw)		BS012			
Department's participating in offering	the course	Basic Sc	cience Department		
Number of credit hours/points of the co	ounie (accord	fing to the bylaw)			
Lecture	Tutorial	/ Laboratory	Total contact		
2	2		.4		
Course Type		○ Compulsory	☐ Elective		
Academic level at which the course is	taught	Preparatory year			
Academic Program		All Program			
Faculty/Institute		Higher Institute of Engineering and Technology (Manzalla			
University/Academy		Manzalla Academy			
Name of Course Coordinator		Prof. Dr. Ali Samir			
Course Specification Approval Date		16 August 2025			
Course Specification Approval		Institute Council No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Material properties - Physical quantities - Standard units and dimensions -periodic motion- mechanical properties for materials -fluid properties - viscosity - surface tension-sound waves - waves in clastic media - Heat and thermodynamics: heat transfer - Gas motion theory - First law of thermodynamics - entropy and second law of thermodynamics - temperature measurements and thermometers.

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3. Course Learning Outcomes CLOs.

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program spees)		Course Learning Outcomes Upon completion of the course, the student will be able to				
Code Text		Code	Text			
Identify, formulate, and solve		CLO1	Demonstrate an ability to understand a systems of units, conversion factors, and dimensions and solve many of examples on its and study the mechanical properties for matter such as stress, strain elasticity, plasticity,etc.			
AL.	AI. complex engineering problems by applying engineering fundamentals, basic science, and mathematics.	CLO2	Illustrate the different types of oscillation and associated concepts such as amplitude, periodic time, frequency and the angular frequency, deduce the relation of mechanical energy of simple harmonic motion, and Study the speed of sound and its associated phenomena.			
		CLOS	List the properties of static fluid and dynamic fluid.			
	Develop and conduct appropriate experimentation and/or simulation,	CLO4	Name the temperature scales, thermometers, quantity of heat and specific heat.			
A2. and evalua	analyze and interpret data, assess, and evaluate findings, and use statistical analyses and objective	CLO5	Rephrase the types thermal expansion, heat transfer and understand the theory of kinetic gases and thermodynamic.			
	engineering judgment to draw conclusions.	CLO6	Perform laboratory experiments about the properties of matter and heat			

4. Teaching and Learning Methods

Face to face lecture

Online education

∑ Tutorial / Exercise

Group discussion

□ Laboratory

Sue visit

Self-learning

Presentation

Mini project

Research and reporting (self-learning)

□ Brainstorming

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Course Schedule

			Expected	Expected number of the Learning Hours					
No. of Scientific content of the course the (Course Topics) Week	Total Weekly Hours	Theoretical teaching (lectures/discu ssion groups/)	Training (Practical /Clinical/)	Self- learning (Tasks/ Assignments / Projects/)	Other (to be determ ned)				
	Units and Dimensions:								
1-2	(Material properties-Physical quantities-conversion factors)	12	4	4	4				
	Mechanical properties of matter :					_			
3-4	(stress-strain-Hook law- modulus- factor of safety)	10	4	4	2				
	Periodic motion and	-				-			
5-6	Oscillations-simple harmonic motion-damped and forced oscillation)	TI.	4	4	3				
7	Sound waves - waves in elastic media-Doppler effect - police radar)	5	2	2	2				
8		М	id Term						
9-10	Properties of fluids-viscosity- tension surface – Bernoull's principle)	10	4	4	2				
11-12	Thermometers and Quantity of heat: (Thermometers- quantity and units of heat – heat capacity calorimetry – latent heat)	10		4	2				
13-14	Thermal Expansion and Beat transfer; (linear, area and volume expansion- convection-radiation conduction)	18/11		4	4				

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			Expected number of the Learning Hours					
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discu ssion groups/)	Training (Practical /Clinical/)	Self- learning (Tasks/ Assignments / Projects/)	Other (to be determined)		
15	Theory of gases and thermodynamic: (ideal gas law- first and second law of thermodynamic-heat engines)	5	2	2	1			
16		Fina	term exam					

5. Methods of students' assessment

Assessment Methods *	thods * (Week Number)		Percentage of Total Course Marks	
Quizzes	6, 11	5	3,3%	
Mid-Term Examination	8	20	13.3%	
Final Examination	(As Schedule)	90	60%	
Lab Exam	(As Schedule)	10	6.7%	
Activities and assignments	Every week	25	16.7%	
Final Oral Exam (if exists)		100	76	
	Quizzes Mid-Term Examination Final Examination Lab Exam Activities and assignments	Assessment Methods * (Week Number) Quizzes 6, 11 Mid-Term Examination 8 Final Examination (As Schedule) Lab Exam (As Schedule) Activities and assignments Every week	Assessment Methods * (Week Number) Scores	

6. Learning Resources and Supportive Pacifities

Learning resources (books, scientific	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Hugh D. Young: Roger A Freedman, University Physics 12E with Modern Physics, 15th Edition, Pearson, 2020.
references, etc.) *	Other References	Scientists and Engineers (6th ed.).

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		Halliday, D, Resnick, R, & Walker, Fundamentals of Physics (8th ed.)
	Electronic Sources (Links must be added)	Website, EKB, Software simulation
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	
	(to be inclinated)	
COMPANY OF THE PARTY OF THE PAR	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
facilities &		
facilities &	Devices/Instruments	Computers with internet access.
facilities & equipment for teaching	Devices/Instruments Supplies	Computers with internet access. Whiteboards and smart boards.
	Devices/Instruments Supplies Electronic Programs	Computers with internet access. Whiteboards and smart boards.

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

7.1 Lecture contents:

Week	Topies	Lec	ec T/L	Lec T/L					"CLO's" s must al	
				CLO1	CLO2	CLO3	CL04	CLO5	CLO6	
1-2	Units and Dimensions: (Material properties- Physical quantities- conversion factors)	1	TO A							

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	THE RESERVE							100	11-2
3-4	Mechanical properties of matter: (stress-strain-Hook law- modulus-factor of safety)	4	4	х					х
5-6	Periodic motion and Oscillations-simple harmonic motion-damped and forced oscillation)	4	4		х				x
7	Sound waves - waves in elastic media-Doppler effect - police radar)	2	2		x				Х
8			Mid	Term Es	cam	-			di la
9-10	Properties of fluids- viscosity- tension surface – Bernoulli's principle)	4	4			x			x
11	Thermometers and Quantity of heat: (Thermometers- quantity and units of heat - heat capacity - calorimetry - latent heat)	2	2			x	I		x
12-13	Thermal Expansion and Heat transfer: (linear, area and volume expansion-convection- radiation -conduction)	4	4	(Court				x	
14-15	Theory of gases and thermodynamic: (ideal gas law- first and second law of	(х	

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	thermodynamic-heat engines)	
16		Final Exam

7.2 Practical Contents:

Week	Topics	Lab	LOs
E	Experiment 1 fine measurements	2	CLO6
2	Experiment 2 simple pendulum	2	CLO ₆
3	Experiment 3 tension surface of liquid	2	CLO ₆
.4	Experiment 4 hook's law	2	CL06
5	Experiment 5 determination of young's modulus	2	CLO6
6	Experiment 6 determination of rigidity modulus	2	CL06
7	Experiment 7 Archimedes' Principle	2	CLO6
8	Mid term		
9	Experiment 8 speed of sound in air	2	CLO6
10	Experiment 9 viscosity of liquid	2	CLO6
11	Experiment 10 specific heat of solid using mixing method	2	CLO6
12	Experiment 11 determination of the melting point of wax	2	CLO6
13	Revision	2	CL06
15	Practical Exam	-	CLO6

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	4.Course Learning outcomes "CLO's" On completing this course, students must able to:									
	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6				
Face to face lecture	X	X	X	X	X	X				
Tutorial / Exercise	Y	X	X	X	X					
Group discussion	107	CA	1	A		X				
Laboratory	TIE!	YA				X				
Self-Learning	V.A.	SERVICE	(B)/4	1						

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Teaching and Learning Methods	4.Course Learning outcomes "CLO's" On completing this course, students must able to:								
	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6			
Research and reporting		711	X						
Brain storming		X			X	X			

7.3. Student assessment matrix with CLOs:

Assessment Methods	 Course Learning outcomes "CLO's" On completing the course, students must able to: 								
	CL01	CLO2	CLO3	CLO4	CLO5	CL06			
Final written exam	X	X	X	X	X				
Mid-term Exam	X	X		X					
Quizzes	X	X	X	X	X				
Research assignments			X		X				
Lab Exam						X			
In-class questions (formative assessment)	X		X		х				

Course coordinator:

Name	Signature	Academic Year
Prof. Dr. Ali Samir	9	2025-2026

Program coordinator:

Name	Signature	Academic Year		
Prof. Dr. Tarek Abu Ouf		2025-2026		

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1. Basic Information:

Course 7	litle (according to the	bylaw)	Me	schanics (1)			
Course (Code (according to th	e bylaw)		BS013			
Departm course	ent/s participating in	's participating in offering the credit hours/points of the course (acc		Basic Science Department			
Number	of credit hours/point	s of the course (ac	cording to the bylaw)				
	Lecture	Tutorial	/ Laboratory	Total contact			
	2		2	4			
Course 7	Уурс		□ Compulsory	☐ Elective			
Academ	ic level at which the	course is taught	Prep	sarutory year			
Academ	ie Program		Al	Il Program			
Faculty/	Institute			Ingineering and Technology Manzalla			
Universi	ty/Academy		Manz	alla Academy			
Name of	Course Coordinator		Prof.	Dr. Attia Aref			
Course S	Specification Approva	I Date	16.4	August 2025			
Course S	Specification Approva	1	Institute Council N	lo. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Engineering Statics: Vectors and spatial Forces - Torque - Couple moment - equilibrium of particle and rigid body - gravity center and geometric center - distributed forces - Applications on beams and hydrostatics - friction and its applications on bolts and beams.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	ogram Outcomes (NARS/ARS) ording to the matrix in the program specs)	Upo	Course Learning Outcomes in completion of the course, the student will be able to:
Code	Text	Code	Text
		CLOI	Replirase states of matter and units of measurements.
		CLO2	Develop the ability to solve resolution of forces in two dimensions.
	Identify, formulate, and solve complex engineering problems by	The state of the s	Explain and study equilibrium of bodies and apply it into trusses.
A1.	applying engineering fundamentals, basic science, and mathematics.	CLO4	Rephrase Theory of Equations and to solve problems on center of gravity.
	A1. applying engineering fundamentals,	CLO5	Show ability to collaborate and communicate with others positively and effectively
		CLO6	Demonstrate willingness to help and assist other colleagues.

4. Teaching and Learning Methods

□ Face to face lecture	☐ Site visit
☐ Online education	⊠ Self-learning
☐ Tutorial / Exercise	□ Presentation
□ Group discussion	☐ Mini project
☐ Laboratory	Research and reporting (self-learning)
	□ Brainstorming

Course Schedule

			Expected number of the Learning Hours						
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discu ssion groups/)	Training (Practical /Clinical/)	Self- learning (Tasks/ Assignments / Projects/)	Other (to be determined)			
1 - 2	Units of measurements, Vectors and spatial Forces	10	4	4	2	-21			
3-4	Resolution of two forces and equilibrium.	10	- 4	4	2				

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			Expected	number of t	he Learning Ho	ors
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discu sxion groups/)	Training (Practical /Clinical/)	Self- learning (Tasks/ Assignments / Projects/)	Other (to be determi ned)
	Torque					
5-6	Forces in 3 dimensions and equilibrium. Distributed forces	10	4	4	2	
7	Moment in 2 dimensions.	5	2	2	î	
8		Mid	Term Exam			
9-10	Moment in 3 dimensions.	10	4	4	2	
11	Couple in two and three dimensions.	5	2	2	1	
12	Equilibrium of bodies.	5	2	2	1	
13	Friction.	5	2	2	1	
14-15	Center of gravity. Applications on beams and hydrostatics	10	4	4	2	
16	The second second	F	inal Exam			

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	6	6%
2.	Mid-Term Examination	8	18	18%
3.	Final Examination	(As Schedule)	60	60%
4.	Lab Exam	(As Schedule)	0	0%
5.	Activities and assignments	Every week	16	16%
6.	Final Oral Exam (if exists)		à	%

6. Learning Resources and Supportive Facilities

Learning	The main (essential) reference for	
resources	the course	Be
(books,	(must be written in full according to the	Co
scientific	scientific documentation method)	6.1

Beer, F. p and Johnston, E. R., "Vector Mechanics for Engineering Dynamics", McGraw-Hill Book Company, USA, 1990.

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references, etc.) *	Other References	Beer, F. p and Johnston, E. R., "Vector Mechanics for Engineering Dynamics", McGraw-Hill Book Company, USA, 1990.		
	Electronic Sources (Links must be added)	Website		
	Learning Platforms (Links must be added)	https://lms.manzalancademy.edu.eg/		
	Other (to be mentioned)			
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.		
equipment	Supplies	Whiteboards and smart boards.		
for	Electronic Programs	Microsoft Office program, Acrobat Reader		
teaching	Skill Labs/ Simulators			
and	Virtual Labs			
learning *	Other (to be mentioned)			

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Lec.	T/L	(Jourse L	earning o	outcomes	"CLO's	**
11,000				CLOI	CLO2	CLO3	CLO4	CLO5	CLO
1-2	Units of measurements. Vectors and spatial Forces	4	4	х	х				
3 - 4	Resolution of two forces and equilibrium. Torque	4	4	x		х			
5-6	Forces in 3 dimensions and equilibrium. Distributed forces	4:	4			x	х		
7	Moment in 2 dimensions.	2	2			X			
8			Mic	Term E	xam				
9-10	Moment in 3 dimensions:	4	4			X			
11	Couple in two and three dimensions.	2	2			х			
12	Equilibrium of bodies.	2	2		X			X	X
13	Friction.	2	2		X			X	X
14-15	Center of gravity, Applications on beams and hydrostatics	4	4	х			х		
16		11	F	inal Exa	m			-	

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7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course Learning outcomes "CLO's"							
reacting and exar mag rections	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6		
Face to face lecture	X	X	X	X	X	X		
Online education								
Tutorial / Exercise	X	X		X				
Group discussion					X			
Self-Learning								
• Presentation				X	x	X		
Brain storming			X					

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLO's"							
Assessment Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6		
Final written exam	X	X	X	X				
Mid-term Exam	X	X	X					
Quizzes	X	X	X					
Research assignments					X	X		
In-class questions (formative assessment)					х	Х		

Course coordinator:

Name		Signature	Academic Year
Prof. Dr. Attia Arcf	Mene		2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Ouf	15	2025-2026

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I. Basic Information:

Course Title (according to the bylaw)	Engineering D	rawing and Projection (1)			
Course Code (according to the bylav	v)	MEC014				
Department/s participating in offering	ig the course	Basic Science Department				
Number of credit hours/points of the	course (accord	ing to the bylaw)				
Lecture Tutorial		Laboratory	Total contact			
3		4	7			
Course Type		□ Compulsory	☐ Elective			
Academic level at which the course	is taught	Preparatory year				
Academic Program		All Program				
Faculty/Institute		Higher Institute of Engineering and Technology a Manzalla				
University/Academy		Manzalla Academy				
Name of Course Coordinator		Dr. Yassin EL Sayod Yassin				
Course Specification Approval Date		16 August 2025				
Course Specification Approval		Institute Council	No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Skills of the engineering drawing- engineering processes- orthogonal projection on two planes- point projection- straight line, and plane-projection of simple bodiesauxiliary projection- sphere, conical and cylindrical- surfaces intersections.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student able to:		
Code	Text	Code	Text	
	Apply engineering design processes to produce cost-effective solutions that meet specified needs with	CLOI	Apply the drawing tools in the correct ways and practice them.	
A3,	consideration for global, cultural, social, economic, environmental,	Cl.02	Identify and define fundamental concepts and principles of engineering drawing and projection.	
		CL04	Utilize various projection methods to create accurate technical drawings.	
		CLO3	Explain and demonstrate the correct uses of engineering drawing tools to the student.	
A8.		CLO5	Explain the significance of scale, dimensioning, and annotation in engineering drawings.	
		CL06	Evaluate different projection techniques and their applications in engineering design and communication.	

Site visit

4. Teaching and Learning Methods

⊠	Face to	face I	ecture)

Online education	Self-learning
------------------	---------------

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□ Group discussion	☐ Mini project
☐ Laboratory	⊠ Research and reporting (self-learning)
	☐ Brainstorming

Course Schedule

			Experted	number of t	he Learning Ho	urs
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discu- ssion groups/)	Training (Practical /Clinical/)	Self- learning (Tasks/ Assignments / Projects/)	Other (to be determ ned)
1-2	Introduction of engineering drawing - Types of engineering drawing - Types of lines and their applications	16	6	8	2	
3-4	Engineering processes	16	6	8	2	
5-6	Descriptive Engineering and Orthogonal projection - Point projections	17	6	8	3	
7	straight line and plane - Projection of simple bodies - auxiliary projection	10	3	4	3	
8		M	lid Term			
9-10	Engineering Individuals for prism, pyramid and cube	18	6	8	4	
11-12	Engineering individuals for Sphere, conical and cylindrical Surface intersections -Projection types - Projection methods -	16	6	8	2	
13-14	Orthogonal and isometric projection treatment- air pollution.	18	6	8	4	
15	Construction of orthographic projection of isometric	10	3	4	3	

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			Expected	number of t	he Learning Ho	ors.
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discu solon groups/)	Training (Practical /Clinical/	Self- learning (Tinks/ Assignments / Projects/)	Other (to be determined)
16		Fina	l term exam			

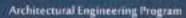
5. Methods of students' assessment

Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
Quizzes	6, 11	11.25	6.43 %
Mid-Term Examination	8	22.5	12.86 %
Final Examination	(As Schedule)	100	57.14 %
Lab Exam	(As Schedule)	-	-%
Activities and assignments	Every week	41.25	23.57%
Final Oral Exam (if exists)	-	25	%
	Quizzes Mid-Term Examination Final Examination Lab Exam Activities and assignments	Assessment Methods (Week Number) Quizzes 6, 11 Mid-Term Examination 8 Final Examination (As Schedule) Lab Exam (As Schedule) Activities and assignments Every week	Quizzes 6, 11 11.25 Mid-Term Examination 8 22.5 Final Examination (As Schedule) 100 Lab Exam (As Schedule) Activities and assignments Every week 41.25 Einel Ord Examination (As Schedule)

6. Learning Resources and Supportive Facilities

Learning	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	K.L.Naraya, Kanniah, and K. VenKata, Machine Drawing, 4 th Edition, 2009.
(books, scientific	Other References	G.R. Nagpal, Machine Drawing, 2th Edition, 2006.
references, etc.) "	Electronic Sources (Links must be added)	AutoCAD
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/

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	Other (to be mentioned)	V.La Kshminarayanan, M.L. Mathur, Machine Drawing, 7 th E.,1986. P.L., Sah, Fundamentals of Machine Drawing, 2 th , Edition, 2015.				
Supportive	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.				
facilities &	Supplies	Whiteboards and smart boards.				
for	Electronic Programs	Microsoft Office program, Acrobat Reader				
teaching and	Skill Labs/ Simulators	-				
learning *	Virtual Labs	-				
	Other (to be mentioned)					

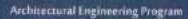
7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

7.1 Lecture contents:

Week	Topics	Lec	T/L	- (Course L	earning o	outcomes	"CLO's	**
TYCER.	Tupics	141922	ZADDE	CLOI	CLO2	CLO3	CL04	CLOS	CLO6
1-2	Introduction of engineering drawing - Types of engineering drawing - Types of lines and their applications	6	8	x					
3-4	Engineering processes	- 6	8	X		X			
5-6	Descriptive Engineering and Orthogonal projection - Point projections	6	8	x		х	х		
7	straight line and plane - Projection of simple bodies - auxiliary projection	3	4	х		х			
8			Mid	Term E	xam				
9-10	Engineering individuals for prism, pyrumid and cube	6	8		х			Х	x

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Week	Topics	Lee T/L Course Learning outcomes "!						"CLO's	'CLO's"	
TTECH	Topics			CLOI	CLO2	CLO3	CLO4	X X X	CLO6	
11-12	Engineering individuals for Sphere, conical and cylindrical	6	8		х			х		
12-13	Surface intersections - Projection types - Projection methods -	6	8		х			х	X	
13-14	Orthogonal and isometric projection	6	8		х			х		
15	Construction of orthographic projection of isometric	3	4				Х	х		
16			F	inal Exa	m			-		

7.2. Teaching and learning matrix with CLOs:

	Course Learning outcomes "CLO's"								
Teaching and Learning Methods	LOI	1.02	LO3	L04	LO5	LO6			
Face to face lecture	X	X	X	X	X	X			
Tutorial / Exercise	X	X	X	X	X				
Group discussion					X	X			
Self-Learning						T.			
Research and reporting		X			X				

7.3. Student assessment matrix with CLOs:

Account Market	Course Learning outcomes "CLO's"							
Assessment Methods	LOI	1.02	L03	L04	L05	1.06		
Final written exam	X	X	X	X	X			
Mid-term Exam	X	X	X					
Quizzes	X	x	X	X				
Research assignments			X		X			
In-class questions (formative assessment)		X			X	X		

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Course coordinator:

Name	Signature	Academic Year
Ass. Prof. Yassen El. Sayed Yassen	Jassonla	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Ouf	· de	2025-2026

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1. Basic Information:

Course Title (according to the byla	w)	Introduction in Computer and programming BS015					
Course Code (according to the byla	w)						
Department/s participating in offeri	ing the course	Basic Science Department					
Number of credit hours/points of th	e course (accord	fing to the bylaw)					
Lecture Tutorial		/ Laboratory	Total contact				
2:	2		.4				
Course Type		○ Compulsory	☐ Elective				
Academic level at which the course	is taught	Preparatory year					
Academic Program		All Program					
Faculty/Institute		Higher Institute of Engineering and Technology a Manzalla					
University/Academy		Manzalla Academy					
Name of Course Coordinator		Prof. Dr. Ahmed Salama					
Course Specification Approval Date		16 August 2025					
Course Specification Approval		Institute Council	No. (12) on 16 August 2025				

2. Course Overview (Brief summary of scientific content)

Introduction to computer science- computer system and its components - data organization input and output devices- storage and processing devices- programming principles- program flow chat - decision making tables- Communication systems and Computer Networks-Numbering systems-Internet- practical applications: office package - elementary programming.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	rogram Outcomes (NARS/ARS) ling to the matrix in the program spees)	Upon	Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
	Identify, formulate, and solve complex engineering problems by	CLOI	Discover the input and output devices in computers.
AI.	applying engineering fundamentals, basic science, and mathematics.	CLO2	Illustrate the types of data: binary- hexadecimal-decimal.
		CLO3	Trace the execution of programs written in any programming language.
	Practice research techniques and methods of investigation as an	CLO4	Apply software codes using programming language.
A5.	inherent part of learning.	CLO2 Discover the input and outpost computers. CLO2 Illustrate the types of chexadecimal-decimal. CLO3 Trace the execution of program any programming language. CLO4 Apply software codes using language. CLO5 Computer Networks Number	Classify communication systems and Computer Networks Numbering systems- Internet practical applications.

4. Teaching and Learning Methods

□ Face to face lecture	☐ Site visit
Online education	Self-learning
☑ Tutorial / Exercise	□ Presentation
□ Group discussion	☐ Mini project
☐ Laboratory	⊠ Research and reporting (self-learning)
	☐ Brainstorming

Course Schedule



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			Expected	number of t	he Learning Ho	urs
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical feaching (lectures/diseu ssion groups/)	Training (Practical /Clinical/)	Self- learning (Tasks/ Assignments / Projects/)	Other (to be determ ned)
1-2	Introduction to computer science	16	4	4	2	
3-4	Computer system and its components	10	4	4	2	
5-6	Data organization input and output devices	10	4	4	2	
7	Storage and processing devices Programming principles	5	2	2	1	
8		M	lid Term	·		
9-10	Program flow chat	10	4	4	2	
11	Decision making tables	10	2	2	1	
12	Communication systems and Computer Networks	5	2	2	ı	T
13	Numbering systems-Internet	5	2	2	1	
14-15	Practical applications: office package - elementary programming,	10	4	:4	2	
16		Final	term exam			

5. Methods of students' assessment

Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks	
Quizzes	6, 11	4	4.%	
Mid-Term Examination	8	18	18%	
Final Examination	(As Schedule)	60	60%	
	Quizzes Mid-Term Examination	Assessment Methods * (Week Number) Quizzes 6, 11 Mid-Term Examination 8	Assessment Methods (Week Number) Scores	

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4.	Lab Exam	(As Schedule)	Test T	-%
5.	Activities and assignments	Every week	18	18%
6.	Final Oral Exam (if exists)		140	%

6. Learning Resources and Supportive Facilities

Learning resources (books, scientific references, etc.) *	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Donald E., Knuth, Fundamental Algorithms: Art Of Computer Programming, Addison-Wesley Professional PTG, 2nd edition, 1998.
	Other References	Sinha, P. K., Sinha P., Computer Fundamentals Concepts, Systems & Application, 4 th edition, BPB.
	Electronic Sources (Links must be added)	https://ieeexplore.ieee.org/
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	
		Projectors, audio-visual systems, and
Supportive	Devices/Instruments	Computers with internet access.
facilities & equipment	Supplies	Whiteboards and smart boards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching and	Skill Labs/ Simulators	He:
learning *	Virtual Labs	-
	Other (to be mentioned)	

7. Course Matrixes:

0.7

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7.1. Course contents Matrix with CLOs:

		Lec.	T/L	Cor	irse Learn	ing outcom	ies "CLO	k**
Week	Topics			CLO1	CLO2	CL03	CL04	CLOS
1-2	Introduction to computer science	4	4			х		
3-4	Computer system and its components	4	4			Х		
5 - 6	Data organization input and output devices	4	4			х	х	
7	Storage and processing devices Programming principles	2	2	x		Х		Х
8			Mid T	Term				
9-10	Program flow chat	4	4	X	X	X		
-11	Decision making tables	2	2		X			X
12	Communication systems and Computer Networks	2	2	х			Х	
13	Numbering systems-Internet	2	2	X				X
14-15	Practical applications: office package - elementary programming.	4	4				х	
16		F	inal ter	m exam				

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course Learning outcomes "CLO's"						
	CLO1	CLO2	CLO3	CLO4	CLO5		
Face to face lecture	X	X	X	X	X		
Tutorial / Exercise	X	X		X			
Group discussion				X			
Self-Learning							
Presentation		X	X		T		

7.3. Student assessment matrix with CLOs:



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Assessment Methods	Course Learning outcomes "CLO's"							
Assessment Methods	CLOI	CLO2	CLO3	CEO4	CLOS			
Final written exam	X	X	X	X	X			
Mid-term Exam	X	X	X					
Quizzes	X	X						
Research assignments		X						
In-class questions (formative assessment)	X		X					

Course coordinator:

Name	Signature	Academic Year
Prof. Dr. Ahmed Salama	apl.	2025-2026

Program coordinator:

Signature	Academic Year
A.	2025-2026
	Signature

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1. Basic Information:

Course Title (according to the by)	(aw)	English	For Contractor (4)		
		English for Engineering (1)			
Course Code (according to the bylaw)		BS016			
Department's participating in offering the course		Basic S	cience Department		
Number of credit hours/points of	the course (accordin	g to the bylaw)			
Lecture	Tutorial / I	aboratory	Total contact		
0	2		2		
Course Type		○ Compulsory	☐ Elective		
Academic level at which the course is taught		Preparatory year			
Academic Program		All Program			
Faculty/Institute		Higher Institute of Engineering and Technology Manzalla			
University/Academy		Manzalla Academy			
Name of Course Coordinator		Prof. Dr. Abdelrahman Al Adl			
Course Specification Approval Dar	te	16	August 2025		
Course Specification Approval		Institute Council 1	No. (12) on 16 August 2025		

2. Course Overview (Brief summary of scientific content)

This is the first course in the English course series - students will learn to develop skills in listening, speaking, reading, and writing, with a special emphasis on reading. The structure of the course is designed such that the students will develop both listening and writing abilities through examples brought from articles taken from a variety of literatures, and from writing assignments. Both listening and speaking skills are developed by practicing with experienced English Coordinator.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	Text	Code	Text	
	crot	Clarify that the main emphasis of the course will be on listening, speaking, and writing rather than memorizing technical vocabulary.		
		CL02	Recall information, main ideas, and details after reading a text	
A8. Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools.	graphically, verbally and in writing – with a range of audiences using	CL03	Expand vocabulary knowledge and utilize conventions of grammar and usage specific to the context.	
	CLO4	Enhance students' writing skills in composing paragraphs and reports.		
		CL05	Apply both listening and speaking skills by practicing with an experienced English Coordinator.	
		CL06	Develop their communicative functions or conversational skills.	

4. Teaching and Learning Methods

□ Face to face lecture	☐ Site visit
☐ Online education	Self-learning
☑ Tutorial / Exercise	□ Presentation
	☐ Mini project
☐ Laboratory	⊠ Research and reporting (self-learning)
	☐ Brainstorming

Course Schedule



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_			Market St.	-		
	Scientific content of the course		Expecto	d number of t	be Learning Hoc	ics .
No. of the Week	(Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Turks/ Assignments / Projects/)	Other (to be determined)
I.	Pronunciation Focus-speaking- reading and writing	-4	0	2	2	
2	Active listening techniques	4	0	2	2	
3	Writing Skills (Paragraphs & Comparative Essay)	4	0	2	2	
4	Skinuning and scanning for key information Analyzing different types of texts (fiction, non-fiction, technical)	3	0	2	1	
5	Language Functions	4	0	2	2	
6	Exploring themes and characters in selected texts	4	0	2	2	
7	Reading Comprehension	4	0	2	2	
8		M	lid Term	ALCOHOL:	COURSE NO	BEER
9	Vocabulary Study	4	0	2	22	
10	Contextual vocabulary acquisition	4	0	2	-2	9190
11	Communication Skills Presentations)	4	0	2	2	
12	Grammar & Sentence Structure	4	0	2	2	
13	Technical Abbreviations, Terms & Symbols	14	0	2	2	
14-15	Structuring paragraphs and essays	6	0	4	2	
16		Final	term exam			

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5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks	
1.	Quizzes	6, 11	1.5	3% -	
2.	Mid-Term Examination	8	6.75	13.5%	
3.	Final Examination	(As Schedule)	35	70%	
4.	Lab Exam	(As Schedule)	0	0%	
5.	Activities and assignments	Every week	6.75	13,5%	
6.	Final Oral Exam (if exists)			.%	

6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	A, S. Betty, Fundamentals of English Grammar, 3rd edition; Pearson Education, NY 10606, 2003.
Learning resources (books, scientific references, etc.) *	Other References	 M. Bates, and T. D. Evans, Nucleus English for Science and Fechnology. Mc Corquodate (Newton) Ltd. 1980. B. J. Cohen, Medical Terminology: An Illustrated Guide., 5th edition; Lippincott Williams & Wilkins, USA, 2007. E. C. Collins, A Short Course in Medical Terminology: Enhanced Reprint, 1st edition, Lippincott Williams & Wilkins, USA, 2008.
	Electronic Sources (Links must be added)	https://www.bbc.co.uk/learningenglish/english/feat ures/english-at-work
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/

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Other

	(to be mentioned)	The same better a course of their
		Country of the Country of the
Supportive	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
facilities & equipment	Supplies	Whiteboards and smart boards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching and	Skill Labs/ Simulators	-
learning *	Virtual Labs	**
	Other (to be mentioned)	

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

7.1 Lecture contents:

Week	Topics	Lec.	T/L						
		-	-50	THEOR	CLOL	CLO3	CLO4	CLOS	CLOS
1	Pronunciation Focus- speaking-reading and writing		2	Х	X	X			V.
2	Active listening techniques	-	2		X		X	100	741
3	Writing Skills (Paragraphs & Comparative Essay)		2	х		х			
4	Skimming and scanning for key information Analyzing different types of texts (fiction, non-fiction, technical)	•	2	X		X	X		
5	Language Functions		2	X		X	X		
6	Exploring themes and characters in selected texts	-	2		X	х			
7	Reading Comprehension	-	2	X		X			
8		M	id Ter	m Exan	n				
9	Vocabulary Study		2	X		X	- 1		

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Week	Topics	Lec.	T/L	Course Learning outcomes "CLO's"					
TTECH		-9000	200	CLO1	CLO2	MACHINE STATE	CL04	A STATE OF THE STA	
10	Contextual vocabulary acquisition	*	2	Х		х			Α.
11	Communication Skills Presentations)	-	2		х			х	x
12	Grammar & Sentence Structure	*	2						
13	Technical Abbreviations, Terms & Symbols		2		X			х	х
14-15	Structuring paragraphs and essays	*	4						
16			Final	Exam					

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning	Course Learning outcomes "CLO's"							
Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO		
Face to face lecture	X	X	X	X	X	X		
Tutorial / Exercise	-	X	40.000	X	X	X		
Group discussion			7	X		X		
Self-Learning			100	. 0		200		
Presentation		X	X		X			
Research and reporting		X		X		X		

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLO's"							
	CLOI	CLO2	CLO3	CLO4	CLO5	CLO		
Final written exam	X	X	X	X		-		
Mid-term Exam	X	X						
Quizzes	X	X	X		X			
Research assignments		X		X				

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Assessment Methods	Course Learning outcomes "CLO's"							
	CLOI	CLO2	CLO3	CL04	CLO5	CLO6		
In-class questions (formative assessment)	Х	X	Х					

Course coordinator:

Name	Signature	Academic Year
Prof. Dr. Abdelrahman Al Adl	(my May	2025-2026

Program coordinator:

Name	Signature	Academic Year	
Prof. Dr. Tarek Abu Ouf	XX.	2025-2026	

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1. Basic Information:

Course Title (according to the bylaw)	En	gineering Mathematics (2)
Course Code (according to the bylaw)).	BS021
Department/s participating in offering course	the I	Basic Science Department
Number of credit hours/points of the o	course (according to the	bylaw)
Lecture	Tutorial / Laboratory	Total contact
2	2	4
Course Type		sory Elective
Academic level at which the course is	taught.	Preparatory Year
Academic Program		Ali Program
Faculty/Institute	Higher Insti	tute of Engineering and Technology at Manzalla
University/Academy		Manzalla Academy
Name of Course Coordinator	D	r. Hamouda Abu Eldahab
Course Specification Approval Date		16 August 2025
Course Specification Approval	Institute Co	ouncil No. (12) on 16 August 2025

2. Course Overview (Brief summary of scientific content)

Integration: Integration methods- integration by substitution -partial fractions - Trigonometric substitution - definite integral and its properties- higher and lower Rieman - basic theorem in eventuation and integration - integration application - calculation areas- rotational volumes - integration by approximation Simpson rule - polar coordinates and its applications - analytical geometry - second order equations equation of a pair of straight lines - circles and circles groups - benical sections - analytical geometry in space - coordinate system - line and plane equations - sphere - cylinder and cone.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program spees)		Course Learning Outcomes Upon completion of the course, the student will able to:			
Code	Text	Code	Text		
	CLOI	Illustrate the concept of integration and its properties. Identify the different integration rules and methods.			
	CLO2	Explain the integration of trigonometric, exponential, logarithmic functions and polynomials.			
A1.	Identify, formulate, and solve complex engineering problems by	C1.03	Identify the concepts of Line integrals Surface and volume integrals.		
applying engineering fundamentals, basic science, and mathematics.	CL04	Show an understanding of the concepts of Analytical Geometry just as Line, Circle and Conic Sections in 2D and 3D.			
	CLO5	Handle with Change and Moving the Origin for various shapes and planes.			
		CLO6	Identify mathematical techniques for modeling, solving and analyzing real problems.		

4. Teaching and Learning Methods

□ Face to face lecture	☐ Site visit
☐ Online education	Self-learning
☑ Tutorial / Exercise	☐ Presentation
Group discussion	☐ Mini project
☐ Laboratory	Research and reporting (self-learning
	□ Brainstorming

Course Schedule

				1924	Expected number of the Learning Hours				
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discu ssion groups/)	Training (Practical /Clinical/)	Self- learning (Tasks/ Assignments / Projects/	Other (to be determined)			
1-2	Revision on differentiation rules.	10	4.	4	2				

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			Expected	number of t	he Learning Ho	mrs
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical seaching (lectures/discu axion groups/)	Training (Practical /Clinical/)	Self- learning (Tasks/ Assignments / Projects/	Other (to be determ ned)
	Integration rules.					
3-4	Integration methods: Integration of Inverse Trigonometric Functions, Integration by Partial Fractions, Integration by Completing Square.	10	4	4	2	
5	Integration by Parts, Integration by Substitution	10	4	4	2	
6	Definite Integral and its properties - higher and lower Riemann.	10	4	4	2	
7	Revision on differentiation rules. Integration rules.	5	2	2	1	
8		Mid	Term Exam			
9	Definite Integral and its properties - higher and lower Riemann.	5	2	2	1	
10	Area Between Under the Curve, Area Between Two Curves.	5	2	2	1	
11	Analytical Geometry: Coordinates, Straight Line in 2D.	5	2	2	1	
12	Follow Straight Line in 2D, Circle Conic Sections.	5	2	2	1	
13	3D Coordinates, Change the Origin (Moving), Straight line in 3D, Plane, Sphere.	5	2	2	1	
14-15	Second order equations equation of a pair of straight lines.	10	4	4	2	
16	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	F	nal Exam			was.

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	7.5	6%

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2.	Mid-Term Examination	8	22.5	18%
3.	Final Examination	(As Schedule)	75	60%
4.	Lab Exam	(As Schedule)		
5.	Activities and assignments	Every week	20	16%
6.	Final Oral Exam (if exists)			(*)

6. Learning Resources and Supportive Facilities

Learning	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Marvin L. Bittinger, David J. Ellenbogen, Scoot A. Surgent, Calculus and its applicationsm Tenth Edition, Pearson Education, 2012.
resources (books,	Other References	Lecture notes.
scientific references,	Electronic Sources (Links must be added)	
etc.) *	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access,
equipment	Supplies	Whiteboards
for	Electronic Programs	Microsoft Office program, Mathematica
teaching	Skill Labs/ Simulators	
and	Virtual Labs	**
learning "	Other (to be mentioned)	**

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	20	Course Learning outcomes "CLO's"						
ST COR.	Topics	Lieu	e. T/L	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6
1+2	Revision on differentiation rules. Integration rules.	4	4	х					
3-4	Integration methods: Integration of Inverse	4	4	Х	х				

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age of the	-		in a	Course	Learnin	g ontcom	nes "CLC)'s**	
Week	Topics	Lec.	TAL	CLOI	C1.02	CLO3	CL04	CLO5	CLO
	Trigonometric Functions, Integration by Partial Fractions, Integration by Completing Square.								
5-6	Integration by Parts, Integration by Substitution.	4	4	х	х				
7	Definite Integral and its properties - higher and lower Riemann.	2	2	х		х			
8			M	id Term	Exam		17		
9	Definite Integral and its properties - higher and lower Riemann.	2	2	х		х			
10	Area Between Under the Curve, Area Between Two Curves.	2	2	х		X			Х
11	Analytical Geometry: Coordinates, Straight Line in 2D.	2	2				х	x	
12	Follow Straight Line in 2D, Circle Conic Sections.	2	2				x		Х
13	3D Coordinates, Change the Origin (Moving), Straight line in 3D, Plane, Sphere.	2	2				х	х	х
14-15	Second order equations equation of a pair of straight lines.	4	4					х	х
16			3	Final Ex	am:				

7.2. Teaching and learning matrix with CLOs:

Tarobias and Laureina Mathada	Course I	Course Learning outcomes "CLO's"							
Teaching and Learning Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6			
Face to face lecture	X	X	X	X	X	X			
Tutorial / Exercise	X	X	X	X	X	X			
Group discussion	X	X	X	X	X	X			

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Teaching and Learning Methods	Course 1	Course Learning outcomes "CLO's"							
reacting and Learning Stethous	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6			
Carrier Commence	_	1		11100000000					
Self-Learning									
Research and reporting					X	X			

7.3. Student assessment matrix with CLOs:

Assessment Methods		Course	e Learning	goutcome	"CLO's"	
Assessment rittings	CLOI	CLO2	CLO3	CL04	CLO5	CLO6
Final written exam	X	X	X	X	X	X
Mid-term Exam	X	X	X	X		
Quizzes	X	X	X	X	X	X
Research assignments	X	X	X	X	X	X
In-class questions (formative assessment)	х	х	х	Х	х	х

Course coordinator:

Name	Signature	Academic Year
Dr. Hamouda Abu Eldahab	C 30 30 30	2025-2026

Program coordinator:

Nume	Signature	Academic Year	
Prof. Dr. Turek Abu Ouf	A.	2025-2026	

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1. Basic Information:

Course T	itle (according to the	bylaw)	Physics (2)				
Course Code (according to the bylaw)			BS022				
Department/s participating in offering the course			Basic Sc	ience Department			
Number	of credit hours/points	of the course (ac	coording to the bylaw)				
	Lecture	Tutorial	/ Laboratory	Total contact			
	2		2	.4			
Course T	уре		□ Compulsory	☐ Elective			
Academi	c level at which the c	ourse is taught	Preparatory year				
Academi	e Program		All Program				
Faculty/L	nstitute			ingineering and Technology Manzalla			
Universit	y/Academy		Manzalla Academy				
Name of Course Coordinator		Assoc, Dr. Ali Samir					
Course Specification Approval Date		16 August 2025					
Course S	pecification Approva	i.	Institute Council No. (12) on 16 August 2023				

2. Course Overview (Brief summary of scientific content)

Electricity and magnetism: charge and substance- electric field-column's law- electric flux- Gauss law- electric volt- condenser and insulation materials-current, resistance and electric force - ohm's law and simple circuits- magnetic field- Babot and savart laws -magnetic flux and gauss law- Faraday law - Magnetic impedance topics: engineering light - light properties for spherical surfaces -lenses and mirrors - wave properties for light and Hygen's principle - interference - polarization- and diffraction -nuclear physics: - nuclear construction - Bohar theorem - principle of quantum theory- laser - optical - electric phenomenon.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will able to:			
Code	Text	Code	Text		
	CLO	Demonstrate an ability to understand properties of electric charges to compute electric force by using coulomb's law and solve a lot of examples about electric field and apply Gauss's Law to determine the electric field inside any enclosed surface in case conducting sphere or insulating sphere.			
AL.	Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.	CLO2	Explain phenomenon of electric field production from changing magnetic fields as do the applications of this phenomenon in electrical devices such as generators and motors.		
		CLO3	Study electric potential energy and electric potential due to point charges and definitional o capacitance and find it in case of Parallel-Plate Cylindrical and Spherical Capacitors		
		CLO4	Demonstrate an ability to understand Ohm's law to find the equivalent resistance, current and potential difference in circuit in case of series or parallel.		
	Develop and conduct appropriate experimentation and/or simulation.	CLO6	Performs laboratory experiments about elegrica and magnetic properties.li-		
A2. ar	analyze and interpret data, assess, and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.	CLO5	Apply ray-tracing rules to determine the location orientation and magnification of images produced by mirrors and leases, interpret optics phenomena that include propagation, refraction, interference and diffraction, and explain the concept of nuclear physics.		

4. Teaching and Learning Methods

\boxtimes	Face to face lecture	☐ Site visit
	Online education	Self-learning
Ø	Tutorial / Exercise	□ Presentation
\boxtimes	Group discussion	☐ Mini project
\boxtimes	Laboratory	⊠ Research and reporting (self-learning)

Course specification 2025-2026

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Brainstorming

Course Schedule

		Total Weekly Hours	Expected number of the Learning Hours					
Nu. of Scient the Week	Scientific content of the course (Course Topics)		Theoretical teaching (lectures/discu mion groups/	Training (Practical /Clinical/)	Self- Jearning (Tasks/ Assignments / Projects/)	Other (to be determined)		
1-2	Electrostatic force: charge and substance Coulomb's law - the principle of conservation and quantization of charge		4	4	2			
3-4	-The electric field - The electric field resulting from a point charge - Definition of the dipole and calculating the final field at a distant point - The electric field resulting from (linear distribution of charges - Surface distribution of charges) - The effect of the electric field on (point charge - The electric dipole) - Movement of a charge in the field The electrician.	10	4	•	2			
5-6	Electric Flow and Gauss's Law: Electric Field Flow - Gauss's Law -	01	4	4	2			
7	Applications of Gauss's Law -Conductors in Static Fields.	5	2	2	1			
8		Mid	Term Exam					
9-10	Electric potential: electric potential energy - potential and potential difference - field calculation of potential - electric potential energy for a system of point charges.	10	4	4	2			
11	Capacitor: Connecting capacitors in electrical circuits and capacitance laws	5	2	2	1			

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			Expected number of the Learning Hours					
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discu ssion groups/)	Training (Practical /Clinical/)	Self- learning (Tasks/ Assignments / Projects/)	Other (to be determ) ned)		
	-Electrical circuits: ohm's law and simple circuits- Magnetic field- Babot and savart laws.							
12	Engineering light - Light propagation for spherical surfaces (mirrors and lens)- Light phenomena (propagation- reflection- refraction)	5	2	2	1			
13	Wave properties for light and Hygen's principle - Interference - Diffraction- Polarization and its application-	5	2	2	1			
14-15	nuclear construction - Bohar theorem - principle of quantum theory- laser,	10	4	4	2			

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	5	4%
2.	Mid-Term Examination	8	15	12%
3.	Final Examination	(As Schedule)	75	60%
4.	Lab Exam	(As Schedule)	10	8%
5.	Activities and assignments	Every week	20	16%
6.	Final Oral Exam (if exists)			%

6. Learning Resources and Supportive Facilities

Learning	The main (essential) reference for	Hugh DeYoung and Roger A. Freedman, University
resources	the course	Physics 12E with Modern Physics.

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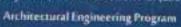
(books, scientific references, etc.) *	(must be written in full according to the scientific documentation method)		
	Other References	Serway, R. A., & Jewett, J. W. Physics for Scientists and Engineers (6th Ed.). Halliday, D., Resnick, R., & Walker, J Fundamentals of Physics (8th Ed.). Serway, R. A., & Faughn, J. S. College Physics (8th Ed.).	
	Electronic Sources (Links must be added)		
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/	
	Other (to be mentioned)		
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.	
	Supplies	Whiteboards and smart boards.	
for	Electronic Programs	Microsoft Office program, Acrobat Reader - Software simulation	
teaching and	Skill Labs/ Simulators		
learning *	Virtual Labs		
rear ming	Other (to be mentioned)		

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Lec	Lec T/L	1 10000	ourse Lea	S COLUMN			
				CLO1	CLO2	CLO3	CL04	CLO5	CLO6
1-2	Electrostatic force: charge and substance Coulomb's law - the principle of conservation and quantization of charge	4	4	х					
3-4	-The electric field - The electric field resulting from a point charge - Definition of the dipole and calculating the final field at a distant			x					

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5-6	point - The electric field resulting from (linear distribution of charges - Surface distribution of charges) - The effect of the electric field on (point charge - The electric dipole) - Movement of a charge in the field The electrician. Electric Flow and Gauss's Law: Electric Field Flow -	4	4		x				
	Gauss's Law -	4	4						
7	Applications of Gauss's Law -Conductors in Static Fields.	2	2		X				
8			Mid	Term E	xam erex				
9-10	Electric potential: electric potential energy - potential and potential difference - field calculation of potential - electric potential energy for a system of point charges.	4	4			х			
11.	Capacitor: Connecting capacitors in electrical circuits and capacitance laws -Electrical circuits; ohm's law and simple circuits- Magnetic field-Babot and savart laws.	2	2				х	х	x
12	Engineering light - Light propagation for spherical surfaces (mirrors and lens)- Light phenomena (propagation-reflection- refraction)	2	2					х	x
ix	Wave properties for light and Hygen's principle - Interference - Diffraction- Polarization and its application-	2						x	

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14-15	Nuclear construction - Bohar theorem - principle of quantum theory- laser.	4	4	x	х
16			Final Exam		

Week	Topics	Lab Hrs	CLO
1	Experiment 1 Introduction	2	CLO6
2	Experiment 2 metric bridge (determine unknown resistance)	2	CLO
3	Experiment 3 Ohm's law	2	CLO6
4	Experiment 4 capacitors	2	CLO6
5	Experiment 5 comparison between two magnetics torque	2	CLO6
6	Experiment 6: galvanometer of shadow	2	CLO6
27.0	Experiment 7 transformers	2	CLO6
8	Mid term		
9	Experiment 8 prism	2	CLO6
10	Experiment 9 lenses-mirrors	2	CLO6
11	Experiment 10: liquid lenses	2	CLO6
12	Revision	2	CLO6
15	Practical Exam	-	1,06

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	4.Course Learning outcomes "CLO's" On completing this course, students must able to:						
	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6	
Face to face lecture	X	X	X	X	X		
Tutorial / Exercise	X	X	X	X	X		
Group discussion	2000	Sees	(5%) i	_		X	
Laboratory		1. 353	57,5			X	
Self-Learning:		San				-	
Presentation			X			1 12	
Research and reporting		11500	X		X		
Brain storming		X		X			

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7.3. Student assessment matrix with CLOs:

Assessment Methods	4. Course Learning outcomes "CLO's" On completing this course, students must able to:						
	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6	
Final written exam	X	X	X	X	X		
Mid-term Exam	X	X					
Quizzes	X	X	X				
Lab Exam						X	
Research assignments	X	X	X	X			
In-class questions (formative assessment)	Х	X	Х	х	х		

Course coordinator:

Name	Signlature	Academic Year
Dr. Ali Samir	A	2025-2026

Program coordinator;

Name	Signature	Academic Year	
Prof. Dr. Tarek Abu Ouf	1	2025-2026	

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1. Basic Information:

Course T	itle (according to the	e bylaw)	Me	rehanies (2)	
Course Code (according to the bylaw)			BS023		
Department/s participating in offering the course			Basic Science Department		
Number	of credit hours/point	s of the course (ac	ccording to the bylaw)		
	Lecture	Tutorial	/ Laboratory	Total centact	
	2		2	4	
Course Type		□ Compulsory	☐ Elective		
Academi	e level at which the	course is taught	Preparatory year		
Academi	e Program		All Program		
Faculty/I	nstitute		Higher Institute of Engineering and Technolo at Manzalla		
University/Academy			Manzalla Academy		
Name of Course Coordinator			Prof. Dr. Attia Aref		
Course Specification Approval Date			16 August 2025		
Course S	pecification Approve	l	Institute Council N	lo. (12) on 16 August 2025	

2. Course Overview (Brief summary of scientific content)

Engineering Statics: Vectors and spatial Forces - Torque - Couple moment - equilibrium of particle and rigid body - gravity center and geometric center - distributed forces - Applications on beams and hydrostatics - friction and its applications on bolts and beams.



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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will able to:			
Code	Text	Code	Text		
	CLOI	Rephrase states of matter and units of measurements.			
	Identify, formulate, and solve	CLO2	Develop the ability to solve resolution of forces in two dimensions.		
ž.	complex engineering problems by applying engineering	6 1 6 3 3	Explain and study equilibrium of bodies and apply it into trusses.		
The state of the s	fundamentals, basic science, and mathematics.	CLO4	Rephrase Theory of Equations and to solve problems on center of gravity.		
		CLO5	Show ability to collaborate and communicate with others positively and effectively		
		CLO6	Demonstrate willingness to help and assist other colleagues.		

4. Teaching and Learning Methods

Face to face lecture	☐ Site visit
☐ Online education	Self-learning
□ Tutorial / Exercise	□ Presentation
	☐ Mini project
☐ Laboratory	Research and reporting (self-learning)
	□ Brainstorming

Course Schedule.

			Expected number of the Learning Hours			
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discu ssloe groups/)	Training (Practical /Clinical/)	Self- learning (Tasks/ Assignments / Projects/)	Other (In be determi ned)
1-2	Units of measurements. Vectors and spatial Forces	10	4	4	2	
3 - 4	Resolution of two forces and equilibrium. Torque	10	4	4	2	

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			Expected	number of t	he Learning Ho	mrs -
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discu ssion groups/)	Training (Practical /Clinical/)	Self- learning (Tasks/ Assignments / Projects/)	Other (to be determ ned)
5 - 6	Forces in 3 dimensions and equilibrium, Distributed forces	10	4	4	2	
7	Moment in 2 dimensions.	5	2	2	1	
8		Mid	Term Exam			
9-10	Moment in 3 dimensions.	10	4	4	-2	
11	Couple in two and three dimensions.	5	2	2	1	
12	Equilibrium of bodies.	5	2	2	1	
13	Friction.	5	2	2	1	
14-15	Center of gravity, Applications on beams and hydrostatics	10	4	4	2	
16		F	inal Exam			

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	6	6%
2.	Mid-Term Examination	8	18	18%
3.	Final Examination	(As Schedule)	60	60%
4.	Lab Exam	(As Schedule)	-0	0%
5.	Activities and assignments	Every week	16	16%
6.	Final Oral Exam (if exists)			%

6. Learning Resources and Supportive Facilities

Learning resources (books, scientific	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Beer, F. p and Johnston, E. R., "Vector Mechanics for Engineering Dynamics", McGraw-Hill Book Company, USA, 1990.
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Other References	Beer, F. p and Johnston, E. R., "Vector Mechanics for Engineering Dynamics", McGraw-Hill Book Company, USA, 1990.
Electronic Sources	
(Links must be added)	
Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/
Other (to be mentioned)	
Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
Supplies	Whiteboards and smart boards.
Electronic Programs	Microsoft Office program, Acrobat Reader
Skill Labs/Simulators	-
Virtual Labs	
Other (to be mentioned)	
	Electronic Sources (Links must be added) Learning Platforms (Links must be added) Other (to be mentioned) Devices/Instruments Supplies Electronic Programs Skill Labs/ Simulators Virtual Labs

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Werk	The state of the s	Lec.	T/L	(Course L	earning (outcomes	"CLO's	**
week	Topies			CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
1-2	Units of measurements. Vectors and spatial Forces	4	4	x	X	24	1-0-		
3-4	Resolution of two forces and equilibrium. Torque	4	-4	x		X		146	
5-6	Forces in 3 dimensions and equilibrium. Distributed forces	4	4			х	х		
7	Moment in 2 dimensions.	2	2			X			
8		Mid Term Exam							
9-10	Moment in 3 dimensions.	4	4			X			
11	Couple in two and three dimensions.	2	2			х			
12	Equilibrium of bodies.	2	2.		X			X	X
13	Friction.	2	2		X			X	X
14-15	Center of gravity. Applications on beams and hydrostatics	4	4	х			х		
16			1	Final Exa	ino:				

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7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course Learning outcomes "CLO's"						
	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	
Face to face lecture	X	X	X	X	X	X	
Tutorial / Exercise	X	X		x			
Group discussion		-			x		
Self-Learning							
• Presentation				X	X	X	
Brain storming			X				

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLO's"							
Assessment Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6		
Final written exam	X	X	X	X		7.0000000		
Mid-term Exam	X	X	X					
Quizzes	X	X	X					
Research assignments					X	X		
fu-class questions (formative assessment)	753				X	X		

Course coordinator:

Name	Signature	Academic Year
Prof. Dr. Attia Aref	au 9	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Turck Abu Ouf	1	2025-2026

Course specification 2025-2026

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t. Basic Information:

Course T	itle (according to the	: bylaw)	Engineering Drawing and Projection (2)			
Course C	ode (according to th	e bylaw)	MEC024			
Department/s participating in offering the course			Basic Science Department			
Number	of credit hours/point	s of the course (ac	cording to the bylaw)			
	Lecture Tutorial		/ Laboratory	Total contact		
	2		3	5		
Course T	ype		□ Compulsory	☐ Elective		
Academi	c level at which the	course is taught	Preparatory year			
Academi	c Program		All Program			
Faculty/Institute		Higher Institute of Engineering and Technolog at Manzalla				
University/Academy		Manzalla Academy				
Name of Course Coordinator		Dr. Yassin EL Sayed Yassin				
Course S	pecification Approva	il Date	16 August 2025			
Course Specification Approval			Institute Council No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Projection of simple bodies - Dimensioning writing- drawing of engineering bodiesengineering sections drawing- missing projections - drawing simple engine partsmetal connection drawing- orthogonal and oblique drawing- electrical symbols introduction to drawing using the computer(auto CAD).

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	rogram Outcomes (NARS/ARS) ling to the matrix in the program spees)	Upon	Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
	Apply engineering design processes to produce cost-effective solutions	CLOI	Apply the drawing tools in the correct ways and practice them.
	that meet specified needs with consideration for global, cultural, social, economic, environmental,	CLO2	Identify and define fundamental concepts and principles of engineering drawing and projection.
A3,	ethical and other aspects as	CLO3	Explain and demonstrate the correct uses of engineering drawing tools to the student.
	Communicate effectively – graphically, verbally and in writing –	CLO4	Utilize various projection methods to creat accurate technical drawings.
A8.	with a range of audiences using contemporary tools.	CL05	Explain the significance of scale, dimensioning, and annotation in engineering drawings.
		CLO6	Evaluate different projection techniques and their applications in engineering design and communication.

4. Teaching and Learning Methods

Face to face lecture	☐ Site visit
☐ Online education	Self-learning
□ Tutorial / Exercise	□ Presentation
□ Group discussion	☐ Mini project
☐ Laboratory	Research and reporting (self-learning)
	□ Brainstorming

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Course Schedule

			Expected	number of t	be Learning Ho	ors
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discu ssion groups/)	Training (Practical /Clinical)	Self- learning (Tasks/ Assignments / Projects/)	Other (to be determ ned)
1 - 2	Projection of simple bodies	12	4	- 6	2	
3-4	Dimensioning writing	12	4	- 6	2	
5 - 6	Drawing of engineering bodies	12	4	6	2	
7	Engineering sections drawing	6	2	3	1	
8	Mid Term Exam					
9-10	Missing projections	12	4	6	2	
11	Drawing simple engine parts	6	2	3	1	
12	metal connection drawing	6	2	3	1	
13	Orthogonal and oblique drawing	6	2	3	1	
14-15	Electrical symbols introduction to drawing using the computer (auto CAD).	12	4	6	2	
16	Section 1	F	inal Exam			

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	7.5	6%
2.	Mid-Term Examination	8	22.5	18%
3.	Final Examination	(As Schedule)	75	60%
4.	Lab Exam	(As Schedule)	0	.0%
5.	Activities and assignments	Every week	20	16%
6.	Final Oral Exam (if exists)		н:	%

6. Learning Resources and Supportive Facilities



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		A III mile iii
Learning	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	K.L. Narayan, Kanniah, and K., VenKata Reddy, Machine Drawing, 4 th Edition, 2009.
resources (books,	Other References	V. I.a Kshminarayanan and M.L. Mathur ,Machine Drawing , , 7 th E,,1986.
scientific references,	Electronic Sources (Links must be added)	
etc.) *	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
	Supplies	Whiteboards and smart boards.
for teaching	Electronic Programs	Microsoft Office program, Acrobat Reader Auto CAD
and	Skill Labs/ Simulators	+
learning *	Virtual Labs	
rear ning	Other (to be mentioned)	

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Lee	e T/L	Course Learning outcomes "CLO's"					
77.466	Topics	Liee	Las	CLOI	CLO2	CLO3	CLO4	CLO5	CLO ₆
1-2	Projection of simple bodies	4	6	X					
3-4	Dimensioning writing	.4	6	X		X			
5-6	Drawing of engineering, bodies	4	6	х		х	Х		
7	Engineering sections drawing	2	3	X		X			
- 8	La de Contrata de la contrata del contrata de la contrata del contrata de la contrata del contrata de la contrata de la contrata de la contrata del contrata de la contrata del contrata de la contrata de la contrata de la contrata del contrata del contrata del contrata de la contrata de la contrata del con		M	lid term	2				
9-10	Missing projections	4	6		Х			X	4
11	. Drawing simple engine parts			2	х			Share	1
12	metal connection drawing	98	3		х			X	X
13	Orthogonal and oblique drawing		3		X			-X	X

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Week	Topies	Lec	T/L,	Course Learning outcomes "CLO's"					
TYLER				CLO1	CLO2	CLO3	CLO4	CLO5	CLO ₆
		2							
14-15	Electrical symbols introduction to drawing using the computer (auto CAD).	4	6				х	х	
16			Fir	af Exam					

7.2. Teaching and learning matrix with CLOs:

	Course Learning outcomes "CLO's"							
Teaching and Learning Methods	CLOI	C1.02	CLO3	CLO4	CLO5	CLO6		
Face to face lecture	X	X	X	X	X	X		
Tutorial / Exercise	X	X	x	X	X	X		
Group discussion					X	X		
Self-Learning								
Presentation				X				
Research and reporting					X	X		
Brain storming			X					

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLO's"							
Assessment Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CŁO6		
Final written exam	X	X	X	X	X			
Mid-term Exam	X	X	X					
Quizzes	X	X	X	X				
Research assignments					X	X		
In-class questions (formative assessment)					X	х		

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Course coordinator:

Name	Signature	Academic Year	
Ass. Prof. Yassen EL Sayed Yassen	Joshen (9)	2025-2026	

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Ouf	The state of the s	2025-2026

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1. Basic Information:

Course Title (according to the byl	aw)	Chemistry				
Course Code (according to the by	law)	BS025				
Department/s participating in offe	ring the course	Basic Science Department				
Number of credit hours/points of	the course (accord	ling to the bylaw)				
Lecture	Tutorial	/ Laboratory	Total contact			
2	2		4			
Course Type		□ Compulsory	☐ Elective			
Academic level at which the cour	se is taught	Preparatory year				
Academic Program		All Program				
Faculty/Institute		Higher Institute of Engineering and Technology a Manzalla				
University/Academy		Manzalla Academy				
Name of Course Coordinator		Dr. Reda Shaaban Ali Salama				
Course Specification Approval Da	de	16 August 2025				
Course Specification Approval		Institute Council No. (12) on 16 August 2025				

2. Course Overview (Brief summary of scientific content)

Introduction to material properties - introduction to chemical thermodynamics- Thermal chemistry- solutions- chemical equilibrium- electrical chemistry- chemical reaction-thermal and balance in combustion processes and different cement industry- fertilizers industry- corrosion- water pollution and its treatment- air pollution.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to				
Code	Text	Code	Text			
ĺ	Identify, formulate, and solve complex engineering problems by applying engineering fundamentals,	CLOI	Identify states of matter, gas laws, and units of measurements, solutions properties, thermodynamic laws, chemical equilibrium and electrochemistry.			
AI.	basic science, and mathematics.	CL02	Demonstrate an understanding of water analysis, wastewater treatment and cement industry.			
		CLO3	Solve problems on gases, Thermo chemistry and electrochemistry equations			
A2.	Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess, and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.	CL04	Perform laboratory experiments in titration of acid base, exidation reduction titration and precipitation.			
	Function efficiently as an individual and as a member of	CLO5	Collaborate and communicate with others positively and effectively			
A7.	multi-disciplinary and multi- cultural teams.	CLO6	Demonstrate willingness to help and assist other colleagues.			

4. Teaching and Learning Methods

□ Face to face lecture	☐ Site visit
☐ Online education	Self-learning
∑ Tutorial / Exercise	☐ Presentation
	☐ Mini project
	Research and reporting (self-learning)
	□ Brainstorming

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Course Schedule

			Expected number of the Learning Hours					
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (hectures/discu ssion groups/)	Training (Practical /Clinical/	Self- learning (Tasks/ Assignments / Projects/)	Other (to be determin ed)		
1-2	Introduction to material properties)	11	4	4.	3			
3-4	Introduction to chemical thermodynamics-Thermal chemistry	10	4	4	2			
5-6	Periodic motion and Oscillations-simple harmonic motion-damped and forced oscillation)	11	4	4	3			
7	Electrical chemistry	7	2	2	3			
8		M	lid Term					
9-10	Chemical reaction – Thermal and balance in combustion processes	12	4	4	4			
11-12	Different cement industry- fertilizers industry- corrosion	10	4	4	2			
13-15	Water pollution and its treatment- air pollution.	16	6	6	4	Jak.		
16		Final	term exam					

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
l.	Quizzes	6, 11	4.5	4,5%
2.	Mid-Term Examination	8	13.5	13.5 %
3.	Final Examination	(As Schedule)	60	60%

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4,	Lab Exam	(As Schedule)	10	10 %
5.	Activities and assignments	Every week	12	12%
6.	Final Oral Exam (if exists)			96

6. Learning Resources and Supportive Facilities

Learning	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Bursten, Chemistry, The Central Science, 14th			
resources (books, scientific references, etc.) *	Other References	Lecture material and experimental sheets.			
	Electronic Sources (Links must be added)	www.GeneralchemistryResearch.com.			
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/			
	Other (to be mentioned)				
Supportive	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.			
facilities &	Supplies	Whiteboards and smart boards.			
for teaching and learning	Electronic Programs	Microsoft Office program, Acrobat Reader			
	Skill Labs/ Simulators	-			
	Virtual Labs	-			
	Other (to be mentioned)				

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Course specification 2025-2026

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7.1 Lecture contents:

Week	Topics	Lee.	T/L	Course Learning outcomes "CLO's"					
77.50				CLOI	CLO2	CL03	CLO4	CLO5	CLO6
1+2	Introduction to material properties	4	4	Х					
3-4	Introduction to chemical thermodynamics-Thermal chemistry	4	de	Х		х			lin
5-6	Periodic motion and Oscillations-simple harmonic motion-damped and forced oscillation)	4	4	x		х	х		
7	Electrical chemistry	2	2	X		X			
8			Mid	Term Es	am				
9-10	chemical reaction - Thermal and balance in combustion processes	4.	4	х		х			
11-12	Different cement industry- fertilizers industry- corresion	4.	.4		х			х	х
13-15	Water pollution and its treatment- air pollution.	6	-6		х			Х	х
16			Fi	al Exam				-	

7.2 Practical Contents:

Week	Topics		Lab Hrs	List
1	Experiment 1 Titration of Acids and Bases	1	2	CLD9
2	Experiment 2 determination of the acidity of vinegar titration	r by acid-base	2	CLO4
3	Experiment 3 Measurements of Density		2	CLO4
4-5	Experiment 4 Oxidation - Reduction Titration		4	CLO4
6-7	Experiment 5 Iodometric Titration			CLO4
9	Experiment 6 Gravimetric Analysis (determination of	2	CLO4	
10	Experiment 7 Gravimetric Analysis (determination of	2	CLO4	
11	Experiment 8 Buffer Solution	2	CLO4	
12	Revision	2	CLO4	
15	Practical Exam		-	CLO4

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7.2. Teaching and learning matrix with CLOs:

Della State of the	Course Learning outcomes "CLO's"						
Teaching and Learning Methods	CL01	CLO2	CLO3	CL04	CLO5	CLO6	
Face to face lecture	x	X	X	X	X	X	
Tutorial / Exercise	X	X		X			
Group discussion	X	X	X		X	X	
Laboratory	X			X			
Self-Learning							
Research and reporting					X	X	
Brain storming		X		X		X	

7.3. Student assessment matrix with CLOs:

American Market	Course Learning outcomes "CLO's"						
Assessment Methods	CL01	CLO2	CLO3	CLO4	CLO5	CLO6	
Final written exam	X	X	X				
Mid-term Exam	X	X	X				
Quizzes	X	X	X				
Lab Exam	4000	a results	North State of	- X	Constant	- inter	
Research assignments	-	559	10.62°	100	X	X	
In-class questions (formative assessment)		X	1	U.	x	X	

Course coordinator:

Name	Signature	Academic Year
Dr. Reda Shaaban Ali Salama	Redame	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Ouf	Ar	2025-2026

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1. Basic Information:

Course Ti	tle (according to th	e bylaw)	Production Engineering			
Course Code (according to the bylaw)			MEC026			
Department/s participating in offering the course			Basic Science Department			
Number o	f credit hours/point	s of the course (ac	cording to the bylaw)			
	Lecture	Tutorial	/ Laboratory	Total contact		
	2		3	5		
Course Type		□ Compulsory	☐ Elective			
Academic level at which the course is taught			Preparatory year			
Academic Program			All Program			
Faculty/Institute			Higher Institute of Engineering and Technolog at Manzalla			
University/Academy			Manzalla Academy			
Name of Course Coordinator			Dr. Yassin EL Sayed Yassin			
Course Specification Approval Date		16 August 2025				
Course Specification Approval			Institute Council No. (12) on 16 August 202:			

2. Course Overview (Brief summary of scientific content)

Introduction to Engineering Materials- Ferrous and non- Ferrous metals- Steel and cast iron production furnaces- Introduction to technological processes- Metal casting- Metal forming- rolling-drawing- Bending- Welding- Milling- Drilling- Grinding- Lathing-Simple Measuring tools- Production quality-Industrial safety-practices in different workshops.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will able to:				
Code	Text	Code	Text			
A2. simulation, analyze and interpret data, assess, and evaluate findings, and use statistical analyses and objective engineering	CLO	Demonstrate the essential knowledge to classify engineering materials.				
	CL:02	Identify different types of welding, different methods of metal bonding, and the types of gases used in gas welding.				
		CLO3	Identify the workbench processes and study of special equipment used to conduct them.			
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.	C1.04	Recognize the tools and the methods that used in designing and manufacturing of casting processes.				
	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	CLOS	Demonstrate the essential knowledge to understand and conduct forming and cutting processes.			

4. Teaching and Learning Methods

mar.	100000	400	ale contra	VALUE OF THE PARTY	
\times	Face	10	face	lecture	

Online education

☑ Tutorial / Exercise

Group discussion

□ Laboratory

Site visit

Self-learning

Presentation

☐ Mini project

Research and reporting (self-learning)

□ Brainstorming

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Course Schedule

			Expected number of the Learning Hours						
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical tenching (lectures/discu ssion groups/	Training (Practical /Clinical/)	Self- learning (Tarks/ Assignments / Projects/)	Other (to be determ ned)			
1	Industrial safety	6	2	3	1				
2-3	Introduction to engineering materials – Ferrous and non- ferrous metals – steel and east-iron production furnaces	12	4	6	2				
4-5	Simple measuring tools	12	4	6	2				
6	Introduction to technological processes	6	2	3	1				
7	Metal casting – metal forming – rolling – drawing – bending	6	2 3		1				
8		Mid	Term Exam						
9-10	Welding - milling -	12	4	6	2				
11-12	Lathing - production quality	12	4	6	2				
13-14	Practices in different workshops	12	4	6	2				
15	drilling - grinding	6	2	. 3	1				
16		F	inal Exam						

5. Methods of students' assessment

Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks	
Quizzes	6, 11	5	4%	
Mid-Term Examination	8	15	12%	
Final Examination	(As Schedule)	75	60%	
Lab Exam	(As Schedule)	10	8%	
Activities and assignments	Every week	20	- 16%	
Final Oral Exam (if exists)	(As Schedule)	0	0%	
	Quizzes Mid-Term Examination Final Examination Lab Exam Activities and assignments	Quizzes 6, 11 Mid-Term Examination 8 Final Examination (As Schedule) Lab Exam (As Schedule) Activities and assignments Every week	Quizzes (Week Number) Scores Quizzes 6, 11 5 Mid-Term Examination 8 15 Final Examination (As Schedule) 75 Lab Exam (As Schedule) 10 Activities and assignments Every week 20	

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6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	K.L. Narayan - Kanniah, and K. VenKata Reddy , Machine Drawing - 4 th Edition. 2009 - G.R. Nagpal, Machine Drawing - 2 th Edition, 2006.
Learning resources (books, scientific references, etc.)	Other References	V. LaKshminarayanan and M.L. Mathur "Muchine Drawing., 7th E., 1986. R. B. Gupta, Machine Drawing., 7th Hidition., 1997 P. L., Sah, Fundamentals of Machine Drawing., 2th Edition., 2015.
STATE	Electronic Sources (Links must be added)	to Lanton , LOVE 2.
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	*
editor of the last		
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment	Supplies	Whiteboards,
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/ Simulators	The Desire of the Religion
and learning	Virtual Labs	_

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Lec	T/L	Course Learning outcomes "CLO's"					
	Service State of the Service S	15 1		CLOI	CL02	CLO3	CL04	CLO5	CLO6
	Industrial safety	2.	13.	X		The second state of	BIADSCRIP	Y	Section.
2-3	introduction to engineering materials – Ferrous and non-ferrous	1/4	6	x		х		х	#

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Week	Topics	Lec	T/L	Course Learning outcomes "CLO's"					
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	- Option			CLOI	C1.02	CLOS	CL04	CLO5	CLO
	metals – steel and cast- iron production furnaces								
4.5	Simple measuring tools	4	6	X		X	X		
6	Introduction to technological processes	2	3	х		х			х
7	Metal casting - metal forming - rolling - drawing - bending	2	3	Х		х		х	
8.			Mi	d Term I	Xam				
9-10	Welding-milling-	- 4	6	X	X	X		X	X
11-12	Lathing production quality	4	6	х	х			х	
13 - 14	Practices in different workshops	4	6	х		х		х	x
15	Drilling - grinding	2	3	Х				X	
16			1	Final Exp	m				

7.2. Practical contents:

Week	Topics	Lab (Hrs)	LO
1-2	Workshop I: Carpentry	6	CL03
3-4	Workshop 2: Blacksmithing and measuring instrumentation	6	CLO3
5-6	Workshop 3: Workbench Processes	6	CLO3
7	Workshop 4; Welding	3	CEO2
8	Mid Term Exam		
9	Workshop 4: Welding	3	CLO2
10	Workshop 5: Lathing	3	CLOS

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11	Workshop 6: Machine	3	CLO5
12	Workshop 7: Electricity	3	CLO3
13	Workshop 8: Models and Casting Processes	3	CLO4
14	Practical Exam		

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course Learning outcomes "CLO's"							
reaching and scaring stemos	CL01	CLO2	CLO3	CLO4	CLO5	CLO6		
Face to face lecture	X	X	X	X	X	X		
Tutorial / Exercise	X	x	X					
laboratory				X				
Group discussion				X				
Self-Learning								
Presentation			X.		X			
Research and reporting	x				X			
Brain storming			X					

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLO's"								
PROSESSED CONTRACTOR	CLOI	CLO2	CLOS	CL04	C1.05	CLO			
Final written exam	X	X	X	X	X	X			
Mid-term Exam	X	X	X		X				
Lab Exam		X		X	X	_			
Quizzes	X	X	X						
Research assignments			X			X			

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Course coordinator:

Name	Signature	Academic Year
Ass. Prof. Yassen EL Sayed Yassen	I seemal	2025-2026

Program coordinator:

ivame	Signature	Academic Year
Prof. Dr. Tarek Abu Ouf	-AIX	2025-2026

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1. Basic Information:

Course T	itle (according to the	bylaw)	Engineerin	g and environment		
Course Code (according to the bylaw)		BS027				
Department/s participating in offering the course		Basic Science Department				
Number	of credit hours/point	s of the course (ac	ecording to the bylaw)			
Lecture Tutorial /		/ Laboratory	Total contact			
	2		0	2		
Course T	ype		○ Compulsory	☐ Elective		
Academi	c level at which the	course is taught	Preparatory year			
Academi	c Program		All Program			
Faculty/b	nstitute		Higher Institute of Engineering and Technolo at Manzalla			
University/Academy		Manzalla Academy				
Name of Course Coordinator		Prof. Dr. Attia Aref				
Course Specification Approval Date		16 August 2025				
Course S	pecification Approve	al	Institute Council No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Engineering Statics: Vectors and spatial Forces - Torque - Couple moment - equilibrium of particle and rigid body - gravity center and geometric center - distributed forces - Applications on beams and hydrostatics - friction and its applications on bolts and beams.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	rogram Outcomes (NARS/ARS) ling to the matrix in the program specs)	Course Learning Outcomes Upon completion of the course, the student will be ab				
Code	Code Text		Text			
		CLO2	Apply engineering design to produce solution that meet specified needs with consideration o public health, safety, and welfare, as well a global, cultural, social, environmental, and economic factors.			
A4.	Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk	CLO4	Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global economic, environmental, and societal contexts.			
management principles.	CLO5	Learn principles of environmental engineering applied to the design and implementation of water supply schemes.				
		C1.06	Illustrate the impact of engineered systems on the environment and apply current Engineering technologies to protect the environment (water, air and soil).			
	Function efficiently as an individual and as a member of multi-disciplinary and multi-cultural teams.	CLOI	Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.			
A7.		CLO3	Rephrase function effectively on a team whose members together provide leadership, arceto-ti- collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.			

4. Teaching and Learning Methods

Face to face lecture	☐ Site visit
□ Online education	Self-learning
☑ Tutorial / Exercise	□ Presentation □
□ Group discussion	☐ Mini project
☐ Laboratory	Research and reporting (self-learning
	☑ Brainstorming

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Course Schedule

			Expecte	d number of	the Learning H	ours
No. of the Week	(Course Topies)	Total Weekly Hours	Theoretical teaching (lectures/discu ssinn groups/)	Training (Practical /Clinical/)	Self- learning (Tanks/ Assignments / Projects/	Other (to be determin ed)
1-2	Introduction to environmental science: Why studying environmental science- Integration of environmental components (elements).	6	4	0	2	
3-4	Modern technology and its effect on the environment.	6	4	0	2	
5-6	Environment and industrial planning- for environment protection- pollution and methods of controlling it.	6	4	0	2	
7	Engineering Entrance: what is engineering- Brief of the Engineering history.	3	2	0	1	
8		Mid	Term Exam			
9-10	Performance supports for the engineering history.	6	4	0	2	
11	Performance supports for the engineering work.	3	2	0	1	
12	Engineering work branches- International classification of the engineering jobs.	3	2	0	t	
13	Planning and its important to the engineering work,	3	2	0	1	
14-15	Increasing the ability of production and developing the productivity.	6	.4	0	2	
16		Fir	ral Exam			

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course
1.	Quizzes	6.11	1.0	Marks
	Surcees	6, 11	1.5	3%

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13.5%

.96

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
2.	Mid-Term Examination	8	6.75	13,5%
3.	Final Examination	(As Schedule)	35	70%
4.	Lab Exam	(As Schedule)	0	0%

Every week

6.75

6. Learning Resources and Supportive Facilities

Activities and assignments

Final Oral Exam (if exists)

6.

Learning resources	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	 Dr. B.C. Pumnia Ashok Kr. Jain Aran Kr. Jain, Environmental Engineering 1: Water Supply Engineering: B. 2nd Edition, Laxmi Publications (P) Ltd. Jhu, N. K. (2018). Environment, Sustainability, and Mechanical Engineering. EESD 2018, 126 	
(books, scientific references, etc.) *	Other References	G. S. Birdle and J. S. Birdle , Water Supply and Sanitary Engineering, Dhanpat Rai Publishi Company, New Delhi.	
	Electronic Sources (Links must be added)		
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/	
	Other (to be mentioned)		
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.	
equipment	Supplies	Whiteboards and smart boards.	
for	Electronic Programs	Microsoft Office program, Acrobat Reader	
teaching	Skill Labs/ Simulators		
and	Virtual Labs	-	
learning *	Other (to be mentioned)		

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Wee	k Topics	Lec.	T/L		Course I	carning o	outcomes	"CLO's"	
				CLOI	CLO2	CLO3	CL04	CLOS	CLO
1-2	Introduction to environmental science: Why studying environmental science-Integration of environmental components (elements).	4	3	x				X	
3-4	Modern technology and its effect on the environment.	4			X				+
5-6	Environment and industrial planning- for environment protection- pollution and methods of controlling it.	4					x		
7	Engineering Entrance: what is engineering- Brief of the Engineering history.	2		Х		1	+		X
8			Mid To	erm Exan					
9-10	Performance supports for the engineering history.	4	-	x	x				
	Performance supports for the			**	2		X		
n	engineering work.	2		х	х	x			
12	Engineering work branches- International classification of the engineering jobs.	2	-	1	х			X	-
13	Planning and its important to the engineering work.	2	-	+	Х	+	+	-	X
4-15	Increasing the ability of production and developing the productivity.	4	-	+		x		X	
16		Final E	Your.						



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7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course Learning outcomes "CLO's"								
	CLOI	CLO2	CLO3	CLO4	CLO5	CLO			
Face to face lecture	X	X	X	X	X	X			
Tutorial / Exercise	X	X	x			-			
Group discussion				X					
Self-Learning			-						
Presentation			X		x				
Research and reporting		X			X	x			
Brain storming	x	x		x		A .			

7.3. Student assessment matrix with CLOs:

Assessment Methods		Course La	carning ou	teomes "(CLO's"	
	CLOI	CL02	CLO3	CLO4	CLO5	CLO
Final written exam	X	X	X	X	X	X
Mid-term Exam	X	X	X		X	
Quizzes	X	X	X			
Research assignments		X	155	X		

Course coordinator:

Name	Signature	Academic Year
Prof. Dr. Attia Ares (Yeul		2025-2026

Name	Signature	Academic Year
Prof. Dr. Turck Abu Ouf	A.	2025-2026



1. Basic Information:

Course Title (according to the bylaw)	Practical Training (1)
Course Code (according to the bylaw)	TRN 011
Department/s participating in offering the course	Basic Science department
44	

Course Marks

Discussion	Report	Institution's Assessment	Total
40%	30%	30%	Pass/Not Pass

Hours/ Weeks

48 total h	ours/4 weeks			
Course Type	□ Compulsory	☐ Elective		
Academic level at which the course is taught	Preparatory Year			
Academic Program	All Program			
Faculty/Institute	Higher Institute of Engineering and Technology a Manzalla			
University/Academy	Manzalla Academy			
Name of Course Coordinator	Institute's staff			
Course Specification Approval Date	16 August 2025			
Course Specification Approval	Institute Council No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Students complete this training after completing the preparatory year, during the summer period for four weeks at the institute, four days per week. This training covers relevant subjects, depending on the nature of the program (engineering drawing training, workshop training, laboratory training, and ICDL training courses (Word, PowerPoint, Excel).

3. Course Learning Outcomes CLOs.

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Practical Training Course specification 2025-2026



Program Outcomes (NARS/ARS) (according to the matrix in the program spees)		Course Learning Outcomes Upon completion of the course, the student will be able to:		
Code	Text	Code	Text	
Develop and conduct appropriate experimentation and/or simulation,		CLO2	Assess the quality, accuracy, and effectiveness of work completed during practical training.	
A2.	analyze and interpret data assess and	CLO3	Use Microsoft Word, PowerPoint, and Exce to enhance students' academic and professional communication skills.	
		CLO4	Introduce students to scientific methods, data collection, and analysis, preparing them for advanced laboratory work in engineering disciplines.	
A3.	Utilize engineering design methodologies to create cost-efficient solutions that fulfil defined requirements while accounting for global, cultural, social, economic, environmental, ethical, and relevant factors within the framework of sustainable design and development principles.	CLOI	Recall fundamental concepts and tools used in engineering drawing, workshop tasks laboratory experiments, professional-quality documents, and presentations.	
AS.	Communicate effectively using written, oral, graphical, and presentational skills.	CLO5	Apply foundational engineering principles, collaborate in teams, and communicate effectively across various mediums	

4. Teaching and Learning Methods

□ Face to face lecture	☐ Site visit
☐ Online education	⊠ Self-learning
Exercise ■	□ Presentation
☑ Group discussion	☐ Mini project
□ Laboratory	■ Research and reporting (self-learning)

Practical Training Course specification 2025-2026



□ Brainstorming

Course Schedule

			Expected number of the Learning Hours					
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discu- ssion groups/)	Training (Practical /Clinical/)	Self- learning (Tasks/ Assignments / Projects/)	Other (to be sletermi ned)		
1	Engineering drawing Training	12	-	70	3			
2	Workshop Training	12	2.5	25	2			
3	laboratory Training	12	100	*	2			
4	ICDL Training courses (Word, PowerPoint, Excel)	12	**	*:	2			
Total		48 total hours						

5. Methods of students' assessment

Assessment Methods	Weeks	Percentage of Total Course Marks
Report	:**	30%
Mini-Project Assignment		**
Discussion	94	40%
Institution's Assessment	-	30%
Total		100%
	Report Mini-Project Assignment Discussion Institution's Assessment	Report Mini-Project Assignment Discussion Institution's Assessment

6. Learning Resources and Supportive Facilities

Learning resources (books, scientific	resources (must be written in full according to the scientific documentation	El-Sayed, A. M., Hassan, H. K., Abdel Rahman, M. T., Mohammed, S. R., & Lotfy, K. W. (2023). Practical training manual for first-year engineering students (5th ed.), Cairo University Pres
etc.) =	Other References	Cairo University, Faculty of Engineering, (2023). Practical training manual for first-year

Practical Training Course specification 2025-2026



	11	engineering students (5th ed.). Cairo University Press.
	Electronic Sources (Links must be added)	https://www.gcflearnfree.org/microsoft-word- basics/ https://www2.mae.ufl.edu/directory/pdf/E.agin eering Dr
	Learning Platforms (Links must be added)	
	Other (to be mentioned)	
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment	Supplies	Whiteboards and smart boards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/Simulators	
and	Virtual Labs	
learning *	Other (to be mentioned)	

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Hes	Course Learning outcomes "CLOs"					
WEEK.		ropies	1-	CLOI	CLO2	CLO3	CLO4	CL05
1	Engineering drawing Training	12	X	X				
2	Workshop Training	12		X			X	
3	Inhoratory Training	12				X		
4	ICDL Training courses (Word, PowerPoint, Excel)	12			X		X	
Total		48 total hours						

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning	Course Learning outcomes "CLO's"						
Methods	CLO1	CLO2	CLO3	CLO4	CLO5		
Face-to-face lecture	X	X	X	X	X		
Exercise				X	X		



Teaching and Learning	Course Learning outcomes "CLO's"							
Methods	CLO1	CLO2	CLO3	CL04	CLO5			
Group discussion	X		X	X	1000000			
Laboratory	X			X				
Self-Learning								
Presentation		X	X					
Research and reporting		X		X				
Brain storming	X							

7.3. Student assessment matrix with CLOs:

Assessment Methods		Course I	carning out	comes "CLO"	£**
Test statement statements	CLO1	CLO2	CLO3	CLO4	CL05
Oral Discussion	X	X		X	X
Research assignments			X	X	
In-class Question	X		X	X	X

Course coordinator:

Name	Signature	Academic Year
Institute's staff	Almed hasen	2025-2026

Name Signature Academic Year Dr. Ali Samir 2025-2026

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1. Basic Information:

Course Title (according to the by	law)	Mathematics, St	atistics and Programming
Course Code (according to the by	ylaw)		BS 111
Department/s participating in off course	ering the	Basic Sc	ience Department
Number of credit hours/points of	the course (ac	cording to the byław)	
Lecture	Tutorial	Laboratory	Total contact
2		2	4
Course Type -		□ Compulsory	☐ Elective
Academic level at which the cour	se is taught	3	irst year
Academic Program		Architecture	Engineering Program
Faculty/Institute			ingineering and Technology Manzalla
University/Academy		Manz	alla Academy
Name of Course Coordinator		Prof. Dr.	Osama Mohareb
Course Specification Approval Da	ate	16 A	ogust 2025
Course Specification Approval		Institute Council N	o. (12) on 16 August 2025

2. Course Overview (Brief summary of scientific content)

Partial differential - maximum values of multivariable functions - quadratic integrals - applications - ordinary quadratic and first order differential equations - engineering applications - elementary theory of numerical analysis - approximation - finding equation roots - systems of linear equations - principles of statistics.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	rogram Outcomes (NARS/ARS) ording to the matrix in the program speex)	Upon	Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
	Identify, formulate, and solve complex engineering problems by	CLO	Understand multi variables functions and its applications and statistics.
Al.	applying engineering fundamentals,	CLO2	Develop the ability to solve Mathematica applications.
			Demonstrate willingness to help and assist other colleagues.
A3.	Apply engineering design processes to produce cost-effective solutions	CLO3	Understand and study differential equations.
	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.	CLO4	Understand Theory of numerical analysis.
A6.	Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements.	CLO5	Show ability to collaborate and communicate with others positively and effectively

4. Teaching and Learning Methods

Face to face lecture	Site visit
☐ Online education	⊠ Self-learning
□ Tutorial / Exercise □	□ Presentation
□ Group discussion □	Mini project
☐ Laboratory	Research and reporting (self-learning
	Brainstorming

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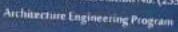
Course Schedule

No. 0	Scientific content of the course		Expecte	d number of 1	he Learning Ho	orx
Week	(Course Topies)	Weekly Hours	Theoretical teaching (lectures/discu- asion groups/	Training (Practical/ Clinical/	Self-learning (Tasks/ Assignments / Projects/	Other (to be determ
	Multi Variables Functions-		man)	The same	- repectar	ned)
1-2	maximum values of multivariable functions	10	4	4	2	
3-4	Partial Derivatives and	V-	4			
5-6	Applications.	10	- 7	4	2	
	Multiple Integrals.	10	4	-	-	
7	Differential equations	5	2	4	2	
8		The second secon	-	2	1	
	Ordinary quadratic and first	Mid	Ferm Exam			
9-10	order differential equations- engineering applications	10	4	4	2	
11	Numerical Analysis	-			- 1	
12	Approximation	5	2	2	1	-
10	finding	5	2	2	1	
13	systems of linear equations	5	2	2	-	
14-15	Statistics Educations			-	1	
16		10	4	4	2	
Moth	ds of students' assessment	Fina	d Exam		-	-

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/	Percentage of Total Course
	Quizzes		Scores	Marks
2.	Mid-Term Examination	6, 11	3	3%
	Final Examination	8	13.5	13.5%
	Lab Exam	(As Schedule)	70	70%
	Activities and assignments	10 Carried 19		111
	Final Oral Exam (if exists)	Every week	13.5	-%
Lene	ning Resources and Supportive	May I A TOTAL	*****	13.5%

Learning resources (books, scientific	(must be written in full according to the scientific documentation method)	W. Bifges, V. Cochran, B. Gillett, "Calculus"
references,	Other References	Lecture Notes

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etc.) *	Electronic Sources	
	(Links must be added)	966
	Learning Platforms (Links must be added)	https://lms.manzalaacademv.edu.eg/
	Other (to be mentioned)	
Supportive	Devices/Instruments	Projectors, audio-visual systems, and
facilities &	Supplies	Computers with internet access
for teaching	Electronic Programs	Whiteboards. Microsoft Office program, Acrobat Reader Wolfram Mathematica; Modern Technical
and	Skill Labs/ Simulators	Computing
learning *	Virtual Labs	-
Course Matri	Other (to be mentioned)	

7.1. Course contents Matrix with CLOs:

Week	Topics	Lec.	T/L	Course	Learnin	g outcom	tes "CL6	31,00	
	Multi Variables Functions-			CLO1	CLO2	CLO3	CLOA	TO SALES	Transport
1-2	maximum values of multivariable functions	4	4	х			CLOS	CL05	CLO
3-4	Partial Derivatives and Applications.	4	4	X					
5 - 6	Multiple Integrals.	-	-			- 1			
7	Differential equations	4	4	X			-	-	-
8	- educatolis	2	2			X	-		X
9-10	Ordinary quadratic and first order differential equations—engineering applications	4	4	Term Ex		x	T		
11	Numerical Analysis	2 1			100			_ 1	
12	Approximation	2	3/	W/P	130		X	-	
13	finding equation roots - systems of linear equations	2	2		2		X		X
4-15	Statistics	100	00	7 1	30 H			X 3	6
16		4 16	4	X	3617		-	-	
		1	Fia	d Exher	011	-			

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7.2. Teaching and learning matrix with CLOs:

	Course Learning outcomes "CLO's"								
Teaching and Learning Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO			
Face to face lecture	X	X	X	X	X	X			
Tutorial / Exercise	X	X		X	X	X			
Group discussion			X			X			
Self-Learning									
Presentation				X					
Brain storming			X						

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLO's"							
Assessment Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6		
Final written exam	X	X	X	X				
Mid-term Exam	X	X	X	X				
Quizzes	X	X	X					
Research assignments					X	X		
In-class questions (formative assessment)					x	X		

Course coordinator:

Name	Signature	Academic Year		
Prof. Dr. Osama Mohareb	Devilo	2025-2026		

Program coordinator:

Name	Stenature	Academic Year
Prof. Dr. Tarek Abu Auf		2025-2026

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1. Basic Information:

Course Title (according to the bylaw)		Architectural Design (1)				
Course Code (according to the	he bylaw)	ARE 111				
Department/s participating in offering the course		Architecture Engineering Department				
Number of credit hours/point	ts of the course (a	ecording to the bylaw)				
Lecture	Tutorial	I / Laboratory	Total contact			
2		4	6			
Course Type		≅ Compulsory	□ Elective			
Academic level at which the	course is taught	First Year				
Academic Program		Architectural Program				
Faculty/Institute		Higher Institute of Engineering and Technology : Manzalla				
University/Academy		Manzalla Academy				
Name of Course Coordinator		Prof. Dr. Tarek Abu Auf				
Course Specification Approval Date		16 August 2025				
Course Specification Approv.	al	Institute Council	No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific con(ent)

Introduction to architectural design - training the student to study and solve simple design problems

 developing skills and abilities to multiple types and techniques of presentation for architectural design projects.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program spees)		Course Learning Outcomes Upon completion of the course, the student able to:				
Code	Text	Code	Text			
A5 Practice research techniques and methods of investigation as an inherent part of learning.	CLo3	Discuss and explain the philosophical role of various data in the compatibility of the basics of architectural drawing with the era and the main architectural elements.				
	CL04	Explain the aesthetics of architectural drawing.				
	CLo7	Analyze different ideas, views, and knowledge from a range of sources to select the suitable design elements for projects.				
	Produce designs that meet building users' requirements through understanding the relationship between people and buildings,	CLol	Recognize the concept of architectural drawing, its elements, and components of architectural drawing paintings.			
B2			Identify the technical terminology of architectural drawing and their technical implications.			
вз	understanding structural design,	CLo5	Discuss and explain the technical foundations of architectural drawing and the intention that contributes to highlighting the artistic values of the elements and components.			
LTrees	construction, technology and engineering problems associated with building designs.		Use artistic and technical methods in the language of architectural drawing in paintings.			

4. Teaching and Learning Methods

- Face to face lecture
- ☐ Online education
- ⊠ Tutorial / Exercise
- ⊠ Group discussion
- ☐ Laboratory

- Site visit
- 50 Self-learning
- Presentation
- Mint project
- Research and reporting (self-learning)
- M Brainstorming

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Course Schedule

			Exp	octed number of the L	coming Hours	
No. of the Week	of the (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined
1	Introduction to architecture (introduction and groups' formulation).	8	2	4	2	
2	Developing skills and abilities to multiple types and techniques of presentation for architectural design projects. (Project research studies and program analysis & Review examples of the previously mentioned project).	8	2	4	2	
3-4	Developing skills and abilities to multiple types and techniques of presentation for architectural design projects. (Sketch design for the project's concept and layout)	16	4	8	4	
5	Developing skills and abilities to multiple types and techniques of presentation for architectural design projects. (Draft design for the project's plans).	10		4	4	
6-7	Training the student to study and solve simple design problems (Review the sketches of the students to determine if they understand the principles of architectural design).	18		8	6	

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2000	Manager William Page 1	ter.	Exp	ected number of the L	earning Hours	
No. of the Week	The state of the s	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/	Self-learning (Tasks/ Assignments/ Projects/)	Other (ii) be determined
8			Mid Term Exar	n	-	
9	Design problems (Review the sketches of the students to determine if they understand the principles of architectural design).	10	2	4	4	
10	Training the student to study and solve simple design problems (Identify details for design project and presentation +Formulate own idea of the project).		2	4	4	
11	Sketch design for the project's sections and elevations+ Illustrate more detailed sketches for project.	10	10 2 4		4	
12- 13	Developing skills and nbilities to multiple types and techniques of presentation for architectural design projects. (Review final project drawings and presentation of the project).	ills and iple types es of for design 20 4 8		8		
	Training the student to study and solve simple design problems (Discuss problems facing the students and implement the previous commands in the project).	19	(1)	4	4	
15	Developing skills and abilities to multiple types and techniques of	10	2	4	4	

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Nu. of the Week	201112		Expected number of the Learning Hours						
	Scientific content of the course (Course Topies)	Total Weekly Hours	TOTAL STREET	Training (Practical/Clinical/	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined			
	presentation for architectural design projects. (Final submission of the project).								
16			Final Exam						

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
L	Quizzes	6, 11	13.5	7.7 %
2.	Mid-Term Examination	8	27	15.4 %
3.	Final Examination	(As Schedule)	60	34.3%
4.	Lab Exam		-	
5.	Activities and assignments	Every week	49.5	28.3%
6.	Final Oral Exam (if exists)	(As Schedule)	25	14.3%

6. Learning Resources and Supportive Facilities

Learning	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Ching, Francis D.K. A Visual Guide. 1st edition, Wiley, 2017.
Learning resources (books, scientific references, etc.)	Other References	 Ching, Francis D.K. Form, Space, and Order. 4th edition, Wiley, 2021. Bergman, David. A Critical Guide. 1st edition, Princeton Architectural Press, 2019. Douglas, R. S. Design Drawing. 3rd edition, Wiley, 2020.
	Electronic Sources (Links must be added)	Arch Daily (https://www.archdaily.com) Coursera - Fundamentals of Architecture Design (https://www.coursera.org

Ministry of Higher Education Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architecture Engineering Program



	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	راقت، على تالالية الإبداع المعمارين. الإبداع المادي في الممارة - البيئة والفراغ بالطيعة الأولى، الأهرام، بدون تاريخ نشر محدد
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment	Supplies	Whiteboards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/ Simulators	-
and	Virtual Labs	-
learning	Other (to be mentioned)	

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Toulo	Lee		Course Learning outcomes "CLOs"								
	Topics	Lecture	T/L	CTOI	CLO2	CLO3	CLO4	CLOS		CL07		
1	Introduction to architecture (introduction and groups' formulation).	2	4	x						UPES		
2	Developing skills and abilities to multiple types and techniques of presentation for architectural design projects. (Project research studies and program analysis &Review examples of the previously mentioned project).	2	4		x	x.						
3- 4	Developing skills and abilities to multiple types and techniques of presentation for architectural design projects. (Sketch design for the project's concept and layout)	4	8		x		x					
5	Developing skills and abilities to multiple types and techniques of presentation for architectural design projects. (Draft design for the project's ptims).	A	4		x		x	x				
6-7	Training the students to study and solve simple design problems (Review the sketches of the students to determine if they understand the principles of architectural design).	1	8	×						1		
8	Mid-Teur	Exam	1							Table 1		
9	Design problems (Review the sketches of the	2	4									

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Topics	Lecture	177	Course Learning outcomes "CLOs"						
Topics		75	CLOI	CLOZ	CLO3	CLO4	CLOS	CLO6	CLO7
Training the student to study and solve simple design problems (Identify details for design project and presentation+ Formulate own idea of the project).	2	4	x		x			1000	
Sketch design for the project's sections and elevations+ Illustrate more detailed sketches for project,	2	4		x.		x	x		T
Developing skills and abilities to multiple types and techniques of presentation for architectural design projects. (Review final project drawings and presentation of the project).	4	8	x					×	х
Training the student to study and solve simple design problems (Discuss problems facing the students and implement the previous commands in the project).	2	4	x	х					
Developing skills and abilities to multiple types and techniques of presentation for architectural design	2	4				x	x	x	
	Training the student to study and solve simple design problems (Identify details for design project and presentation) Formulate own idea of the project). Sketch design for the project's sections and elevations+ Illustrate more detailed sketches for project. Developing skills and abilities to multiple types and techniques of presentation for architectural design projects. (Review final project drawings and presentation of the project). Training the student to study and solve simple design problems (Discuss problems facing the students and implement the previous commands in the project). Developing skills and abilities to multiple types and techniques of presentation for architectural design projects. (Final submission of the project).	Training the student to study and solve simple design problems (Identify details for design project and presentation) Formulate own idea of the project). 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Training the student to study and solve simple design problems (Discuss problems facing the students and implement the previous commands in the project). Developing skills and abilities to multiple types and techniques of presentation for architectural design the students and implement the previous commands in the project).

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning	Course Learning outcomes "CLO's"										
Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6	CLO?				
Face to face lecture	x	A	3	X			CLO				
Tutorial / Exercise	- 3		x	x	- 3	- 8					
Group discussion	x		x		X	X					
Site visit			-								
self-learning		_		X							
Presentation	1	AL THE	534								
Mini project	153	-60	SCENE .	-		0.001					
Research and reporting	1/3/	1	2535		. X	x	_				
Brainstorming	11XE	100	J 101				X				
Case study	110 9		T.			X	X				
	11314		CX I		X						

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architecture Engineering Program



7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLO's"									
Assessment Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7			
Final written exam		x	x		X	x				
Mid-term Exam			x		X	x				
Quizzes		X		X	X	X				
Research assignments	X		x				×			
In-class questions (formative assessment)	х	x		x						
Oral Exam	x		X				×			
Project assignments		X	x	x	×		×			

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf		2025-2026
Program coordinator:	10/0/201	

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf		2025-2026

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1. Basic Information:

Course Title (according to the bylaw)		Buildir	ng construction (1)			
Course Code (according to the bylaw)			ARE 112			
Department's participating in offering t	he course	Architecture Engineering Department				
Number of credit hours points of the co	ourse (accord	ing to the bylaw)				
Lecture	Tutorial	Laboratory	Total contact			
2		4	.6			
Course Type		⊠ Compulsory	☐ Elective			
Academic level at which the course is t	noght	First Year				
Academic Program		Architectural Program				
Faculty/Institute		Higher Institute of I	Engineering and Technology at Maszalla			
University/Academy		Mae	izalla Academy			
Name of Course Coordinator		Dr. Huda El Baz				
Course Specification Approval Date		16 August 2025				
Course Specification Approval		Institute Council	No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Traditional construction - masonry - raw bricks & brick masonry - construction buildings - types & techniques: the wall bearing type - construction of roofs, Floors, and ceilings - building insulation against dampness, rain drainage - construction building types & techniques: the skeleton type and its construction components -mortars and finishing materials - applications and working drawings of simplified buildings - introduction to technical sanitary installations.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	Program Outcomes (NARS/ARS) ding to the matrix in the program specs)	Course Learning Outcomes Upon completion of the course, the student able to:					
Code	Text	Code	Text				
	Utilize contemporary technologies, codes of practice and standards, quality	CL02	Choose the materials properties and their appropriate, usage in the project's drawings.				
A4	guidelines, health and safety requirements, environmental issues, and risk	CLO3	Analyze the principles of construction and installation as related to construction materials.				
	management principles.	CLO4	Hlustrate the architectural and working drawings; plans, sections, and elevations				
	Generate Ecologically responsible environmental conservation and	CLO1	Identify construction types and installations and analyze architectural drawings' details.				
В3	rehabilitation designs through understanding structural design, construction, Technology and engineering problems associated with building designs.	CLO5	Estimate a new perspective for building materials and structure systems.				
	Transform design concepts into buildings and integrate plans into overall planning	CLO6	choose proper structural system.				
	within the constraints of project financing, project management, cost control and	CLO7	Identify Construction System & Foundation types. Usage in the project's drawings.				
B4			Identify Building insulation against dampness, rain drainage.				
			Appraise Materials applications & Internal &external finishing and Identify Mortars and finishing materials.				

4. Teaching and Learning Methods

☑ Face to face lecture
 ☑ Online education
 ☑ Self-learning
 ☑ Tutorial / Exercise
 ☑ Presentation
 ☑ Mini project
 ☑ Laboratory
 ☑ Research and reporting (self-learning)

☑ Brainstorming



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Course Schedule

			Expecte		he Learning Hou	IO)
No. of the Week	The (Course Topics) Weekly Teek Hours		Theoretical teaching (lectures/discus sion groups/	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determined)
1	Traditional construction & Course definition (Drawing tools & sketching.) (Introduction: Sequence of construction work & Symbols)	8	2	4	2	
2	Masonry - raw bricks & brick masonry (Foundations & plans)	8	2	4	2	
3-4	Construction buildings - types & techniques: the wall bearing type (Elevations)	16	4	8	4	
5-6-7	Construction of roofs, Floors, and ceilings (Structure Systems (Building Moisture insulation works)	24	6	12	6	
8		Mid	Term Exam		9	
9	Building insulation against dampness, rain drainage. (Stairs & Section)	10	2	4	4	
10	Construction building types & techniques: the skeleton type and its construction components. (stone wall and break types)	10	2	4	4	
11	Mortars and finishing materials (Building Thermal insulation works) + Quiz2+ (project)	10	2	4	4	
12-	Applications and working drawings of simplified buildings. (Finishing work part 1)	20	4	8	×	
14	Introduction to technical sanitary installations (Finishing work part 2)	10	2	4	4	
1.5	Final submission of the project and Revision	10	2	4	4	
16		Fit	nal Exam			

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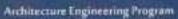
5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	11	6.3%
2.	Mid-Term Examination	8	23	13.1 %
3.	Final Examination	(As Schedule)	100	57.2%
4.	Lab Exam			-
5.	Activities and assignments	Every week	41	23,4%
6.	Final Oral Exam (if exists)		(44)	

6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Ching, Francis D.K. Building Construction Illustrated. 5th edition, Wiley, 2014.				
Learning resources (books,	Other References	Allen, Edward, and Iano, Joseph. Materials and Methods of Construction. 6th edition, Wiley, 2019.				
scientific references, etc.) *	Electronic Sources (Links most be added)	The Constructor - https://theconstructor.org Coursera - Construction Project Management (https://www.coursera.org)				
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/				
	Other (to be mentioned)	هندسة التشييد (الجزء الثاني تشطيبات المباني - الجزء الثالث مرافق المياه والصرف الصحي)، محمود حمين المصيلحي، 2018.				
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.				
equipment	Supplies	Whiteboards.				
for	Electronic Programs	Microsoft Office program, Acrobat Reader				
teaching	Skill Labs/ Simulators	<u> </u>				
and	Virtual Labs	***				
learning *	Other (to be mentioned)					

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

		-		C	ourse	Lear	ning	outer	mes '	CLC)s"	
Week	Topics	Lecture	T/L	CT.01	CLO2	CLO3	CLO4	CLOS	CL06	CL07	CLO8	CLO9
1	Traditional construction & Course definition (Drawing tools & sketching.) (Introduction: Sequence of construction work & Symbols)	2	4	x	х							
2	Masonry - raw bricks & brick masonry (Foundations & plans)	2	4	X					X	x		
3	Construction buildings - types & techniques: the wall bearing type (Elevations) + Quiz1		8		x		х	x				X.
5	Construction of roofs, Floors, and					-						
6	ceilings (Structure Systems	4	8			x	x				X	
7	(Building Moisture insulation works)											
8		Mid	term	exar	n							
9	Building insulation against dampness, rain drainage. (Stairs & Section)	2	4	X		x	x					X
10	Construction building types & techniques: the skeleton type and its construction components. (stone wall and break types)	2	4		x	x	x	х				x
11	Mortars and finishing materials (Building Thermal insulation works) + Quiz2+ (project)	2	4	x	х			x				х
12- 13	Applications and working drawings of simplified buildings. (Finishing work part 1)	4	8		x	x	x	х	x			x
14	Introduction to technical sanitary installations. (Finishing work part 2)	2	4		x	x			x		х	
15	Final submission of the project and Revision	2	4	x	X	X	X	X	X	X	X	x
16		Fi	nal E	xam							- '	

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7.2. Teaching and learning matrix with CLOs:

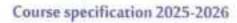
Teaching and			Cour	se Learn	ing outco	mes "Cl	LO's"		
Learning Methods	ng Methods CLO1 Cl		.01 CL02 CL03 CI		CLO5	CLO6	CLO7	CLO8	CLO9
Face to face lecture	X	X	X	X	X.	X	X	X	
Online-education									
Tutorial / Exercise		X	X	X	X	X	X	X	
Group discussion	X		N			X			X
Site visit	X				X	X	X		
Self-Learning						1111			
 Presentation 	X.	N	X	X	X	X	X	X	X
 Mini project 	X	X			X				X
Research and reporting				x					X
Brainstorming		X		X.	X			X	X
Case study					X	X	X		

7.3. Student assessment matrix with CLOs:

Assessment			Cour	se Learn	earning outcomes "CLO's"	LO's"			
Methods	CLO1	CLO2	CLO3		CLO5			CLO8	CLO9
Final written exam		X	X	X	X	N	X	N	X
Oral exam									
Mid-term Exam	N.	X	X	X					
Quizzes			X	X			X	X	
Research assignments				X			N		
In-class questions (formative assessment)	х	х	x		х		X	X	х
Project assignments		x			х		X	X	x

Course coordinator:

Name	Signature	Academic Year	
Dr. Huda El Baz	2000/2	2025-2026	
Program coordinator:			
Name	Signature	Academic Yea	



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1. Basic Information:

Course Code (according to the bylaw)		100.113		
	ARE 113			
Department's participating in offering the course	Architecture	Engineering Department		
Number of credit hours/points of the course (acco	ording to the hylaw)			
Lecture Tutor	ial/Laboratory	Total contact		
3	(4)	3		
Course Type	00 Compulsory	□ Elective		
Academic level at which the course is taught	First Year			
Academic Program	Archi	tectural Program		
Faculty/Institute	Higher Institute of Engineering and Technology Manzalla			
University/Academy	Manzalla Academy			
Name of Course Coordinator	Dr. N	farwa El Adham		
Course Specification Approval Date	16	August 2025		
Course Specification Approval	Institute Council	Institute Council No. (12) on 16 August 2025		

2. Course Overview (Brief summary of scientific content)

A. History of architecture; prehistoric architecture - Ancient Egyptian architecture - Ancient Egyptian cities - Castles and forts - Houses - Temples (for life & funeral ceremonies) - Tombs - Mesopotamian architecture - Greek architecture- Roman - architecture.

B. Theories of architecture: study of the concepts of architecture and its theory-Building types -Design constraints of private and public building elements -Human dimensions and used spaces and zones - vertical and horizontal circulation elements in buildings - criteria' and principles of planning and designing parking lots.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes a completion of the course, the student will be able to:
Code	Text	Code	Text
A3	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.	CL04	Apply new knowledge by selecting lessons and basis of architectural work from the different theories through different ancient ages and applying them in architectural work.
A8	Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools.	CLO6	Identify Jessons and the besis of architectura work from the different theories through different ancient ages and apply them in architectura work.
	Produce designs that meet building users' requirements through understanding the relationship between people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale.		Identify from the development in architectura theories across ancient civilizations.
B2			Use adequate knowledge of the ancient age's architecture according to success in respecting economic, societal, environmental dimensions and risk management in design.
В3	Generate ecologically responsible environmental conservation and rehabilitation designs through understanding structural design, construction, technology and engineering problems associated with building designs.	CLO2	Practice research on different architectural theories through different ancient ages.

4. Teaching and Learning Methods

- Face to face lecture
- ☐ Online education
- DD Tutorial / Exercise
- □ Group discussion
- □ Laboratory

- ☐ Site visit
- Self-learning
- D Presentation
- Mini project
- ⊠ Research and reporting (self-learning)
- Brainstorming

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Course Schedule

			Expected number of the Learning Hours					
No. Scientific content of the course of the (Course Topics) Week	Total Weekly Hours	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Taska/ Assignments / Projects/)	Other (to be desermin ed)			
1	History of architecture, prehistoric architecture.	4	3	5.	1			
2	Ancient Egyptian architecture - Ancient Egyptian cities.	4	3	-	1			
3	Castles and forts - Houses - Temples (for life & funeral ceremonies) - Tombs	4	3		1			
4	Mesopotamian architecture	4	3		1			
5	Greek architecture	4	3	-	1			
6-7	Roman architecture.	8	6		2			
8		Mid	Term Exam					
9	Theories of architecture: study of the concepts of architecture and its theory.	4	3	2	1			
10	Building types.	4	3		- 1			
11	Design constraints of private and public building elements.	4	3	+	1			
12	Vertical and horizontal circulation elements in buildings	4	3	20	1			
14	Criteria and principles of planning and designing parking lots.	4	3	27	1			
15	General revision and discussion of student questions.	4	3	\$3	1			
16		Fi	nal Exam					

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6,11	6	6.56
2.	Mid-Term Examination	8	12	12%
3.	Final Examination	(As Schedule)	60	60.%
4.	Lab Exam	**		
4. 5.	Activities and assignments	Every week	22	22 %
6.	Final Oral Exam (if exists)	-		-

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6. Learning Resources and Supportive Facilities

a	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Neufert, E. (1992). Architects' Data: Handbook of Building Types.	
	Other References	A History of Architecture on the Comparative Method by Sir Banister Fletcher (1996) The Architecture of the City by Aldo Rossi (1982) The Evolution of Architecture by Pierre du Biez (1988) Towards a New Architecture by Le Corbusier (1923)	
	Electronic Sources (Links must be added)	The Architecture Foundation — https://www.architecturefoundation.org.uk Coursera — History of Architecture (https://www.coursem.org)	
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/	
	Other (to be mentioned)	عبد الجواد، توقيق ـ تاريخ العمارة والقنون في العصور الاولى ـ مكتبة الالجلو ـ 1971 Theories and Manifestos of Contemporary Architecture by Charles Jeneks (2000)	
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.	
equipment	Supplies	Whiteboards.	
for	Electronic Programs	Microsoft Office program, Acrobat Reader	
teaching	Skill Labs/ Simulators		
and	Virtual Labs	-	
learning	Other (to be mentioned)		

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

11		-		C	Course Learning outcomes "CLO's"				
Week	Topics	Lecture	T/L.	CLOI	CLO2	CL03	CL04	CLOS	CI.06
1	History of architecture; prehistoric architecture.	3	-	X	X	X		-	
2	Ancient Egyptian architecture -Ancient Egyptian cities.	3	-			-		X	
3	Castles and forts - Houses - Temples (for life & funeral ceremonies) - Tombs	3						X	
4	Mesopotamian architecture	3			X				
5	Greek architecture	3	-				X	X	X
6	Roman architecture.	3	-		X	X		-	-
7	Mid-term exar	11							
8	Theories of architecture: study of the concepts of architecture and its theory.	3			X				
9	Building types.	3	-				X	·X	X
10	Design constraints of private and public building elements.	3					X	x	x
11	Human dimensions and used spaces and zones.	3					X		
12	Vertical and horizontal circulation elements in buildings	3	+		X	x			
13	Criteria and principles of planning and designing parking lots.	3	-		x		X		
14	General revision and discussion of student questions.	3			X		X		
15	Final Exam	1000	1				1000		

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course Learning outcomes "CLO's"						
reaching and centuing methods	CLO1	CLO2	CLO3	CLO4	CLO5	CL06	
Face to face lecture	X.	X	X	X	X	X	
Group discussion		X	X				
Site visit					X	X	
Self-Learning							
Presentation		X	X	X			
Mini project		X	X	X		X	
Research and reporting		X	X	X			
Brainstorming		X		X	X	X	
Case study	X	X		1120			

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7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLO's"						
	CL01	CLO2	CLO3	CLO4	CL05	CLO6	
Final written exam				X	X	X	
Mid-term Exam				X	X	X	
Quizzes				X	X	X	
Research assignments	X	X	X	X			
In-class questions (formative assessment)			X	X			
Project assignments			X	X	X	X	

Course coordinator:

Name	Signature	Academic Year
Dr. Marwa El Adham	-OVINIE)	2025-2026
Program coordinator:	County	
Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf		2025-2026

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architecture Engineering Program



1. Basic Information:

Course Title (according to the byle	iw)	The	pory of structure	
Course Code (according to the by)	aw)	CIVALLI		
Department's participating in offer	ring the course	Civil Engineering Department		
Number of credit hours/points of t	he course (accord	ing to the bylaw)		
Lecture Tutorial /		/ Laboratory	Total contact	
2	2		4	
Course Type		20 Compulsory	□ Elective	
Academic level at which the course	e is taught	First year		
Academic Program		Architectural Engineering Program		
Paculty/Institute		Higher Institute of Engineering and Technology Manzalla		
University/Academy		Manzalla Academy		
Name of Course Coordinator		Prof. Dr.Basem osami Rageh		
Course Specification Approval Date		16 August 2025		
Course Specification Approval		Institute Council No. (12) on 16 August 2025		

2. Course Overview (Brief summary of scientific content)

Basic concepts and analysis of structure - equilibrium - stability and compatibility - external and internal equilibrium of statically determined plane structures, beams, frames, and trusses - normal sheer - torsion and combined stress - elasticlations - introduction to the analysis of statically indeterminate structures through Consistent deformations and moment distributions - buckling of columns -introduction structures

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Upon	Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
Apply engineering design processes to produce cost-effective solutions		CL01	identify formulate, and solve general engineering problems
A3.	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.	CLO3	Calculate different types of structure and finding the support reactions.
A5.	Practice research techniques and 5. methods of investigation as an	CLO2	use the techniques, skills, and modern engineering tools necessary for engineering practice
	inherent part of learning.	CLO5	teach the space structures and space frames
B1.	Create architectural, urban and planning designs that satisfy both aesthetic and technical requirements, using adequate knowledge of: history	CLO4	solve different types of internal loadings in different types of structures including shear normal and moment values in terms of values and function
	and theory, related fine arts, local culture and heritage, technologies and human sciences	CLO6	Discuss buckling of columns

4. Teaching and Learning Methods

□ Face to face lecture	Site visit
☐ Online education	⊠Self-learning
ETutorial / Exercise	
⊠Group discussion	☐Mini project
☐ Laboratory	☐ Research and reporting (self-learning)
	□ Brainstorming



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Course Schedule

		1	Expecto	d number of t	be Learning Hos	IO.
No. of the Week	Scientific content of the course (Course Topics)	Total Week ly Hours	Thorotical teaching (lectures/discus sion groups/	Training (Practical/ Clinical/	Self-learning (Tanks/ Assignments / Projects/)	Other (to be determin ed)
T.	Basic concepts and analysis of structure	6	2	2	2	
2-3	equilibrium	12	4	4	4	
4-5	stability and compatibility	12	4	4	4	
6-7	external and internal equilibrium of statically determined plane structures, beams, and frames,	12	4	4	4	
8	1.	Mid-	Term Exam			
9-10	normal shear and torsion and combined stress	12	4	4	4	
11-12	introduction to the analysis of statically indeterminate structures through Consistent deformations and moment distributions	12	4	4	4	
13	Buckling of columns	6	2	2	2	
14	Introduction structures	6	2	2	2	
15	revision	6	2	2	2	
16		Fir	al Exam			

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	4.5	4.5%
2.	Mid-Term Examination	8	13.5	13.5%
3.	Final Examination	16(As Schedule)	70	70%
4.	Lab Exam			
5.	Activities	Every week	12	12%
6.	Final Oral Exam (if exists)	-		- 3

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6. Learning Resources and Supportive Facilities

Learning resources (books, scientific references, etc.)	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Timoshenko, S. (1983). History of strength of materials: with a brief account of the history of theory of elasticity and theory of structures. Courier Corporation
	Other References	Lecture Notes
	Electronic Sources (Links must be added)	School Control Adv.
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	Khachaturyan, A. G. (2013). Theory of structural transformations in solids. Courier Corporation.
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
	Supplies	Whiteboards.
for teaching and	Electronic Programs	Microsoft Office program, Acrobat Reader, Autocad
	Skill Labs/ Simulators	
	Virtual Labs	**
learning	Other (to be mentioned)	

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Lecture	T/L		Course L	earning	outcome	"CLOs	18
THER		Lecture	LIL	CLOI	CLO2	CLO3	CLO4	CLO5	CLO
1	Hasic concepts and analysis of structure	2	2	X					
2-3	equilibrium	4	4	X		x			
4-5	stability and compatibility	4	4		x		x		
6-7	external and internal equilibrium of statically determined plane	4	4		x		x	x	
	structures, beams, and frames,			х					x
8			Mid	Term Ex	am				
9-10	normal shear and torsion and combined stress	4	4			x	x		
11-12	introduction to the analysis of statically indeterminate structures through Consistent deformations and moment distributions	4	2		x		x	x	
13	Buckling of columns	2	2	X					x
14	Introduction structures	2	2	X	x				10
15	revision	2	2				x	x	x
16			Fi	nal Exam					

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course Learning outcomes "CLOs"						
	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	
Face to face lecture	X	X	-	-	x	x	
Tutorial / Exercise	x		x	x	x		
Group discussion	X	X		x			
Site visit		X					
Self-Learning							
Presentation	X		X		x		
Brain storming				x		x	

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7.3. Student assessment matrix with CLOs:

A	Course Learning outcomes "CLOs"						
Assessment Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	
Final written exam			x	X	x		
Mid-term Exam			x				
Quizzes	S.	X	x	- 3		X	
Lab Exam	x	X	x				
In-class questions (formative assessment)	x	X					

Course coordinator:

Name	Signature	Academic Year
Prof. Dr.Basem osami	() 1	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	/	2025-2026



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1. Basic Information:

Course Title (according to the bylaw)		Surveying.			
Course Code (according to the bylaw)		CIVA 112			
Department's participating in offering the	course Civ	il Engineering Department			
Number of credit hours points of the cours	se (according to the bylaw)				
Lecture	Tutorial / Laboratory	Total contact			
2	3	5			
Course Type	⊠ Compulsory	□ Elective			
Academic level at which the course is tang	cht	first year			
Academic Program	Archites	Architectural Engineering Department			
Faculty/Institute	Higher Institu	Higher Institute of Engineering and Technology a Manzalla			
University/Academy		Manzalla Academy			
Name of Course Coordinator	Dr.	Kareem Mohamed Found			
Course Specification Approval Date		16 August 2025			
Course Specification Approval	Institute Co	Institute Council No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

The course aims to introduce the basic elements of engineering surveying and its architectural applications:

- A. Surveying and measuring operations: plotting scales, venires, linear and simple angular measurement devices,
- B. Chain surveying: leveling and theodolites map drawing photogrammetry and its architectural applications.



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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS).

	Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes ompletion of the course, the student will be able to:
Code	Text	Code	Text
	Identify, formulate, and solve	CLO1	Distinguish and understand different types of survey.
Al	complex engineering problems by applying engineering fundamentals, basic science, and mathematics.	CLO2	Discuss plane surveying instruments such as tapes, EDM, levels, theodolite, and compass.
			Construct different types of map scale.
A2	Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess, and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.	CLO6	Act professionally in design and supervision of civil engineering.
A6	Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements.	CLO5	Discuss Leveling: definitions, differential leveling and field methods, leveling errors, Laser leveling.
A7	Function efficiently as an individual and as a member of multi- disciplinary and multi-cultural teams	CLO4	Practice experimentally in the Field and use different equipment in measuring plane surveying.

4. Teaching and Learning Methods

□ Face to face lecture	Site visit
☐ Online education	Self-learning
□ Tutorial / Exercise	□ Presentation
☑ Group discussion	☐ Mini project
■ Laboratory	⊠ Research and reporting (self-learning)
	☐ Brainstorming



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Course Schedule

			Expected number of the Learning Hours				
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hoors	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determined)	
ti	Introduction to Plane Surveying, Methods of measurements and setting-up.	6	2	3	1		
2	Shape of earth, surveying branches.	6	2	3	1		
3	Instruments and methods of linear measurements, Simple surveying techniques, Chain surveying.	6	2	3	1		
4	Surveying using compass, Common parts of surveying instruments.	6	2	3	1		
5	Plane table, Verniers, Maps and its arrangements.	6	2	3	1		
6-7	Leveling and contour lines	12	4	6	2		
8		Mid	term Exam				
8-9	Areas and volumes, Land leveling.	12	4	6	2		
10	Surveying using theodolites.	6	2	3	1		
11- 12	Introduction to the theory of errors.	12	4	6	2		
13- 15	Map drawing photo grammar and its Architectural Application.	18	6	9	3		
16		Fi	nal Exam				

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
l.	Quizzes	6, 11	3	3%
2.	Mid-Term Examination	8	9	9%
3.	Final Examination	(As Schedule)	70	70%
4.	Lab Exam	(As Schedule)	10	10%
5.	Activities and assignments	Every week	8	8%
6.	Final Oral Exam (if exists)		4	

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6. Learning Resources and Supportive Facilities

Learning	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Krishna, R. A., & Ashok, S. (2020, June). Automated land area estimation for surveying applications. In 2020 International Conference for Emerging Technology (INCET) (pp. 1-5). IEEE.		
(books,	Other References	Lecture Note.		
scientific references,	Electronic Sources (Links must be added)	https://dailycivil.com/plane-surveying- details/		
etc.) *	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/		
	Other (to be mentioned)	Walker, I., & Witschel. (2020). Surveying for civil and mine engineers: Springer International Publishing.		
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and		
equipment	Supplies	Computers with internet access. Whiteboards.		
for	Electronic Programs	Microsoft Office program, Acrobat Reader		
teaching	Skill Labs/ Simulators	interest office program, Acrosat Reader		
and	Virtual Labs	-		
learning *	Other (to be mentioned)			

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Lecture contents:

¥	Topics	Course Learning outcomes "CLOs"							
Week	Topics	Lee	T/L	CLOI	CLO2	CLO3	CL04	CLO5	CLO6
1	Introduction to Plane Surveying, Methods of measurements and setting-up.	2	3	х					
2	Shape of earth, surveying branches.	2	3	X	Х				
3	Instruments and methods of linear measurements, Simple surveying techniques, Chain surveying.	2	3		x	x			
4	Surveying using compass, Common parts of surveying instruments.	2	3	х		х	х		
5	Plane table, Verniers, Maps and its arrangements.	2	3	х			X		
6-7	Leveling and contour lines	4	6				X		
8			Mid 7	erm Exar	m			11	
9	Areas and volumes, Land leveling.	4	6	Х	Х		X	X	
10	Surveying using theodolites.	2	3	X	X	X			
11-	Introduction to the theory of errors.	4	6		x			x	
13-	Map drawing photo Grammer and its Architectural Application.	6	9		х			х	X
16			Fin	al Exam					

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5.2 Practical Contents:

Week	Topics	Lab Hrs.	CLOs
1	Introduction and definition of tools and devices in the laboratory and their uses.	2	CLO4
3	Practical Exercise (1): Lines, Height and Column Projection Using a measuring tape to determine lengths	2	CLO4
5	Practical Exercise (2): A) Lifting using longitudinal measuring tools B) Creating a cadastral map of an area based on the infill details of the survey polygon.	2	CLO4
9	Practical Exercise (3): A) Temporary Adjustment of the Level B) Permanent Adjustment of the Level	2	CL04
10	Continue practical exercise (3): C)Calculating Point Elevations (Leveling) D)Longitudinal and Transverse Leveling E) Conducting a leveling network and creating a contour map	2	CLO4
12	Practical Exercise 4 A) Measuring traverse angles with a theodolite B) Measuring traverse lengths with a theodolite or a level (tachymetry method)	2	CL/04

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course Learning outcomes "CLOs"							
reacting and treating methods	CLO1	CLO2	CLO3	CLO4	CL05	CLO6		
Face to face lecture	X	X	X	X	X	X		
Tutorial / Exercise	X	X	X	X	X	Х		
Group discussion				X		X		
Laboratory			X	X	X			
Site visit		X	X	X	X	х		
Self-Learning								
Presentation			X					
Research and reporting			X	X		X		

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7.3. Student assessment matrix with CLOs:

Student assessment methods: -

Oral exam	Course Learning outcomes "CLOa"								
reservances recursos	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6			
Final written exam	X	X	X	X	X	X			
Oral exam						X			
Mid-term Exam	X	X	X						
Quizzes			X		X				
Lab Exam			X	X	X				
In-class questions (formative assessment)			х		х				

Course coordinator:

Name	Signature	Academic Year
Dr. Kareem Mohamed Fouad	Oth 11.	2025-2026

Program coordinator:

Name	Signature	Academic Year	
Prof. Dr. Tarek Abu Auf	1	2025-2026	



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I. Basic Information:

Course Title (according to the bylaw)		Architectural design (2)			
Course Code (according to the bylaw)		ARE 121			
Department/s participating in offering	the course	Architectural Engineering Program			
Number of credit hours/points of the c	ourse (accordi	ing to the bylaw)			
Lecture	Tutorial /	Laboratory	Total contact		
2		4	6		
Course Type		☑ Compulsory	□ Elective		
Academic level at which the course is	taught	First Year			
Academic Program		Architectural Engineering Program			
Faculty/Institute		Higher Institute of Engineering and Technology a Manzalla			
University/Academy		Manzalla Academy			
Name of Course Coordinator		Prof. Dr. Tarek Abu Auf			
Course Specification Approval Date		16 August 2025			
Course Specification Approval		Institute Council No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Simplified projects dealing with aesthetic, cultural, environment, functional, and structural constraints of architectural form and space - principles of using and designing building interiors and external spaces, services, vertical/horizontal circulation, with reference to human needs and interactions with surrounding built and natural environments - applications with architectural models and studying types and techniques of presentation in architectural design and projects.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Eiroco	Program Outcomes (NARS/ARS) rding to the matrix in the program spees)	Upon	Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
A3	Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for global, cultural,	CLe1	Illustrate simplified examples of projects dealing with aesthetic, cultural, environmental, functional, and structural constraints of architectural form.
	social, economic, environmental, ethical and other aspects as	CLo2	Analyze problems, formulate solutions and architectural articulation.
	appropriate to the discipline and within the principles and Contexts of sustainable design and development.	Clo3	Evaluate different alternative solutions to design issues.
A7	Function efficiently as an individual	CL04	Apply sustainable concepts to solve design problems.
	and as a member of multi- disciplinary and multi-cultural teams.	CLo5	Describe the cultural, social, economic, environmental, ethical, and other aspects of sustainable design and development.
B2	Produce designs that meet building users' requirements through	CLo7	Create an integrated proposal that keep social, cultural, economic, and identity
	understanding the relationship between people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale.	CLo8	Apply the various types and techniques of presentation in architectural design and projects.
83	Generate ecologically responsible, environmental conservation and rehabilitation designs through understanding of the structure of architectural design, construction, technology and engineering problems associated with building designs.	C1.06	Design building interiors and external spaces, services, and Principles of using vertical horizontal circulation.

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4. Teaching and Learning Methods

☐ Online education

M Group discussion

☐ Laboratory

⊠Case study

Site visit

図 Self-learning

□ Presentation

Mini project

@ Research and reporting (self-learning)

Brainstorming

Course Schedule

	Scientific content of the	AWY DA	Expo	ected number of the L	earning Hours	
No. of the Week	(Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)
1-3	Simplified projects dealing with nesthetic, cultural, environment, functional, and structural constraints of architectural form and space & (Project introduction and groups' formulation. Objectives of Project design).	24	6	12	6	
4-3	Principles of using and designing building interiors and external spaces, services (Defining Phases of architectural design process.	16	4	8	4	
67.	principles of using and designing building interiors and external spaces, services (Site Analysis, Concept and Space syntax)	16	4	8		
.18	The state of the s		Mid Term Exa	im		
9	Principles of using vertical/horizontal circulation, with reference to human needs and interactions with surrounding built and natural environments	8	2	4	2	
10-11	principles of using vertical/horizontal circulation, with reference to human needs and interactions	16	4	8	4	

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		_				
No.	Scientific coment of the	4000	Exp	reied number of the L	earning Hours	
of the Week	(Course Topics()	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined
	with surrounding built and natural environments (Structure Systems for Residential buildings)				I rojetts	
12	applications with architectural models and studying types and techniques of presentation in architectural design and projects	8	2	4	2	
13-14	applications with orchitectural models and studying types and techniques of presentation in architectural design and projects. (Elevations and Architectural styles)	16	4	8	4	
15	Applications with architectural models and studying types und techniques of presentation in architectural design and projects. (Final Layout Submission, Perspective, Shots) Final Booklets Submission	8	2	4	2	
16		-	Final Exam			

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	11	7.3%
2.	Mid-Term Examination	8	23	15.4%
3.	Final Examination	16	60	40%
4.	Lab Exam		1000	100000
5.	ACTIVETES and assignments	Every week	41	.%
6.	Final Oral Exam (if exists)	(As Schedule)	15	27.3%

8.01

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6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	·Hall, D. J., & Giglio, N. M. (2016). Architectural Graphic Standards, John Wiley & Sons.						
Learning resources (books, scientific references,	Other References	 Wasson, C. S. (2015). System engineering analysis, design, and development: Concepts, principles, and practices. John Wiley& Sons. Barron, M. (2009). Auditorium acoustics and architectural design. Spon Press. 						
etc.)	Electronic Sources	https://www.firstinarchitecture.co.uk/how-to-						
3217001000000	(Links must be added)	develop-architectural-concepts/						
	Learning Platforms (Links must be added)	https://hms.manzalaacademy.edu.eg/						
	Other (to be mentioned)							
	Devices/Instruments	Projectors, audio-visual systems, and Computers with						
-	The state of the s	internet access.						
Supportive facilities &	Supplies	Whiteboards.						
equipment	Electronic Programs	Microsoft Office program, Acrobat Reader						
for teaching and	Skill Labs/Simulators							
learning	Virtual Labs	-						
	Other (to be mentioned)							

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

		-		Course Learning outcomes "CLOs"							
Week	Topics	Lecture	1/L	CLOI	CLO2	CLO3	CLO4	CL.05	CLO6	CLO7	CLOS
1-2	Simplified projects dealing with aesthetic, cultural, environment, functional, and structural constraints of architectural form and space & (Project introduction and groups' formulation. Objectives of Project design).	4	8	x	x						
3	Principles of using and designing building interiors and external spaces, services (Defining Phases of architectural design process.	2	4		x	x	x				
4-5	principles of using and designing building interiors and external spaces, services (Site Analysis, Concept and Space syntax)	4	ж						x		
8	Mid Term Exam										
9	Principles of using vertical/horizontal circulation, with reference to human needs and interactions with surrounding built and natural environments (Initial concept proposal).	2	4						x		
10-11	principles of using vertical/horizontal circulation, with reference to human needs and interactions with surrounding built and natural environments (Structure Systems for Residential buildings)	4	8								x
12	applications with architectural models and studying types and techniques of presentation in architectural design and projects	2	4							х	T
13-14	Applications with architectural models and studying types and techniques of presentation in architectural design and projects. (Elevations and Architectural styles)	4	8							х	
15	Applications with architectural models and studying types and techniques of presentation in architectural design and projects. (Final Layout Submission, Perspective, Shots)	2	4							x	
16	Final Exam		-								

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7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods			Course le	corning o	utcomes	"CLO's	**	
reacting and Learning Methods	CLO1	CLO2	CL03	CLO4	CLO5	CLO6	CLO7	CLO8
Face to face lecture	X	X	x		X			-
Tutorial / Exercise		x	X	x	X		x	
Group discussion	X	X		X	x			
Site visit	x	x	x	121				
Presentation	x	x	x	X			x	X
Mini project					3			
Self-learning								
· Research and reporting	x	x		x	x			
Brain storming	X	x		x	x		x	
Case study		x	X	x	- 117		x	

7.3. Student assessment matrix with CLOs:

Assessment Methods		Course learning outcomes 'CLO's"										
	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7	CLO8				
Final written exam		X		x	X		X.					
Oral exam		x	X.				100	X				
Mid-term Exam		x	-	x	X		- 1					
Quizzes		x		X.	- 3							
Lab Exam				-								
Research assignments	x	x		x								
In-class questions (formative assessment)	-	x	x	x								
Project assignments		1	x	×	x		- 5	×				

Course coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	A.	2025-2026
Program coordinator:	19	
Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	1	2025-2026

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1. Basic Information:

Course Title (according to the bylaw)		Buildi	ng construction (2)					
Course Code (according to the bylaw)		ARE 122						
Department/s participating in offering t	the course	Architectural Engineering Program						
Number of credit hours points of the co	ourse (according	to the bylaw)						
Lecture	Tutorial / L.	aboratory	Total contact					
2	4		6					
Course Type		El Compulsory	□ Elective					
Academic level at which the course is to	aught	First Year						
Academic Program		Architectura	l Engineering Program					
Faculty/Institute		Higher Institute of I	ingineering and Technology a Manzalla					
University/Academy		Man	zalla Academy					
Name of Course Coordinator		Dr. Alaa Morgan						
Course Specification Approval Date		16	August 2025					
Course Specification Approval		Institute Council	No. (12) on 16 August 2025					

2. Course Overview (Brief summary of scientific content)

Study of the different types and techniques of building construction - skeleton buildings - frames - sliding slabs - prestressed concrete - shell construction - steel constructions - trusses - thermal insulation of roofs and externals walls - construction details stairs.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

(acc	Program Outcomes (NARS/ARS) ording to the matrix in the program spees)	Upo	Course Learning Outcomes. n completion of the course, the student will be able to:
Code	Text	Code	Text
A6	Plan, supervise and monitor implementation of engineering projects, taking into comideration other trades	CLof	Illustrate simplified examples of projects dealing with aesthetic, cultural, environmental, functional, unc atructural constraints of architectural form.
	requirements.	CLo2	Analyze problems, formulate solutions and architectural articulation.
A10	Acquire and apply new knowledge; and practice self, lifelong and other learning	CLo3	Apply the theoretical background to the building processes of design and works in site.
	strategies.	CLos	Develop skills and ability of applying building economics to projects and designs.
B2	Produce designs that meet building users*	CLo4	Recognize modern structure methods and technologies.
	requirements through understanding the relationship between people and buildings, and between buildings and their environment; and the need to relate	CLu5	Apply different theories of technologies and technical installations in buildings and different building materials.
	buildings and the spaces between them to burnan needs and scale.	CL06	Produce designs by applying the principles of construction and installation as related to construction materials.
B5	Prepare design project briefs and documents and understand the context of the architect in the construction industry, including the architect's role in the processes of bidding, procurement of architectural services and building production.	CLo7	Create ideas by incorporating principles of working drawings in different projects.

4. Teaching and Learning Methods

- 18 Face to face lecture
- ☐ Online education
- □ Tutorial / Exercise
- 22 Group discussion
- □ Laboratory
- ⊠Case study

- Site visit
- Self-learning
- 2 Presentation
- Mini project
- Research and reporting (self-learning)
- Brainstorming

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Course Schedule

		- 1	Expe	cted number of the Le	aming Heurs	
No. of the Week	Scientific consent of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/)	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined
1	Study of the different types and techniques of building construction +Program introduction and course orientation.	8	2	4	2	
2-3	Skeleton buildings. Frames sliding slabs	16	4	8	4	
4-5	Restressed concrete Shell construction.	16	4	- 8	-4	
6-7	steel constructions trusses	16	4	8	4	
8			Mid Toon Ex	iiiti -		
9-11	Study of the different types and techniques of building construction (Learning drawing fundamentals of multi- stories building and practicing on drawing).	24	4	12	6	
2-14	Thermal insulation of toofs and externals walls, construction details stairs (Identify basic details of stairs drawing)	24	6	12	6	
15	Final submission of the project.	8	2	+	2	
16			Final Exam			

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	9	6%
2.	Mid-Term Examination	8	18	12%
3.	Final Examination	16	90	60%
4.	Lab Exam		:0.	%
5.	ACTIVETES and assignments	Every week	33	22%
6.	Final Oral Exam (if exists)			%

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6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	 Ching, F. D. (2023). Architecture: Form, space, and order. John Wiley & Sons. 					
Learning resources (books, scientific	Other References	 Watson, D. (2004). Time-saver standards for architectural design. Batsford, H., & Ford, C. B. RECENT ARCHITECTURAL BOOKS. 					
etc.)	Electronic Sources (Links must be added)	https://www.firstinarchitecture.co.uk/how-to- develop-architectural-concepts/					
	Learning Platforms (Links must be added)	https://ims.manzalaacademy.edu.eg/					
	Other (to be mentioned)						
Supportive	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.					
facilities &	Supplies	Whiteboards.					
equipment	Electronic Programs	Microsoft Office program, Acrobat Reader					
for teaching	Skill Labs/ Simulators	-94					
and learning	Virtual Labs	344					
marning	Other (to be mentioned)						

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Locture	Locture	Course Learning outcomes *CL							0,2,4	
int.	topus			CLOI	CLOZ	CLOS	CLO4	CLOS	CLO6	CL07	CLOS	
1	Study of the different types and techniques of building construction +Program introduction and course orientation.	2	4	×								
2-3	Skeleton buildings. Frames - sliding slabs	4	8			X						
4-5	Restressed concrete Shell construction.	4	8		*		х.					
6-7	steel constructions trusses	4	8								П	
R.			Mid	Term E	Name							
X-11	Study of the different types and techniques of building construction (Learning drawing fundamentals of multi- stories building and practicing on drawing).	6	12						x	N.		
2-	Thermal insulation of roofs and externals walls.	6	12							×		
15	Final submission of the project.	2	4							X.		

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning	Course learning outcomes "CLO's"							
Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7	CLO8
Face to face lecture	x	x	X	X.	x	N.	X	
Tutorial / Exercise		X	X.	X.	X.	×	×	×
Group discussion				X	X	N.	X	X
Site visit				X .	X.			1 127
Self-Learning							-	
 Presentation 	X.		X.		X.	X.		
 Mini project 			X:		X	X	Х.	N.
 Research and reporting 	X	×	×	X.	X.			
Brainstorming		X				X	X	- 8
Case study			X	X				

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7.3. Student assessment matrix with CLOs:

Assessment Methods	Course learning outcomes "CLO's"							
ASSENSITION MICHIDIAN	CLOI	CLO2	CLO3	CLO4	CLO3	CL06	CLO7	CLO8
Final written exam	-	X	X	X.	X	X	X	×
Oral exam		X						
Mid-term Exam	X	X	X	X				
Quizzes			X	X			X	X
Lab Exam							- 200	
Research assignments				X			X	
In-class questions (formative assessment)	Х	х	Х		Х		X	×
Project assignments		X			X		X	X

Name	Signature	Academic Year
Dr. Alaa Morgan	1 1021	2025-2026
rogram coordinator;	/ / / /	
Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf		2025-2026

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1. Basic Information:

Course Title (according to the bylaw)		Visual Training ARE 123 Architectural Engineering Program		
Course Code (according to the bylaw)				
Department's participating in offering the	course			
Number of credit hours/points of the cour	se (according to the	se bylaw)		
1.ecture	Tutorial / Labor	atory	Total contact	
2	3		5	
Course Type	⊠ C	ompulsory	□ Elective	
Academic level at which the course is taught		First Year		
Academic Program		Architectural Engineering Program		
Faculty/Institute		Higher Institute of Engineering and Technology a Manzalla		
University/Academy		Manzalla Academy		
Name of Course Coordinator		Prof. Dr. Tarek Abu Auf		
Course Specification Approval Date		16 August 2025		
Course Specification Approval	1	Institute Council No. (12) on 16 August 2025		

2. Course Overview (Brief summary of scientific content):

- A. Introduction of various drawing principles and artistic techniques: pencil techniques, pen & ink -proportions perspective, scale and composition foreground, middle and background sketching architectural elements and landscapes architectural presentation
- B. Theory of colors: Study of color circles, bues, grades, and schemes use of colors in drawing build-up and natural elements - colors and presentation media - drafting and resdering, manual and mental skills - application on interior design buildings.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

(acce	Program Outcomes (NARS/ARS) ording to the matrix in the program spees)	Course Learning Outcomes Upon completion of the course, the student will be able to:			
Code	Test	Code	Test		
A6	Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements.	CLot	Define visual design fundamentals.		
A7		CLo2	Identify the content areas of the factors related to three-dimensional drawings and architectural presentation.		
	Function efficiently as an individual and as a member of multi-disciplinary and multi-cultural teams.	CLa3	Identify acquaintance with the range of graphic tools in the third dimension which are necessary for conveying architectural concepts diverse area of structural and architectural drawing.		
		CLo4	Select the accurate scale for each drawing.		
		CL06	Practice different methods of presenting projects, drawings, and freehand sketches.		
A10	Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.	CLo7	Produce designs by applying the principles of construction and installation as related to construction materials.		
BI	Create architectural, urban and planning designs that satisfy both aesthetic and technical requirements, using adequate knowledge of history and theory, related fine arts, local culture and heritage, technologies and human sciences.	CLoS	Apply different theories of technologies and technical installations in buildings and different building materials.		

4. Teaching and Learning Methods

□ Face to face lecture	☐ Site visit
☐ Online education	⊠Self-learning
B Tutorial / Exercise	Presentation
⊠ Group discussion	
☐ Laboratory 每Case study	■ Research and reporting (self-learning)

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architecture Engineering Program



Course Schedule

-741470	Scientific content of the					
No. of the Week	cosme (Counte Topics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/)	Self-learning (Tanks/ Assignments/ Projects/)	Other (to be determined
1	Introduction of various drawing principles	7	2	- 3	2	
2-3	Artistic techniques: pencil techniques, pen & ink.	14	4	6	4	
4-5	Foreground, middle und background sketching architectural elements - and landscapes architectural presentation + Shade of lines & 2d shapes & shades of objects	14	4	6		
6-7	Proportions perspective, scale and composition Principles of perspectives perspective and shades of building. Buildings featuring multiple circulation.	14	4	(A)	4	
8.			Mid Term Ex	im		
9-11	Theory of colors: Study of color circles, bues, grades, and schemes. Use of colors in drawing build-up and natural elements.	21	6	9	6	
12-14	Colors and presentation media- drufting and rendering, manual and mental skills.	21	6	9	5	
15	Application for interior design buildings. Final submission of the project.	7	2	3	2	
16			Final Exam			

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5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
I.	Quizzes	6, 11	7	5.4%
1. 2. 3.	Mid-Term Examination	8	14	11.2%
3.	Final Examination	16	80	64%
4.	Lab Exam	**	146	%
5.	ACTIVETES and assignments	Every week	24	20%
6.	Final Oral Exam (if exists)		***	96
	A STATE OF THE PARTY OF THE PAR			

6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	•Marco T.Brand.(2017), Perspective Drawing: Ensyand Clear DrawingGuide.		
Learning resources (books, scientifie	Other References	Lockard, W. K. (1979). Design drawing experience Pepper Pub Ching, F. D. (2023). Architectural graphics. John .Wiley & Sons		
etc.)	Electronic Sources (Links must be added)	https://www.firstinarchitecture.co.uk/how-to- develop-architectural-concepts/		
	Learning Platforms (Links must be added)	https://lms.manzahaacademy.edu.eg/		
	Other (to be mentioned)			
Supportive	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.		
facilities &	Supplies	Whiteboards.		
equipment	Electronic Programs	Microsoft Office program, Acrobat Reader		
for teaching	Skill Labs/Simulaturs	-		
and learning	Virtual Labs			
J	Other (to be mentioned)			

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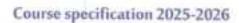
7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

-		2			Cou		arnin CLO		comes	
Week	Topics	Lecture	101	CLOI	CLOI	CLOS	CL04	CL05	Comes	CLO7
I.	Introduction of various drawing principles	2	3	x						
2-3	Artistic techniques: pencil techniques, pen & ink.	4	6			Г		x		
4-5	Foreground, middle and background sketching architectural elements - and landscapes architectural presentation	:4:	6					x		x
6-7	Proportions perspective, scale and composition Principles of perspective+ perspective and shades of building.									
8	Mid-term ex	amy			-		-			
9. 11	Theory of colors: Study of color circles, hues, grades, and schemes.	6	9	1	x	П	4			
12- 14	Colors and presentation media- drafting and rendering, manual and mental skills.	6	9			Г		x	x	
15	Application for interior design buildings,	2	3		x		×			
16	Final Exam	n	-		21 12					

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course Learning outcomes "CLO's"									
reseming and rearing rections	CLOI	CLO2	CLO3	CL04	CL05	CLO6	CLO7			
Face to face lecture	X	X	3		1	3	-			
Tutorial / Exercise						x	- 8			
Group discussion	x			X.	x	100				
Self-Learning				-		-				
Presentation						3	- 1			
Mini-project						100				
Research and reporting	X	× -			×					
Brain storming				8						
Case study		X .	1	1			1			



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7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLO's"									
Assessment stemous	CLO1	CLO2	CLO3	CLO4	CL05	CL06	CLO7			
Final written exam		x	X	- 1		- 3	- 1			
Oral exam			1							
Mid-term Exam		1	1	- 1			- 5			
Quizzes	3		X	- 3		X				
Lab Exam										
Research assignments					1					
In-class questions (formative assessment)	X.	3		x						
Project assignments	х	- 3	N.	- 1		1	×			

Course coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	/	2025-2026
Program coordinator:	-60	
Name	Stapature	Academic Year
Prof. Dr. Tarek Abu Auf		2025-2026



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1. Basic Information:

Course Title (according to the hylaw)	8	shade and Perspective
Course Code (according to the bylaw)		ARE 124
Department/s participating in offering the	course Archite	etural Engineering Program
Number of credit hours/points of the cour	se (according to the bylaw)	
Lecture	Tutorial / Laboratory	Total contact
2	3	-5
Course Type	Compulsory	□ Elective
Academic level at which the course is tang	ght	First Year
Academic Program	Architec	ctural Engineering Program
Faculty/Institute	Higher Institute	of Engineering and Technology at Manzalla
University/Academy		Manzalla Academy
Name of Course Coordinator	ASSC	OC.Prof. Dr. Marwa Atef
Course Specification Approval Date		16 August 2025
Course Specification Approval	Institute Cour	ncil No. (12) on 16 August 2025

2. Course Overview (Brief summary of scientific content)

- A. Shade: Study of shade of a dot, straight lines, plan shapes, and objects, methods of shading projection - application on partial architectural drawing with recessed and protruded parts of buildings and regrouping.
- B. Perspective: Study of rules and principles of drawing perspective theories of one and two-vanishing-point perspectives bird's and ant's eyes shades in perspective applications on different architectural designs Characterized with a variety of forms and levels.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Connetencies (NARS/ARS)

{acco	Program Outcomes (NARS/ARS) rding to the matrix in the program spees)	Upon	Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
A2	Develop and conduct appropriate experimentation and/or simulation.	CLo3	Apply skills in 3D objects by drawing perspective and using shading to display it.
	analyze and interpret data, assess, and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.		Sketch Shade of 2D shapes and Shades of objects.
A10	The state of the s	CLo2	Define acquaintance with the range of graphic tools in the third dimension which is necessary for conveying architectural concepts in diverse areas of structural and architectural drawing.
		CLo4	Select the accurate scale for each drawing.
B2	Produc designs that meet building users' requirements through	CLal	Identify the content areas of the factors related to three-dimensional drawings and architectural presentation.
	understanding the relationship between people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale.	CLo2	Define acquaintance with the range of graphic tools in the third dimension which is necessary for conveying architectural concepts in diverse areas of structural and architectural drawing.
		CLo5	Identify Principles of shading and shade of a dot and Shade of lines and Study of rules and principles of drawing perspective.

4. Teaching and Learning Methods

ECS-14	Face	-20 mm N	Mary Control	4	
DVD 1	COMPANIES.	March 1	make the later	T-month	E to be selected.
MARK	PERMISSE.	10.0	DELCO:	BACK!	

☐ Online education

□ Tutorial / Exercise

□ Laboratory

ElCase study

☐ Site visit.

⊠Self-learning

Mini project

■ Research and reporting (self-learning)

Brainstorming

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architecture Engineering Program



Course Schedule

12677	Scientific content of the	2000		ected number of the La		
No. of the Week	(Course Topics)	Fotal Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/)	Self-learning (Tasks/ Assignments/ Projects/_)	Other (to be determined
1	Shade: Study of shade of a dot, straight lines	7	2	3	2	
2	Study of plan shapes, and objects,	7	2	3	2	
3.5	methods of shading projection application on partial architectural drawing with recessed and protruded parts of huildings and regrouping	21	6	9	6	
6-7	application on partial architectural drawing with recessed and protruded parts of buildings and regrouping	14	4	6	4	
-8			Mid Term Ex	am .		
9-10	Perspective: Study of rales and principles of drawing perspective	14	4	6	4	
11-12	theories of one and two- vanishing-point perspectives bird's and ant's eyes	14	4	6	4	
13-14	shades in perspectives Applications on different architectural designs Characterized with a variety of forms and levels.	14	4	6	4	
15	Final submission of the project	7	2	3	2	
16	II	- 13	Final Exam			

Ministry of Higher Education Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architecture Engineering Program



5. Methods of students* assessment

No.	- Quizzes (W	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course
	Quizzes	6, 11	0	Marks
2.	Mid-Term Examination	8		6%
3.	Final Examination		18	12%
4.	Lab Exam	16	90	60%
-				%
	activates and assignments	Every week	33	
Ď.,	Final Oral Exam (if exists)		75.5	22%

Learning	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Cherubino, P., Martinez-Levy, A. C., Caratu, N. Curtocci, G., Di Flumeri, G., Modica, E., & Trettel, J. (2019). Consumer behaviour through the eyes of neurophysiological measures: State-of-the-art and futur trends. Computational intelligence and neuroscience 2019.
resources (books, scientific references,	Other References	Metrger, P. (2007). The art of perspective: The ultimate guide for artists in every medium Penguin. Architectural Perspectives and Shadow, M. Elkalidy
etc.) *	Electronic Sources (Links must be addod)	https://www.firstinarchitecture.co.uk/how-to- develop-architectural-concepts/
	Learning Platforms (Links must be added)	https://lep.mancalaacademy.edu.eg/
	Other (to be mentioned)	The state of the s
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with
equipment -	Supplies	Internet access.
for teaching	Electronic Programs	Whiteboards.
and learning	Skill Labs/ Simulators	Microsoft Office program, Acrobat Reader
	Virtual Labs	*
	Other (to be mentioned)	

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

*		10	171	Course	Learning	outcom	es "CLO"	5.00	
Week	Topics	Lecture		CLOI	CLO2	CL03	CL04	- Contractor	CL06
1	Shade: Study of shade of a dot, straight - lines	2	3	X	х			X	
2	Study of plan shapes, and objects,	2	3			X	X	X	
3-5	methods of shading projection application on partial architectural drawing with recessed and protraded parts of buildings and regrouping	4	6			х	x		
6-7	application on partial architectural drawing with recessed and protruded parts of buildings and regrouping	4	6			x	x		x
8		N.	tid-Te	onn.					
9- 10	Perspective: Study of rules and principles of drawing perspective	4	6			x			x
11-	theories of one and two-vanishing-point perspectives	4	6	x	x				
13- 14	Shades in perspectives Applications on different architectural designs Characterized with a variety of forms and levels.	4	6			х	х		
15	Final submission of the project	2	3			X	N.		
16		F	nal Ex	1000		177.501			

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course Learning outcomes "CLO's"								
	CFO1	CLO2	CLO3	CL04	CLO5	CLO6			
Face to face lecture	X	X	X	X	X	X			
Tutorial / Exercise	X		X	X	X				
Group discussion	X	X							
Self-Learning			Trial Control						
Presentation				X		X			
Mini project				X					
Research and reporting				X	X	X			
Brain storming	X	X		X		X			
Case study			X	X					

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7.3. Student assessment matrix with CLOs:

	Course Learning outcomes "CLO's"									
Assessment Methods	CLOI	CLO 2	CLO3	CLO 4	CLO 5	CLO6	CLO7			
Final written exam		x	x	X		Y.	Y			
Mid-term Exam		x	x	x		×	-			
Quizzes	3		x	x		×	-			
Research assignments	x					-				
In-class questions (formative assessment)	x	x		x	-					
Project assignments	x	X	x	x		x	X			

Course coordinator:

Name	Signature	Academic Year
Assoc.Prof. Dr. Marwa Atef	SOUNT?	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	1	2025-2026

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1. Basic Information:

Course Title (according to the bylav	r)	Technical Reports in architecture				
Course Code (according to the hylar	w)	ARE 125 Architectural Engineering Program				
Department/s participating in offering	ng the course					
Number of credit hours/points of the	e course (accord	ling to the bylaw)				
Lecture	Tutorial	/ Laboratory	Total contact			
2			2			
Course Type		□ Compulsory	□ Elective			
Academic level at which the course	is taught	First Year				
Academic Program		Architectural Engineering Program				
Faculty/Institute		Higher Institute of Engineering and Technology a Manzalla				
University/Academy		Manzalla Academy				
Name of Course Coordinator		Assoc.Prof. Dr. Kareem Mahrous				
Course Specification Approval Date		16 August 2025				
Course Specification Approval		Institute Council No. (12) on 16 August 2025				

2. Course Overview (Brief summary of scientific content)

Issues and subjects in the architectural engineering of projects throughout phases -preparation of preliminary and final reports - written exercises - oral discussion -ways and techniques of data presentation. Theory of colors: Study of color circles, hues, grades, and schemes - use of colors in drawing build-up and natural elements - colors and presentation media - drafting and rendering, manual and mental skills - application on interior design buildings.

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Practice writing the list of references in a different

3. Course Learning Outcomes CLOs

(accor	Program Outcomes (NARS/ARS) ding to the matrix in the program spees)	Course Learning Outcomes Upon completion of the course, the student will be able to			
Code	Text	Code	Test		
A5 Practice research techniques and methods of investigation as an inherent part of learning.	CLot	Identify the importance and usage of different types of technical reports for engineers.			
		CLo2	Recognize the differences between the different sections of technical reports.		
		CLø3	Produce accurate, clear, efficient, and comprehensive engineering technical report.		
		CLot	Devise different ideas, views, and knowledge from a range of sources to organize collect, analyze, and evaluate information for writing a technical report.		
A8	Communicate effectively graphically, verbally and in writing – with a range	CLo5	Analyze various literature regarding writing styles and rules.		

CLo6

format.

4. Teaching and Learning Methods

of audiences using contemporary tools.

199 Face to face fecture	☐ Site visit
☐ Online education	⊠Self-learning
□ Tutorial / Exercise	Presentation

☐ Laboratory

☐ Research and reporting (self-learning)

Course Schedule

2300	Scientific content Expected numb		cted number of the L	ber of the Learning Hours				
No. of the Week	of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)		
1-2	Issues and subjects in the architectural engineering of projects throughout phases (Introduction+ Formatting	8	4		4			

Course specification 2025-2026

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019



Architecture Engineering Program

			Fare	cted number of the L	coming House	
No. of the Week	of the course Weekly		Theoretical tenching (lectures/discussion groups/)	Training (Practical/Clinical/)	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)
	guidelines (templates, budges, and text).					
3	Preparation of preliminary and final reports (Components of a report (preliminary pages)).	4	2	******	2	
4-6	written exercises (Components of a report: text of a report: introduction, main section, conclusion, recommendations)	12	6		6	
7	Ways and techniques of data presentation.	4	2		2	
8			Mid Term	Exam		
9-11	Practice and discuss how to prepare and write a technical report, oral discussion	12	6		6	
12- 14	ways and techniques of data presentation (Referencing of sources and originality (author- date, and numerical referencing))	12	6	december 1	6	
15	Final project.	4	2	*******	2	
16:			Final Ex	am		

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5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	2	4%
2.	Mid-Term Examination	8	7	14%
3.	Final Examination	16	35	70%
4.	Lab Exam	**	- W	%
5.	ACTIVETES and assignments	Every week	6	12%
6,	Final Oral Exam (if exists)			%

b. Learning	Resources and Supportive Facilities					
	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	 Khamis, N. Y., Rahim, A. A. A., Sinnadurai, S., Ali, Z. M., & Ali, Z. (2015). ESL educators' belief in teaching English for academic purposes (EAP) to low level learners. International Journal of Language Education and Applied Linguistics. 				
Learning resources (books, scientific references,	Other References	 Winckel, A., & Hart, B. (1995). Report writing style guide for engineering students. University of South Australia, Faculty of Engineering. Pickett, N. A., & Laster, A. A. (1993). Technical English: Writing, rending, and speaking. (No Title). 				
etc.j	Electronic Sources	https://www.firstinarchitecture.co.uk/how-to-				
	(Links must be added)	develop-architectural-concepts/				
	Learning Platforms (Links must be added)	https://lms.manzalnacademy.edu.en/				
	Other (to be mentioned)					
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.				
CONTRACTOR OF THE	Supplies	Whitehourds.				
CHARLES IN THE PARTY OF THE PAR	Electronic Programs	Microsoft Office program, Acrobat Reader				
and	Skill Labs/ Simulators	=				
scientific references, etc.) Supportive facilities & equipment or teaching	Virtual Labs					
STATE STATE OF	Other (to be mentioned)					

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019

Architecture Engineering Program



7. Course Matrixes:

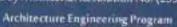
7.1. Course contents Matrix with CLOs:

_		-		0	ourse		CLO4	utcomes		
Week	Topics	ecture	77.7	CLOI	CLO2	CL03	CL04		CL/06	
1-2	Issues and subjects in the architectural engineering of projects throughout phases (Introduction+ Formatting guidelines (templates, hadges, and text).	4	-	x						
3	Preparation of preliminary and final reports (Components of a report (preliminary pages)).	2	2.5			x			Т	
4-6	written exercises (Components of a report: text of a report: introduction, main section, conclusion, recommendations)	6	-				x	x	T	
7	Ways and techniques of data presentation.	2	- 2	x	-	X				
8	Mid Tenn Exan						A II		die.	
9- 11	Practice and discuss how to prepare and write a technical report. Oral discussion.	6						x		
12- 14	ways and techniques of data presentation (Referencing of sources and originality (author-date, and numerical referencing))	6	•					x		
15	Final project.	2							×	
16	Final Exam	150			110				10	

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning	Course Learning outcomes "CLO's"								
Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6			
Face to face lecture	x	x		X	X	X			
Tutorial / Exercise			x						
Group discussion					X				
Self-Learning									
Presentation	3	x	x	X		- 1			
Mini-project			x		X	X			
Research and reporting	X			X	X				
Brain storming				X	X	x			
Case study			×		3	- 4			

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019





7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLO's"								
	CLOI	CLO2	CLOS	CLO4	CLO5	CLO6			
Final written exam			*	X	3	Y			
Oral exam	×	x							
Mid-term Exam			- 1	X	x				
Quizzes			X	X	*	- 1			
Research assignments	×	*		X		-			
In-class questions (formative assessment)	x	x	x		x	х			
Project assignments		x		X	x	74			

Course coordinator:

Name	Spenature	Academic Year
Assoc Prof. Dr. Kareem Mahrous	4.550	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	R	2025-2026

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architecture Engineering Program



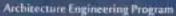
1. Basic Information:

Course Title (according to the bylaw)		Properties and test of material			
Course Code (according to the bylaw)		CIVA 121			
Department/s participating in offering th	ie course	Civil Engineering Department			
Number of credit hours/points of the cou	arse (according to the	bylaw)			
Lecture	Totorial / Laborate	ry Total contact			
3	2	5			
Course Type	□ Cor	npulsory □ Elective			
Academic level at which the course is tax	ught	first year			
Academic Program		Architectural Engineering Department			
Faculty/Institute	Highe	r Institute of Engineering and Technology at Manzalla			
University/Academy		Maszalla Academy			
Name of Course Coordinator		Prof. Dr. Mohamed Yousey Elshikh			
Course Specification Approval Date		16 August 2025			
Course Specification Approval	Insti	tute Council No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Materials used in engineering products - standards codes, and inspections - the development of innovative uses of building materials - concrete: components manufacture, and quality control - partitioning materials: gypsum, lime, timber, and bricks - the effects of water on building materials - the mechanics of engineering materials.

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019





3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student w able to:		
Code	Test	Code	Test	
A4 Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess, and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.	CLOI	Distinguish the general engineering materials		
	CLO2	Develop the general materials properties and the methods of determination it		
	CLO4	analysis the effect of mixing water on properties of materials		
Plan, supervise and monitor		CLO3	Practice the mechanical properties of metals and tests machines	
A6 implementation of engineering projects, taking into consideration	CLO5	analysis the properties of aggregate, cement, wood		
Face dell'	other trades requirements.	CLO6	neach the effect of mineral and chemical admixtures on concrete characteristics	

4. Teaching and Learning Methods

- ☐ Online education
- ™ Tutorial / Exercise
- □ Group discussion
- M Laboratory

- M Site visit
- ⊠ Self-learning
 - □ Presentation
 - Mini project
 - □ Research and reporting (self-learning)
- 2 Brainstorming

Course Schedule

			Expected number of the Learning Hours					
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determin ed)		
1	Materials Used In Engineering Products	6	3	2	1			
2	Standards Codes, And Inspections	6	3	2	1			
3-4	The Development Of Innovative	12	.6	4	2			

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019





			Expected number of the Learning Hours					
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discus- sion groups/	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determine ed)		
	Uses Of Building Materials							
5	Concrete: Components Manufacture, And Quality Control	6	3	2	ī			
6-7	Partitioning Materials: Gypsum, Lime	12	6	4	2			
8		Mid	term Exam					
8-9	Partitioning Materials Timber, And Bricks	12	6	4	2			
10- 12	The Effects Of Water On Building Materials	18	9	6	3			
13- 14	The Mechanics Of Engineering Materials 12 6	6	4	2				
15	Revision	6	3	2	1	_		
16		Fir	nal Exam					

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks	
1	Quizzes	6, 11	5	4%	
2.	Mid-Term Examination	8	16	12.8%	
3.	Final Examination	(As Schedule)	80	64%	
4.	Lab Exam	(As Schedule)	10	8%	
5.	Activities and assignments	Every week	14	11.2%	
6,	Final Oral Exam (if exists)	+		%	

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019

Architecture Engineering Program



6. Learning Resources and Supportive Facilities

Learning resources (books, scientific	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Walker, J., & Witschel. (2020). Surveying for civil and mine engineers. Springer International Publishing.
	Other References	Neville, A. M., & Brooks, J. J. (1987). Concrete technology (Vol. 438). England: Longman Scientific & Technical.
references, etc.)	Electronic Sources (Links must be added)	
	Learning Platforms (Links must be added)	https://lms.manzalaucademv.edu.eg/
	Other (to be mentioned)	
		P. 1
Supportive	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
facilities &	Supplies	Whiteboards,
equipment for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching and	Skill Labs/ Simulators	16
learning	Virtual Labs	**
	Other (to be mentioned)	

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Lecture content:

Week	Topics	Lecture	T/E	Course Learning outcomes "CLOs"						
-1.000114-0		- Lincolnice		CLO1	CLO2		CLO4			
1	Materials Used in Engineering Products	3	2	×				Canto	CARRO	
2	Standards Codes, And Inspections	3	2	x		x				
34	The Development of Innovative Uses of Building Materials	6	4		х		x			
5	Concrete: Components Manufacture, And Quality Control	3	2		x		x	x	x	

Higher Institute of Engineering and Technology at Mancalla Established by Ministerial Resolution No. (2354) of 2019 Architecture Engineering Program



Week	Topics	Topics Lecture	T/L		Course Learning outcomes "CLOs"				
			1	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
6-7	Partitioning Materials: Gypsum, Lime	6	4	х	-			C-A-CASA	CLO
8			M	idterm E					
9	Partitioning Materials Timber, And Bricks	3	2	*	sam.	x			
10-12	The Effects of Water on Building Materials	0	6		x		x	x	+
13-14	Mechanics Engineering Materials	6	4	x					x
15	Revision	3	2	x	x		x	x	x
16				inal Exar					

Practical Contents:

Experiment 1 Sieve Analysis Test Experiment 2 Los Angeles Test Experiment 3 Cement softness test	2 2	CL04
	_	-
Experiment 3 Cement softness tost		CLO4
the state of the s	2	CL04
experiment 4 Cement volume stability test	4	CL04
	4	CLO4
xperiment 6 Initial setting time test for cement-Final setting time test or cement	2	CLO4
xperiment 7 Slump Test -Compacting Factor Test	2	CLO4
xperiment 8 Compressive Strength Test -Indirect Tensile Strength Test	3	110000
evision	-	CLO4
ractical Eyam	4	CLO4 CLO4
N N	speriment 5 Standard consistency test for cement paste speriment 6 Initial setting time test for cement-Final setting time test r cement speriment 7 Slump Test -Compacting Factor Test speriment 8 Compressive Strength Test -Indirect Tensile Strength Test	A speriment 5 Standard consistency test for cement paste apperiment 6 Initial setting time test for cement-Final setting time test apperiment 7 Slump Test -Compacting Factor Test apperiment 8 Compressive Strength Test -Indirect Tensile Strength Test vision 2

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architecture Engineering Program



7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods		Course Learning outcomes "CLOs"						
	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6		
Face to face lecture	x	x	x		x	x		
Tutorial / Exercise			x	x	x			
Group discussion		x		x				
Laboratory			X	x	x			
Site visit		x				_		
Self-Learning								
Presentation	x		х		x			
Mini project	x		x			x		
Brainstorming				x		X		

7.3. Student assessment matrix with CLOst

Assessment Methods		Cor	es "CLOs"			
Managaran Managar	CLOI	CLO2	CLO3	CL04	CLO5	CLO6
Final written exam	X	X	x	x	x	X
Oral exam				x	x	X
Mid-term Exam	x	x	x	x		-
Quizzes		X	x			
Research assignments	x			x		x
In-class questions (formative assessment)						x
Project assignments			x	x	x	v

Course coordinator:

Name	Signature	Academic Year
Prof. Dr. Mohamed Yousry Elshikh	Moh	2025-2026

Program coordinator:

Name	Signature	Academic Year	
Prof. Dr. Tarek Abu Auf		2025-2026	

Course specification 2025-2026



1. Basic Information:

Course Title (according to the bylaw)	Practical Training-Architectural Eng. (2)
Course Code (according to the bylaw)	TRN 142
Department/s participating in offering the course	Architectural Engineering department

Course Marks

Discussion	Report	Institution's Assessment	Total
40%	30%	30%	Pass/Not Pass

Hours/ Weeks

48 total	hours/4 weeks			
Course Type	□ Compulsory	☐ Elective		
Academic level at which the course is taught	First Year			
Academic Program	Architectumi Engineering Program			
Faculty/Institute	Higher Institute of Engineering and Technology a Manzalla			
University/Academy	Manzalla Academy			
Name of Course Coordinator	Institute's staff			
Course Specification Approval Date	16 August 2025			
Course Specification Approval	Institute Council No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

This internship is completed after the first year of study during the summer semester in their respective academic department. The internship is conducted over a period of four weeks at the institute, four days a week. This internship includes developing skills in hand sketching and visual expression, as well as an introduction to architectural drawing using traditional tools. Students are trained to draw and analyze architectural shapes and facades, and to prepare hand-drawn architectural drawings of simple buildings. Students are also trained in the basics of digital drawing using AutoCAD Basic and Photosbop, converting hand drawings into digital images.

3. Course Learning Outcomes CLOs

Practical Training Course specification 2025-2026



Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program spees)		Upon completion of the course, the student will be able to:			
Code	Test	Code	Text		
AI.	Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics	CLO4	Propose creative and innovative solutions for simple design problems while adhering to functional and aesthetic requirements.		
A2.	Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess, and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.	CL03	Enhance and refine hand-drawn sketches using Photoshop, converting them into professional-quality digital images.		
A3.	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.	CLO2	Analyze and apply the principles of architectural forms, shapes, and facades, including proportions, symmetry, rhythm, and texture.		
A10,	Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.	CLOI	Create accurate and expressive hand sketches to convey architectural ideas, including freehand perspective drawings, shading techniques, and spatial relationships.		
		CLO5	Communicate architectural concepts clearly and effectively through hand sketches, technical drawings, and digital presentations.		

4. Teaching and Learning Methods

-	p	14-	
Page 1	THE REAL PROPERTY AND ADDRESS OF	to face	COLUMN TWO IS NOT
LOGIL	CARLE O	AN LABOR OF	RECEIPTE

☐ Site visit

Practical Training Course specification 2025-2026



☐ Online education	Si Self-learning
	□ Presentation □
□ Group discussion	☐ Mini project
☐ Laboratory	Research and reporting (self-learning)
	☐ Brainstorming

Course Schedule

			Expected number of the Learning Hours				
Nu. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical traching (lectures/discu ssion groups/)	Training (Practical /Clinical/)	Self- learning (Tasks/ Assignments / Projects/)	Other (to be determ ned)	
1	Hand Sketching and Visual Expression (e.g., geometry, proportions) to create accurate sketches.	12		-	3		
2	Architectural Shapes and Facades.	12			2		
3	Digital Enhancement of Hand- Drawn Sketches Using Photoshop	12	72	-	3		
4	Refine hand-drawn sketches	12	785	*	4		
Total	Calle	48	total hours				

5. Methods of students' assessment

No	Assessment Methods	Weeks	Percentage of
•		Treeto.	Total Course Marks

Practical Training Course specification 2025-2026



1.	Report	. 11	30%
2.	Mini-Project Assignment	+	
3.	Discussion	-	40%
4.	Institution's Assessment		30%
Т	Total		100%

6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Ching, F. D. K., & Juroszek, S. P. (2022). Design drawing: A guide to visual expression, sketching, and concept communication for architects and designers (3rd ed.). Wiley.
Learning resources (books,	Other References	Design Drawing: A Guide to Visual Expression, Sketching, and Concept Communication for Architects and Designers
scientific references, etc.) *	Electronic Sources (Links must be added)	https://www.urchduitv.com/904528/architectural -drawing-how-to-draw-building-facades
	Learning Platforms (Links must be added)	
	Other (to be mentioned)	
Supportive	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
facilities & equipment	Supplies	Whiteboards and smart boards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/ Simulators	*



and	Virtual Labs	-
learning *	Other (to be mentioned)	

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Hrs	Course Learning outcomes "CLO's"				
W.CER	ropics	-	CLOI	CLO2	CLO3	CLO4	CLO5
i	Hand Sketching and Visual Expression (e.g., geometry, proportions) to create accurate sketches.	12	x				х
2	Architectural Shapes and Facades.	12		X		x	X
3	Digital Enhancement of Hand- Drawn Sketches Using Photoshop	12			х		x
4	Refine hand-drawn sketches	12	X	X			X
Total		48 tot	al hours				

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning	Course Learning outcomes "CLO's"						
Methods	CLO1	CLO2	CLO3	CL04	CLO5		
Face to face lecture	X	X	X	X	X		
Exercise		X	X				
Group discussion			X	X			
Self-Learning					1		
Presentation	X		X		T		
Research and reporting	X			X	X		

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLO's"						
	CLO1	CLO2	CLO3	CLO4	CLO5		
Oral Discussion	X	X	X	X	X		
Research assignments		X		X	X		



Assessment Methods	Course Learning outcomes "CLO's"					
	CLO1	CLO2	CLO3	CLO4	CL05	
In-class Question	X		X	X	X	

Course coordinator:

Name	Signature	Academic Year
Institute's staff	Menna nasser Rahaf Ibrahina	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	Avi	2025-2026

ligher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019

Architecture Engineering Program



1. Basic Information:

Course Title (according to the bylaw)		Architectural design (3)		
Course Code (according to the hylaw)		ARE 211		
Department's participating in offering the	e course	Architectural	Engineering Department	
Number of credit hours/points of the cou-	rse (according	to the bylaw)		
Lecture Tutorial		aboratory	Total contact	
2	4		6	
Course Type		8 Compulsory	☐ Elective	
Academic level at which the course is tar	ught	second year		
Academic Program		Architectural Engineering Program		
Faculty/Institute		Higher Institute of Engineering and Technology Manzalla		
University/Academy		Manzalla Academy		
Name of Course Coordinator		Prof. Dr. Tarek Abu Auf		
Course Specification Approval Date		16 August 2025		
Course Specification Approval		Institute Council	No. (12) on 16 August 2025	

2. Course Overview (Brief summary of scientific content)

Study and analysis of building elements for average-scale project programs and compositions principles of environmental impact assessment in the design phase -study of the importance of structural significance in forming architectural spaces.

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program spees)		Upon	Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
A5	Practice research techniques and methods of investigation as an inherent part of learning	Ctol	Demonstrate teamwork skills in research activities and effectively present findings in reports. Investigate architectural parameters related to the project and the appropriate software tools.
A10	Acquire and apply new knowledge; and practice self,	CL ₀ 6	Identify functional and structural requirements for each design project and

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	Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
	lifelong and other learning strategies.		apply appropriate drawing techniques using various drawing tools and equipment.
	Produce designs that meet building users' requirements through understanding the relationship between people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale.	Cl.o2	Illustrate site analysis through sketches, including location, surrounding elements, and entrances, as well as environmental factors such as sun exposure and ventilation.
		CLo3	Analyze the internal forces influencing the project, including requirements, spatial organization, and functional relationships.
B2		CLo4	Develop preliminary design sketches for the project's plan, integrating design concepts, formation principles, and environmental considerations.
		CLO5	Examine architectural styles in the project's context and evaluate the interrelation of forms, spaces, and structural complexities in design.

4. Teaching and Learning Methods

- ☑ Face to face lecture.
- Online education
- ™ Tutorial / Exercise
- ₩ Group discussion
- □ Laboratory

- ☑ Site visit
- Self-learning
- Presentation
- Mini project
- Research and reporting (self-learning)
- E Brainstorming
- E Case study

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architecture Engineering Program



Course Schedule

			Expected number of the Learning Hours					
No. of the Week	Scientific content of the course (Course Topics)	Total Workly Hours	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determined)		
1	Study and Analysis of Building Elements for Average-Scale Project Programs and Compositions: (Introduction to the course, nyllabus overview, and fundamentals of building elements in architectural design.)	10	2	4	4			
2	Study and Analysis of Building Elements for Average-Scale Project Programs and Compositions: (Analysis of key building elements (walls, floors, roofs, openings) and their spatial role in average-scale project compositions.)	10	2	4	4			
*	Study and Analysis of Building Elements for Average-Scale Project Programs and Compositions: (Composition principles: How building elements interact in architectural design.)	10	2	4	4			
4	Study and Analysis of Building Elements for Average-Scale Project Programs and Compositions: (Functional and aesthetic considerations in designing with building elements.)	10		4	4			
5	Study and Analysis of Building Elements for Average-Scale	10	1	4	4			

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Tigher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architecture Engineering Program



			Expected number of the Learning Hours					
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasko/ Assignments / Projects/)	Other (to be determined)		
	Project Programs and Compositions: (Application of building elements to average-scale project programs case study analysis.)							
6-7	Integration and Pre-Midterm Review: Review of building elements and their role in average-scale project compositions.	20	4	8	8			
8		N	did-term					
9	Principles of Environmental Impact Assessment in the Design Phase: (Introduction to environmental impact assessment and its role in architectural design.)	10	2		4			
10	Principles of Environmental Impact Assessment in the Design Phase: (Key environmental considerations in the design phase materials, energy efficiency, and site impact.)	10	2	4	4			
ü	Principles of Environmental Impact Assessment in the Design Phase: (Strategies for integrating environmental assessment principles into architectural compositions.)	10		4	4			

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Ministry of Higher Education ligher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architecture Engineering Program



			Expected number of the Learning Hours					
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments /Projects/)	Other (to be determined)		
12	Study of the Importance of Structural Significance in Forming Architectural Spaces: (Introduction to structural significance in architecture role of structural systems in space formation.)	10	2	4	4			
13	Study of the Importance of Structural Significance in Forming Architectural Spaces: (Structural strategies in architectural design case studies of different approaches.)	16	2	4	4			
14	Study of the Importance of Structural Significance in Forming Architectural Spaces: (Structural integrity and spatial experience impact of materials and forms on architectural spaces.)	16	2	4	4			
15	Final project Integration: (Synthesis of building elements, environmental assessment and structural significance in a cohesive architectural design.)	\$ 10°	2	4	4			
16	169 202	Fi	naf Exam					

5. Methods of students' assessment

Course specification 2025-2026

digher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architecture Engineering Program



No. Assessment Methods		Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	13.5	7.7%
2.	Mid-Term Examination	8	27	15.4 %
3.	Final Examination	(As Schedule)	70	40%
4.	Lab Exam	-	**	%
5.	Activities and assignments	Every week	49,5	28.3%
6.	Final Oral Exam (if exists)	(As Schedule)	15	8.6%
	PROPERTY OF THE PROPERTY OF TH			

6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Ching, F. D. K. Architectural design: A critical guide, Wiley. (2020).		
Learning resources	Other References	Mitrovic, B. Design process in architecture From concept to completion. Routledge (2021).		
(books, scientific references, etc.)	Electronic Sources (Links must be added)	Carpo, M. A short but believable history the digital turn in architecture. e-flu Architecture. (2023).Retrieved fro https://www.e- flux.com/architecture/chronograms/528659		
	Learning Platforms (Links must be added)	Manzala Academy LMS, https://lms.manzalaacademy.edu.eg/		
	Other (to be mentioned)			
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.		
equipment	Supplies And Co	Whiteboards.		
for	Electronic Programs	Microsoft Office program, Autocad		
teaching	Skill Labs/ Simulators	1200		
and	Virtual Labs	Page / /// #		
learning	Other (to be mentioned)	201		

7. Course Matrixes:

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7.1. Course contents Matrix with CLOs:

We		-		Course Learning outcomes "CLOs"					
ek	Topics	Lecture	TA	CEOI	CL02	CLO3	CLO4	CLO5	9073
1	Study and Analysis of Building Elements for Average-Scale Project Programs and Compositions: (Introduction to the course, syllabus overview, and fundamentals of building elements in architectural design.)	2	4	x					x
2	Study and Analysis of Building Elements for Average-Scale Project Programs and Compositions: (Analysis of key building elements (walls, floors, roofs, openings) and their spatial role in average-scale project compositions.)	2	4			x			x
3	Study and Analysis of Building Elements for Average-Scale Project Programs and Compositions: (Composition principles: How building elements interact in architectural design.)	2	4				x	x	
	Study and Analysis of Building Elements for Average-Scale Project Programs and Compositions: (Functional and aesthetic considerations in designing with building elements.)	2	-			x		x	
5	Study and Analysis of Building Elements for Average-Scale Project Programs and Compositions:	1	*	Ì					x

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_			-/2	-12					
	(Application of building elements to average-scale project programs case study analysis.)	1							
6-7	Integration and Pre-Midterm Review: Review of building elements and their role in average-scale project compositions.		8			x			x
		Mid	Term	Exam				-	+
,	Principles of Environmental Impact Assessment in the Design Phase: (Introduction to environmental impact assessment and its role in architectural design.)	2	4	x			x		
0	Principles of Environmental Impact Assessment in the Design Phase: (Key environmental considerations in the design phase materials, energy efficiency, and site impact.)	2	4		x		x		
1	Principles of Environmental Impact Assessment in the Design Phase: (Strategies for integrating environmental assessment principles into architectural compositions.)	2	4				x	x	
2	Study of the Importance of Structural Significance in Forming Architectural Spaces: (Introduction to structural significance in architecture role of structural systems in space formation.)	2	-				x		×
3	Study of the Importance of Structural- Significance in Forming Architectural Spaces:	2	A Y	3		x			x

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_		_		MARINE TOTAL				
	(Structural strategies in architectural design case studies of different approaches.)							
14	Study of the Importance of Structural Significance in Forming Architectural Spaces: (Structural integrity and spatial experience impact of materials and forms on architectural spaces.)	2	4				x	x
15	Final project Integration: (Synthesis of building elements, environmental assessment, and structural significance in a cohesive architectural design.)	2	4	x	x	x		
16		Fi	nal Ex	am				

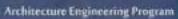
7.2. Teaching and learning matrix with CLOs:

Translation and Laurentee Markets	Course	Course Learning outcomes "CLOs"								
Teaching and Learning Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6				
Face to face lecture	X	X	x	X	X	X				
Online education (Asynchronous)			x							
Tutorial / Exercise		X	X	X		x				
Group discussion	X	X			X					
Site visit		x								
Self-Learning										
Presentation	X	x			X	x				
Mini project		X		x						
Research and reporting	X									
Brain storming	X	X	X	X	X	X				
Case study	X	X								

7.3. Student assessment matrix with CLOs:

1	Course l	Course Learning outcomes "CLOs"							
Assessment Methods		CLOI	CLO2	CLO3	CLO4	CLO5	CLO6		
Final written exam	163	MA	SP III	x	X	x	X		
Oral exam	1835	17%	X			x			
Mid-term Exam	18.07	CHARLES	3/8//	X	X		X		
Quizzes	10	13. 1	531	x			x		

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A second of the	Course Learning outcomes "CLOs"								
Assessment Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6			
Research assignments	x	X			X				
In-class questions (formative assessment)	x		x		x	x			
Project assignments		x	x	X	X	X			

Course coordinator:

Name	Signature	Academic Year		
Prof. Dr. Tarek Abu Auf		2025-2026		

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	THE PARTY OF THE P	2025-2026



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1. Basic Information:

Course Title (according to the bylaw)	Computer app	Computer applications in architecture (1)				
Course Code (according to the bylaw)		ARE 212				
Department/s participating in offering the	course Architectura	al Engineering Department				
Number of credit hours/points of the cours	se (according to the bylaw)					
Lecture	Tutorial / Laboratory	Total contact				
2	2	4				
Course Type	☑ Compulsory	□ Elective				
Academic level at which the course is tauj	ght	Second year				
Academic Program	Architectu	ral Engineering Program				
Faculty/Institute	Higher Institute of	f Engineering and Technology at Manzalla				
University/Academy	Mi	anzalla Academy				
Name of Course Coordinator	Prof.	Dr. Tarek Abu Auf				
Course Specification Approval Date	THE PARTY OF THE P	6 August 2025				
Course Specification Approval	Souther Council	il No. (12) on 16 August 2025				

Prevailing operating system - trainings - architectural drawing problems -applications on

Course specification 2025-2026

architectural-related cases.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	gram Outcomes (NARS/ARS) ding to the matrix in the program specs)	Course Learning Outcomes Upon completion of the course, the student w be able to:				
Code	Text	Code	Text			
	Apply engineering design processes to produce cost-effective solutions that meet specified needs	CLo2	Identify challenges related to CAD applications and utilize appropriate 2D drawing commands to address them.			
A3	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.	CLo5	Utilize both 2D and 3D CAD commands to develop architectural projects within computer laboratories.			
	Utilize contemporary technologies, codes of practice and standards,	CLo1	Implement the commands and concepts introduced in lectures within computer laboratories			
A4	quality guidelines, health and safety requirements, environmental issues, and risk management principles.	CLo3	Recall and demonstrate proficiency in using block editors, dimensioning tools, and plotting commands in architectural drawings.			
	Generate ecologically responsible, environmental conservation and rehabilitation designs through	CLo4	Analyze and execute 3D CAD modeling commands, applying them effectively in project development.			
B3	understanding of structural design, construction, technology and engineering problems associated with building designs.	CLo6	Define the technical requirements for each design project and apply appropriate drawing techniques using 2D and 3D CAD commands.			

4. Tenching and Learning Methods

M Face to face lecture

☐ Online education

☑ Tutorial / Exercise

⊞-Site visit

E Self-learning

Presentation

El-Mini project

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⊠ Laboratory

⊠ Research and reporting (self-learning)

Brainstorming

Case study

Course Schedule

			Expecte	d number of t	he Learning Hou	IDE :
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discus sion groups/	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determined)
ì	Introduction to the Prevailing Operating System & Basic Architectural Software Training: (Overview of the course and introduction to the prevailing operating system used in architectural design.)	6	2	2	2	
2	Introduction to the Prevailing Operating System & Basic Architectural Software Training: (Fundamentals of file management, software installation, and system optimization for architectural applications.)	6	2	2	2	
3	Introduction to the Prevailing Operating System & Basic Architectural Software Training: (Introduction to architectural design software interface navigation, basic tools, and workflow setup.)	6	2	2	2	
4	Introduction to the Prevailing Operating System & Basic Architectural Software Training: (Hands-on training: Creating and managing digital drawing files.)	5.	2	2	2	

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_			Mark Street			
			Expecte	d number of t	he Learning Hou	ini
No. of the Work	Scientific content of the course (Course Topics)	Total Weekly Heurs	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Setf-learning (Tarks/ Assignments / Projects/)	Other (to be determined)
5	Architectural Drawing Problems: (Understanding digital drafting techniques precision tools, layers, and object properties.)	6	2	2	2	
6-7	Architectural Drawing Problems: (Common architectural drawing problems scaling, alignment, and accuracy issues.)	12	4	4	4	
8		M	id – term			
9	Applications on Architectural- Related Cases: (Advanced drafting techniques annotations, dimensions, and line weights in architectural drawings,)	6	2	2	2	
10	Applications on Architectural- Related Cases: (Application of digital tools in 2D architectural project development.)	6	2	2	2	
11	Applications on Architectural- Related Cases: (Introduction to 3D modeling software and its role in architectural design.)	6	2	2	2	
12	Practical Applications & Project Development: (Developing a digital architectural project site plan, floor plans, and elevations.)	6	2	2	2	
13	Practical Applications & Project Development: (Integration of 3D modeling with 2D drawings perspectives, sections, and renders.)		CAR O	2	2	
14	Practical Applications & Project Development:	6	1	//2	2	

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			Expected number of the Learning Hours						
No. of the Week	Scientific content of the course (Course Topics)	Total Workly Hours	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determined)			
	(Final project preparation review, corrections, and optimization of digital outputs.)								
15	Final Project Review & Submission: (Final adjustments and submission of architectural projects using digital tools.)	6	2	2	2				
16		Fi	nal Exam						

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	4.5	4.5%
2.	Mid-Term Examination	8	9	9%
3,	Final Examination	(As Schedule)	60	60%
4.	Lab Exam	(As Schedule)	10	10%
5.	Activities	Every week	16.5	16.5%
6.	Final Oral Exam (if exists)			→%

6. Learning Resources and Supportive Facilities

Learning resources (books,	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Styles, K., & Richard, A. Working Drawings Handbook, 1st edition, Routledge, 2012.
scientific	Other References	Lectures material and sheets.
references, etc.) *	Electronic Sources (Links must be added)	Rahim, A., & Jamelle, H. Analyzing the Influence of Technology in Architecture: Computer Applications and Building Design, 1st edition, Research Gate, 2023. Retrieved from (PD) Authyzing the Influence of Technology

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	MA COLUMN TO SERVICE STATE OF THE PROPERTY OF
	in Architecture: Computer Applications and Building Design
Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/
Other (to be mentioned)	Coursera. Building Information Modeling (BIM) in Practice, 1st edition, Coursera, 2023. Retrieved from https://www.coursera.org/learn/bim
Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
Supplies	Whiteboards.
Electronic Programs	AutoCAD, Photoshop
Skill Labs/ Simulators	-
Virtual Labs	**
Other (to be mentioned)	
	Other (to be mentioned) Devices/Instruments Supplies Electronic Programs Skill Labs/ Simulators Virtual Labs

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

				Cour	se Lea	rning	outcom	res "C	LOs"
Week	Topics	Lecture	T/L	CLO 1	CL O2	CL O3	CL O4	CL O5	CLO 6
1	Introduction to the Prevailing Operating System & Basic Architectural Software Training: (Overview of the course and introduction to the prevailing operating system used in architectural design.)			x					

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	7-15-			100	
2	Introduction to the Prevailing Operating System & Basic Architectural Software Training: (Fundamentals of file management, software installation, and system optimization for architectural applications.)	2	2	x	
3	Introduction to the Prevailing Operating System & Basic Architectural Software Training: (Introduction to architectural design software interface navigation, basic tools, and workflow setup.)	2	2	x	
4	Introduction to the Prevailing Operating System & Basic Architectural Software Training: (Hands-on training: Creating and managing digital drawing files.)		100 A		

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5	Architectural Drawing Problems: (Understanding digital drafting techniques precision tools, layers, and object properties.)	2	2	x		
6-7	Architectural Drawing Problems: (Common architectural drawing problems scaling, alignment, and accuracy issues.)	4	4	x	x	
8		۸	lid Term I	xam		
9	Applications on Architectural-Related Cases: (Advanced drafting techniques annotations, dimensions, and line weights in architectural drawings.)	2	2		x	
10	Applications on Architectural-Related Cases: (Application of digital tools in 2D architectural project development.)	2				x
11	Applications on Architectural-Related Cases:	2	2		x	

60

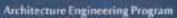
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				404		
	(Introduction to 3D modeling software and its role in architectural design.)					
12	Practical Applications & Project Development: (Developing a digital architectural project site plan, floor plans, and elevations.)	2	2		x	x
13	Practical Applications & Project Development: (Integration of 3D modeling with 2D drawings perspectives, sections, and renders.)	2	2		x x	x
14	Practical Applications & Project Development: (Final project preparation review, corrections, and optimization of digital outputs.)	Series Contraction of the Contra	, X.	Cox Charles	х	x
15	Final Project Review & Submission: (Final adjustments and submission of	2	2	9)	x	x

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	architectural projects using digital tools.)		
16		Final Exam	

7.2. Teaching and learning matrix with CLOs:

Touchies and Learning Matheds	Course Learning outcomes "CLOs"							
Teaching and Learning Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6		
Face to face lecture	х	3	X	X	8:	X.		
Tutorial / Exercise		x			×	X		
Group discussion		x			x	X		
Laboratory	x	X	3	x	X	X		
2000	Self	-Learning						
Presentation		x						
Mini-project			x	X	X	x		
Research and reporting		X						
Brainstorming	x	X	X	x	x	X		
Case study	x	x						

7.3. Student assessment matrix with CLOs:

Assessment Matheda	Course Learning outcomes "CLOs"					
Assessment Methods	CL01	CLO2	CLO3	CLO4	CLO5	CLO6
Final written exam	x	x	x	x	x	X
Oral exam	x	X	X	X	X	X
Mid-term Exam	x	x	x			
Quizzes	x	X	x			
Lab Exam	x		3	X		
Research assignments		X		X	X.	X
In-class questions (formative assessment)	x	x	x	x	x	x
Project assignments	x	X	x	X	X	x

Course coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf		2025-2026

Program coordinator:

Name	Signature	Academic Year		
Prof. Dr. Turek Abu Auf	10000000000000000000000000000000000000	2025-2026		

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1. Basic Information:

Course Title (according to the bylaw)	Build	Building construction (3)				
Course Code (according to the bylaw)		ARE 213				
Department/s participating in offering the cou	nse Architectural Engin	eering Department				
Number of credit hours/points of the course (a	according to the bylaw)					
Lecture Tu	torial / Laboratory	Total contact				
2	4	6				
Course Type	□ Compulsory	□ Elective				
Academic level at which the course is taught		Second year				
Academic Program	Architectur	Architectural Engineering Program				
Faculty/Institute	Higher Institute of	Higher Institute of Engineering and Technology a Manzalla				
University/Academy	Mai	Manzalla Academy				
Name of Course Coordinator	Dr. 1	Dr. Marwa Aladham				
Course Specification Approval Date	16	16 August 2025				
Course Specification Approval	Institute Council	Institute Council No. (12) on 16 August 2025				

2. Course Overview (Brief summary of scientific content)

Working steps to implement different construction and finishing procedures in buildings: detailing of site works - excavation and foundation works - concrete and reinforced concrete works - masonry - raw bricks & brick masonry - wooden construction details - drawing details of doors, windows, and wardrobes -plaster and finishes of internal and external building surfaces - water and damp proofing -thermal insulation techniques - flooring works - sanitary and electrical works -applications.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Pr (nece	ogram Outcomes (NARS/ARS) ording to the matrix in the program specs)	Upon	Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
Cour	Develop and apply alternative design solutions in building	CLo3	Propose effective structural solutions while enhancing teamwork and coordination skills among project members.
A3	Article Articl		Develop and apply alternative design solutions in building construction projects while addressing and resolving related challenges:
A6	Develop and apply alternative design solutions in building construction projects while addressing and resolving related challenges.	CLo4	Examine and interpret expansion and settlement joint details in architectural drawings.
	Produce designs that meet building users' requirements through understanding the relationship between people and buildings, and	CLol	Understand the function of various structural systems for wide-span constructions and their relationship with spatial dimensions.
B2		CLo6	Assess advanced techniques for producing comprehensive construction drawings, including detailed elements.
	Generate ecologically responsible, environmental conservation and rehabilitation designs; through understanding of structural design, construction, technology and engineering problems associated with building designs	CLo5	Evaluate and analyze sanitary and rainwater drainage drawings within the project.
В3		CLo2	Identify the fundamental project drawings, assess material properties, and determine their appropriate application within the project.

4. Teaching and Learning Methods

- ☐ Online education
- ☑ Tutorial / Exercise
- M Group discussion
- □ Laboratory

- Site visit
- Self-learning
- M Presentation
- Mini project
- Research and reporting (self-learning)
- ⊠ Brainstorming

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Course Schedule

	Scientific content of the		Espe	eried number of the Li	THE RESERVE OF THE PARTY OF THE	
No. of the Week	Course Torics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined
ľ.	Working steps to implement different construction and finishing procedures in buildings Site Works, Excavation & Foundation Works: (Introduction to construction processes site preparation and preliminary works.)	8	2	4	2	
2	Working steps to implement different construction and finishing procedures in buildings Site Works, Excavation & Foundation Works: (Introduction to construction processes site preparation and preliminary works.)	s	2	4	2	
3	Working steps to implement different construction and finishing procedures in buildings Site Works, Excavation & Foundation Works: (Reinforced concrete foundations detailing and implementation.)	s	2	4	2	
4	Working steps to implement different construction and finishing procedures in buildings Structural Construction	8	2	4	2	

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Expected number of the Learning Flours Scientific content of the Total No. Self-learning Other Theoretical Training. course Weekly of the (Practical/Clinical/ (Tisks) (n) be teaching (Course Topics) desermined) Week Hours Assignments/ (lectures/discussion 1,.... Projects/ ...) groups/.....) Concrete, Masonry. and Woodwork: (Concrete and reinforced concrete slabs. construction beams, and columns.) Working steps implement different construction finishing procedures in buildings Structural Construction 2 Concrete, Masonry, and Woodwork: (Masonry techniques raw bricks. brick. wall bonding, and systems.) Working steps implement different construction finishing procedures in buildings Structural Construction 16 Concrete, Masonry, and Woodwork: (Wooden construction details framing. structural joinery, and applications.) Mid-Term Exam 8 Working steps implement different construction and finishing procedures in buildings Openings. Finishes & Insulation: (Drawing and detailing of doors, windows, and wardrobes.)

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Expected number of the Learning Hours Scientific content of the No. Total Theoretical Self-learning Other Training. course. of the Weekly teaching. (Practical/Clinical/ (Tasks On be (Course Topics) Week Hours. (fectures/discussion _3 Assignments/ determined) groups' .__) Projects' ...) Working кверк implement different construction and finishing procedures in 10 buildings Openings, 2 Finishes & Insulation: (Plustering and finishes internal and external surface treatments.) Working steps implement different construction and finishing procedures in buildings Openings, H 2 Finishes & Insulation: (Water and damp proofing techniques materials and applications.) Working steps implement different construction and finishing procedures in buildings Flooring. Sanitary. Working steps to implement 12 different construction Z and finishing procedures buildings Electrical Works: (Flooring systems tile, wood, and concrete finishes.) Working steps

2

finishing procedures in

different

Flooring.

and

implement

construction

buildings

13

2

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	The same and the same		Expected number of the Learning Hours						
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (Jectures/discussion groups/)	Training (Practical/Clinical/)	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined			
	Sanitary, and Electrical Works: (Thermal insulation techniques and energy- efficient construction.)								
14	Working steps to implement different construction and finishing procedures in buildings Flooring, Sanitary, and Electrical Works: (Sanitary and electrical works MEP coordination in construction.)	8	2	4	2				
15	Final Project Review & Applications: (Site and construction detailing applications student project evaluations.)	8	2	4	2				
16			Final Exa	m					

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	9	6%
2.	Mid-Term Examination	8	18	12%
3.	Final Examination	(As Schedule)	90	60%
4.	Lab Exam	140		5%
5.	Activities and assignments	Every week	33	22%
6.	Final Oral Exam (if exists)		270	.2%

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6. Learning Resources and Supportive Facilities

Learning resources (books, scientific references, etc.)	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Wasson, C. S., System Engineering Analysis, Design, and Development: Concepts, Principles, and Practices, John Wiley & Sons, 2015.				
	Other References	Ching, F. D. K., & Adams, C., Building Construction Illustrated, 6th ed., Wiley, 2020. Schittich, C., Modern Construction Handbook, 6th ed., Birkhäuser, 2021				
	Electronic Sources (Links must be added)	UCLA Library, Design Manuals, Standards, and Buildin Types, UCLA Architecture & Urban Design Library, 202 Retrieved from: https://guides.library.ucla.edu/architecture/manualsandstanda				
	Learning Platforms (Links must be added)	Manzala Academy LMS, https://lms.manzalaacademy.edu.eg/				
	Other (to be mentioned)	YouTube, Advanced Construction Techniques, 2023. Retrieved from https://www.voutube.com/watch?v=video_id				
Supportiv	Devices/Instrument	Projectors, audio-visual systems, and Computers with internet access.				
e facilities	Supplies	Whiteboards,				
& equipment	Electronic Programs	Microsoft Office program, Acrobat Reader				
for teaching	Skill Labs/ Simulators	S##4				
and	Virtual Labs					
learning	Other (to be mentioned)					

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

		Lee	11 2	C	ourse	Learni	ng out	comes	"CLO	11
Week	Topics		TIL	CLOI	CLO2	CLO3	CLO4	CLO5	CL/06	CL07
1	Working steps to implement different construction and finishing procedures in buildings Site Works, Excavation & Foundation Works: (Introduction to construction processes site preparation and preliminary works.)	2	4	x	x					
2	Working steps to implement different construction and finishing procedures in buildings Site Works, Excavation & Foundation Works: (Excavation techniques and types of foundation systems.)	2	4	х	x					
3	Working steps to implement different construction and finishing procedures in buildings Site Works, Excavation & Foundation Works: (Reinforced concrete foundations detailing and implementation.)	2	4	х	х					
4	Working steps to implement different construction and finishing procedures in buildings Structural Construction - Concrete, Masonry, and Woodwork: (Concrete and reinforced concrete construction slabs, beams, and columns.)	2	4	x	x	x				

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				C	ourse l	Learni	ng oute	comes	"CLO	ar.
Week	Topics	Lec	T/L	CLOI	CL02	CL03	CL04	CLO5	CL06	CLO7
5	Working steps to implement different construction and finishing procedures in buildings Structural Construction – Concrete, Musonry, and Woodwork: (Masonry techniques raw bricks, brick bonding, and wall systems,)	2	4		x	x				
6-7	Working steps to implement different construction and finishing procedures in buildings Structural Construction – Concrete, Masonry, and Woodwork: (Wooden construction details framing, structural joinery, and applications.)	8	16		x	x	x			
8	approximation of the second	M	id Te	m Exa	im					
9	Working steps to implement different construction and finishing procedures in buildings Openings, Finishes & Insulation: (Drawing and detailing of doors, windows, and wardrobes.)	2	4				x		x	
10	Working steps to implement different construction and finishing procedures in buildings Openings, Finishes & Insulation: (Plastering and finishes internal and external surface treatments.)	2	4						x	
11	Working steps to implement different construction and finishing procedures in buildings Openings, Finishes	2	4						х	

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				C	ourse l	Learni	ng oute	omes	CLO	¥**
Week	Topics	Lec	T/L	CLOI	CL02	CL03	CLO4	CLOS	CLO6	CLO7
	& Insulation: (Water and damp proofing techniques materials and applications.)									
12	Working steps to implement different construction and finishing procedures in buildings Flooring, Sanitary, Working steps to implement different construction and finishing procedures in buildings Electrical Works: (Flooring systems tile, wood, and concrete finishes.)	2	4					x	x	x
13	Working steps to implement different construction and finishing procedures in buildings Flooring, Sanitary, and Electrical Works: (Thermal insulation techniques and energy-efficient construction.)	2	4						x	X
14	Working steps to implement different construction and finishing procedures in buildings Flooring, Sanitary, and Electrical Works: (Sanitary and electrical works MEP coordination in construction.)	2	4					x		x
15	Final Project Review & Applications: (Site and construction detailing applications student project evaluations.)	2	4						×	×

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7.2. Teaching and learning matrix with CLOs:

Teaching and Learning	-	Con	rse Learn	ing outco	mes "CLC)s"	100
Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO?
Face to face lecture	x	X	X	X	x	X	
Tutorial / Exercise	X	X	x	x	X		
Group discussion			X			x	x
Site visit	x			x	X	- 77	x
		Self-Lear	ning		11		
Presentation			x	x	x	x	
Mini-project						x	
Research and reporting		X					x.
Brain storming	x	X	x	X	x	x	

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLOs"									
Assessment Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO:			
Final written exam	x	X	X	x	x	X	x			
Mid-term Exam		X	X	x	x					
Quizzes	X	X		X	x		x			
Research assignments	X	X	X	x	x	x	- 3			
In-class questions (formative assessment)	х	X	x			x	x			
Project assignments	x	X	x	X	×	X-	- 1			

Name	Signature	Academic Year
Dr. Marwa Aladham	All luces	2025-2026

Program coordinator:

Name	Signatury	Academic Year
Prof. Dr. Tarek Abu Auf		2025-2026



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1. Basic Information:

Course Title (according to the bylaw	ā.	History & Theories of Architecture (2)				
Course Code (according to the bylav	v)	ARE 214				
Department/s participating in offering the course		Architectural Engineering Department				
Number of credit hours/points of the	course (accord	ling to the bylaw)				
Lecture	Tutorial	/ Laboratory	Total contact			
3		5	3			
Course Type		□ Compulsory	□ Elective			
Academic level at which the course	is taught	Second year				
Academic Program			All Program			
Faculty/Institute		Higher Institute of Engineering and Technology a Mantzalla				
University/Academy		Manzalla Academy				
Name of Course Coordinator		Dr. Marwa Aladham				
Course Specification Approval Date		16	August 2025			
Course Specification Approval		Institute Council No. (12) on 16 August 2025				

2. Course Overview (Brief summary of scientific content)

- A. History of architecture: Medieval architecture in western and Islamic Worlds -Islamic architecture.
- B. Theory of architecture: Analytical study of the factors affecting architectural design (economical, functional, social, human, psychological, and environmental) - Building technology and construction techniques - architectural theories and criteria of designing for building elements vertical circulation in buildings - residential buildings - office buildings - commercial buildings.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	gram Outcomes (NARS/ARS) rding to the matrix in the program specs)	Upon	Course Learning Outcomes completion of the course, the student will be able to:		
Code	Text	Code	Text		
	Utilize contemporary technologies, codes of practice and standards,		Develop an understanding of sustainability principles as they evolved through different civilizations and examine their interactions.		
A4	quality guidelines, health and safety requirements, environmental issues, and risk management principles.	CLo3	Analyze architectural function effectively and enhance communication skills through teamwork in studying architectural form, space, and order to achieve spatial, aesthetic, and technical harmony.		
	Practice research techniques and		Practice research techniques and	Clo2	Organize research on various architectural theories across different periods of the Middle Ages.
A5	methods of investigation as an inherent part of learning.	CLo5	Summarize essential aspects of Middle Ages architecture while considering economic, societal, and environmental dimensions, as well as risk management in design.		
BI	Create architectural, urban and planning designs that satisfy both aesthetic and technical requirements, using adequate	CLo4	Apply acquired knowledge by identifying key architectural lessons and principles from different Middle Age theories and integrating them into architectural design.		
ы	knowledge of: history and theory, related fine arts, local culture and heritage, technologies and human sciences.	CL06	Identify key architectural lessons and principles from various Middle Age theories and explore their application in architectural practice.		

4. Teaching and Learning Methods

- M Face to face lecture
- □ Online education
- ☑ Tutorial / Exercise
- ☐ Laboratory

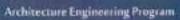
- Site visit
- Self-learning.
- Presentation
- Mini project
- Research and reporting (self-learning)
- □ Brainstorming

Course Schedule

Course specification 2025-2026



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			Екресте	d number of t	he Learning Hou	im.
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (Jectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determined)
1	History of Architecture: (Introduction to medieval architecture overview of Western and Islamic architectural developments.)	4	3	2.63	1	
2	History of Architecture: (Medieval architecture in the Western world Romanesque and Gothic styles, structural and aesthetic characteristics.)	4	3	Sec.	1	
3	History of Architecture: (Medieval architecture in the Islamic world mosques, madrasas, and palaces; comparison with Western styles.)	4	3	(F)	1	
:4	History of Architecture: (Islamic architecture principles, elements, and regional variations.)	4	3		1	
5-6	History of Architecture: (Case studies: Notable examples from both Western and Islamic medieval architecture.)	8	6		2	
7	Integration and Pre-Midterm	3	3		1	
8	Review	Mid-	-Term Exam			
9	Theory of Architecture – Factors Affecting Architectural Design: (Analytical study of design factors economic, functional, and social influences.)	3	3		1	
10	Theory of Architecture — Factors Affecting Architectural Design: (Human, psychological, and environmental factors in architectural design.)	3	3		1	

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			Expecte	d number of t	he Learning Hoo	0
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (fectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determined)
11	Theory of Architecture – Factors Affecting Architectural Design: (Impact of building technology and construction techniques on architectural form and function.)	3	3		1	
12	Architectural Theories & Design Criteria: (Architectural theories and design principles for building elements.)	3	3	•	1	
13	Architectural Theories & Design Criteria: (Vertical circulation in buildings stairs, ramps, and elevators.)	3	3	(2)	1	
14	Architectural Theories & Design Criteria: (Design principles for residential, office, and commercial buildings.)	3	3		1	
15	Final Review and Application: (Discussion and analysis of architectural theories in relation to historical and contemporary buildings.)	3	3		1	
16		Fi	nal Exam			

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5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	6	6%
2.	Mid-Term Examination	8	18	18%
3.	Final Examination	(As Schedule)	60	60%
4.	Lab Exam		н.	%
5.	Reports and assignments	Every week	16	16%
6.	Final Oral Exam (if exists)	-	12	.56

6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Stubbs, M., Heritage-Sustainability: Developing a Methodology for the Sustainable Appraisal of the Historic Environment, Planning Practice & Research, 19(3), Taylor & Francis, 2004.			
Learning resources (books, scientific references, etc.)	Other References	Ching, F. D. K., Jarzombek, M., & Prakash, V., A Global History of Architecture, 3rd ed., Wiley, 2021.			
	Electronic Sources (Links must be added)	Architectural Digest, 17 Essential Architectural Styles Everyone Should Know, Architectural Digest, 2023. Retrieved from: https://www.architecturaldigest.com/gallery/essential- architectural-styles-everyone-should-know			
	Learning Platforms (Links must be added)	Manzala Academy LMS, https://lms.manzalaacademy.edu.eg/			
	Other (to be mentioned)	Podcasts, Architecture History Now, 2023. Retrieved from: https://podcasts.apple.com/us/podcast/architecture-history-now/id1525647506			
Supportive	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.			
facilities &	Supplies	Whiteboards.			
equipment for	Electronic Programs	Microsoft Office program, Acrobat Reader			
teaching	Skill Labs/ Simulators	-			
T. T	Virtual Labs	_			

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and	Other (to be mentioned)
learning	Comment (in the international)

7, Course Matrixes:

7.L. Course contents Matrix with CLOs:

				Co	Course Learning outcomes "CLOs"					
Week	Topics	Lecture	T/L	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5	CLO 6	
1	History of Architecture: (Introduction to medieval architecture overview of Western and Islamic architectural developments.)	3	12	x						
2	History of Architecture: (Medieval architecture in the Western world Romanesque and Gothic styles, structural and aesthetic characteristics.)	3	٠		x					
3	History of Architecture: (Medieval architecture in the Islamic world mosques, madrasas, and palaces; comparison with Western styles.)	3		x	x					
4	History of Architecture: (Islamic architecture principles, elements, and regional variations.)	3		x						
5-6	History of Architecture: (Case studies: Notable examples from both Western and Islamic medieval architecture.)	6	101	x	x				N	
7	Integration and Pre- Midterm Review	3	Ki.		x	ж	x			
8			Mid Te	m Exan	1				100	
9	Theory of Architecture – Factors Affecting Architectural Design: (Analytical study of design factors economic,	3	*			х		x		

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Factors Affecting Architectural Design:

Factors Affecting Architectural Design: (Impact of building

technology and

function.)

(Human, psychological, and environmental factors in architectural design.) Theory of Architecture –

construction techniques on architectural form and

Architectural Theories & Design Criteria:

(Architectural theories and

design principles for building elements.) Architectural Theories & Design Criteria:

(Vertical circulation in

buildings stairs, ramps,

Architectural Theories & Design Criteria:

(Design principles for

residential, office, and commercial buildings.) Final Review and Application:

(Discussion and analysis

of architectural theories in relation to historical and contemporary buildings.)

and elevators.)

10

11

12

13

14

15

16



CLO

6

X

X

X

X

X

X

Х

×

X

X.

Final Exam

3

3

3

3

3

3

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7.2. Teaching and learning matrix with CLOs:

		Course Learning outcomes "CLOs"						
Teaching and Learning Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6		
Face to face lecture	x	X	x	x	X	X		
Tutorial / Exercise	x	X	x	x	x	X		
Group discussion		X	x	x				
Site visit		X			x			
	Self	-Learning						
Presentation		X	x	x		X		
Mini-project			x	X		X		
Research and reporting	x	X	x	x		x		

7.3. Student assessment matrix with CLOs:

		Course Learning outcomes "CLOs"							
Assessment Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6			
Final written exam	x	X	X	X	X	X			
Mid-term Exam	x	x	X	X		x			
Quizzes	X	x	x	x	x	x			
Research assignments	X	x	X	x	x				
In-class questions (formative assessment)	x	x	X	x	x	x			
Project assignments	x	x	X	x	x	X			

Course coordinator:

Name	Signature	Academic Year
Dr. Marwa Aladham	29 110	2025-2026
rogram coordinator;	(114	
Name	Signature	Academic Year
		2025-2026

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1. Basic Information:

Course Title (according to the	bylaw)	History of city planning			
Course Code (according to the	bylaw)	ARE 215			
Department's participating in s	offering the course	Architectural Engineering Department			
Number of credit hours/points	of the course (accordi	ng to the bylaw)			
Lecture	Tutorial	/ Laboratory	Total contact		
3		•	3		
Course Type		図 Compulsory	☐ Elective		
Academic level at which the o	ourse is taught	Second year			
Academic Program		Architectural Engineering Program			
Faculty/Institute		Higher Institute of Engineering and Technology Manzalla			
University/Academy		Manzulla Academy			
Name of Course Coordinator		Dr. Alaa Morgan			
Course Specification Approval	Date	16 August 2025			
Course Specification Approva		Institute Council No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

History of earliest human settlements in different civilizations and study of the evolution and historical development of city planning in ancient Egypt, Mesopotamia, Greek and Roman civilizations and a comparison, Medieval periods in the Western and Islamic Worlds and a comparison, Renaissance, Industrial revolution age and its impact on city planning, modern theories and trends of city planning -research and trainings.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

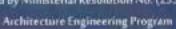
	ogram Outcomes (NARS/ARS) ording to the matrix in the program spees)	Course Learning Outcomes Upon completion of the course, the student will be able to:			
Code	Text	Code	Text		
A4 Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk manuscement principles.		eodes of practice and standards, quality guidelines, health and safety CLo2 env			
Practice research techniques and		CLo4	Construct scaled models (maquettes) to explore various methods of assembling residential buildings and urban spaces.		
A5	methods of investigation as an inherent part of learning	CL06	Utilize digital tools like AutoCAD and Photoshop to effectively present architectural and urban design projects.		
4.16	Acquire and apply new knowledge;	CLo3	Illustrate urban-scale solutions through freehand sketches and demonstrate their application in real contexts.		
A10	A10 and practice self, lifelong and other learning strategies.		Evaluate software tools such as AutoCAD in reviewing different approaches to assembling residential units.		
Bi	Create architectural, urban and planning designs that satisfy both aesthetic and technical requirements, using adequate knowledge of: history	CLo1	Classify architectural projects, urban design, and urban planning based on their scope, function, and impact on the built environment.		
	and theory, related fine arts, local culture and heritage, technologies and human sciences.	CLo2	Analyze challenges facing the built environment in Egypt and propose effective design-based solutions.		

4. Teaching and Learning Methods

- 00 Face to face lecture
- ☐ Online education
- M Tutorial / Exercise
- ☑ Group discussion
- ☐ Laboratory

- ☑ Self-learning
- El Presentation
- Mini project
- Research and reporting (self-learning)
- Brainstorming

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Course Schedule

	Scientific content of the	Expected number of the Learning Hours							
No. of the Week	course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/)	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined			
1	Earliest Human Settlements & Ancient Civilizations: (Introduction to city planning definitions, significance, and early human settlements.)	6	3	1943	3				
2	Earliest Human Settlements & Ancient Civilizations: (Urban planning in Ancient Egypt & Mesopotamia hierarchical city structures, religious and administrative centers.)	6	3	*	3				
3	Greek & Roman City Planning: (Greek city planning Hippodamian grid system, agora, acropolis, and public spaces.)	6	3		3				
4	Greek & Roman City Planning: (Roman city planning cardo and decumanus, forums, infrastructure, and urban expansion.)	6	3	-	3				
5-6	Comparative Analysis of Ancient Civilizations: (Comparison of city planning principles in Ancient Egypt, Mesopotamia, Greece, and Rome.)	12	6	•	6				

4.3

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	Valley or British	Expected number of the Learning Hours						
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/)	Self-learning (Tusks/ Assignments/ Projects/)	Other (to be determined)		
7	Medieval Periods – Western and Islamic Worlds: (Medieval Western Cities: Organic growth, feudal influences, fortifications, and public spaces. Islamic Cities: Mosque- centered design, sooks, courtyards, and water management.)	6	3		3			
8	Marian Ma		Mid-Term	Exam				
9	Renaissance & Industrial Revolution: (Renaissance urban planning ideal city concepts, symmetry, and order.)	6	3	•	3			
10	Remissance & Industrial Revolution: (Industrial Revolution impact of industrialization on urban growth, transportation, and housing.)	6	3	*	3			
-11	Modern Theories & Trends in City Planning: (Early 20th-century urban theories Garden City, Radiant City, and City Beautiful Movement.)	6	3	*	3			
12	Modern Theories & Trends in City Planning: (Contemporary city planning trends	6	3		3			

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	(Course Topics) Week	10000	Expected number of the Learning Hours							
No. of the Week		Total Weekly Hours	Theoretical tenching (loctures/discussion groups/)	Training (Practical/Clinical/	Self-learning (Taske/ Assignments/ Projects/_)	Other (to be determined)				
	sustainability, smart cities, and new urbanism.)									
13	Research and Training Applications: (Case study analysis of historical and modern cities.)	6	3	•	3					
14	Research and Training Applications: (Urban planning exercises students apply theories to real-world examples.)	6	3	8	3					
15	Final Review & Comparative Discussion: (Reflection on the historical progression of city planning and its impact on today's cities.)	6	3		3					
16			Final Exa	m .						

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6,11	4.5	4.5%
2.	Mid-Term Examination	8	13.5	13.5%
3.	Final Examination	(As Schedule)	70	70%
4.	Lab Exam		**	%
5.	Activities	Every week	12	12%
6.	Final Oral Exam (if exists)	*	4	9%

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6. Learning Resources and Supportive Facilities

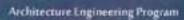
Learning resources (books, scientific references, etc.)	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Barron, M. Auditorium acoustics and architectural design. Spon Press, 2009.			
	Other References	Kostov, S. The city shaped: Urban patterns and meanings through history (2nd ed.) Thames & Hudson, 2021.			
	Electronic Sources (Links must be added)	Plane Tizen. Top 20 urban planning books (a all time). Plane Tizen, 2023. Retrieved from https://www.planetizen.com/books/20			
	Learning Platforms (Links must be added)	Manzala Academy LMS, https://lms.manzalaacademy.edu.eg/			
	Other (to be mentioned)	MIT Open Course Ware. History of urban form. 2023. Retrieved from https://ocw.mit.edu/courses/architecture/4-241j- theory-of-city-form			
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.			
equipment	Supplies	Whiteboards.			
for	Electronic Programs	Microsoft Office program, Acrobat Reader			
teaching	Skill Labs/ Simulators	-			
and	Virtual Labs	4			
learning	Other (to be mentioned)				

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Lec	TA	Course learning outcomes "CLOs"					
				CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
1.	Earliest Human Settlements & Ancient Civilizations: (Introduction to city planning definitions, significance, and early human settlements.)	3	85	x					

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Week	Topics	Lec	T/L	Course learning outcomes "CLOs"					
				CL01	CLO2	CLO3	CLO4	CLO5	CLO
2	Earliest Human Settlements & Ancient Civilizations: (Urban planning in Ancient Egypt & Mesopotamia hierarchical city structures, religious and administrative centers.)	3		x					
3	Greek & Roman City Planning: (Greek city planning Hippodamian grid system, agora, acropolis, and public spaces.)	3:		x	×				
.4	Greek & Roman City Planning: (Roman city planning cardo and decumanus, forums, infrastructure, and urban expansion.)	3	×	х	х				
5-6	Comparative Analysis of Ancient Civilizations: (Comparison of city planning principles in Ancient Egypt, Mesopotamia, Greece, and Rome.)	6	-		x	x			
7	Medieval Periods – Western and Islamic Worlds: (Medieval Western Cities: Organic growth, feudal influences, fortifications, and public spaces. Islamic Cities: Mosque- centered design, souks, courtyards, and water management.)	3			x	x	х		
8			M	id Term I	Exam				

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			_	-	-				
Week	Topics	Lec	1	- (Course le	earning o	utcomes	"CLOs	
WEEK	Lopics	2 3	F	CLOI	CLO2	CL03	CL04	CL05	CLC
9	Renaissance & Industrial Revolution: (Renaissance urban planning ideal city concepts, symmetry, and order.)	3		х			×	x	
10	Renaissance & Industrial Revolution: (Industrial Revolution impact of industrialization on urban growth, transportation, and housing.)	3	30			x	х		x
11	Modern Theories & Trends in City Planning: (Early 20th-century urban theories Garden City, Radiant City, and City Beautiful Movement.)	3					х		x
12	Modern Theories & Trends in City Planning: (Contemporary city planning trends sustainability, smart cities, and new urbanism.)	3					x		х
13	Research and Training Applications: (Case study analysis of historical and modern cities.)	3	S.				x	х	х
14	Research and Training Applications: (Urban planning exercises students apply theories to real-world examples.)	3				x	x	x	x
15	Final Review & Comparative Discussion: (Reflection on the historical progression of city planning and its impact on today's cities.)	3		×	x	x	x	x	

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7.2. Teaching and learning matrix with CLOs:

	Course Learning outcomes "CLOs"					
Teaching and Learning Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
Face to face lecture	X	X	x	X	x	x
Tutorial / Exercise				X	x	x
Group discussion	X	X	x			
Site visit		X		x		
Self-Learning		V				
• Presentation			X		X	X
Mini-project				X	x	X
Research and reporting			x			
Brainstorming	X	X	x	X	X	X

7.3. Student assessment matrix with CLOs:

	Course Learning outcomes "CLOs"						
Assessment Methods	CLOI	CLO2	CL03	CLO4	CLO5	CLO6	
Final written exam	X	X	X			x	
Mid-term Exam	x	X	x				
Quizzes	x		X		X	x	
Research assignments	X	X	X	X			
In-class questions (formative assessment)	x	X	x			x	
Project assignments	x	X	X	x	X	X	

Course coordinator:

Name	Signature	Academic Year
Dr. Alaa Morgan) (0 x N.	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	254	2025-2026

Ministry of Higher Education Figher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architecture Engineering Program

1. Basic Information:



Course Title (according to the bylaw) Course Code (according to the bylaw) CIVA 211 Department/s participating in offering the course Architecture Engineering Department

Lecture	Tutorial / Laboratory	Total contact
2	2	4
Course Type	⊠ Compulsory	□ Elective
Academic level at which the course is taug	ght	Second Year
Academic Program	Civi	l Engineering Program
Faculty/Institute	Higher Institute	of Engineering and Technology at Manzalla
University/Academy		Manzalla Academy
Name of Course Coordinator	Assoc.	Prof. Mahmoud Abd-Aziz
Course Specification Approval Date		16 August 2025
Course Specification Approval	Institute Cou	ncil No. (12) on 16 August 2025

Course Overview (Brief summary of scientific content)
 Reinforced concrete (RC) - principles of designing RC constructions - analysis and design of sections that are subject to bending - load distribution - reinforcement details of beams, flat slabs, columns, and stairs.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program spees)		Upon completion of the course, the student sable to:		
Code	Text	Code	Text	
A1	Identify, formulate, and solve complex engineering problems by	CLO4	Manage tasks and resources of concrete substance effectively.	
A1	applying engineering fundamentals, basic science, and mathematics.	CLO5	Recognize how to work in a team.	
A2	Develop and conduct appropriate experimentation and/or sinustation, analyze and interpret data, assess, and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.	C1.O3	Use codes of practices in designing reinforced engineering concrete structures.	
	Apply engineering design processes to produce cost-effective solutions that	CLO1	Design different types of concrete structures, slabs, beams and columns.	
A3	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.	CLO2	Design RC stairs and flat slabs.	
A10	Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.	CLO6	Solve all problems related to concrete structures.	

4. Teaching and Learning Methods

B Face to face lecture	☐ Site visit
☐ Online education	I≊ Self-learning
□ Tutorial / Exercise	50 Presentation
□ Group discussion	Mini project
☐ Laboratory	■ Research and reporting (self-learning)
	Brainstorming

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Course Schedule

			Expected number of the Learning Hours					
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/)	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)		
1	Introduction to RC	6	2	2	2			
2-3-	Design of RC Beams	24	8	8	8			
6-7-	Design of RC solid Slabs	18	6	6	6			
10- 11	Design of Columns	12	4	4	4			
12-	Design of Stairs	12	4	4	4			
14-	Design of flat slabs	12	4	4.	4			

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
ī.	Quizzes	6, 11	7	5.5%
2.	Mid-Term Examination	8	20	16%
3.	Final Examination	(As Schedule)	80	64%
4.	Lab Exam	(As Schedule)	*	-
5.	Reports and assignments	Every week	18	14.5%
	resports and assignments	Litery week	1.110	

6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course	Wight, J. K. (2016). Reinforced concrete: Mechanics and design (7th Global ed.). Pearson Education.
Learning resources (books,	Other References	Ding, Y., & Ning, X. (2023). Reinforced concrete: Basic theory and standards. Springer. https://doi.org/10.1007/978-981-19-2920-5
scientific references, etc.)	Electronic Sources	Mahmoud, S. (2023). Reinforced concrete design: Fundamentals and practical examples. Cambridge Scholars Publishing
	Learning Platforms	Manzala Academy LMS, https://lms.manzalancademy.edu.eg/

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Other	Lecture material and experimental sheets
Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
Supplies	Whiteboards
Electronic Programs	Microsoft Office program, Acrobat Reader
Skill Labs/ Simulators	*
Virtual Labs	*
Other (to be mentioned)	
	Supplies Electronic Programs Skill Labs/ Simulators Virtual Labs

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

ALC: A	43170	10.00	T/L.		Course Learning outcomes "C-LOs"				
Week	Topics	Lec.	1/1.	CLOI	CLO2	CLO3	CL04	CLO5	CLO
1	Introduction to RC	2	2			X	X	X	X
2 – 3- 4-5	Design of RC Beams	8	8	x		х	X.	x	X
6-7-9	Design of RC solid Slabs	6	6	X		X	X	X	X
8			A	fid Term	Escaro.				
10-11	Design RC columns.	- 6	6	X		X			X
12-13	Design of Stairs	4	4		X	X	X	X	X
14-15	Design of flat slabs	4	4		X	X	X	X	X
16	Final Exam								

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning	Course Learning outcomes "C-LOS"								
Methods	CLOI	CLO2	CLO3	CLO4	CL:05	CLO6			
Face to face lecture	X	X	X	X		X			
Tutorial / Exercise	X	X	X	X	X	X			
Group discussion					X	X			
Self-Learning				11	-	100			
Presentation					X	X			
Mini project	X	X	X	X		X			

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Teaching and Learning	Course Learning outcomes "C-LOS"							
Methods	CLOI	CLO2	CLO3	CL04	CLO5	CLO6		
Research and reporting			1	X		X		
Brain storming	X	X	X			X		

7.3. Student assessment matrix with CLOs:

1	Course Learning outcomes "C-LOS"							
Assessment Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CL06		
Final written exam	X	X	X			X		
Mid-term Exam	X	X	X			X		
Quizzes	X	X	X					
Research assignments	X	X	X	X	X	X		
In-class questions (formative assessment)	X	X	х	X		х		
Project assignments	X	X	X	X		X		

Course coordinator:

Name	Signature	Academic Year
Assoc. Prof. Mahmoud Abd- El-Aziz	2/2/4/2	2025-2026

Program coordinator;

Name	Signature /	Academic Year
Prof. Dr. Tarek Abu Auf	CMX	2025-2026

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1. Basic Information:

Course Title (according to the bylaw)		Architectural design (4)		
Course Code (according to the bylaw)		ARE 221		
Department/s participating in offering the	he course	Architectural	Engineering Department	
Number of credit hours/points of the co	urse (accordi	ng to the bylaw)		
Lecture	Tutorial	/ Laboratory	Total contact	
2		4	6	
Course Type		☐ Compulsory	☐ Elective	
Academic level at which the course is to	might.	Second year		
Academic Program		Architectural Engineering Department		
Faculty/Institute		Higher Institute of Engineering and Technology a Manzalla		
University/Academy		Manzalla Academy		
Name of Course Coordinator		Assoc.prof. Kareem Mahrous		
Course Specification Approval Date		16 August 2025		
Course Specification Approval		Institute Council No. (12) on 16 August 2025		

2. Course Overview (Brief summary of scientific content)

Making researches and field visits and their application on architectural design projects - ways of identifying dealing with problems - design approaches to average-scale projects - studies of environment impact assessment.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Pro (accc	Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes completion of the course, the student will be able to:
Code			Text
A5	Practice research techniques and methods of investigation as an	CLO1	Identify research and their application on architectural design projects
	inherent part of learning	CLO4	Assess different ideas of architectural design projects.
Ві	Create architectural, urban and planning designs that satisfy both nesthetic and technical requirements, using adequate knowledge of: history and theory, related fine arts, local culture and heritage, technologies and human sciences	CLO2	Apply field visits and their application on architectural design projects
	Produce designs that meet building users' requirements through understanding the relationship between people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale	CLO3	Develop ways of dealing with problems
82		CLO5	Discuss Scale projects
В3	Generate ecologically responsible, environmental conservation and rehabilitation designs; through understanding of: structural design, construction, technology and engineering problems associated with building designs	CLO6	Apply environment impact assessment.

4. Teaching and Learning Methods

100	100 mm		Mr. Committee	4000	
DO:	Face	to	tisce	lect	ure
-		Bren.			-

☐ Online education

☑ Tutorial / Exercise

□ Group discussion

□ Laboratory

□ Case study

⊠ Site visit

⊠ Self-learning

Presentation

Mini project

☐ Research and reporting (self-learning)

□ Brainstorming



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Course Schedule

	Scientific content of the		Expe	Expected number of the Learning Hours						
No. of the Week	course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)				
1	Making research	11	2	4	5					
2	Field visits	10	2	4	4					
3-4	Research and fields applications on architectural design projects	22	4	8	10					
5	Ways of identifying and dealing with problems	10	2	4	.4					
6-7	Design. Approaches to average	22	4	8	10					
8.			Mid - term o	exam						
9	Design. Approaches to average	11	2	4	.5					
10-	Scale projects	33	6	12	15					
13-	Studies of environment impact assessment.	20	4	8	8					
16	Final Exam									

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	13.5	7.74%
2.	Mid-Term Examination	8	27	15.42%
3.	Final Examination	(As Schedule)	70	40%
4.	Lab Exam	- E	1.0	
5.	Activities and assignments	Every week	49.5	28.27%
6.	Final Oral Exam (if exists)	(As Schedule)	15	8.57%
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6. Learning Resources and Supportive Facilities

Learning resources (books,	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Hall, D. J., & Giglio, N. M. (2016). Architectural Graphic Standards. John Wiley & Sons.		
	Other References	Lecture Notes		
scientific references,	Electronic Sources (Links must be added)			
etc.)	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/		
	Other (to be mentioned)	Penz, F. (2017). Cinematic Aided Design: An everyday life approach to architecture. Routledge.		
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.		
equipment	Supplies	Whiteboards		
for	Electronic Programs	Microsoft Office program, Acrobat Reader		
teaching	Skill Labs/ Simulators	Autodesk AutoCAD		
and	Virtual Labs	**		
learning	Other (to be mentioned)			

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

200.00	12/08/07	\$100 ANDES	-	Course Learning outcomes "CLOs"						
Week	Topics	Lecture	T/L	CLO1		CLO3		CLO5		
1	Making research	2	4	x						
2	field visits	2	4	х		x				
3-4	Research and fields applications on architectural design projects	4	8		x		x			
5	ways of identifying dealing with problems	2	4		x		x	x		
6-7	design, approaches to average	2	4	x					x	
8			N	lid Term	Exam					
9	design, approaches to average	4	8			x	x			

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Section 1	Paneste.	A SAME	****	Course Learning outcomes "CLOs"					
Week	Topics	Lecture	1/L	CLO1	CLO2	CLO3	CLO4	CL05	CLO6
10	scale projects	2	4		x		x	X	1
11-12	scale projects	4	8	x					X
13	studies of environment impact assessment.	2	4	x	х				
14	studies of environment impact assessment.	2	4				x	x	x
15				Final Ex	am				

7.2. Teaching and learning matrix with CLOs:

		Course Learning outcomes "CLOs"									
Teaching and Learning Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6					
Face to face lecture	x	X	1		X	X					
Tutorial / Exercise	x		x	x	x						
Group discussion	X	X		x							
Site visit		X									
Self-Learning											
Presentation	X		x		х						
Mini project	X		X			x					
Brainstorming				x							
Case study					x						

7.3. Student assessment matrix with CLOs:

	Course Learning outcomes "CLOs"								
Assessment Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6			
Final written exam			X	X	x	x			
Oral exam			x						
Mid-term Exam	x	X	X	X		X			
Quizzes	X	X	X						
Research assignments	x	x							
Project assignments			X	X	X	X			

Course coordinator:

Name		Sig	nature	Λ	Academic Year
Assoc.prof. Kareem Mahrous	1	M	>	, /	2025-2026
rogram coordinator;		/	do		

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	AV.	2025-2026

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1. Basic Information:

Course Title (according to the bylaw)	Build	fing Construction (4)	
Course Code (according to the bylaw)		ARE 222	
Department/s participating in offering the co	INVESTIGATION OF THE PROPERTY		
Number of credit hours/points of the course	(according to the bylaw)		
Lecture 7	utorial / Laboratory	Total contact	
2	.4	6	
Course Type	□ Compulsory	[] Elective	
Academic level at which the course is taugh	i.	Second year	
Academic Program	Architectur	al Engineering Department	
Faculty/Institute	Higher Institute o	of Engineering and Technology a Manzalla	
University/Academy	M	tanzalla Academy	
Name of Course Coordinator	Assoc.	prof. Kareem Mahrous	
Course Specification Approval Date		16 August 2025	
Course Specification Approval	Institute Counc	cil No. (12) on 16 August 2025	

2. Course Overview (Brief summary of scientific content)

Steel works and details - ways and techniques of expansion joints and treatments of different building cracks and caulks - prefabricated buildings, prestressed, and precast concrete - concrete and reinforced concrete and their ratios of their components - ways and techniques of mixing and casting concrete - laboratory setups of quality assurance - thermal and damp proofing, noise reduction, antistatic, and anti-radiation materials - recent finishing materials and buildings and attributed physical and mechanical features.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	ogram Outcomes (NARS/ARS) ording to the matrix in the program specs)			
Code	Text	Code	Text	
A3	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.	CLOI	Identify Steel works and details	
A4	Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles.	CLO3	Describe concrete and reinforced concrete and their ratios of their components	
	Produce designs that meet building users' requirements through understanding the relationship between people and buildings and between	CLO2	Discuss ways and techniques of expansion joint treatments of different building cracks and caulk	
B2	people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale.		Explain thermal and damp proofing, noise reduction, antistatic, and anti-radiation materials	
B3	Generate ecologically responsible, environmental conservation and rehabilitation designs; through understanding of: structural design,	CLO4	Design ways and techniques of mixing and casting concrete	
	construction, technology and engineering problems associated with building designs.	CLO6	Describe finishing materials and buildings and attributed physical and mechanical features.	

4. Teaching and Learning Methods

- E Face to face lecture
- □ Online education
- Tutorial / Exercise
- □ Group discussion
- □ Laboratory

- Site visit
- ⊠ Self-learning
 - D Presentation
 - Mini project
 - □ Research and reporting (self-learning)
- M Brainstorming

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Course Schedule

			Expected number of the Learning Hours						
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)			
11:	Steel works and details	10	2	4	4				
2	ways and techniques of expansion joints and treatments of different building cracks and caulks	10	2	4	4				
3-4	concrete and reinforced concrete and their ratios of their components	16	4	8	4				
5-7	ways and techniques of mixing and casting concrete	22	6	12	4				
8		N	lid – Term Exam						
9	thermal and damp proofing, noise reduction	10	2	4	4				
10	antistatic, and anti-radiation materials	10	2	4	4				
11-12	recent finishing materials	16	4	- 8	-4				
13-14-	Attributed physical and mechanical features.	32	8	16	8				
16			Final Exam			- 13			

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
L.	Quizzes	6, 11	9	6%
2.	Mid-Term Examination	8	18	12%
3,	Final Examination	(As Schedule)	90	60%
4.	Lab Exam	H	*	*
5.	Activities and assignments	Every week	33	22%
6.	Final Oral Exam (if exists)	-	-	-

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6. Learning Resources and Supportive Facilities

Learning	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Hall, D. J., & Giglio, N. M. (2016). Architectural Graphic Standards. John Wiley & Sons.
resources	Other References	Lecture Notes
(books, scientific references, etc.)	Electronic Sources (Links must be added)	
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	Penz, F. (2017). Cisematic Aided Design: An everyday life approach to architecture. Routledge.
		Projectors, audio-visual systems, and
Supportive facilities &	Devices/Instruments	Computers with internet access.
equipment	Supplies	Whiteboards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/ Simulators	-
and	Virtual Labs	
learning	Other (to be mentioned)	

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

32.13	227727	Learning outco					outcome	"CLOs	**
Week	Topics	Lecture	T/L	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
1	Steel works and details	2	4	x					
2	ways and techniques of expansion joints and treatments of different building cracks and caulks	2	4	x		x			
3-4	concrete and reinforced concrete and their ratios of their components	4.	8		x		x		x
5	ways and techniques of mixing and casting concrete	2	4		x		x	x	x.

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				100	STATE OF THE PARTY						
W. I			1000	Course Learning outcomes "CLOs"							
Week	Topics	Lecture	T/L	CLO1		CLO3					
6	ways and techniques of mixing and casting concrete	2	4	x							
8		Mid Term Exam									
9	thermal and damp proofing, noise reduction	4	8	x		х					
10	antistatic, and unti- radiation materials	2	4		x		x	8			
11-12	recent finishing materials	4	8	x					x		
13- 14-15	attributed physical and mechanical features.	8	16	x	x		x	x	x		
16	200000			Final Ex	am						

7.2. Teaching and learning matrix with CLOs:

	Course Learning outcomes "CLOs"								
Teaching and Learning Methods	CL01	CLO2	CLO3	CLO4	CLO5	CLO6			
Face to face lecture	X	X	X	32/11/0/00	х	X			
Tutorial / Exercise			X	x	X				
Group discussion		X		x					
Site visit		x							
Self-Learning	10								
Presentation	x		x		X				
Mini project	x		x			X			
Brain storming				X		X			
Case study		x							

7.3. Student assessment matrix with CLOs:

	Course Learning outcomes "CLOs"									
Assessment Methods	CLOI	CLO2	CLO3	CL04	CLO5	CLO6				
Final written exam	x	X	x	X	X	X				
Mid-term Exam	x	x	X	X						
Quizzes		x	x							
Research assignments	x			X		X				
In-class questions (formative assessment)						х				
Project assignments			x	x	x	X				

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Course coordinator:

Name	Signature	Academic Year
Assoc.prof. Kareem Mahrous	dh This	2025-2026
rogram coordinator:	1117	
Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	12	2025-2026

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1. Basic Information:

Course Title (according to the bylaw)		Urban Design ARE 223 Architectural Engineering Department				
Course Code (according to the bylaw)						
Department/s participating in offering the	course					
Number of credit hours/points of the cours	se (according to ti	he bylaw)				
Lecture	Tutorial / Labo	eratory	Total contact			
2	3		5:			
Course Type	100	Compulsory	□ Elective			
Academic level at which the course is taug	thit	Second year				
Academic Program		Architectural Engineering Department				
Faculty/Institute	Н	Higher Institute of Engineering and Technology a Manzalla				
University/Academy		Manzalla Academy				
Name of Course Coordinator		Dr. Lamina Gamal				
Course Specification Approval Date		16 August 2025				
Course Specification Approval		Institute Council	No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Definition of urban design: programs, and attributes - study of principles of urban design - ecological and environment effect on urban shaping.

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	Program Outcomes (NARS/ARS) according to the matrix in the program specs)		Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
A10	Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.	CLOI	Assess different ideas of urban planning projects.

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Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Upon completion of the course, the student will able to:				
Code	Text	Code	Text			
		CLO4	Design urban plans that keep the urban identity and conserve the environment.			
B1	Create architectural, urban and planning designs that satisfy both aesthetic and technical requirements, using adequate knowledge of: history and theory, related fine arts, local culture and heritage, technologies and human sciences.	CLO2	Evaluate different alternative solutions of urbar planning issues.			
		CLO7	Identify the main social, cultural, economic, and urban issues and problems.			
	Generate ecologically responsible, environmental conservation and rehabilitation designs; through	CLO3	Apply knowledge of urban planning to solve the urban problems and utilize the potentials of cities			
B3		CLO5	Apply economic, social, cultural, environmental and urban aspects into urban planning projects.			
B4	Transform design concepts into buildings and integrate plans into overall planning within the constraints of: project financing, project management, cost control and methods of project delivery; while having adequate knowledge of industries, organizations, regulations and procedures involved.	CLO6	Develop adequate knowledge to deal with site constraints and maximize site usage.			

4. Teaching and Learning Methods

- S Face to face lecture
- ☐ Online education
- ☑ Tutorial / Exercise
- ⊠ Group discussion
- □ Laboratory

- Site visit
- ☑ Self-learning
 - Presentation
 - Mini project
 - ☐ Research and reporting (self-learning)
- □ Brainstorming

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Course Schedule

			Espected number of the Learning Hours						
the (Course Topics) Week	Scientific content of the course (Course Topics)	Tistal Weekly Hours	Theoretical teaching (lectures/dis- cussion groups/)	Training (Practical/CI inical/)	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)			
1-4	Definition of Urban Design: Programs, And Attribute	32	8	12	12				
5-7	Study of Principles of Urban Design	24	6	9	9				
8	- 2	7	lid Term Exa	10					
9-15	Ecological And Environment Effect on Urban Shaping and Their Applications	55	14	21	20				
16			Final Exam						

5. Methods of students' assessment

Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
Quizzes	6, 11	7	-5 6%
Mid-Term Examination	8	13	16.2%
Final Examination	(As Schedule)	80	64%
Lab Exam	14:		7.5
Activities and assignments	Every week	25	20%
Final Oral Exam (if exists)	- 1	· ·	
	Quizzes Mid-Term Examination Final Examination Lab Exam Activities and assignments	Assessment Methods (Week Number) Quizzes 6, 11 Mid-Term Examination 8 Final Examination (As Schedule) Lab Exam Activities and assignments Every week	Assessment Methods (Week Number) Scores Quizzes 6, 11 7 Mid-Term Examination 8 13 Final Examination (As Schedule) 80 Lab Exam - Activities and assignments Every week 25

6. Learning Resources and Supportive Facilities

Learning resources (books,	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Wasson, C. S. (2015). System engineering analys design, and development: Concepts, principles, a practices. John Wiley & Sons.				
scientific	Other References	Lecture Notes				
references, etc.)	Electronic Sources (Links must be added)					
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/				

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Other (to be mentioned)	Totten, C. W. (2019). Architectural Approach : Level Design, CRC Press.				
Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.				
Supplies	Whiteboards.				
Electronic Programs	Microsoft Office program, Acrobat Reader				
Skill Labs/ Simulators	- 98				
Virtual Labs	*				
Other (to be mentioned)					
	(to be mentioned) Devices/Instruments Supplies Electronic Programs Skill Labs/ Simulators Virtual Labs				

7. Course Matrixes:

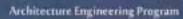
7.1. Course contents Matrix with CLOs:

NATion by	Totales	T. continues	TEAL		Cour	se Learn	ing outc	omes "C	LOs"	
Week	Topics	Lecture	TZL	CLO1	CLO2		CLO4		CLO6	CLO7
1-4	Definition of urban design: programs, and attribute	8	12	x	x	x	x			
5-6	study of principles of urban design	4	6	x	х		x	x		x
8				Mid T	erm Exar	11				
9-15	ecological and environment effect on urban shaping and their applications	1	42	x	x	x	x	x	x	x
16		11111111		Fina	d Exam				1.11	

7.2. Teaching and learning matrix with CLOs:

		Cours	e Learni	ng outco	mes "CI	.Os**	
Teaching and Learning Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO 6	CLO 7
Face to face lecture	х	x			x	x	x
Tutorial / Exercise	x		x	X	X		x
Group discussion	x	x		x	222		-
Site visit		x					

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	Course Learning outcomes "CLOs"						
Teaching and Learning Methods	CLO1	CLO2	CL03	CL04	CLO5	CLO 6	CLO 7
Self-Learning							
• Presentation	X		X		X		X
Mini project	x		x			х	x
Brain storming				x			x

7.3. Student assessment matrix with CLOs:

Assessment Matheda	Course Learning outcomes "CLOs"						
Assessment Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7
Final written exam			X	x	x		X
Mid-term Exam	x	x	X	X	1	x	x
Quizzes	x	x	X				
Research assignments	X	X			x	x	X
Project assignments			X	X	X	x	

Course coordinator:

	Academic Year	
and Travel	2025-2026	
	and rare	

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	6	2025-2026

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1. Basic Information:

I APRILLE AND COLUMN CONTROL				
Course Title (according to the bylaw)	Building phy-	sies and environmental control		
Course Code (according to the bylaw)		ARE 224		
Department/s participating in offering the	course Architectu	ral Engineering Department		
Number of credit hours/points of the cour	se (according to the bylaw)			
Lecture	Tutorial / Laboratory	Total contact		
2	2	4.		
Course Type		□ Elective		
Academic level at which the course is tau	ght	Second year		
Academic Program	Architectu	Architectural Engineering Department		
Faculty/Institute	Higher Institute	Higher Institute of Engineering and Technology Manzalla		
University/Academy	1	Anzalla Academy		
Name of Course Coordinator	D	Dr. Marwa Eladham		
Course Specification Approval Date		16 August 2025		
Course Specification Approval	Institute Coun	Institute Council No. (12) on 16 August 2025		

2. Course Overview (Brief summary of scientific content)

A. Building physics: physical and mechanical properties of building materials - thermodynamics and heat transfer - thermal behavior of building elements(walls, roofs, and floors) - time lag - thermal storage - thermal isolation -acoustics - acoustical behavior of building elements - noise population and controls - dampness in buildings and controls - a number of applications on building envelopes to adapt with their surrounding environments.

B. Environment control: The natural environment and climatic factors – human thermal comfort in building interiors – buildings and streets orientation –natural ventilation in buildings – solar control in windows - design of buildings and Windows to adapt with their surrounding environments - landscaping and use of trees for shading, air purification, and control of ventilating patterns – protection from desertification.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	ogram Outcomes (NARS/ARS) rding to the matrix in the program spees)	Upon	Course Learning Outcomes Upon completion of the course, the student will be ab to:		
Code	Text	Code	Text		
A3	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.	CLO2	Discuss Occupational and Human health safety related to the different types of pollution, and methods of prevention		
A10	Acquire and apply new knowledge, and practice self, lifelong and other learning strategies.	CLOI	Recognize the regulation and standard codes for occupational safety related to Environmental issues		
	Produce designs that meet building users' requirements through understanding the	CLO3	Define the phenomenon of global warming, greenhouses, and predict future environmental hazards and their impact on the environment.		
B2	relationship between people and buildings, and between buildings and their environment, and the need to relate buildings and the spaces between them to human needs and scale.		Apply appropriate steps to design safe systems at work and manage their risk in effective ways.		
Generate ecologically responsible environmental conservation and rehabilitation designs.		CL04	Practice applying the quality assurance procedures in all environmental and occupational safety.		
В3	through understanding structural design, construction, technology and engineering problems associated with building designs.	CLO6	Apply techniques in a professional manner to manage the risks of the most types of pollutions such as: air pollution, water pollution, chemical pollution electromagnetic pollution.		

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4. Teaching and Learning Methods

- □ Face to face lecture
- ☐ Online education
- ⊠ Tutorial / Exercise
- M Group discussion
- □ Laboratory

- M Site visit
- ⊠ Self-learning
 - E Presentation
 - Mini project
 - □ Research and reporting (self-learning)
- Brainstorming

Course Schedule

			Expected number of the Learning Hours					
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (loctores/discussion groups/)	Training (Practical/Clinical/)	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined		
4	Building physics: Physical and mechanical properties of building materials	6	2	2	2			
2	thermodynamics and heat transfer	6	2	2	2			
3-4	thermal behavior of building elements (walls, roofs, and floors)	12	4	4	4			
3	time lng	6	2	2	2			
6-7	thermal storage	12	4	4	4			
8	Mid - Term Exam							
9	thermal isolation - acoustics	6	2	2	2			
10	dampness in buildings and controls	6	2	2	2			
11-	Environment control: The natural environment and climatic factors - human thermal comfort in building interiors	12	4	4	4			
13- 14- 15	design of buildings and Windows to adapt with their surrounding environments -	24	8	8	8			

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			Expe	cied number of the Le	mening Hours	
No. of the Week	Scientific content of the course (Caurse Topics)	Total Weekly Hours	Theoretical teaching (Jectures/discussion groups/)	Training (Practical/Clinical/	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)
	landscaping and use of trees for shading, air purification, 13-and control of Ventilating patterns - 4protection from desertification.					
16			Final Exa	m		

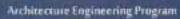
5. Methods of students' assessment

Nα.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	6	966
2.	Mid-Term Examination	8	18	%18
3.	Final Examination	(As Schedule)	60	%60
4.	Lab Exam	+		
5.	Activities and assignments	Every week	16	%16
6.	Final Oral Exam (if exists)		*	-
_				

6. Learning Resources and Supportive Facilities

Learning resources	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Wasson, C. S. (2015). System engineering analysis, design, and development: Concepts, principles, and practices. John Wiley & Sons.		
(books,	Other References	Lecture Notes		
scientific references,	Electronic Sources (Links must be added)			
etc.)	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/		
	Other (to be mentioned)	Totten, C. W. (2019). Architectural Approach to Level Design. CRC Press.		

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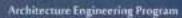
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment	Supplies	Whiteboards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/ Simulators	
and	Virtual Labs	-
learning	Other (to be mentioned)	

^{7.} Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	The same of	Lecture	T/L		ourse L	carning :	outcome	s "CLOs	**
week	Constitution Constitution	Lecture	1714	CLOI	CLO2	CLO3	CLO4	CLO5	CL06
1	Building physics: physical and mechanical properties of building materials	2	2	x					
2	thermodynamics and heat transfer	2	2	x		x			
3-4	thermal behavior of building elements (walls, roofs, and floors)	4	4		x		x		
5	time lag	2	2		x		X	х	x
6	thermal storage	2	2	x		x		x	X
8			M	id Term	Exam				
9	thermal isolation - acoustics	4	4	x		х	x		
10	dampness in buildings and controls	2	2		x		x	×	
11-12	Environment control: The natural environment and climatic factors - human thermal comfort in building interiors	4	4	x			x	x	x
13- 14-15	design of buildings and Windows to adapt with their	6	6	x	х		x	x	x

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Week	Tanlas	Tantana	Trans.			earning	outcome	s "CLOs	#
WCCK.	Topics	Lecture	T/L	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6
	surrounding environments - landscaping and use of trees for shading, air purification, and control of ventilating patterns - protection from desertification.								
16				Final Ex	am				

7.2. Teaching and learning matrix with CLOs:

The state of the state of	Course Learning outcomes "CLOs"							
Teaching and Learning Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO 6		
Face to face lecture	X	x	X	x	x			
Tutorial / Exercise			x	x	x			
Group discussion		x		x		X		
Site visit		x				7.2		
Self-Learning			-					
Presentation	X		x		x			
Mini project	X	x	x			X		
Brain storming				x		x		

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLOs"								
Assessment stemous	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6			
Final written exam	x	X	X	X	X				
Mid-term Exam	x	X	X	X					
Quizzes		X	x						
Research assignments	X			x		x			
Project assignments		X	X	x	x				

Course coordinator:

Name	Signature	Academic Year
Dr. Marwa Eladham	Plant	2025-2026
Program coordinator:	1111	
Name	Signature	Academic Year
Prof. Dr. Tarek Aba Auf	13	2025-2026

Course specification 2025-2026

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1. Basic Information:

Course Title (according to the bylaw)	Computer a	pplications in architecture (2)			
Course Code (according to the bylaw)		ARE 225			
Department's participating in offering the	e course Architectu	ral Engineering Department			
Number of credit hours/points of the cou	rse (according to the bylaw)				
Lecture	Tutorial / Laboratory	Total contact			
2	2	4			
Course Type	⊠ Compulsory	☐ Elective			
Academic level at which the course is tax	aght	Second year			
Academic Program	Architectu	Architectural Engineering Department			
Faculty/Institute	Higher Institute	of Engineering and Technology at Manzalla			
University/Academy	. N	Aanzalla Academy			
Name of Course Coordinator	Prof.	Prof. Dr. Tarek Abu Auf			
Course Specification Approval Date		16 August 2025			
Course Specification Approval	Institute Coun	cil No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Defining methods and techniques of computer applications in architectural and urban design fields - use of computer in programming, architectural design aiding, working drawing, quantities, and descriptions, drawing and presentation- preparation of two and three-dimensional drawings - use of computers in preparing researches and environmental studies.

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)			Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
A4	Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles.	CLOI	Analyze engineering software, their disciplines, and their importance towards sustainable development.

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Program Outcomes (NARS/ARS) (according to the matrix in the program specs)			Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
A5	Practice research techniques and methods of investigation as an inherent part of Learning.	CLO3	Apply current architectural software worldwide and their advantages.
B2	Produce designs that meet building users' requirements through understanding the Relationship between people and	CLO2	Apply engineering design processes by using 3d soft wares in sharing information through the architectural field and form a background on the cg programs development.
buildings, and between buildings and , their environment; and the need to relate buildings and the spaces between them to human needs and scale.	CLO5	Apply the facilities of available software commands to attain flexibility and collaborative work through various situations.	
B3	Generate ecologically responsible, environmental conservation and rehabilitation designs; through understanding of: structural design, construction, technology and engineering problems associated with building designs.	Cl.04	Apply and improve the art of using max program for 2d & camp; 3d drawings.

4. Teaching and Learning Methods

- El Face to face lecture
- ☐ Online education
- 図 Tutorial / Exercise
- **図** Group discussion
- 2 Laboratory

⊠ Site visit

- Self-learning

 - Mini project
 - ☐ Research and reporting (self-learning)
- ☑ Brainstorming

Course Schedule

	Scientific content of the		Expe	ected number of the La	curning Heors	
of the Weekly (Course Topica) Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)		
1-2	Defining methods and techniques of computer applications in architectural and urban design fields	12	4 -	4	4	

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Aven	Scientific content of the		Expected number of the Learning Hours						
No. course Topics) Weekly Hours	Theoretical teaching (foctures discussion groups/)	Training (Practical/Clinical/	Setf-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)					
3-7	use of computer in programming, architectural design aiding, working drawing, quantities, and descriptions, drawing and presentation	30	10	10	10				
8			Mid - Term I	xam					
9-10	preparation of two and three-dimensional drawings	12	4	4	4				
11-	Use of computers in Preparing researches and environmental studies.	30	10	10	10				
16			Final Exam	1					

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1,	Quizzes	6, 11	4.5	4.5%
2.	Mid-Term Examination	8	9	9%
3.	Final Examination	(As Schedule)	60	60%
4.	Lab Exam	(As Schedule)	10	10%
5.	Reports and assignments	Every week	16.5	16.5%
6.	Final Oral Exam (if exists)	**		-9%

6. Learning Resources and Supportive Facilities

Learning resources (books, scientific references,	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Wasson, C. S. (2015), System engineering analysis, design, and development: Concepts, principles, and practices. John Wiley & Sons.
etc.)	Other References	Lecture Notes

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	Electronic Sources (Links must be added)	
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	Totten, C. W. (2019). Architectural Approach to Level Design, CRC Press.
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment -	Supplies	Whiteboards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching and	Skill Labs/ Simulators	Autodesk AutoCAD, Autodesk Revit and Autodesk 3D Max
learning	Virtual Labs	-
The state of the s	Other (to be mentioned)	

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Lecture T	T/L	Course Learning outcomes "CLOs"				
	ropics	Lecture	A74.	CL01	CLO2		CLO4	
1-2	Defining methods and techniques of computer applications in architectural and urban design fields	4	4	x	x	x		
3-6	use of computer in programming, architectural design aiding, working drawing, quantities, and descriptions, drawing and presentation	8	8	х	x	х	x	x
8		Mic	lterm I	Exam				
9-10	preparation of two and three- dimensional drawings	4	4	х	x	x	x	
11- 14-15	use of computers in preparing researches and environmental studies.	6	6	х	x	x	x	x
16	a when works to the later of	Fi	nal Ex	am				

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7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course Learning outcomes "CLOs"						
	CLO1	CLO2	CLO3	CLO4	CLOS		
Face to face lecture	X	X	3	T			
Tutorial / Exercise			X				
Group discussion		X			X		
Laboratory		X			- ^		
Site visit		X					
Self-Learning							
• Presentation	x		x				
Mini project	x	X	x	-	x		
Brain storming		X	- 4	×	x		

7.3, Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLOs"					
	CL01	CLO2	CLO3	CLO4	CLO5	
Final written exam	X	X	x	x		
Oral exam		X		*		
Mid-term Exam	X	X	x	· ·	x	
Quizzes		X	x		-	
Lab Exam		X	-		_	
Research assignments	X		-	-	-	
Project assignments	- 10	×	-		X	

Name	Signature	Academic Year	
Prof. Dr. Tarek Abu Auf	A	2025-2026	

Program coordinator:

Name	Signature,	Academic Year	
Prof. Dr. Tarck Abu Auf	1	2025-2026	

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1. Basic Information:

Contract deletes annual alter					
Course Title (according to the bylaw)		Steel structure			
Course Code (according to the bylaw)		CIVA221			
Department/s participating in offering	the course Civil	Civil Engineering Department			
Number of credit hours/points of the or	ourse (according to the bylaw)				
Lecture	Tutorial / Laboratory	Total contact			
2	2	4			
Course Type		□ Elective			
Academic level at which the course is t	trught	second year			
Academic Program	Archite	Architectural Engineering Program			
Faculty/Institute	Higher Institute	Higher Institute of Engineering and Technology a Manzalla			
University/Academy	19	Manzalla Academy			
Name of Course Coordinator	1	Dr. Khaled Eltaweel			
Course Specification Approval Date		16 August 2025			
Course Specification Approval	Institute Cou	ncil No. (12) on 16 August 2025			

 Course Overview (Brief summary of scientific content)
 Structural systems and steel constructions - design loads - design of members which are subjected to control forces, moments, or shear forces - design of bolted and welded connections.

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:			
Code	Text	Code	Text		
Al	Identify, formulate, and solve complex engineering problems by	CL01	Discuss the structure systems of steel structure		

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		100		
Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Upon completion of the course, the student was able to:		
Code	Text	Code	Text	
	applying engineering fundamentals, basic science, and mathematics.	CLO3	Discuss the tension and compression members	
A2	Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess, and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.	CLOS	Design connection members	
A10	Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.	CLO4	Discuss the moment and torsion	
BI	Create architectural, urban and planning designs that satisfy both aesthetic and technical requirements, using adequate knowledge of: history and theory, related fine arts, local culture and heritage, technologies and human sciences.	CLO2	Discuss the design loads	

4. Teaching and Learning Methods

☐ Face to face lecture ☐ Online education	☐ Site visit
	Self-learning
⊠ Tutorial / Exercise	☐ Presentation
☐ Group discussion	□ Mini project
☐ Laboratory	⊠ Research and reporting (self-learning)
	☐ Brainstormine

Course Schedule

63)

No.	Scientific content of the		Expected number of the Learning Hours					
of the Week	(Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/	Self-learning (Tasks/ Assignments/	Other (to be determined		
1-2	Discuss the structure systems of steel structure	12	4	4	Projects/)			

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Architecture Engineering Program



2011	Scientific content of the	244 (1810)	Tixpo	ected number of the La	carning Hours	
No. of the Week	course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/)	Self-learning (Tasks/ Ansignments/ Projects/)	Other (to be determined
3-4	Discuss the structure systems of steel structure	12	4.	4	4	-
3	Discuss the structure systems of steel structure	6	2	2	2	***
6-7	Discuss the design loads	12	4	4	4	
8			Mid Term Fo	cam		
9	Discuss the design loads	6	2	2	2	-
10- 11	design the tension members	12	4	4	4	-
12	design compression members	6	2	2	2	-
13	Discuss the moment and torsion	6	2	2	2	2
15	Discuss the tension and compression members	12	4	4	4	-
16			Final Exam	1		

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	4.5	4.5%
2.	Mid-Term Examination	8	13.5	13.5%
3.	Final Examination	(As Schedule)	70	70%
4.	Lab Exam			
5.	Reports and assignments	Every week	12	12%
6.	Final Oral Exam (if exists)		14	

6. Learning Resources and Supportive Facilities

Learning resources (books,	The main (essential) reference for	S. A. Ashtul, S. N. putil "Review on Discuss of space frame structure system "International Research Journal of Engineering and Technology (IRJET), Volume: 07,2020.
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Ministry of Higher Education Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architecture Engineering Program



		The state of the s
scientific references,	Other References	Yasser Eleithy notes.
etc.)	Electronic Sources (Links must be added)	www,EngYasserEleithy.com,
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/\
	Other (to be mentioned)	***************************************
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	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
facilities &	Devices/Instruments Supplies	Projectors, audio-visual systems, and Computers with internet access. Whiteboards.
facilities &	to the same	Computers with internet access. Whiteboards.
facilities & equipment	Supplies	Computers with internet access. Whiteboards.
1200	Supplies Electronic Programs	Computers with internet access.

^{7.} Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Learning outcomes "CLOs"					
	70,000	CLOI	CLO2	CLO3	CLO4	CLO	
1-2	Discuss the structure systems of steel structure	X					
3-4	Discuss the structure systems of steel structure	X	X				
5	Discuss the structure systems of steel structure	х	х				
6-7	Discuss the design loads		x				
8	Mid Ter	m Exam					
9	Discuss the design loads		X		- 1		
10-11	design the tension members		7.05	X	X		
12	design compression members			X	X	-	
13	Discuss the moment and torsion		X	X	- 7%	X	
14-15	Discuss the tension and compression members	X		-	-	X	
16	Final					- A	

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7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Learning outcomes "CLOs"					
Name of the second second	CLO1	CLO2	CLO3	CLO4	CLO5	
Face to face lecture	X	X	X	X	X	
Tutorial / Exercise	X	X	×		100	
Self-Learning	-		- 0		X	
Research and reporting	_					
2 Cardina and reporting		X		X		

7.3. Student assessment matrix with CLOs:

Assessment Methods	Learning outcomes "CLOs"					
	CLO1	CLO2	CLO3	CL04	CLO3	
Final written exam	X	X	X	X	X	
Quizzes		X		x		
Midterm exam	X	X	X			
Research assignments	X	X		v		
Reporting assignments		v				

Course coordinator:

Name	Signature	Academic Year
Dr. Khaled EL-Taweel	1, 11, 11, 1	1
	1/1/1/18	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf		The second second second
		2025-2026





1. Basic Information:

Course Title (according to the bylaw)	Practical Training-Architectural Eng. (3)
Course Code (according to the bylaw).	TRN 243
Department/s participating in offering the course	Architectural Engineering department

Course Marks

Discussion	Report	Institution's Assessment	Total
40%	30%	30%	Pass/Not Pass

Hours/ Weeks

48 total hours/4 weeks					
Course Type	□ Computsory	☐ Elective			
Academic level at which the course is taught	Second	i Year			
Academic Program	Architectural Eng	incering Program			
Faculty/Institute	Higher Institute of Engine Manu				
University/Academy	Manzalla	Academy			
Name of Course Coordinator	Institute	's staff'			
Course Specification Approval Date	16 Augu	st 2025			
Course Specification Approval	Institute Council No. (1	2) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

The training includes the student's attendance at the institute during the summer field training period, where they will be trained on Autodesk Revit and 3ds Max programs, with the aim of developing their skills in 3D modeling and preparing professional architectural scenes.

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Practical Training Course specification 2025-2026



Program Outcomes (NARS/ARS)			Course Learning Outcomes				
(accon	fing to the matrix in the program spees	Upon	Upon completion of the course, the student will be al to:				
Code.	Text	Code	Test				
A2.	Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess, and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.	cto4	Use modern tools (graphical, verbal, and written means) to present designs to diverse audiences, including clients, stakeholders, and peers.				
A3.	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.	CLO2	Apply advanced rendering techniques, materia mapping, and environmental effects to product photorealistic visualizations				
A4.	Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles.	CLOS	Explain the purpose and application of various design principles, software tools, and rendering techniques.				
A6.	Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements	CLO3	Incorporate sustainable design principles into 3D models and visualizations, reflecting environmental and cultural considerations.				
BL.	Create architectural, urban and planning designs that satisfy both aesthetic and technical requirements, using adequate knowledge of: history and theory, related fine arts, local	CLOI	Create detailed 3D architectural models using Autodesk Revit, including floor plans, elevations, sections, and schedules.				



Program Outcomes (NARS/ARS) (according to the matrix in the program spees)		Course Learning Outcomes Upon completion of the course, the student will be alto:		
Code	Text	Code	Text	
	culture and heritage, technologies and human sciences.			

4. Teaching and Learning Methods

Face to face lecture	☐ Site visit
☐ Online education	Self-learning
	□ Presentation
□ Group discussion	☐ Mini project
☐ Laboratory	□ Research and reporting (self-learning)
	☐ Brainstorming

Course Schedule

			Expected	number of t	he Learning Ho	HRPS.
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discu ssion groups/)	Training (Practical /Clinical/)	Self- learning (Tasks/ Assignment s/ Projects/)	Other (to be determi- ned)
1	3D Modeling Using Autodesk Revit	12	-		4	
2	Advanced Rendering Techniques in 3ds Max	12		(4)	2	
3	Sustainable Design Principles in 3D Models and Visualizations	12			3	



		-	Expected	number of t	he Learning Ho	mes
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discu ssion groups/)	Training (Practical /Clinical/)	Self- learning (Tasks/ Assignment s/ Projects/)	Other (to be determi- ned)
4	Architectural Concepts Through Modern Tools	12	-	*	2	
Total		48	total hours			-

5. Methods of students' assessment

No •	Assessment Methods	Weeks	Percentage of Total Course Marks
1,	Report	141	30%
2.	Mini-Project Assignment	-	
3.	Discussion	-	40%
4.	Institution's Assessment	(46)	30%
Ī	Total		100%

6. Learning Resources and Supportive Facilities

Learning resources (books, scientific	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Ching, F. D. K., & Wampler, S. (2023). Architectural graphics and visualization: From conceptual sketching to BIM and advanced rendering (6th ed.). Wiley.
etc.) *	Other References	Architectural Graphics and Visualization: From Conceptual Sketching to BIM and Advanced Rendering



	Electronic Sources (Links must be added)	https://knowledge.autodesk.com/support/revit/l arn-explore/caas/simplecontent/content/revit- tutorials.html
	Learning Platforms (Links must be added)	
	Other (to be mentioned)	
Supportive	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
acilities &	Supplies	Whiteboards and smart boards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/ Simulators	_
and	The state of the s	
Vital Strategic Comments	Virtual Labs	-

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	His	Course Learning autcomes "CLO's"					
***CUM	Topics		CLOI	CLO2	CLO3	CLO4	CLO5	
1	3D Modeling Using Autodesk Revit	12	х				Х	
2	Advanced Rendering Techniques in 3ds Max	12		X			х	
3	Sustainable Design Principles in 3D Models and Visualizations	12			х	X		
4	Architectural Concepts Through Modern Tools	12				Х	х	
Total		48 to	tal bours					

7.2. Teaching and learning matrix with CLOs:



Teaching and Learning	Course Learning outcomes "CLO's"							
Methods	CLOI	CLO2	CLO3	CLO4	CLO5			
Face to face lecture	X	X	X	X	X			
Exercise	X		X					
Group discussion	X		X	X				
Self-Learning					-			
Presentation		X	X					
Research and reporting				X	X			

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLO's"							
	CLOI	CLO2	CLO3	CLO4	CLO5			
Oral Discussion		X	X	X	X			
Research assignments	X		X		X			
In-class Question		X	X					

Course coordinator:

Name	Signature	Academic Year
Institute's staff'	Haussda Adi	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	O MAR	2025-2026

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L. Rasic Information:

The state of the s						
Course Title (according to the b	ylaw)	Architectural design (5)				
Course Code (according to the l	bylaw)	ARE 311 Architectural Engineering Department				
Department/s participating in o course	ffering the					
Number of credit hours/points	of the course (acc	cording to the bylaw)				
Lecture	Lecture Tutorial		Total contact			
2		4	6			
Course Type		□ Compulsory	☐ Elective			
Academic level at which the con	irse is taught	Third year				
Academic Program		Architectural Engineering Program				
Faculty/Institute		Higher Institute of Engineering and Technology Manzalla				
University/Academy		Man	zalla Academy			
Name of Course Coordinator		Dr. Shaima Naseer				
Course Specification Approval	Dute	16 August 2025				
Course Specification Approval		Institute Council No. (12) on 16 August 2025				

2. Course Overview (Brief summary of scientific content)

Study of external environmental conditions and development of students' perception of urban formsthe kind of relationship between external volumes and building shapes-significance of structural concept in shaping and formulating architectural spaces- raising efficiency in the design process architectural projects characterized with complicated, diversified elements- introduction to the strategic environmental studies of projects.

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	gram Outcomes (NARS/ARS) rding to the matrix in the progra specs)		Lipon	Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	11/2	Code	Text
A5	Practice research techniques methods of investigation as		CL01	Explain how research about the architectural parameters of the project and the software used.
-	inherent part of learning.		CLo2	Analyze Site and urban studies for project

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100	Market Control of the		
Program Outcomes (NARS/ARS) (according to the matrix in the program specs)			Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
Create architectural, urban and planning designs that satisfy both aesthetic and technical requirements, using adequate knowledge of: history and theory related fine architectural.	CLoS	Analyze through drawings, models an diagrams, the interrelated complexities of forms, spaces, and structures of the desig projects.	
	and theory, related fine arts, local culture and heritage, technologies and human sciences.	CLe6	Analyze functional and structural requirement in each design project
	Produce designs that meet building users' requirements through	CLo3	Design for project's plans and project research studies and program analysis
B2 betwo betwo envir build	understanding the relationship between people and buildings, and between buildings and their environment, and the need to relate buildings and the spaces between them to human needs and scale.	CLo7	Sketch techniques using different drawing tools and equipment and Model simulation workshop.
В3	Generate ecologically responsible, environmental conservation and rehabilitation designs; through understanding of structural design, construction, technology and engineering problems associated with building designs.	CLo4	Create the idea, the formation principles, and the environmental research.

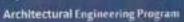
4. Teaching and Learning Methods

- M Face to face lecture
- ☐ Online education
- ∑ Tutorial / Exercise
- ☑ Group discussion
- ☐ Laboratory

10

- Site visit
- Self-learning
 - [8] Presentation
 - Mini project.
 - Research and reporting (self-learning)
- Brainstorming

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Course Schedule

	Colombia and Colombia		Expe	cted number of the Le	arning Hours	
No. of the Week	Scientific content of the course (Course Topies)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/	Self-learning (Tasks/ Assignments/ Projects/	Other (to be determined
E	Introduction to the strategic environmental studies	10	2	4	4	
2-3	Studies of projects(the Egyptian Code for Hospitals - Site and urban studies	20	4	8	8	
4	raising efficiency in the design process architectural projects characterized with complicated, diversified elements	10	2	4	4	
5-7	(Theories and foundations of hospital design-zoning analysis + project program-The master plan -other plans)	30	6	12 12		
8			Mid Term E	exam		
9	significance of structural concept in shaping and formulating architectural spaces (formation vocabulary and construction systems	10	2	4	4	
10	Sketch design for elevations and sections	10	2	4	4	
11-12	Sketch design for elevations and sections Study of external environmental conditions and development of			8	8	

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	Scientific content of the		Expected number of the Learning Hours							
No. of the Week	course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)				
	andurbanism)		The state of the s							
13-	the kind of relationship between external volumes and building shapes(Model simulation workshop)	20	4	R	×					
15	Final submission of the project	10	2	4	4					
16			Final Exa	um						

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6-11	13.5	7.71 %
2.	Mid-Term Examination	8	27	15.43%
3.	Final Examination	16	70	40%
4.	Lab Exam	-44		%
5.	Activities and assignments	Every week	49.5	28.29%
6.	Final Oral Exam (if exists)	(As Schedule)	.15	8.57 %
	The Allert of the Control of the Con			

6. Learning Resources and Supportive Facilities

Learning	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Ching, F. D. K. (2020). Architectural design: critical guid Wiley.				
resources (books,	Other References	Totieg, C. W. (2019), Architectural Approach to Level Design, CRC Press.				
scientific references,	Electronic Sources (Links must be added)	https://pdf.uniid.pgv/pdf_docs/Pnadc561.pdf				
etc.)	Learning Platforms (Links must be added)	Manzaia Academy LMS, https://tms.munzalaacademy.edu.eg/				
	Other (to be mentioned)	Mitrovic, B. (2021). Design process in architecture: From concept to completion.				

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	cilities & Supplies for Electronic Programs	Routledge.				
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.				
equipment	Supplies	Whiteboards.				
for	Electronic Programs	Microsoft Office program, Acrobat Reader				
teaching	Skill Labs/Simulators	Revit – 3D				
and	Virtual Labs					
learning	Other (to be mentioned)					

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

		2				Cour	se Learn	ing oute	omes "C	LOs"	
Week	Topics	Lecture	T/L	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7	
1	Introduction to the strategic environmental studies	2	4	x	x						
2-3	Studies of projects(the Egyptian Code for Hospitals - Site and urban studies	4	8	x	x						
4	raising efficiency in the design process architectural projects characterized with complicated, diversified elements	2	4		x	x					
5-7	(Theories and foundations of hospital design-zoning analysis + project program-The muster plan -other plans)	4	8	-	(Pa)						
8				Mid	Term Ex	am	131				
9	significance of structural concept in shaping and formulating architectural	4	8	x		件 轉		x	x		

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Architectural Engineering Program

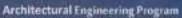


		_	-								
		2			Course Learning outcomes "CLOs"						
Week	Topics	Lecture	T/I.	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7	
	spaces(formation vocabulary and construction systems										
10	Sketch design for elevations and sections	2	4					x	X	x	
11-	Study of external environmental conditions and development of students' perception of urban forms (Sustainability in architecture andurbanism)	4	8				x				
13-	the kind of relationship between external volumes and building shapes(Model simulation workshop)	4	8						х	х	
15	Final submission of the project	2	4							x	
16				Fi	nat Exam						

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course Learning outcomes "CLOs"									
reaching and Dearning Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7			
Face to face lecture	X	X	X	X	X	N	X			
Tutorial / Exercise		- 8	X	X	X	N.				
Group discussion	X	X					×			
Site visit	X			X						
Self-Learning	N.									
Presentation	X	X	1000	-			X			
Mini-project		10	110	SOL	X	X	X.			
Research and reporting	X	×	101	18	1					
Brain storming		100	WE	TAI	X	x				
Case study		x	- X /	- 100						

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7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLOs"							
Assessment Methods	CL01	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7	
Final written exam			X	X	X	X		
Oral exam	X	N					N.	
Mid-term Exam		X	X	X	X.			
Quizzes			X	X	X	- %		
Research assignments	X	×						
In-class questions (formative assessment)			x	×	X	X		
Project assignments				X:			N.	

Course coordinator:

Name	Signature	Academic Year
Dr. Shaima Naseer	Lanney	2025-2026
Program coordinator:	A Comment	
Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf		2025-2026

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1. Basic Information:

A STATE OF THE PARTY OF THE PAR					
Course Title (according to the bylaw)		Executive designs (1)			
Course Code (according to the bylaw)		ARE 312 Architectural Engineering Department			
Department/s participating in offering the	course				
Number of credit hours/points of the cour	se (according	to the bylaw)			
Lecture Tutorial /		aboratory	Total contact		
1	4		5		
Course Type	3	50 Compulsory	□ Elective		
Academic level at which the course is tau	ght	Third year			
Academic Program		Architectural Engineering Program			
Faculty/Institute		Higher Institute of Engineering and Technology a Manzalla			
University/Academy		Manzalla Academy			
Name of Course Coordinator		Dr. Lamia Gamal			
Course Specification Approval Date		16 August 2025			
Course Specification Approval	1895	Institute Council No. (12) on 16 August 2025.			

2. Course Overview (Brief summary of scientific content)

Detailed study and preparation of the various and recent structural systems covering wide spans in buildings- preparation of the complete working drawings and details of major projects with wide-span facilities-field visits to similar projects.

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Architectural Engineering Program



3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) according to the matrix in the program spees)		Course Learning Outcomes Upon completion of the course, the student will be abl to:				
Code	Text	Code	Text			
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.		CLOI	Design projects that the student has make and solve all modifications needed for the design to be suitable to make the working drawings			
		CLO3	Create of working drawings of project (Elevation, Sections, Stairs and Door + Window details,)			
1-	A7 Function efficiently as an individual and as a member of multi-disciplinary and multi-cultural teams.	CLO5	Create of layouts details and field visits to similar projects			
997		CLO6	Produce shop drawings for the project and employ requirements, codes, and procedures.			
113	Generate ecologically responsible, environmental conservation and rehabilitation designs; through understanding of: structural design, construction, technology and engineering problems associated with building designs.	CL06	Produce shop drawings for the project and employ requirements, codes, and procedures.			
B4	Transform design concepts into buildings and integrate plans into overall planning within the constraints of: project financing, project management, cost control and methods of project delivery; while having adequate knowledge of industries, organizations, regulations and	CLOI	Define the function of different building and finishing materials, structural systems technology, and engineering problems associated with building construction and create workings drawings based on all these foundations. Create of working details of project (Elevations sections Stairs and Door +window details)			

4. Teaching and Learning Methods

- Face to face lecture
- C Online education
- M Tutorial / Exercise
- □ Laboratory

- ☐ Site visit
- ₩ Self-learning
 - 20 Presentation
 - Mini project
 - Research and reporting (self-learning)
- Brainstorming

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Architectural Engineering Program



Course Schedule

	Scientific contest of the	Scientific content of the		Expected number of the Learning Hours							
No. of the Week	Course Tonics	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/)	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)					
1-2	Detailed study and preparation of the various and recent structural systems covering wide spans in buildings (Redesign of the Mall design project - X-ref plans)	18	2	8	8						
3-7	Preparation of the complete working drawings of project with wide-span facilities (Plans floor – sections)	45	5	20	20						
8			Mid Term Ex	am							
9-12	Preparation of the complete working details of project - Elevations - Stairs (plans +section) - Detailed sections - Door +window details	36	4	16	16						
13- 14	field visits to similar projects(Layout +sitting out)	18	2	8	8						
15	Final submission of the project	9	100	4	4						
16			Firm Exan	16/3							

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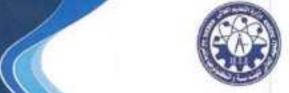
5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6,11	11	7.5%
2.	Mid-Term Examination	8	22.5	15%
3.	Final Examination	16	60	40%
4.	Lab Exam			_%
5.	Activities and assignments	Every week	41.5	27.5%
6.	Final Oral Exam (if exists)	(As Schedule)	15	10%
	A SALID CONTRACTOR OF THE ACTION OF THE ACTI			

6. Learning Resources and Supportive Facilities

Learning	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	"Architectural Detailing: Function, Constructibility, Aesthetics"			
resources (books, scientific references, etc.)	Other References	على الصنيف التنفيذية ، الطبعة اللتية، 2017 . Styles, K. (2014). Working drawings handbook. Elsevier.			
	Electronic Sources (Links must be added)				
	Learning Platforms (Links must be added)	Manzala Academy LMS, https://lms.manzalaacademy.edu.eg/			
	Other (to be mentioned)	سة التشييد (الجزء الثاني تشطيبات المبقى - الجزء الثالث مرافق الدياء والصرف الصحي)، محدود حسين المصيلحي،			
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.			
equipment	Supplies	Whiteboards and smart boards.			
for	Electronic Programs	Microsoft Office program			
teaching	Skill Labs/ Simulators	W. V. (1911) -			
and	Virtual Labs	Paul 3 67/			
learning	Other (to be mentioned)	5-43/			

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Touler	Lecture	re T/L	Course Learning outcomes "CLOs"					
week	Topics Lecture	A/AL	CLOI	CLO2	CLO3	CLO4	CLO5	CLO	
1-2	Detailed study and preparation of the various and recent structural systems covering wide spans in buildings (Redesign of the Mall design project - X-ref plans)	2	8	x		х			
3-7	Preparation of the complete working drawings of project with wide-span facilities (Plans floor – sections)	5	20			х	x		
8			Mis	d Term E	xam				
9-12	+section) - Detailed sections - Deer +window details	4	16		х	x	x		
13-14	field visits to similar projects(Layout +sitting out)	2	8				x	x	
15	project discussion & Revision	1/	4	X	x				x
16			16	inal Exa	m				

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7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course Learning outcomes "CLOs"						
reacting and centuing atenious	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	
Face to face lecture	X	X	X	X			
Tutorial / Exercise		X	X	X			
Group discussion		X					
Self-Learning		7					
Presentation	X	X	X	X		X	
Mini project				X		X	
Research and reporting		X		X			
Brain storming	X		X	X	X		
Case study			X			X	

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLOs"							
Transament (HELIOUS	CL01	CLO2	CLO3	CLO4	CLO5	CLO6		
Final written exam		X	X	X	X			
Oral exam						х		
Mid-term Exam		x	X	X	X			
Quizzes		X		x				
Research assignments		X						
In-class questions (formative assessment)	x	X	х	x	x			
Project assignments						X		

Course coordinator;

Name	Signature	Academic Year
Dr. Lamia Al-Adl	Tanatraw	2025-2026
Program coordinator:	MEAREN	
Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf		2025-2026

Course specification 2025-2026

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I. Basic Information:

CARL CONTRACTOR OF THE PARTY OF					
Course Title (according to the bylaw)		Urban Planning and Design			
Course Code (according to the bylaw)		ARE 313			
Department/s participating in offering the	ne course	Architectural Engineering			
Number of credit hours/points of the cor	urse (according to t	he bylaw)			
Lecture	Tutorial/Labor	atory	Total contact		
2	4		6		
Course Type	B (Compulsory	□ Elective		
Academic level at which the course is ta	ought	Third year			
Academic Program		Architectural Engineering Program			
Faculty/Institute	Hig	Higher Institute of Engineering and Technology Manzalla			
University/Academy		Manzalla Academy			
Name of Course Coordinator		ASSO, Prof. Dr. Marwa Atef			
Course Specification Approval Date		16 August 2025			
Course Specification Approval		Institute Council No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Study of the carious levels of planning (national-regional-local)-development studies-structural planning-environmental, social, economical, and demographic studies-legislations and laws-the city master plan-elements and factors of city planning-development of planning goals and programs-population density- activities and economical bases-social and population possibilities- analysis and design of urban spaces- characteristics of visual conception in the urban environment- visual shaping and forming of the city.

3. Course Learning Outcomes CLOs.

Matrix of course learning outcomes CLOs with Competencies (SDARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Upon completion of the course, the student will be able to:				
Code	Text	Code	Text			
A9	Use creative, innovative, and flexible thinking and acquire entrepreneurial	CLO	Identify economic, social, and environmental aspects in urban design projects.			

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	Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:				
Code	Text	Code	Text				
	and leadership skills to anticipate and respond to new situations.	CLO6	Develop designs with accordance to laws and regulations governing urban design And planning.				
Create architectural, urban and planning designs that satisfy both aesthetic and technical requirements, using adequate knowledge of: history	CLO3	Identify the main social, cultural, economic, and urban factors that affect planning the built environment in general and designing urban spaces.					
	and theory, related fine arts, local culture and heritage, technologies and human sciences.	CL04	Analyze the image of the city and characteristics of visual conception in the urban environment				
	Produce designs that meet building users' requirements through	CLOI	Identify knowledge of urban design and levels of planning to solve built environment problems.				
B2 between people and buildings and between buildings and	between people and buildings, and between buildings and their	CLO5	Develop three dimensional models of students' projects using computer-aided Drawing programs.				
	environment; and the need to relate- buildings and the spaces between them to human needs and scale.	CLO7	Design alternative solutions to urban planning and design projects and Environmental problems.				

- 4. Teaching and Learning Methods
- ☐ Online education
- ☑ Tutorial / Exercise
- □ Group discussion
- ☐ Laboratory

- Site visit
- ⊠ Self-learning
 - Presentation
 - Mini project
 - ☑ Research and reporting (self-learning)

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Course Schedule

100	Scientific content of the	200 W	Exps	ected mamber of the La	earning Hours	
No. of the Week	course (Course Topica)	Total Weekly Hours	Theoretical leaching (lectures/discussion groups/)	Training (Practical/Clinical/)	Self-learning (Tasks/ Assignments/ Projects/)	Other (30 bg determined
1	Introduction of urban design	10	2	4	4	
2	Study of the carious levels of planning (national- regional-local) environmental, social, economical, and demographic studies	10	2	4	4	
3-4	Objectives of Urban design. Characteristics of Urban design and its policies.	20	4	8	8	
5	The city master plan (definition-components- types)	10	2	4	4	
6	Elements and factors of city planning (buildings and spaces).	10	2	4	4	
7	Visual shaping and forming of the city. (Defining the image of the city)	to	2	4	4	
8		- 10	Mid Term Exa	m		
9	characteristics of visual conception in the urban environment (Proportions - enclosure - scale).	10			4	
10- 15	Analysis and design of urban spaces (Use computer application in case studies)	60		24	24	
16		10	Final Exam	11		

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5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6-11	7.5	5 %
2.	Mid-Term Examination	8	15	10%
3.	Final Examination	16	100	66.67%
4.	Lab Exam	120		96
5.	Activities and assignments	Every week	27.5	18.33%
6.	Final Oral Exam (if exists)	**	**	%

6. Learning Resources and Supportive Facilities

Learnin	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Hall, P., & Tewdwr-Jones, M. (2019). Urban and regional planning. Routledge.
resource s (books,	Other References	Chachwick, G. (2016). Models of urban & regional systems in developing countries: Some theories and their application in physical planning (Vol. 36). Elsevier.
scientifi c referenc es, etc.)	Electronic Sources (Links must be added)	https://unhabitat.org/sites/default/files/2020/07/indicator_11.7.1_training_mod_ulc_public_space.pdf
	Learning Platforms (Links must be added)	Manzala Academy LMS, https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	Hall, P. (2020). Ochan planning: History. Routledge.
Support ive	Devices/Instru ments	Projectors, audio-visual systems, and Computers with internet access.

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facilities	Supplies	Whiteboards.	_
& equipme	Electronic Programs	Microsoft Office program	T
nt for teaching	Skill Labs/ Simulators	946	T
and	Virtual Labs	-	+
learning	Other (to be mentioned)		T

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Lec	797.76		Cour	se Learn	ing oute	omes "C	LOs"	
TT CCK	100000	Lec	T/L	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6	CLO?
1	Introduction of urban design	2	4	х						
2	Study of the carious levels of planning (national-regional- local) environmental, social, economical, and demographic studies	2	4	x	x					
3-4	Objectives of Urban design. Characteristics of Urban design and its policies.	4	8			x	x			
5	The city master plan (definition- components- types)	2	4				×			
6	Elements and factors of city planning (buildings and spaces).	2	4	1	10	0	N.			
7	Visual shaping and forming of the city. (Defining the image of the city)	2	4				x/	x		
8				Mid	Ferm E	chm				
9	characteristics of	2	4:		-	-	N			X

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Week	Topics	Lan	99	Course Learning outcomes "CLOs"						
rreek	ropies	Lec	By L.	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7
	visual conception in the urban environment (Proportions - enclosure - scale).									
10-15	Analysis and design of urban spaces (Use computer application in case studies)	10	20						х	x
16				- 1	inal Exa	m				

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course Learning outcomes "CLOs"						
reacting and Learning Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO
Face to face lecture	X	x	x	X	X	X	
Tutorial / Exercise	x	x				X	x
Group discussion	x	x		x	X		
Site visit				x	X		
Self-Learning							
Presentation	X					X	3
Mini project			X		X	X	x
Research and reporting	x		x	x	X		
Brain storming			x		X	X	x
Case study	4			x	X	100	

7.3. Student assessment matrix with CLOs:

Assessment Methods		Cours	e Learni	ng outco	mes "Cl	LOs"	
ressessment rectuous	CL01	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7
Final written exam	X	X	x	x	X	X	
Mid-term Exam	X		х				
Quizzes		X	x	x			
Research assignments	X	10 %	X	x	X		
In-class questions (formative assessment)	170	10	x	x			
Project assignments	A STATE OF THE PERSON NAMED IN	1 /20	1 -11	x	X	x	x

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Course coordinator:

Name	Signature	Academic Year
ASSOC. Prof. Dr. Marwa atef	Celum)	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf		2025-2026

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L. Basic Information:

Course Title (according to the bylaw)		History &Theories of Architecture (3) ARE 314					
Course Code (according to the bylaw)							
Department/s participating in offering course	the	Architectural Engineering					
Number of credit hours/points of the c	ourse (accord	fing to the bylaw)					
Lecture	Tutorial / L	aboratory	Total contact				
3			3				
Course Type		☐ Compulsory	[] Elective				
Academic level at which the course is t	aught	Third year architecture					
Academic Program		Architectural Engineering Program					
Faculty/Institute		Higher Institute of Engineering and Technology a Manzalla					
University/Academy		Manzalla Academy					
Name of Course Coordinator		Dr. Murwa Aladham					
Course Specification Approval Date		16 August 2025					
Course Specification Approval		Institute Council No. (†2) on 16 August 2025					

- 2. Course Overview (Brief summary of scientific content)
- A- History of architecture: Medieval architecture in western and Islamic Worlds -Islamic architecture
- B- Theory of architecture: Analytical study of the factors affecting architectural design (economical, functional, social, human, psychological, and environmental) Building technology and construction techniques architectural theories and criteria of designing for building elements vertical circulation in buildings residential buildings office buildings commercial buildings.



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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	ogram Outcomes (NARS/ARS) ing to the matrix in the program spees)	Course Learning Outcomes Upon completion of the course, the student will be ab				
Code	Text	Code	Text			
Utilize contemporary technologies, codes of practice and standards, quality A4 guidelines, health and safety		CLo3	Analyze architectural function effectively and enhance communication skills through teamwork in studying architectural form, space, and order to achieve spatial, aesthetic, and technical harmony.			
	guidelines, health and safety requirements, environmental issues, and risk management principles.		Summarize essential aspects of Middle Ages architecture while considering economic, societal, and environmental dimensions, as well as risk management in design.			
	Practice research techniques and	CLe2	Organize research on various architectural theories across different periods of the Middle Ages.			
A5	methods of investigation as an inherent part of learning.	CLo4	Apply acquired knowledge by identifying key architectural lessons and principles from different Middle Age theories and integrating them into architectural design.			
***	Create architectural, urban and planning designs that satisfy both aesthetic and technical requirements.	CLe1	Develop an understanding of sustainability principles as they evolved through different civilizations and examine their interactions.			
81	B1 using adequate knowledge of, history and theory, related fine arts, local culture and heritage, technologies and haman sciences.		Identify key architectural lessons and principles from various Middle Age theories and explore their application in architectural practice.			

4. Teaching and Learning Methods

- M Face to face lecture
- ☐ Online education
- M Tutorial / Exercise
- ⊠ Group discussion
- ☑ Laboratory

- Site visit
- ⊠ Self-learning
 - Presentation
 - Mini project
 - Research and reporting (self-learning)
- Brainstorming

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Course Schedule

			Expected	Expected number of the Learning Hours						
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discu ssion groups/	Training (Practical /Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determ ned)				
1	History of Architecture: (Introduction to medieval architecture overview of Western and Islamic architectural developments.)	5	3	-	2					
2	History of Architecture: (Medieval architecture in the Western world Romanesque and Gothic styles, structural and aesthetic characteristics.)	5	3	100	2					
3	History of Architecture: (Medieval architecture in the Islamic world mosques, madrasas, and palaces; comparison with Western styles.)	5	3	_	2					
4	History of Architecture: (Islamic architecture principles, elements, and regional variations.)	5	3	-	2					
5-6	History of Architecture: (Case studies: Notable examples from both Western and Islamic medieval architecture.)	10	6	9	4					
7	Integration and Pre-Midterm Review	5	3	-						
8		Mid	Ferm Exam							
9	Theory of Architecture – Factors Affecting Architectural Design: (Human, psychological, and environmental factors in architectural design.)	5	3	*	2					
10	Theory of Architecture – Factors Affecting Architectural Design: (Impact of building technology and construction techniques on	5	3	~	2					

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			Expected number of the Learning Hours						
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discu ssion groups/)	Training (Practical /Clinical/)	Self-learning (Tunks/ Assignments / Projects/)	Other (to be determi ned)			
	architectural form and function.)								
11	Architectural Theories & Design Criteria: (Architectural theories and design principles for building elements.)	5	3	*	2				
12	Architectural Theories & Design Criteria: (Vertical circulation in buildings stairs, ramps, and elevators.)	5	3	-	2				
13-	Architectural Theories & Design Criteria; (Design principles for residential, office, and commercial buildings.)	10	6	-	4				
15	Final Review and Application: (Discussion and analysis of architectural theories in relation to historical and contemporary buildings.)	5	3	=	2				
16		Fi	nal Exam						

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	2	3%
2.	Mid-Term Examination	8	7	9%
3.	Final Examination	16	60	80%
4.	Lab Exam		-	%
5.	Activities and assignments	Every week	6	8%
6.	Final Oral Exam (if exists)			

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6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Stubbs, M. (2004). Heritage-sustainability: developing a methodology for the sustainable appraisal of the historic environment. Planning Practice & Research, 19(3), 285-305.
resources (books,	Other References	Ching, F. D. K., Jurzombek, M., & Prakush, V. (2021). A global history of architecture (3rd ed.), Wiley.
scientific references,	Electronic Sources (Links must be added)	Nesbitt, K. (2020). Theories and manifestos of contemporary architecture (2nd ed.), Wiley.
etc.)	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	Podcasts. (2023). Architecture history now. Retrieved from https://podcasts.apple.com/us/podcast/architecture-history-now/id1525647506
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment	Supplies	Whiteboards
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/ Simulators	4
and	Virtual Labs	-
learning	Other (to be mentioned)	

^{7.} Course Matrixes:

7.1. Course contents Matrix with CLOs:

		Lectur		Course Learning outcomes "CLOs"						
Week	Topics	e	T/L	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5	CLO 6	
1	History of Architecture: (Introduction to medieval architecture overview of Western and Islamic architectural	3	4	x						

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		Lectur		Course Learning outcomes "CLOs"						
Week	Topics	e	T/L	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5	CL 6	
	developments.)									
2	History of Architecture: (Medieval architecture in the Western world Romanesque and Gothic styles, structural and aesthetic characteristics.)	3			x					
3	History of Architecture: (Medieval architecture in the Islamic world mosques, madrasas, and palaces; comparison with Western styles.)	3		x	x					
4	History of Architecture: (Islamic architecture principles, elements, and regional variations,)	3		x						
5-6	History of Architecture: (Case studies: Notable examples from both Western and Islamic medieval architecture.)	6	3	x	x				x	
7	Integration and Pre- Midterm Review	3	2		x	x	х			
8		٨	tid Ten	n Exam			- "			
9	Theory of Architecture -	3				x	-	X		

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		Lectur	. "	Course Learning outcomes "CLOs"					
Week	Topics	Lectur	T/L	CLO	CLO	CLO	CLO	CLO	CLC
				1	2	3	4	5	6
	Factors Affecting Architectural Design: (Human, psychological, and environmental factors								
	in architectural design.)								
10	Theory of Architecture – Factors Affecting Architectural Design: (Human, psychological, and environmental factors in architectural design.)	3		×		х		x	
n	Architectural Theories & Design Criteria: (Architectural theories and design principles for building elements.)	3				x			x
12	Architectural Theories & Design Criteria: (Vertical circulation in buildings stairs, ramps, and elevators.)	3			x		x		x
13-14	Architectural Theories & Design Criteria: (Design principles for residential, office, and commercial buildings.)	6				x	x		
15	Final Review and	3		x			x		x

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		Lectur		Course	Course Learning outcomes "CLOs"				
Week	Topics	e	T/L	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5	CLO 6
	Application: (Discussion and analysis of architectural theories in relation to historical and contemporary buildings.)								
16			Final	Exam					

7.2. Teaching and learning matrix with CLOs:

	Course l	Course Learning outcomes "CLOs"							
Teaching and Learning Methods	CLOI	CLO2	C1,03	CLO4	CLO5	CLO			
Face to face lecture	X	X	X	x	X	X			
Tutorial / Exercise	x	X	x	x	X	X			
Group discussion		X	x	X					
Site visit		X			X				
Self-Learning	-11								
• Presentation		X	X	x		X			
Mini-project			x	x		X			
Research and reporting	x	X	X	x		x			
Brain storming	x	X	X	X	X	x			

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLOs"						
Assessment Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6	
Final written exam	X	X	X	X	X		
Mid-term Exam	X	X	X			X	
Quizzes	X	X	X	X	X		
Research assignments	X	X			X	x	
In-class questions (formative assessment)	X	X	x	X	X		
Project assignments	X	X	X	X	X	X	

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Course coordinator;

Name	Signature	Academic Year
Dr. Marwa Aladham	Blive	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	A.	2025-2026

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1. Basic Information:

ACCOUNTS, MANAGEMENT .				
Course Title (according to the by	law)	Foundations		
Course Code (according to the by	law)	CIVA311		
Department's participating in offe	oring the course	Civil Engineering Department		
Number of credit hours/points of	the course (accord	fing to the bylaw)		
Lecture	Tutorial	/ Laboratory	Total contact	
2		2	4	
Course Type		☑ Compulsory	□ Elective	
Academic level at which the cour	se is taught	Third Year		
Academic Program		Architecture Engineering Program		
Faculty/Institute		Higher Institute of Engineering and Technology Manzalla		
University/Academy		Manzalla Academy		
Name of Course Coordinator		Dr. Mahmoud El-Gendi		
Course Specification Approval D	ate	16 August 2025		
Course Specification Approval		Institute Council No. (12) on 16 August 2025		

2. Course Overview (Brief summary of scientific content)

Study of calculating soil properties and stresses- characteristics and mechanics, and the selection and design of foundations- soil classification- soil compaction - soil compressibility- theory of consolidation- lateral earth pressure-design of shallow and deep foundations- retaining walls- selection of suitable foundations - design of foundations subjected to centralized and decentralized loads.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program spees)		Course Learning Outcomes Upon completion of the course, the student wanted to:		
Code	Text	Code	Text	
AI	Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.	CLO3	Know types of surface and deep foundations.	
A8	Communicate effectively - graphically,	CLO1	Manage how to calculate the soil stress.	
	verbally and in writing - with a range of audiences using contemporary tools.	CLO2	Recognize the distribution of stresses within the soil under the influence of different loads.	
A9	Use creative, innovative, and flexible thinking and acquire entrepreneurial	CLO4	Design different types of foundations subjected to central loads.	
9.7	and leadership skills to anticipate and respond to new situations.	CLO5	Design different types of foundations subjected to non-central loads.	
B2	Produce designs that meet building users' requirements through understanding the relationship between people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale.	CLO6	Solve all problems related to foundations.	

4. Teaching and Learning Methods

図	Face to face lecture	☐ Site visit
	Online education	Self-learning
区	Tutorial / Exercise	☐ Presentation
	Group discussion	
	Laboratory	Research and reporting (self-learning)
		Brainstorming

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Course Schedule

			Expecte	d number of t	he Learning Hou	Wis :
No. of the Work	Scientific content of the course (Course Topica)	Total Weekly Hours	Theoretical teaching (lectures/discus sion groups/	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determined)
1	Calculate the soil stress	6	2	2	2	
2- 3-4	Distributing of stresses within the soil	18	6	6	6	
5-6	The influence of different loads.	12	4	4	4	
70	Types of surface and deep foundations	6	2	2	2	
R		Mid Term Exam				
9	Types of surface and deep foundations	6	2	2	2	
10-	Designing types of foundations subjected to central loads	12	4	4	4	
12- 13- 14- 15	Designing types of foundations subjected to non-central loads	24	8	8	8	
16		Fi	nof Exam			

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	4.5	4.5%
2.	Mid-Term Examination	8	13.5	13.5%
3.	Final Examination	(As Schedule)	70	70%
4.	Lab Exam	-		
5.	Activities and assignments	Every week	12	12%

6. Learning Resources and Supportive Facilities

The main (essential) reference for the course	Yasser Eleithy notes.
Other References	Text book.
Electronic Sources	Lecture material and experimental sheets.
	for the course

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etc.)		Mashour Ghoneim notes.
	Learning Platforms	https://lms.manzalaacademy.edu.eg/
	Other	F
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment	Supplies	Whiteboards
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/ Simulators	
and	Virtual Labs	*
learning	Other (to be mentioned)	

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Weck	Topics	Lec.	T/L	(Course L	earning o	outcomes	"CLOS							
WEEK.		Lec.	Arke	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6						
1	Calculate the soil stress	2	2	X					X						
2-3-	Distributing of stresses within the soil	6	6	х	х				x						
5-6	The influence of different loads.	-4	4:			X	X	X	X						
8	Mid Term Exam														
7-9	Types of surface and deep foundations	4	4:			X	X	х	x						
10 -	Designing types of foundations subjected to central loads	4	4				x	x	х						
12-15	Designing types of foundations subjected to non-central loads	8	8				х	x	х						
16			Fin	al Exam		Final Exam									

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7.2. Teaching and learning matrix with CLOs:

	Course Learning outcomes "CLOs"								
Teaching and Learning Methods	CLO1	CLO2	CLO3	CLO4	CL05	CLO6			
Face to face lecture	X	X	X	X	X	X			
Tutorial / Exercise	X	X	X	X	X	X			
Self-Learning									
Mini project			X	X		X			
Research and reporting			X	X		X			
Brain storming		X	X			X			

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLOs"								
Assessment Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6			
Final written exam	X	X	X	X	X	Х			
Mid-term Exam	X	X	X			Х			
Quizzes		X		X		X			
Research assignments		X	X	X		X			

Course coordinator:

Name	Signature	Academic Year
Dr. Mahmoud El-Gendi	الحوالين.	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	A.S.	2025-2026

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1. Basic Information:

	Architectural design (6)				
	ARE 321				
the course	Architectural Engineering Department				
ourse (accord	ing to the bylaw)				
Tutorial	Laboratory	Total contact			
	5	2			
Course Type		☐ Elective			
taught	Third year				
	Architectural Engineering Program				
	Higher Institute of Engineering and Technology a Manzalla				
	Manzalla Academy				
	ASSOC. Prof. Dr. Kareem Mahrous				
	16 August 2025				
	Institute Council No. (12) on 16 August 2025				
	ourse (accord	the course Architectural surse (according to the bylaw) Tutorial / Luboratory 5 © Compulsory aught Architectura Higher Institute of 1 Mar ASSOC. Pro			

2. Course Overview (Brief summary of scientific content)

The course concentrates on enhancing the students skills in developing architectural solutions and alleviating the environmental-design, problems-studying a variety of structural solutions to help construct wide-span structures and study their potential associated complications- study of natural ands mechanical ventilation-study of artificial and daylighting- use of computer applications and programs in designing, developing, and presenting architectural projects- applications with help of simplified architectural models.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	Program Outcomes (NARS/ARS) rding to the matrix in the program spees)	Course Learning Outcomes Upon completion of the course, the student will be able				
Code	Text	Code	Text			
A5	Practice research techniques and methods of investigation as an inherent	CL.01	Develop students' abilities to create environmentally friendly designs that alleviate,			
	part of learning.		Create structured research in accordance with the standard scientific guidelines.			
Bi	Create architectural, urban and planning designs that satisfy both nesthetic and technical requirements, using adequate knowledge of: history and theory, related fine arts, local culture and heritage, technologies and human sciences.	CLO3	Develop the students abilities to create architectural solutions, functioning and architectural drawings.			
	Produce designs that meet building users' requirements through understanding the relationship between	CLO4	Produce an integrated design that considers the concept of the project in relation to the standards required in the project program.			
B2	people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale.		Solve problems-studying a variety of structural solutions to help construct wide-span structures			
В3	Generate ecologically responsible, environmental conservation and rehabilitation designs; through		Apply the main techniques of integrated design through architectural drawings with natural and mechanical ventilation-study of artificial and day lighting.			
	construction, technology and engineering problems associated with building designs.	CLO7	Apply finished drawings and the final presentation arrangement for the project.			

4. Teaching and Learning Methods

- ☐ Online education
- STutorial / Exercise
- □ Group discussion
- □ Laboratory

- M Site visit
- ⊠ Self-learning
 - **⊠**Presentation
 - Mini project
 - ⊠ Research and reporting (self-learning)
- ₩ Brainstorming

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Course Schedule

			Expecte	d number of t	he Learning Hou	ms.
No. of the Work	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (fectures/discus sion groups/	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determined)
1-3	The course concentrates on enhancing the students skills in developing alleviating the environmental-design (SiteAnalysis)	30	6	15	9	
4-7	Enhance thestudents skills in developingarchitectural solutions (DesignConcept, Formationprinciples)	40	8	20	12	
8		Mid	Term Exam			
9-11	problems-studyings variety of structural solutions to help constructwide-span structures (Functional and structural requirements -Project considerations)	37	8	20	9	
12	study of natural ands mechanical ventilation-study of artificial and daylighting (Sustainable architecture)	1.0	2	5	3	
13- 14	Use of computer applications and programs indesigning, developing, and presenting architectural projects-applications with help of simplified architectural models(.Define and solve the problems of the design	20	4	10	6	
15	Final submission of the project	10	2	5	3	
16		Fi	nal Exam			

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5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	13.5	6.75%
2.	Mid-Term Examination	8	27	13.5%
3.	Final Examination	16	90	45%
4.	Lab Exam	2003	(9)	н
5.	Activities and assignments	Every week	49.5	24.75%
6.	Final Oral Exam (if exists)	(As Schedule)	20	10%

6. Learning Resources and Supportive Facilities

Learning	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Wasson, C. S. (2015). System engineering analysis, design, and development: Concepts, principles, and practices. John Wiley & Eamp; Sons.				
(books,	Other References	Barron, M. (2009). Auditorium acoustic and architectural design. Spon Press.				
scientific	Electronic Sources	https://www.firsfinarchitecture.co.uk/how-				
references,	(Links must be added)	to-develop-architectural-concepts/				
etc.)	Learning Platforms (Links must be added)	Manzala Academy LMS, https://lms.manzalaacademy.edu.eg/				
	Other (to be mentioned)	Baxter, M. (2018). Product design. CRC press.				
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.				
equipment	Supplies	Whiteboards.				
for	Electronic Programs	Microsoft Office program, Acrobat Reader				
teaching	Skill Labs/ Simulators	44				
and	Virtual Labs	. 				
learning	Other (to be mentioned)					

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Laston	T/L	b ur = u		nie Lean	ring oute	omes."C	LOs"	
W.CCR.	Topies	Lecture	1/1	CLOI	CLO2	CLO3	CLO4	CLO5	CLOs:	CLO7
1-3	The course concentrates on enhancing the students skills in developing alleviating the environmental-design (Site Analysis)	6	15	×	x					
4-7	Enhance the students skills in developing architectural solutions (Design Concept, Formation principles)	8	20			X.	х			
8			M	id Term	Exam					
8-11	problems-studying a variety of structural solutions to help construct wide-span structures (Functional and structural requirements -Project considerations)	8	20						*	
12	study of natural ands mechanical ventilation-study of artificial and daylighting (Sustainable architecture)	2	5					х		
13- 14	Use of computer applications and programs in designing, developing, and presenting architectural projects- applications with help of simplified architectural models(.Define and solve the problems of the design	4	10							x
15	Final submission of the project	2	5				X			×
16			- 1	Final Ex	am					

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7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course Learning outcomes "CLOs"								
reaching and Learning Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7		
Face to face lecture	X		X	X.	X	X			
Tutorial / Exercise		X	X	X	X	x			
Group discussion	X	X							
Site visit	X								
Self-Learning	-								
Presentation	X	X							
Mini-project							X		
Research and reporting	X	X					X		
Brain storming			X	X	×	X			
Case study		X			1111				

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLOs"									
PASSESSITEM STELLIOUS	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7			
Final written exam	X		X	X	X	X				
Oral exam							X			
Mid-term Exam	X		X	X.	×	x				
Quizzes	X		X	X	X	X				
Research assignments	X	X								
In-class questions (formative assessment)		x	x	x	x	x				
Project assignments							X			

Course coordinator:

Name	Signature	Academic Year	
ASSOC. Prof. Dr. Kareem Mahrous	MDS Of	2025-2026	

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	A.	2025-2026

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1. Basic Information:

Course Title (according to the bylaw)		Executive design 2				
Course Code (according to the bylaw)		ARE 322				
Department/s participating in offering the	course	Architectural Engineering Department				
Number of credit hours/points of the cours	se (according	to the bylaw)				
Lecture	Tutorial / L	aboratory	Total contact			
T T	4		5			
Course Type		☑ Compulsory	☐ Elective			
Academic level at which the course is tang	glat	Third year				
Academic Program		Architectural Engineering Program				
Faculty/Institute		Higher Institute of Engineering and Technology a Manzalla				
University/Academy		Manzalla Academy				
Name of Course Coordinator		Dr. Lamiau Gamal				
Course Specification Approval Date		16 August 2025				
Course Specification Approval		Institute Council No. (12) on 16 August 2025				

2. Course Overview (Brief summary of scientific content)

Preparation detailed working drawings of buildings both architectural and structural connections and elements-preparation of sanitary, electrical, and mechanical drawings of architecturally design projects.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

tucci	Program Outcomes (NARS/ARS) ording to the matrix in the program specs)	Upon	Course Learning Outcomes completion of the course, the student will be able to:				
Code	Test	Code	Test				
	Apply engineering design processes to produce cost-effective solutions that meet	CL03	Create detailed working drawings of structural connections				
A3	specified needs with consideration for global, cultural, social, economic, environmental, athical and other aspects as appropriate to the discipline and within the principles and Contexts of sustainable design and development.		Produce designs that meet building mers requirements through understanding the relationship between people and buildings				
H2	Produce designs that meet building users' requirements through understanding the relationship between people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale.	C1.04	Create sanitary drawings of architecturally design projects.				
	Generate ecologically responsible, environmental conservation and	CLOI	Create of working densits of project. Landscape Layout+ Services				
В3	rehabilitation designs; through understanding of structural design, construction, technology and engineering problems associated with building designs.	CLO2	Create ecologically responsible, environmental conservation and rehabilitation designs; through understanding of structural design, construction, technology, and engineering problems associated with building designs				
	Transform design concepts into buildings and integrate plans into overall planning	CLO5	Create electrical drawings of architecturally design projects				
within the constraints of: project financing, project management, cost control and methods of project delivery; while having adequate knowledge of industries, organizations, regulations and procedures involved.		CLO7	Produce realistic executive drawings for boild implementation, and employ the requireme codes, and procedures.				

4. Teaching and Learning Methods

- □ Face to face lecture
- ☐ Online education
- ⊠ Tutorial / Exercise
- M Group discussion
- □ Laboratory

- Site visit
- ⊠ Self-learning
 - □ Presentation
 - Mini project
 - Research and reporting (self-learning)
- ☑ Brainstorming

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Course Schedule

	the (Course Topics)		Expected number of the Learning Hours						
No. of the Week		Total Weekly Hours	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)			
1-2	Concrete ceiling electrical panel Suspended ceiling electrical panel	14	2	8	4				
3-7	Air conditioning systems in buildings Fire systems in buildings	35	5	20	10				
8		Mid	Term Exam						
9	Drainage systems (rain sanitary)	7	1	4	2				
10	Drainage systems (feeding)	7	1.	4	2				
11-12	Raised floors and their types	14	2	8	4				
13	Project final review	7	1	4	2				
14-15	Insulation details for different parts of buildings		2	8	4				
16		F	inal Exam						

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	11	7.5%
2.	Mid-Term Examination	8	22.5	15%
3.	Final Examination	16	60	40%
4.	Lab Exam	-		-%
5.	Activities and assignments	Every week	41.5	27.5%
6.	Final Oral Exam (if exists)	(As Schedule)	15	10%
	AND DESCRIPTION OF THE PARTY OF	The second secon		

6. Learning Resources and Supportive Facilities

Learning resources (books, scientific references,	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Styles, K., & Bichard, A. (2012). Working drawings handbook. Routledge.
etc.)	Other References	Allen, E., & lano, J. (2019). Fundamentals of building construction: materials and methods.

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		John Wiley & Sons.
	Electronic Sources	https://www.firstinarchitecture.co.uk/how-
111	(Links must be added)	to-develop-architectural-concepts/
	Learning Platforms	Manzala Academy LMS,
	(Links must be added)	https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	هنيسة التثبيد والجزء الثقى تشطيبات العبقى - الجزء الثاث مرافق العباء والصرف الصحي/ء محمود حدين المصالحي، 2018
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment	Supplies	Whiteboards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/ Simulators	-
and	Virtual Labs	-
learning	Other (to be mentioned)	

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Acceptance	mr.		1	earning	outcome	s "CLOs	*	
week		lecture	IAF	CLO1			CLO4			CLO7
1-2	Concreteceiling electrical panel Suspendedeciling electrical panel	2	8	x						
3-7	Air conditioning systems in buildings Fire systems in buildings	3	20		х	X				
8				Mid	Term Ex	um.				
9	Drainage systems (rain - sanitary)	2	8				x			
10	Drainage systems (feeding)	1	4					. x		
11-12	Raised floors and their types	2	8						ж.	
13	Project final review	1	4		X					- %
14-15	Insulation details for different parts of buildings	2	8							х
16				Fil	nal Exam					

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7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Mathada	Learning outcomes "CLOs"								
Teaching and Learning Methods	CLO1	CLO2	CL/03	CLO4	CLO5	CLO6	CLO:		
Face to face lecture	8	- 3	x	- 1	X	x			
Tutorial / Exercise			x	x	x	x			
Group discussion			X.		N;				
Site visit	- 1	x							
Self-Learning									
Presentation			X:		X.				
Mini project						X	X		
Research and reporting			3.		x				
Brain storming	x	- 38	x	- 18	x	x			

7.3. Student assessment matrix with CLOs:

Assessment Methods	Learning outcomes "CLOs"								
Assessment Nethons	CF01	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7		
Final written exam	- 1	x	x	1	x.				
Oral exam						- 3	х.		
Mid-term Exam	×	х	x	- 3.	x.				
Quizzes	X	×	x	X.	x				
Research assignments			X		x				
In-class questions (formative assessment)	X	X	x	3.	x				
Project assignments						×	3		

Course coordinator:

Name	Signature	Academic Year	
Dr. Lamiaa Gamal	1 another	2025-2026	

Signature	Academic Year
A.	2025-2026
	Signature .

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I. Basic Information:

Course Title (according to the bylaw)		Housing and urban design (1)			
Course Code (according to the bylaw)		ARE 323			
Department/s participating in offering the course		Architectural Engineering Department			
Number of credit hours/points of the	course (accord	fing to the hylaw)			
Lecture	Tutorial	/ Laboratory	Total contact		
2	2		4		
Course Type		図 Compulsory	☐ Elective		
Academic level at which the course	is taught	Third year			
Academic Program		Architectural Engineering Program			
Faculty/Institute		Higher Institute of Engineering and Technolog Manzalla			
University/Academy		:Man	zalla Academy		
Name of Course Coordinator		Dr.	Alaa Morgan		
Course Specification Approval Date		16 August 2025			
Course Specification Approval		Institute Council	No. (12) on 16 August 2025		

2. Course Overview (Brief summary of scientific content)

Problems of city planning and housing in Egypt from their economical, social, and cultural dimensions-approaches and concepts of urban planning and housing-analytical study of different housing types: economic, average, above-average, and luxurious-planning and design of housing areas and districts- social, economical, and environmental factors affecting housing and urban design.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	im Outcomes (NARS/ARS) ling to the matrix in the program		e Learning Outcomes completion of the course, the student will be :
Code	Text	Code	Text
A10	Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.	CLO6	Create plans with accordance to laws and regulations governing urban planning.
	Create architectural, urban and planning designs that satisfy both aesthetic and technical	CLOI	Explain of Problems of city planning and housing in Egypt from their economical, social, and cultural dimensions.
BI	requirements, using adequate knowledge of: history and theory,	CL02	Discuss concepts of urban planning and housing
	related fine arts, local culture and heritage, technologies and human sciences.	CL05	Create sanitary drawings of architecturally design projects.
B2	Produce designs that meet building users' requirements through understanding the relationship between people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale.	CLOS	Analyze of different housing types; economic, average, above-average, and luxurious
B4	Transform design concepts into buildings and integrate plans into overall planning within the constraints of: project financing, project management, cost control and methods of project delivery; while having adequate knowledge of industries, organizations, regulations and procedures involved.	CLO4	Discuss problems facing the built environment in Egypt

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4. Teaching and Learning Methods

Tace to face lecture

☐ Online education

⊠ Tutorial / Exercise

☐ Laboratory

Site visit

Self-learning

Presentation

Mini project

■ Research and reporting (self-learning)

Brainstorming

Course Schedule

			Expects	of number of i	he Learning Hou	TP.
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)
13	Problems of city planning and housing in Egypt from their economical, social, and cultural dimensions-approaches and concepts of urban planning and housing	18	6	6	6	
4-7	analytical study of different housing types: economic, average, above-average, and luxurious (study of the different types of housing- Characteristics of residential areas and neighborhoods)	24	8	8	8	
.8		Mid	Term Exam			
9+12	planning and design of housing areas (Define problems-Suggest and evaluate alternative solutions)	24	8	8	8	
13-14	Review analysis of problems, constraints, and potentials of the project area.	12	4	4	4	
15	Final submission of the exercise	6	2	2.	2:	
16.		F	nal Exam			

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5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	4.5	4.5%
2.	Mid-Term Examination	8	9	9%
3.	Final Examination	(As Schedule)	70	70%
4.	Lab Exam		- 4	0%
5.	Activities and assignments	Every week	16.5	16.5%
6.	Final Oral Exam (if exists)		+	0%
-	The state of the s			41.35543

6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Hall, P., & Tewdwr-Jones, M. Urban and regional planning. Routledge. (2019).
Learning resources (books, scientific references,	Other References	Chadwick, G. Models of urban & regional systems in developing countries: Some theories and their application in physical planning (Vol. 36). Elsevier. (2016).
etc.)	Electronic Sources	https://www.firstinarchitecture.co.uk/how-
And the second	(Links must be added)	to-develop-architectural-concepts/
	Learning Platforms (Links must be added)	Manzala Academy LMS, https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	Strets, P. G. S. MHousing finance and the urban poor, Rawat., (2004).
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment	Supplies	Whiteboards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/ Simulators	**
and	Virtual Labs	**
learning	Other (to be mentioned)	

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week		Distriction of	T/L		Learn	ning outc	omes "C	LOs"	
WEEK.	Topics	Lecture	1714	CLOI	CLO2	CLO3	CL04	CLO5	CLO
1-3	Problems of city planning and housing in Egypt from their economical, social, and column dimensions-approaches and concepts of urban planning and housing	6	6	x	x				
4-7	analytical study of different housing types: economic, average, above-average, and haxurious (study of the different types of housing- Characteristics of residential areas and neighborhoods)	8	8			×			
8			Mid To	erm Exac	n				
9-12	planning and design of housing areas (Define problems- Suggest and evaluate alternative solutions)	8	8					x	x
13-14	Review analysis of problems, constraints, and potentials of the project area.	4	4				x		x
15	Final submission of the exercise	2	2						x
16			Fina	Exam	111		-	00 17 1	

7.2. Teaching and learning matrix with CLOs:

	Learning outcomes "CLOs"					
Teaching and Learning Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
Face to face lecture	x	X.	X	x		
Tutorial / Exercise			X	- 3	1	
Group discussion			X	X		
Site visit	×		X			
Self-Learning						
Presentation			X	x		
Mini-project						x
Research and reporting			X	X		
Brain storming	x	x			x	

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7.3. Student assessment matrix with CLOs:

A District of Whiteholds		Les	rning outc	omes "CLC	"CLOs"					
Assessment Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CL06				
Final written exam	x	x	X	8						
Mid-term Exam	×	X	X	x						
Quizzes	X	N.	X	x						
Research assignments			X	x						
In-class questions (formative assessment)			X	X	X					
Project assignments						X				

Course coordinator:

Name	Signature	Academic Year	
Dr. Alna Morgan	1108/NI-	2025-2026	

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf		2025-2026

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1. Basic Information:

Course Title (according to the byla	IW)	Technical installations for buildings				
Course Code (according to the byla	aw)	ARE 324				
Department's participating in offer	ing the course	Architectural Engineering Department				
Number of credit hours/points of the	he course (accord	ing to the bylaw)				
Lecture Tutorial		Laboratory	Total contact			
2	2		4			
Course Type		SI Compulsory	□ Elective			
Academic level at which the course is taught		Third year				
Academic Program		Architectural Engineering Program				
Faculty/Institute		Higher Institute of Engineering and Technology a Manzalla				
University/Academy		Manzalla Academy				
Name of Course Coordinator		ASSOC.Prof. Dr. Marwa Atef				
Course Specification Approval Date		16 August 2025				
Course Specification Approval		Institute Council No. (12) on 16 August 2025				

2. Course Overview (Brief summary of scientific content)

Mechanical installations (elevators- escalators-boilers-solar energy - ventilation and r conditioning)

Artificial lighting (units for measuring light-principals for lighting- electric is for buildings).

Acoustics (the nature of sounds-modified pressure levels-sound analysis -noise-standards affecting comfort zones-acoustic design of building and space).



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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	Program Outcomes (NARS/ARS) ording to the matrix in the program spees)	Course Learning Outcomes Upon completion of the course, the student will be able to		
Code	Test	Code	Text	
	Utilize contemporary technologies, codes of practice and standards, quality		Create working details for Artificial lighting	
.04	guidelines, health and safety requirements, environmental issues, and risk management principles.	CLO3	Discuss Acoustics (the nature of sounds acoustic design of building and space)	
A6	Plan, supervise and monitor implementation of engineering projects,		Discuss types of finishing materials ,characteristics and techniques of installation of the same material for different functions	
	taking into consideration other trades requirements.	CL06	Analyze and present ideas in the form of electronic presentation and verbal explanation to audiences and Prepare technical reports writing	
	Prepare design project briefs and documents, and understand the context of	CLOI	Create drawings for Mechanical installations	
BS	the architect in the construction industry.		Create drawings for installation of finishing materials	

4. Teaching and Learning Methods

- El Face to face lecture
- □ Online education
- ☑ Group discussion
- □ Laboratory

- Site visit.
- Self-learning

 - Mini project
 - ☑ Research and reporting (self-learning)
- Brainstorming

Course Schedule



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			Expecto	od number of a	he Learning Hou	rs rs
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discus sion groups/	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)
1-3	Mechanical installations (elevators- escalators-boilers-solar energy - ventilation and conditioning)	15	6	6	3	
4-5	Artificial lighting (units for measuring light- principals for lighting- electric is for buildings).	10	4	4	2	
6-7	Acoustics (the nature of sounds- modified pressure levels-sound analysis -noise-standards affecting comfort zones-acoustic design of building and space)	10	4	4	2	
8		Mid	Term Exam			
9-12	Discuss types of finishing materials ,characteristics and techniques of installation of the same material for different functions Discuss maintenance of walls, roofs, facades, floors.	20	8	8	4	
13-14	Present case Studies	10	4	4	2	-
15	Discussions	5	2	2	1	
16		Fi	nal Exam			

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5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	4.5	4.5%
2,	Mid-Term Examination	8	9	9%
3.	Final Examination	(As Schedule)	70	70%
4.	Lab Exam	-	-	14
5.	Activities and assignments	Every week	16.5	16.5%
6.	Final Oral Exam (if exists)	-		0%

6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Charles S. Wasson, System Engineering Analysis, Design, and Development: Concepts, Principles, and practices, 2015.
Learning resources (books,	Other References	Totten, C. W. (2019). Architectural Approach to Level Design. CRC Press.
scientific references, etc.)	Electronic Sources (Links must be added)	https://www.firstinarchitecture.co.uk/how- to-develop-architectural-concepts/
	Learning Platforms (Links most be added)	Manzala Academy LMS, https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	
Supportive		Projectors, audio-visual systems, and
facilities &	Devices/Instruments	Computers with internet access.
for for	Supplies	Whiteboards.

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teaching	Electronic Programs	Microsoft Office program, Acrobat Reader
and learning	Skill Labs/ Simulators	
	Virtual Labs	
	Other (to be mentioned)	

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Lecture	771.	Learning outcomes "CLOs"			LOs"		
	Topics	Littine	1015	CLOI	CLO2	CLO3	CLO4	CLO5	CLO
1-3	Mechanical installations (elevators- escalators- boilers-solar energy - ventilation and conditioning)	4	4	x					
4-5	Artificial lighting (units for measuring light-principals for lighting-electric is for buildings).	4	4		x				
6-7	Acoustics (the nature of sounds-modified pressure levels-sound analysis -noise- standards affecting comfort zones-acoustic design of building and space)	4	4			x			
8			Mid To	em Exan	1				
9-12	Discuss types of finishing materials ,characteristics and techniques of installation of the same material for different functions Discuss maintenance of walls, roofs, facades, floors.	8	8				x	x	
13-14	Present case Studies	4	4						×.
15	Discussions	2	2						x
16			Fina	Exam					

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7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Learning outcomes "CLOs"							
reaching and Learning Methods	CL01	CLO2	CLO3	CLO4	CLO5	CLO		
Face to face lecture	X	x	x	1	TO HOSE	100000		
Tutorial / Exercise			x	x	x	-		
Group discussion			x	x	-	-		
Site visit	à							
Self-Learning						-		
Presentation			x	x				
Mini-project				-				
Research and reporting			V	x				
Brain storming	x	x	-		x			

7.3. Student assessment matrix with CLOs:

Assessment Methods	Learning outcomes "CLOs"								
	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6			
Final written exam	X	- 1	X	x	A CHILDREN	2000			
Mid-term Exam	x	x	X	- 1		-			
Quizzes	x	x	Y.	×		+			
Research assignments			*	*		-			
In-class questions (formative assessment)			×			-			
			-	-	- 4				
In-class questions (formative assessment) Project assignments			x	x	X				

Course coordinator:

Name	Signature	Academic Year
ASSOC.Prof. Dr. Marwa Atef	isher!	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	A.	2025-2026

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1. Basic Information:

Course Title (according to the byla	iw)	Sanitary Engineering		
Course Code (according to the byl	aw)	CIVA 321		
Department/s participating in offer	ring the course	Civil Engineering Department		
Number of credit hours/points of t	he course (accord	fing to the bylaw)		
Lecture	Tutorial	/ Laboratory	Total contact	
2		2	4	
Course Type		□ Compulsory	☐ Elective	
Academic level at which the cours	e is taught	Third year		
Academic Program		Architectural Engineering Program		
Faculty/Institute		Higher Institute of Engineering and Technology Manzalia		
University/Academy		Manzalla Academy		
Name of Course Coordinator		Dr. Samira Mohammed		
Course Specification Approval Da	te	16 August 2025		
Course Specification Approval		Institute Council No. (12) on 16 August 2025		

2. Course Overview (Brief summary of scientific content)

Hydraulic services and plumbing fixtures in buildings- hot and cold water supply and distribution, sewage systems and waste disposal- ovens and kitchen appliance- fire distinguishers in buildings.

Ministry of Higher Education tigher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architectural Engineering Program



3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student w able to:		
Code	Text	Code	Text	
A4.	Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles.	CLO1	Discuss the system of water supply.	
	Acquire and apply new knowledge:	Cf.03	Develop the costs of waste management systems.	
A10.	Trace(Section) 1 Company 1 Company	CLO5	Discuss the concept of the Hydraulic services in buildings and Develop the Appliances used at bome.	
	Generate ecologically responsible, environmental conservation and rehabilitation designs; through	CL02	Design waste handling or disposing mechanisms, such as incinerators, garbage plants and sanitary fills.	
В3.	understanding of: structural design, construction, technology and engineering problems associated with building designs.	C1,04	Develop the concept of the fire distinguishers in buildings.	

4. Teaching and Learning Methods

□ Face to face lecture	☐ Site visit
☐ Online education	⊠Self-learning
⊠Tutorial / Exercise	☐ Presentation
☐ Group discussion	☐Mini project
□ Laboratory	■ Research and reporting (self-learning)
	Brainstorming

Course Schedule

Ministry of Higher Education tigher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architectural Engineering Program



			The last of the la			
			Expects	d number of t	he Learning Ho	ACS:
No. of the Work	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discus sion groups/	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determined)
1-2	Introduction - Hydraulic services.	12	4	4	4	
3 - 4	Plumbing fixtures in buildings.	12	4	4	- 4	
5 - 6	The water supply and distribution	12	4	4	-	
7	Sewage systems and waste disposal.	6	2	2	2	
8		N/	lid-Term			
9-10	ovens and kitchen appliance	12	4	4	4	
11-12	Fire distinguishers in buildings	12	4	4	-	-
13-14	Costs of waste management systems.	4	4	4	4	
15	Design waste handling or disposing mechanisms.	6	2	2	2	
16		Fin	al Exam			

5. Methods of students' assessment

No.	The state of the s	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	4.5	4.5%
2,	Mid-Term Examination	8	13.5	13.5%
3.	Final Examination	16(As Schedule)	70	70%
4.	Lab Exam		ě.	
5.	Activities	Every week	12	12%
6.	Final Oral Exam (if exists)	-		

6. Learning Resources and Supportive Facilities

Learning resources (books, scientific references,	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Greene County Sanitary Engineering Department.Tony Waltham, 2022
etc.)	Other References	Lecture note

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	Electronic Sources (Links must be added)	What is Sanitary Engineering? How Things Work (bringmeinfo.com)
	Learning Platforms (Links must be added)	Manzala Academy LMS, https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment -	Supplies	Whiteboards.
for teaching	Electronic Programs	Microsoft Office program, Acrobat Reader, Autocad
and	Skill Labs/ Simulators	-
learning	Virtual Labs	
The state of the s	Other (to be mentioned)	

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics		150000		carning			**
3000	TANADIS (Lec	T/L	CLO1	CLO2	CLO3	CLO4	CLO5
1-2	Introduction - Hydraulic services.	4	4			X		X
3-4	Plumbing fixtures in buildings.	4	4	х		x		
5-6	The water supply and distribution.	4	4	X				
7	Sewage systems and waste disposal.	2	2		X	х	X	
8		Mid Terr	n Exar	11			10	
9-10	ovens and kitchen appliance	4	4					х
11-12	Fire distinguishers in buildings.	4	+		X		x	
13-14	Costs of waste management systems.	4	4			X		
15	Design waste handling or disposing mechanisms.	2	2		X			
16		Final E	Name .	-				

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Ministry of Higher Education Tigher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architectural Engineering Program



7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Learning outcomes "CLOs"						
	CLO1	CLO2	C1,03	CLO4	CLO5		
Face to face lecture	X	X	V	N. N.			
Online education		- 14	- ^	X	X		
Tutorial / Exercise	X	v					
Self-Learning			X	X	X		
Research and reporting		v	-				
Brain storming			X	X			
7.3 Student account		X		X			

7.3. Student assessment matrix with CLOs:

Assessment Methods	Learning outcomes "CLOs"					
	CLO1	CLO2	CLO3	CLO4	CLO5	
written exam	X	X	X	Y.	CLOS	
Quizzes		X			X .	
Midterm Exam		- 19	**	A.		
Research assignments		441	_ A	X		
n-class questions (formative		Α		X		
ssessment)	X			x	v	

Name	Signature	Academic Year
Dr. Samira Mohammed	riconer,	2025-2026

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	AS.	2025-2026

Ministry of Higher Education Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Practical Training Course Specification



1. Basic Information:

Course Title (according to the bylaw)	Practical Training-Architectural Eng. (4)
Course Code (according to the bylaw)	TRN 344
Department's participating in offering the course	Architectural Engineering department

Course Marks

Discussion	Report	Institution's Assessment	Total
40%	30%	30%	Pass/Not Pass

Hours/ Weeks

hours/4 weeks	
□ Compulsory	☐ Elective
Third Year	
Architectural Engineering Program	
Higher Institute of Engineering and Technology at Manzalla	
Manzulla Academy	
Institute's staff	
16 August 2025	
Institute Council No. (12) on 16 August 2025	
	Compulsory Third Architectural Eng Higher Institute of Engine Manualla Institute 16 Augu

2. Course Overview (Brief summary of scientific content)

The training includes the student's attendance at the institute during the summer field training period, where they will be trained on Autodesk Revit, Rhinoceros, Grasshopper, or Lumion. The aim is to enhance their skills in digital design, parametric modeling, and visual simulation, which will help them produce advanced architectural designs and analyze the environmental and spatial performance of projects

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Practical Training Course specification 2025-2026

Ministry of Higher Education Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Practical Training Course Specification



Program Outcomes (NARS/ARS) (according to the matrix in the program spees)		Course Learning Outcomes Upon completion of the course, the student will be able to:			
Code	Text	Code	Text		
A6,	Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements.	CL04	Communicate architectural ideas clearly and professionally through 3D models, rendered images, animations, and real-time simulations		
A9.	Use creative, innovative, and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations.	CLOS	Work collaboratively in multidisciplinary teams to create integrated parametric designs and visualizations using Revit, Rhino, Grasshopper, and Lumion.		
В1.	Create architectural, urban and planning designs that satisfy both aesthetic and technical requirements, using adequate knowledge of: history	CLOI	Create detailed 3D architectural models using Autodesk Revit, including floor plans, elevations, sections, and schedules.		
DI.	and theory, related fine arts, local culture and heritage, technologies and human sciences.	CLO3	Apply advanced rendering techniques, material mapping, and environmental effects to produce professional-quality architectural presentations.		
В5.	Prepare design project briefs and documents, and understand the context of the architect in the construction industry, including the architect's role in the processes of bidding, procurement of architectural services and building production.	CL02	Use Grasshopper to create complex geometric forms, generative designs, and algorithm-driven solutions for architectural challenges.		

4. Teaching and Learning Methods

Ø	Face to face lecture	☐ Site visit
	Online education	⊠ Self-learning
Ø	Exercise	□ Presentation

Practical Training Course specification 2025-2026

Ministry of Higher Education Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Practical Training Course Specification



□ Group discussion	☐ Mini project
☐ Laboratory	Research and reporting (self-learning)
	□ Brainstorming

Course Schedule

	S. d. and B. and A. and		Expected	number of t	he Learning Ho	urs
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical truching (lectures/discu ssion groups/)	Training (Practical /Clinical/)	Self- learning (Tustes/ Assignments / Projects/)	Other (to be determ ned)
1	Digital design using Autodesk Revit	12		1961	3	
2	Parametric modeling using Rhinoceros and Grasshopper	12			4	
3	Visual simulation using Lumion	12			3	
4	Integration of BIM, Parametric Design, and Visualization Workflows	12			2	
Total		48	otal hours			

5. Methods of students' assessment

No	Assessment Methods	Weeks	Percentage of Total Course Marks
1.	Report	Add 1	30%
2.	Mini-Project Assignment	140	
3.	Discussion	**	40%

Practical Training Course specification 2025-2026

Ministry of Higher Education Higher Institute of Engineering and Technology at Manzalia Established by Ministerial Resolution No. (2354) of 2019 Practical Training Course Specification



4. Institution's Assessment	+	30%
Total	10	0%

6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Yakhou, L., & Dorst, K. (2023). Digital architectural design: Integrating BIM parametric modeling, and real-time visualization (2nd ed.). Routledge.
Learning resources (books,	Other References	Digital Architectural Design: Integrating BIM, Parametric Modeling and Real-Time Visualization
scientific references, etc.) *	Electronic Sources (Links must be added)	https://www.antodesk.com/sulutions/bim/resourc es/interoperability-between-bim-and- visualization-tools https://www.grasshopper3d.com
	Learning Platforms (Links must be added)	1112 1112 1112
	Other (to be mentioned)	
Supportive	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
facilities & cquipment	Supplies	Whiteboards and smart boards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching and	Skill Labs/Simulators	-
learning *	Virtual Labs	-
	Other (to be mentioned)	

Ministry of Higher Education Higher Institute of Engineering and Technology at Manzalfa Established by Ministerial Resolution No. (2354) of 2019 Practical Training Course Specification



7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Hrs	Course Learning outcomes "CLO's"				
10000	3.000.5		CLO1	CLO2	CL03	CL04	CLO5
1	Digital design using Autodesk Revit	12	Х				Х
2	Parametric modeling using Rhinoceros and Grasshopper	12		X			X
3	Visual simulation using Lumion	12			Х	Х	
4	Integration of BIM, Parametric Design, and Visualization Workflows	12				Х	х
Total		48 to	tal hour	5			

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning	Course Learning outcomes "CLO's"					
Methods	CLO1	CLO2	CLO3	CL04	CLOS	
Face to face lecture	X	X	X	X	X	
Exercise		X		X		
Group discussion	X		X		X	
Self-Learning						
Presentation	X			X		
Research and reporting		X		X		

7.3. Student assessment matrix with CLOst

Assessment Methods	Course Learning outcomes "CLO's"						
	CL01	CLO2	CLO3	CLO4	CLO5		
Oral Discussion	X	X	X	X	X		
Research assignments			X				
In-class Question		X		X			

Course coordinator:

Practical Training Course specification 2025-2026

Ministry of Higher Education Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Practical Training Course Specification



Name	Signature	Academic Year
Institute's staff	smar elso yoh	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	()	2025-2026

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2334) of 2019





1. Basic Information:

Course Title (according to th	ie byław)	Execu	tive designs (3)			
Course Code (according to the	he bylaw)	ARE 411 Architectural Engineering Department				
Department/s participating is course	offering the					
Number of credit hours/poin	ts of the course (as	ccording to the bylaw)				
Lecture	Tutorial	/ Laboratory	Total contact			
1		4	5			
Course Type		□ Compulsory	Cl Elective			
Academic level at which the	course is taught	Fourth year				
Academic Program		Architectural Engineering Department				
Faculty/Institute		Higher Institute of Engineering and Technology Manzalla				
University/Academy		Manzalla Academy				
Name of Course Coordinator		Dr. Lamina Gamal				
Course Specification Approv	al Date	16	August 2025			
Course Specification Approv	at	Institute Council	No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

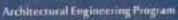
Preparation of a complete group of executive architectural design drawing for a project with specific function, characterized with wide span- making studies and detailed architectural drawings of cladding (internal and external), suspended ceilings, acoustical treatments, damp and water proofing, thermal insulation, lighting, furniture, technical facilities and supplements- legislations and building codes- use of computer programs in calculating and preparing the quantitative preconditions

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	rogram Outcomes (NARS/ARS) ing to the matrix in the program speed)	Upono	Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
A3	Apply engineering design processes to produce cost-effective solutions that meet specified needs with		Create an integrated set of executive designs and executive drawings for a specialized project that contains a long span.

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019





	rogram Outcomes (NARS/ARS) ing to the matrix in the program special	Upon c	Course Learning Outcomes completion of the course, the student will be able to:				
Code	ode Text				de Text Code		Text
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.			Apply detailed drawings for cladding, binding and ceiling works				
A9	Use creative, innovative, and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations.	CL04	Draw Build standards and conventions to produce clear, concise drawings.				
	Produce designs that meet building users' requirements through understanding the relationship between people and buildings, and		Apply building codes and regulations to their designs.				
82	between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale.	CLO6	Devise their drawings with other disciplines, such as structural engineering and mechanical electrical, and plumbing (MEP) engineering.				
В3	Generate ecologically responsible environmental conservation and rehabilitation designs through understanding of: structural design, construction, technology and engineering problems associated with building designs.	CLO5	Design building components and systems in detail, taking into account factors such as structural integrity, performance, and constructability.				

4. Teaching and Learning Methods

- Face to face lecture
- □ Online education
- ☑ Tutorial / Exercise
- □ Group discussion
- El Laboratory



- Self-learning
 - Presentation
 - ☐ Mini project
 - Research and reporting (self-learning)
- ☑ Brainstorming

Course Schedule

Course specification 2025-2026



Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019



Architectural Engineering Program

= 16			Expecto	d number of t	he Learning Hou	17%
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discus slon groups/)	Training (Practical/ Clinical/)	Self- learning (Tasks/ Assignments / Projects/	Other the be determined)
1-3	Introduction on how to prepare a complete group of executive architectural design drawings for a project with a specific function characterized with wide span	21	3	12	6	
4-7	making studies and detailed architectural drawings of cludding (internal and external) suspended ceilings.	28	4	16	8	
8		Mic	Term Exam			
9-11	Studying acoustic treatments, damp and water proofing, thermal insulation, lighting, furniture, technical facilities and supplements	24	3	12	9	
12	Applying legislation and building codes	8	1	4	3	
13-14	Use of computer programs in calculating and preparing the quantitative preconditions.	16	2	8	6	
15	Final submission of the project	8	1	- 14	3	
16		1	inul Exnns			

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	REPUT	7.5%
2.	Mid-Term Examination	8	22.5	15%
3.	Final Examination	16 (As Schedule)	60	40%
4.	Lab Exam	-	540	9%

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architectural Engineering Program



	The state of the s			
5.	Activities and assignments	Every week	41.5	27.5%
6.	Final Oral Exam (if exists)	(As Schedule)	4.5	47,570
	erning Resources and Supporting	100000000000000000000000000000000000000	15	10%

6. Learning Resources and Supportive Facilities

Learning resources (books, scientific references, etc.)	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Ching, F. D. (2020). Building construction illustrated. John Wiley & Sons.
	Other References	Lecture material and sheets.
	Electronic Sources (Links must be added)	AutoCAD - Revit. https://www.autodesk.com/
	Learning Platforms (Links must be added)	https://ims.manzalaacademy.edu.eg/
	Other (to be mentioned)	Imani, S. (2020). Low Power Analog Techniques for Wearable Biosensors. University of California, San Diego.
Supportive		
facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment	Supplies	Whiteboards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/ Simulators	AutoCAD, Pavit, Ph.
and	Virtual Labs	AutoCAD- Revit - Photoshop.
Coorse Matri	Other (to be mentioned)	

7.1. Course contents Matrix with CLOs:

Week	Topics	Lec	T/L	CO.C	ourse I	earning o	arning outcomes "CLOs"			
1-3	Introduction on how to prepare a complete group of executive architectural design drawings for a project with a specific function characterized with wide span	3	12	X.	CLOZ	CLOS	CL04	CL05	CLO	
4-7	making studies and detailed architectural drawings of cladding	4	16		x	x			-	

Higher Institute of Engineering and Technology at Mancalla Established by Ministerial Resolution No. (2354) of 2019

Architectural Engineering Program



_	Topics	Lec	T/L	- 0	ourse Le	carning o	outcome	"CLO	-11
	(internal and external) suspended ceilings.			CL01	CLO2	CLO3	CL04	CL05	CLC
8		_							
	Studying acoustic	-	Mid	Term Ex	am				_
9-11	treatments, damp and water proofing, thermal insulation, lighting, furniture, technical facilities and supplements	3	12				x		
12	Applying legislation and building codes	1	4			-	-	-	
3-14	Use of computer programs in calculating and preparing the quantitative preconditions	2	8		X			x	x
15	Final submission of the project	1	4		+	-	-	-	
16	hing and learning matrix wi	_	877	d Exam					x

Teaching and Learning Methods	Course Learning outcomes "CLO's"									
Face to face lecture	C1,01	Ct.O2	CLO3	CLO4	CLO5	cto				
The state of the s			X	11/21	-0-95/8/10	CLO				
Tutorial / Exercise			A	X	X	X				
Group discussion		X	X	X	X	X				
	X	X			-	^				
Laboratory	X									
Self-Learning	-			X						
Presentation		x I								
Research and reporting	1	A .	1			X				
Irainstorming	(8)		187	X						
A. Student assessment matrix with CLO	100	8 V	X	X	X	X				

Assessment Methods	414-202	Course	Learnin	goutcome	s "CLOs"	
Final written exam	CEOT	CLO2	CLO3	CLO4	CLO5	CLO
Oral exam			X	X	X	V
	X		X			

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architectural Engineering Program



Assessment Methods		Course	Learning	outcome	s "CLOs"	_
Mid-term Exam	CL01	CLO2	CLO3	CLO4	CLO5	CLO
The state of the s	X	X	x			CLO
Quizzes		x	x		-	_
Research assignments				A	X	
In-class questions (formative assessment)			v			
Project assignments			-	A	X	
Course coordinator:						X

Name	Signature	Academic Year	
Dr. Lamina Gamal	10000	2025-2026	
Program coordinator:	Comoco	I SAN HASANITAN	

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	(3)	Make William
	133	2025-2026

Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019





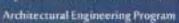
1. Basic Information:

Course Title (according to the bylaw)	An	Architectural designs (7)			
Course Code (according to the bylaw)		ARE 412			
Department/s participating in offering the	course Architecto	ural Engineering Department			
Number of credit hours/points of the cour	se (according to the bylaw)				
Lecture	Tutorial / Laboratory	Total contact			
1	5	6			
Course Type	⊠ Compulsory	☐ Elective			
Academic level at which the course is tau	ght	Fourth year			
Academic Program	Architectu	Architectural Engineering Department			
Faculty/Institute	Higher Institute	of Engineering and Technology at Manzalla			
University/Academy		Manzalla Academy			
Name of Course Coordinator		Dr. Alaa Morgan			
Course Specification Approval Date	A POLICE AND A POL	16 August 2025			
Course Specification Approval	Institute Cour	ncil No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Application of knowledge and skills of the professional, technical, architectural, structural, and technological sciences in the architectural and urban design processes for applicable projects - using architectural modeling as a design aid- discussion of design alternatives and solutions of the same problem- study, analysis, and criticism of the alternatives- studies of the environmental strategy applied to the architectural and urban projects.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	rogram Outcomes (NARS/ARS) ling to the matrix in the program speca)	Upon	Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
A5	Practice research techniques and methods of investigation as an inherent part of Jearning.	CLO7	Design students for professional practice by requiring them to complete a project that meets the highest standards of excellence.
BI	Create architectural, urban and planning designs that satisfy both aesthetic and technical requirements, using adequate knowledge of: history and theory, related fine arts, local culture and heritage, technologies and human sciences.	CL.01	Develop students' ability to design complex and innovative architectural solutions.
	Produce designs that meet building users' requirements through	CLO3	Restate students' ability to think critically and reflectively about their design work.
B2	understanding the relationship between people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale.	CLO5	Apply communicates original and innovative architectural design solutions that reapond to complex social, environmental, and technological challenges.
	Generate ecologically responsible	CLO6	
В3	environmental conservation and rehabilitation designs through understanding of: structural design, construction, technology and engineering problems associated with building designs.	C. C.	Critique the social, environmental, and aesthetic larpaces of their designs.
	Prepare design project briefs and documents and understand the		Establish students' technical skills in architectural drawing, modeling, and construction.
B5	context of the architect in the construction industry, including the architect's role in the processes of bidding, procurement of architectural services and building production.	CLO4	Identify the problem of environment and how to overcome it.

4. Teaching and Learning Methods

- □ Face to face lecture
- ☐ Online education
- Tutorial / Exercise
- ☑ Group discussion

- Site visit
- ⊠ Self-learning
 - □ Presentation
 - ☐ Mini project

Course specification 2025-2026

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Architectural Engineering Program



□ Laboratory

⊠ Research and reporting (self-learning)

⊠ Brainstorming

Course Schedule

			Expecto	d number of t	he Learning Hoo	ICI:
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determine ed)
1-3	Discussing issues and subjects of advanced architectural design trends	24	3	15	6	
4-7	studying design principles and constraints of the advanced trends	32	4	20	8	
8		Mi	d Term Exam			
9-11	Case studies covering the advanced trends.	27	3.	15	9	
12	Applying legislation and building codes in the project	9	1	5	3	
13	Use of computer programs for preparing the	9	T.	5	3	
14-15	Final submission of the project	18	2	10	6	
16		I	inal Exam			

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
L	Quizzes	6.11	14	7.71 %
2.	Mid-Term Examination	1700 A.S	27	15.43%
3.	Final Examination	16 (As Schedule)	70	40%
4.	Lab Exam	THE TANK LIFE	9/#	%
5.	Activities and assignments	Every week	49	28.29%
6,	Final Oral Exam (if exists)	(As Schedule)	15	8.57%

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6. Learning Resources and Supportive Facilities

Learning	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	 Neufert, E., & Neufert, P. (2012). Architects' data. John Wiley & Sons. د أحمد صلاح التين عوف، مقتمة في التصميم العمر الي . م مطبعة الزهراء، القاهرة، مصر ، ۲۰۰۱م. د فاروق عباس جينر – م عمر فاروق جينز، التصميم المعماري، منشأة المغارف، الاسكندرية، مصر ، ۲۰۱۶م. 		
resources (books, scientific	Other References	Lecture material and sheets. در طارق فاروق أبو عوف، تحليل الموقع، مؤسسة سكاي للكتاب والتشر والتوزيع، القاهرة، مصر، ٢٠١٤م		
references, etc.)	Electronic Sources (Links must be added)	https://www.autodesk.com/ AutoCAD- Revit		
	Learning Platforms (Links must be added)	https://lms.manzalancademy.edu.eg/		
	Other (to be mentioned)	موقع الهربة العامة الثانمية السيامية على شبكة الإنترنت مجلة عالم البناء - مجلة تصحيم		
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.		
equipment	Supplies	Whiteboards.		
for	Electronic Programs	Microsoft Office program - Acrobat Reader		
teaching	Skill Labs/ Simulators	AntoCAD- Revit - Photoshop		
and	Virtual Labs			
learning	Other (to be mentioned)	\$400g 3007		

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Lecture	17/1.		Cor	ree Loire	ing outco	mes "CL	Os"	
W-CCK.	Topics	Lecture	- ErL	CLOI	CLO2	Cl.03	CLO4	CLO5.	CLO6	CLO7
1-3	Discussing issues and subjects of advanced architectural design trends	3	15	х						
4-7	studying design principles and constraints of the advanced trends	4	20			Х				
8			N	tid Tenn	Exam					
8-11	Case studies covering the advanced trends,	3	15					Х	X	
12	Applying legislation and building codes in the project	1	5				х	X		
13	Use of computer programs for preparing the project	.1	5		х					
14-15	Final submission of the project	2	10							X
16			i	Final E	xam					

7.2. Tenching and learning matrix with CLOs

	Course-Exarming outcomes "CLO's"							
Teaching and Learning Methods	CLOI	CLO2	CL03	CLO4	CLO5	CLO6	CLO	
Face to face lecture	X	x	145	KA	X	x		
Tutorial / Exercise		x	X/	//x	X	x	X	
Group discussion	x	1						
Site visit	x							
Self-Learning								
• Presentation	x	x					X	
Research and reporting	х	x		x				
Brainstorming			x	x	X	x		
Case study	x		x					

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7.3. Student assessment matrix with CLOs:

Assessment Methods	Course learning outcomes "CLOs"								
	CLOI	CLO2	CLO3	CLO4	CL05	CLO6	CL07		
Final written exam			x	x	x	x			
Oral exam			х			x			
Mid-term Exam	x	x	х						
Quizzes		x	x	x	х				
Research assignments	x	х					_		
In-class questions (formative assessment)			х	x	X				
Project assignments							X		

Course coordinator:

Name	Signature	Academic Year	
Dr. Alaa Morgan	JASA	2025-2026	
Program coordinator:	100000		

Program coordinator:

Name	Signature	Academic Year	
Prof. Dr. Tarek Abu Auf	£./	2025-2026	

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1. Basic Information:

Course Title (according to the bylaw)	History & Theories of Architecture (4)		
Course Code (according to the bylaw)		ARE 413		
Department/s participating in offering the course		Architectural Engineering Department		
Number of credit hours/points of the	course (according	g to the bylaw)	- garanag corporation	
Lecture	A CONTRACTOR OF THE CONTRACTOR		Total contact	
3			3	
Course Type		図 Compulsory	□ Elective	
Academic level at which the course is	tnoght	Fourth year		
Academic Program		Architectural Engineering Department		
Faculty/Institute		Higher Institute of E	ingineering and Technology at Manzalla	
University/Academy		Manzalla Academy		
Name of Course Coordinator		Dr. Marwa El-Adham		
Course Specification Approval Date		16 August 2025		
Course Specification Approval		Institute Council No. (12) on 16 August 2025		

2. Course Overview (Brief summary of scientific content)

Study of architectural theories and constraints of public buildings; institutional, governmental, educational, cultural (museums- exhibitions-theaters-chiemas), healthcare, and touristic- study of the design philosophy of intelligent buildings and recent projects with advanced techniques.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Upon	Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
Α4	Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety	CLO3	Apply critical thinking and analytical skills to the evaluation of architectural theories and practices.
	requirements, environmental issues, and risk management principles.	CL04	Develop their own perspectives on the built environment.
A5	Practice research techniques and methods of investigation as an inherent part of learning.	CLO2	Analyze architectural works in terms of their historical, theoretical, and cultural contexts.
	Create architectural, urban and planning designs that satisfy both	CLO1	Reorganize the history of architecture from the 20th century to the present day.
81	aesthetic and technical requirements, using adequate knowledge of: history	C1.O5	Apply their ideas about architecture effectively in writing and speech.
	and theory, related fine arts, local culture and heritage, technologies and human sciences.		Develop their own architectural thinking and prepare for a career in architecture.

4. Teaching and Learning Methods

- Face to face lecture
- ☐ Online education
- ⊠ Tutorial / Exercise
- □ Group discussion
- ☐ Laboratory

⊠ Site visit

- 図 Self-learning
 - Bl Presentation
 - Mini project
 - Research and reporting (self-learning)
- Brainstorming
 □

Course Schedule

			Expecte	d number of t	he Learning Hou	ers :
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (bectures/discus sion groups/	Training (Practical/ Clinical/)	Self-learning (Tusks/ Assignments / Projects/)	Other (to be determin ed)
1-3	Medieval architecture in the West and the Islamic world	12	9	*	3	

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			Expects	d number of t	he Learning Hos	iri.
No. of the Week	Scientific content of the course Total (Course Topics) Weekly Hours		Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determin ed)
4-7	An analytical study of the factors affecting architectural design (economic, functional, aocial, humanitarian, psychological and environmental)	16	12	34	4	
- 8		Mid	Term Exam			
9-11	Building materials technology and construction methods	12	9	×	3	
12-15	Studying architectural theories and design determinants for elements of private and public use – vertical distribution units – residential – administrative – commercial buildings.	12	9	8	3	
16		2 F	inal Exam		Name of	

5. Methods of students' assessment

	(Week Number)	Scores	Total Course Marks
Quizzes	6, 11	2	3%
Mid-Term Examination	8	7	9%
Final Examination	(As Schedule)	60	80%
Lab Exam	MSSA	2/24	%
Reports and assignments	Every week	6	8%
Final Oral Exam (if exists)	THE SHOULD	9/3-	%
	Mid-Term Examination Final Examination Lab Exam Reports and assignments	Mid-Term Examination 8 Final Examination (As Schedule) Lab Exam Reports and assignments Every week	Mid-Term Examination 8 7 Final Examination (As Schedule) 60 Lab Exam Reports and assignments Every week 6

6. Learning Resources and Supportive Facilifies

Learning resources (books, scientific references,	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Jencks, C. (1990). The new moderns from late to neo-modernism. (No Title).
etc.)	Other References	Lecture material and sheets.

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F'1	Electronic Sources (Links must be added)	
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	Jencks, C., & Nakamura, T. (1986). Charles Jencks. A+ U Publishing Company.
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment	Supplies	Whiteboards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/ Simulators	
and	Virtual Labs	
learning	Other (to be mentioned)	

^{7.} Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Lec	T/L		ourse Le	earning o	outcome	s "CLO	575
WEEK	The state of the s	Lec	1/4.	CLOI	CLO2	CLO3	CLO4	CLO5	CLO
1-3	Medieval architecture in the West and the Islamic world	9	5-5	X					
4-7	An analytical study of the factors affecting architectural design (economic, functional, social, humanitarian, psychological and environmental)	12	4	S. S	×	х			
8		III.	Mid	Torm E	sam.				
8-11	Building materials technology and construction methods	9			9	x	х		
12-15	Studying architectural theories and design determinants for elements of private and public use – vertical distribution units – residential – administrative – commercial buildings.	9	-					x	x
16			F	inal Exa	m				

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7.2. Teaching and learning matrix with CLOs:

Thomas and Foundation Market	Course Learning outcomes "CLO's"						
Teaching and Learning Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6	
Face to face lecture	X		X	X	X	X	
Tutorial / Exercise			X	X	X	X	
Group discussion	X	X			1		
Site visit			X				
Self-Learning							
Presentation	X	X				X	
Research and reporting	X	X		X			
Brainstorming		X	X	X	X	X	
Case study		X					

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course learning outcomes "CLOs"							
Assessment Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6		
Final written exam	X		X	X	x	X		
Mid-term Exam	X	x	x					
Quizzes		x	X	X.	x			
Research assignments	X	x				X		
In-class questions (formative assessment)			x	x	x			
Project assignments	1)]					X		

Course coordinator:

Name	Signature	Academic Year	
Dr. Marwa El-Adham	RANGE 3	2025-2026	

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	7	2025-2026

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L. Basic Information:

Course Title (according to the by)	nw)	Interior design ARE 414				
Course Code (according to the by	law)					
Department's participating in offe	ring the course	Architectural Engineering Department				
Number of credit hours/points of	the course (accord	ling to the bylaw)				
Lecture	Tutorial	/ Laboratory	Total contact			
2		2	4			
Course Type		58 Compulsory	□ Elective			
Academic level at which the cours	e is taught	Fourth year				
Academic Program		Architectural Engineering Program				
Faculty/Institute		Higher Institute of Engineering and Technology a Manzalla				
University/Academy		Manzalla Academy				
Name of Course Coordinator		Ass.Prof.Dr. Marwa Atef				
Course Specification Approval Du	tie	16 August 2025				
Course Specification Approval		Institute Council No. (12) on 16 August 2025				

2. Course Overview (Brief summary of scientific content)

Principal of design and shaping the interior design of public and private buildings-building interior components and technical systems: lighting- acoustics- industrial design and furniture- materials and tools- textures-finishing- aesthetics of architectural spaces- visual perception of spaces- reach erchers and applicable research- study of colors and their psychological effects- application of the color theory on the interior design of buildings

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	ogram Outcomes (NARS/ARS) ing to the matrix in the program spees)	Course Learning Outcomes Upon completion of the course, the student will be ab to:			
Code	Text	Code	Text		
A8	A8 Communicate effectively – graphically, verbally and in writing – with a range of		Discuss the principles of architectural design and how they apply to interior spaces.		
	audiences using contemporary tools.	CI,02	Select materials, finishes, and furniture for interior spaces.		
	Produce designs that meet building users' requirements through understanding the relationship between	CLO3	Use CAD and other computer-aided design software to create and present interior design drawings.		
B2	people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale.		Identify and comply with building codes and regulations.		
	Transform design concepts into buildings and integrate plans into overall planning within the constraints of project financing, project management, cost control and methods of project delivery; while having adequate knowledge of industries, organizations, regulations and procedures involved.	CLO5	Discuss with other professionals, such as architects, contractors, and engineers, to complete interior design projects.		
В4		CLO6	Create functional and aesthetic interior spaces that meet the needs of users.		
	Prepare design project briefs and documents and understand the	CLO7	Identify furniture and accessories that complement the overall design of an interior space.		
B5 architect's role in the processes of bidding, procurement of architectural services and building production.	CLOS	Present their design ideas effectively.			

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4. Teaching and Learning Methods

- Face to face lecture
- ☐ Online education
- □ Totorial / Exercise
- □ Laboratory

- Site visit
- Self-learning
 - □ Presentation
 - ☐ Mini project
 - Research and reporting (self-learning)
- □ Brainstorming

Course Schedule

7740	Scientific content of the		Espe	ected number of the La	raming Hours	
No. of the Week	course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined
1-2	Introduction about principal of design and shaping the interior design	12	4	4	4	
3	Building interior components and technical systems	6	2	2	2	
4	Industrial design and furniture- materials	6	2	2	2	
5-7	Aesthetics of architectural spaces-visual perception of spaces	18	6	6	6	
8			Mid Term Ex	am		
9	Research and applicable research of lighting	6	2	2	2	
10	Study of colors and their psychological effects	6	2	2	2	
11-	Application of the color theory on the interior design of buildings.	12	4	4	4	
13-	Use of computer programs in calculating and preparing the quantitative preconditions	12	4	4	4	
15	Final submission of the project	6	2	2	2	
16			Final Exam	-		

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5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	4.5	4.5%
2.	Mid-Term Examination	8	9	9%
3.	Final Examination	(As Schedule)	60	60%
4.	Lab Exam	**	34	9%
5.	Activities and assignments	Every week	16.5	16.5%
6.	Final Oral Exam (if exists)	(As Schedule)	10	10%

6. Learning Resources and Supportive Facilities

Learning resources	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Jencks, Charles. The New Moderns: From Late to Neo-modernism. 1st edition: Rizzoli, 1990,
(hooks, scientific references, etc.)	Other References	Lecture material and sheets.
	Electronic Sources (Links must be added)	https://www.antodesk.com/
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	Jeneks, Charles. Current Architecture. 1st edition: Academy Editions Ltd, 1982.
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment	Supplies	Whiteboards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/ Simulators	- Paganina resistant recenter
and	Virtual Labs	**
learning	Other (to be mentioned)	

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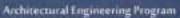


7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Weel	k Topics	Lec	T/L	-	Cor	rse Le	arning o	and some	w 0.00	e> 11	
1-2	Britan Britan		1000	CLO1	CLO2	CLOJ	CLON	CLO5	1.06	L07	
170.00	principal of design and shaping the interior design	4	4	х	X				1.570	LAT	CL
3	Building interior components and technical systems	2	2		x	x	x				
4	Industrial design and furniture- materials	2	2			x	x				
5-7	Aesthetics of architectural spaces- visual perception of spaces	6	6	x	x	x					
8				Mid	Term E	Territoria					
9	Research and applicable research of lighting	2	2		Tenn E	X	x		T		
10	Study of colors and their psychological effects	2	2		x					x	
1-12	Application of the color theory on the interior design of buildings.	4	4	x				x	x		
	Use of computer programs in calculating and preparing the quantitative preconditions.	4	4			х			x	x	X
15	Final submission of the project	2	2					x	+	x	X
6				800	al Exam						1

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7.2. Teaching and learning matrix with CLOs:

Teaching and Learning	Course Learning outcomes "CLO's"								
Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7	CLO8	
Face to face lecture	X	X	X	X	X	X	X	X	
Tutorial / Exercise		X	X	X	X	X			
Group discussion	X	X							
Site visit	X								
Self-Learning									
• Presentation	Х	X				X			
Research and reporting	X	X		X					
Brainstorming			X	X	X	X	X	X	

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLOs"									
	CL01	CL/02	CLO3	CLO4	CLO5	CLO 6	CLO 7	CLO 8		
Final written exam			X	X	X	X	X	X		
Oral exam	X				X	X	X			
Mid-term Exam	X	X	X							
Quizzes		X	X	X	X			X		
Research assignments	X	X				X				
In-class questions (formative assessment)			Х	х	X		X			
Project assignments		X				X	X	X		

Course coordinator;

Name	Signature	Academic Year	
Ass.Prof.Dr. Marwa Atel	Charlo	2025-2026	

Program coordinator:

Name	Signature	Academic Year	
Prof. Dr. Tarek Abu Auf	F	2025-2026	

Course specification 2025-2026

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1. Basic Information:

Course Title (according to the bylaw)		Urban Planning (2) ARE 415 Architectural Engineering Department			
Course Code (according to the bylaw)					
Department's participating in offering the	e course				
Number of credit hours/points of the cou	rse (accordin	g to the bylaw)			
Lecture Tutorial /		aboratory	Total contact		
2	- 3	R	:5		
Course Type		ISI Compulsory	☐ Elective		
Academic level at which the course is tax	ight	Fourth year			
Academic Program		Architectural Engineering Department			
Faculty/Institute		Higher Institute of Engineering and Technology Manzalla			
University/Academy		Manzalla Academy			
Name of Course Coordinator		Dr. Alaa Morgan			
Course Specification Approval Date		16 August 2025			
Course Specification Approval		Institute Council No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Landscaping and site/arrangements- analytical study of site characteristics and its r urban³ Database-social, economical, and cultural database- detailed study of the city's transportation network-numerical analysis of functional relationships within the site-applicable project in one of the old or new cities.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Pr (acco	Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
Apply engineering design processes to produce cost-effective solutions		CLO3	Develop students' skills in urban planning analysis and design.
A3	A3 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.		Presenting students how to collect and analyze data, develop and evaluate planning alternatives, and communicate their planning ideas effectively.
	Create architectural, urban and planning designs that satisfy both aesthetic and technical requirements.		Evaluate students' knowledge and understanding of urban planning theories and practices.
181	B1 using adequate knowledge of: history and theory, related fine arts, local culture and heritage, technologies and human sciences.	CLO7	Create detailed models of students' projects using computer programs to demonstrate urban factors that affect planning the built environment.
	Transform design concepts into buildings and integrate plans into	CLO2	Use urban land planning, transportation planning, environmental planning, and economic development planning.
	overall planning within the constraints of project financing.	CLO4	Identify the problem of environment and how to overcome it.
B4	B4 project management, cost control and methods of project delivery; while having adequate knowledge of industries, organizations, regulations and procedures involved.		Apply their knowledge and skills to real-world urban planning problems and challenges.

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4. Teaching and Learning Methods

□ Face to face lecture

□ Online education

☑ Tutorial / Exercise

S Group discussion

□ Laboratory

M Site visit

⊠ Self-learning

☑ Presentation

Mini project

⊠ Research and reporting (self-learning)

□ Brainstorming

Course Schedule:

201			Expected	number of t	he Learning Hours		
No. of the Wee k	Scientific content of the course (Course Topics)	7 28	Theoretical teaching (lectures/disc ussion groups/)	Training (Practical /Clinical/)	Self- learning (Tusks/ Assignment s/ Projects/)	Other (to be determined)	
1-2	Analytical study of site characteristics	14	4	6	4		
3-4	detailed study of the city's transportation network	14	4	6	4		
5-7	analytical study of site urban Database-social, economic, and cultural database	21	6	9	6		
8		Mid	Term Exam				
9	Numerical analysis of functional relationships within the site	7	2	3	2		
10-	Applicable project in one of the old or new cities.	28	8	12	8		
14- 15	Use computer applications in case studies and applications for the project	14	4	6	4		
16		Fi	nal Exam				

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	6	4%
2.	Mid-Term Examination	8	12	8%

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3.	Final Examination	(As Schedule)	100	66.67%
4.	Lab Exam	92		%
5.	Reports and assignments	Every week	22	14.66%
6.	Final Oral Exam (if exists)	(As Schedule)	10	6.67%

6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	د. أحمد خالد علام، تخطيط المدن، مكانية الإلجاو المصرية، القافرة، مصر ، ١٩٦٨م. د. حازم محمد إبرا فيم، محاضرات قسم التخطيط، كلية الهندسة، جامعة الازهر، القاهرة، مصر، ١٩٨١م. د. عاطف حمرة حسن، تخطيط التجمعات العمر الية المسغيرة، القاهرة، مصر، ١٤٠٤م			
Learning resources (books, scientific references, etc.)	Other References	Lecture material and sheets. John Glasson & Tim MArshall., (2007) Regional Planning, W. W. Norton & Company, New York, London Lynch, K., (1981), A Theory of Good City Form, The MIT Press			
	Electronic Sources (Links must be added)	AutoCAD- 3dsMax - Photoshop. https://www.autodesk.com/			
110	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/			
	Other (to be mentioned)	موقع الهيئة العامة للتخطيط العمراني على شبكة الإنترات موقع وزارة الإكان والمرافق والمجتمعات العمرانية الجنيدة على شبكة الإنترات موقع هيئة المجتمعات العمرانية الجديدة على شبكة الإنترات			
200000000000000000000000000000000000000					
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.			
equipment	Supplies	Whiteboards.			
for	Electronic Programs	Microsoft Office program, Acrobat Reader			
teaching	Skill Labs/ Simulators	AutoCAD- 3dsMax - Photoshop.			
and	Virtual Labs				
learning	Other (to be mentioned)				

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Plate.	Lee	T/L			Learning	outcom	es "LOs"	1	
WEEK.	Topics	Lec	Torr	CLO1	01 CLO2 CLO3	CLO4	CLO5	CLO6	CLO?	
1-2	Analytical study of site characteristics	4	6	X		X				
3-4	detailed study of the city's transportation network	4	6		x					
5-7	analytical study of site urban Database-social, economical, and cultural database	6	9			x	x			
.8		Mid Term Exam								
9	Numerical analysis of functional relationships within the site	2	3				X			
10-13	Applicable project in one of the old or new cities.	8	12					x	x	
14-15	Use computer applications in case studies and applications for the project	:4:	6							x
16				Fin	al Exam					

7.2. Teaching and learning matrix with CLOs:

Total Control of Control of Markets	Course Learning outcomes "CLO's"							
Teaching and Learning Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6	CEO?	
Face to face lecture	X	x	x	x	x			
Tutorial / Exercise	x			x	x	X	X	
Group discussion	x	X		X	х	X		
Site visit	x	x	x					
Self-Learning								
• Presentation	X	X					X	
Mini-project					x	X	X	
Research and reporting	x	х	X			X		
Brain storming			x	x	x			

7.3. Student assessment matrix with CLOs:



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Assessment Methods	Course Learning outcomes "CLOs"							
	LO1	LO2	LO3	LO4	LO5	LO6	LO	
Final written exam	x	x	x	x	x	x	X	
Oral exam	x				x	x		
Mid-term Exam	x	x	x	x			П	
Quizzes	x	x		x		x		
Research assignments	x			x	x	x	X	
In-class questions (formative assessment)	x	x	x					
Project assignments			x		x	x	X	

Course coordinator:

Name	Signature	Academic Year	
Dr. Alna Morgan	dNILON!	2025-2026	

Program coordinator;

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	A ST	2025-2026

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1. Basic Information:

Course Title (according to the bylaw)		Housing and urban design (2) ARE 421 Architecture Engineering Department				
Course Code (according to the bylaw)						
Department's participating in offering t	he course					
Number of credit hours/points of the co	ourse (secord	ing to the bylaw)				
Lecture	Tutorial	/ Laboratory	Total contact			
2.		4.	6			
Course Type		☑ Compulsory	□ Elective			
Academic level at which the course is t	aught	Fourth year				
Academic Program		Architecture Engineering Department				
Faculty/institute		Higher Institute of Engineering and Technology a Manzalla				
University/Academy		Manzalla Academy				
Name of Course Coordinator		Dr. Alaa Morgan				
Course Specification Approval Date		16 August 2025				
Course Specification Approval		Institute Council No. (12) on 16 August 2025				

2. Course Overview (Brief summary of scientific content)

Principals and theories of land use- residential, commercial, and industrial areas-open areas- green areas in city centers- transportation network and paths-services and feasibilities-Defining the housing problem in developing countries-the variety of approaches and trends dealing with the housing problem- social, cultural, and economical factors- user participation and role in the study phase and problem solving- composite planning and housing project with surveying and assessment of planning and housing problems of an existent area- redesign and planning of the existent area and making use of the results in planning for a new area.

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3. Course Learning Outcomes CCLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program spees)		Upon completion of the course, the student will able to:		
Code	Text	Code	Text	
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.	Apply engineering design processes to	CL01	Evaluate different ideas of planning and designing housing projects.	
	produce cost-effective solutions that meet specified needs with consideration for	for site constraints and maximize site	Measure adequate knowledge to deal with site constraints and maximize site usage.	
	CLO6	Demonstrate the main social, cultural economic, and urban issues and problems that affect planning and designing housing projects.		
A7	Function efficiently as an individual and as a member of multi-disciplinary and multi-cultural teams.	CLO2	Evaluate different alternative solutions of housing issues	
	Produce designs that meet building users' requirements through understanding the relationship between people and buildings,	CL07	Reproduce plans and designs with accordance to laws and regulations governing housing projects.	
В2	B2 and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale.	CLO8	Apply knowledge acquired in planning and designing housing projects to plan and design different economic levels housing projects (low-income housing, high-income housing etc.).	
7/5/1	Transform design concepts into buildings and integrate plans into overall planning within the constraints of: project financing.	CLO3	Build up housing designs and plans that keep the urban identity and conserve the environment.	
B4	project management, cost control and methods of project delivery; while having adequate knowledge of industries, organizations, regulations and procedures involved.	CLO4	Integrate economic, social, cultural environmental, and urban aspects into housing projects.	

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4. Teaching and Learning Methods

☑ Face to face lecture	Site visit
☐ Online education	⊠ Self-learning
E Tutorial / Exercise	☑ Presentation
☑ Group discussion	

⊠ Research and reporting (self-learning)

□ Brainstorming

Course Schedule

☐ Laboratory

	Scientific content of the		Espe	ected number of the La	curning Hours	
No. of the Week	(Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/	Self-learning (Tarks/ Assignments/ Projects/)	Other Go be determined
1-2	Principals and theories of land use-residential, commercial, and industrial areas	16	4	8	4	
3-4	open areas- green areas in city centers transportation network and paths	16	4	8	4	
5-6-	services and feasibilities- Defining the housing problem in developing countries-the variety of approaches and trends dealing with the housing problem- social, cultural, and economical factors	24	6	12	6	
8			Mid:Term Ex	am		
9-8	user participation and role in the study phase and problem solving	16	4	8	4	
10- 11-	composite planning and housing project with	24	6	12	6	

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	Scientific content of the		Expe	carning Hours		
No. of the Week	(Course Toples)	Total Weekly Hours	Theoretical teaching (lectures/docussion groups/)	Training (Practical/Clinical/	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)
12	surveying and assessment of planning and housing problems of an existent area					
13- 14- 15	Redesign and planning of the existent area and making use of the results in planning for a new area.	24	6	12	6	
16			Final Exam			

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
L.	Quizzes	6, 11	9	6%
2.	Mid-Term Examination	8	18	12 %
3.	Final Examination	(As Schedule)	90	60 %
4.	Lab Exam	-	(fac)	
5.	Activities and assignments	Every week	33	22 %
6.	Final Oral Exam (if exists)	*	44	-

6. Learning Resources and Supportive Facilities

Learning	The main (essential) reference for	Levitt, David. The Housing Design Handbook: A
resources	the course	Guide to Good Practice. 2nd edition, Routledge,
(books, scientific	(must be written in full according to the scientific documentation	[8,8,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0

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references,	method)						
etc.)	Other References	Mira, R. G., Uzzell, D. L., Real, J. E., and Romay, J. (eds.). <i>Housing, Space and Quality</i> of Life. 1st edition, Routledge, 2017. Bahamam, Ali bin Salem. <i>Housing</i> . 1st edition, Dar Dekka, Kingdom of Saudi Arabia, 2018.					
	Electronic Sources	The Architecture Foundation – https://www.architecturefoundation.org.uk					
	(Links must be added)	Coursera — History of Architecture (https://www.coursem.org)					
250000	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/					
	Other (to be mentioned)	Altaie, A. A. H., and Udah, Z. R. K. The Spatial Analysis of Residential Density in Bahil Governorate Using Geographic Information Systems (GIS). 1st edition, International Development Planning Review Vol. 23, No. 1, 2024, pp. 572–587.					
Supportive	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.					
facilities &	Supplies	Whiteboards.					
for teaching	Electronic Programs	Microsoft Office program, Acrobat Reader					
	Skill Labs/ Simulators						
learning	Virtual Labs	(44)					
	Other (to be mentioned)						

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

***	Total	A continue	78778		Cour			outcom		A)28"	
Week	Topics	1.ecture	T/L	LOI	LO2		LO4	LO5	LO6	LO7	LO
1-2	Principals and theories of land use- residential, commercial, and industrial areas		8	x			x		x		
3-4	open areas- green areas in city centers transportation network and paths	4	8				x		x		x
5-7	services and feasibilities- Defining the housing problem in developing countries-the variety of approaches and trends dealing with the housing problem-social, cultural, and economical factors	6	12	x		x	x	x		x	
8				Mid To	erm Ex	am	100				
8-9	user participation and role in the study phase and problem solving	4 8				x		x			
10-12	composite planning and housing project with surveying and assessing of planning and housing problems of an existent area	4 8	x	x	2000	x		x			x

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13-15	Redesign and planning of the existent area and making use of the results in planning for a new area.	6	12	x	x	x	x	x
16				Final I	xam			

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning	Course Learning outcomes "CLO's"									
Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7	CLO8		
Face to face lecture	x	X	x							
Online education										
Tutorial / Exercise	x	x	x		x			x		
Group discussion		X			X	X		x		
Laboratory								x		
Site visit			x			X				
Self-Learning										
Presentation				X	X.		X	x		
Mini project		x	X							
Research and reporting	x				X			x		
Brain storming						x				
Case study		X	x	x	x		x	x		

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLO's"									
Assessment Areanous	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7	CLOS		
Final written exam		x	X	x	x		X	x		
Oral exam										
Mid-term Exam		x	X	x	x		x	x		
Quizzes			x							
Lab Exam										
Research assignments	x		x							
In-class questions (formative assessment)	x					x				
Project assignments	x	x	X	x			x	x		

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Course coordinator:

Name	Signature	Academic Year		
Dr. Alaa Morgan	CM 20(2025-2026		
Program coordinator:				
Name	Signature	Academic Year		
Prof. Dr. Tarek Abu Auf	13	2025-2026		

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I. Basic Information:

Course Title (according to the byla	w)	Specifications, quantities, and quality control			
Course Code (according to the byle	aw)	ARE 422			
Department's participating in offer	ing the course	Architecture	Engineering Department		
Number of credit hours/points of the	he course (accordin	g to the bylaw)			
Lecture	Tutorial /)	Laboratory	Total contact		
2	3	<u>y</u>	4		
Course Type		⊠ Compulsory	□ Elective		
Academic level at which the cours	e is taught	Fourth year			
Academic Program		Architecture Engineering Program			
Faculty/Institute		Higher Institute of Engineering and Technology Manzalla			
University/Academy		Manzalla Academy			
Name of Course Coordinator		Dr.Khaled Eltawel			
Course Specification Approval Du	te	16 August 2025			
Course Specification Approval		Institute Council	No. (12) on 16 August 2025		

2. Course Overview (Brief summary of scientific content)

Detailed specifications for building items- General and special conditions for a project-quantity and surveying methods- cost and bidding- contactor, client and consultant responsibilities- contract types bid analysis-project management (planning-scheduling-cash flow)-quality and quality control.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	Program Outcomes (NARS/ARS) ding to the matrix in the program spees)	Course Learning Outcomes Upon completion of the course, the student will be able to:			
Code	Text	Code	Text		
Al	Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.	CLOI	Define knowledge of the Quantities Estimating &Specifications to solve building problems.		
A10	Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.	CLO3	Illustrate the professional codes of practice and standards of Quantities Estimating & Specifications.		
	B4 Transform design concepts into buildings and integrate plans into overall planning within the constraints of project financing, project management, cost control and methods of project delivery; while having adequate knowledge of industries, organizations, regulations and procedures involved.	CLO2	Use appropriate construction techniques and materials to specify and implement different designs.		
B4		CLO4	Review the labor powerful economic sectors.		
Prepare design project briefs and documents and understand the context of		CLO5	Sketch the pre-feasibility study of projects and identify economic and static's tools for projects.		
В5	the architect in the construction industry, including the architect's role in the processes of bidding, procurement of architectural services and building production.	CLO6	Present technical reports about Quantities Estimating & Specifications.		

4. Teaching and Learning Methods

- S Face to face lecture
- ☐ Online education
- ⊠ Tutorial / Exercise
- M Group discussion
- □ Laboratory

- Site visit
- ⊠ Self-learning
- Mini project
- ⊠ Research and reporting (self-learning)
- ☑ Brainstorming



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Course Schedule

			Expected number of the Learning Hours				
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Scif-learning (Tusks/ Assignments / Projects/)	Other (to be determin ed)	
1-4	Detailed specifications for building items	24	8	8	8		
5-7	General and special conditions for a project	18	6	6	6		
8		Mid T	erm Exam				
9-10	Quantity and surveying methods- cost and bidding - contactor, client and consultant responsibilities	12	4	4	4		
-11 15	Contract types -bid analysis - project management (planning-scheduling- cash flow)-quality and quality control.	30	10	10	10		
16		Fin	al Exam	"			

5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	4.5	4.5 %
2.	Mid-Term Examination	8	13.5	9 %
3.	Final Examination	(As Schedule)	70	70 %
4.	Lab Exam	4-	-	
5.	Activities and assignments	Every week	12	16.5 %
6.	Final Oral Exam (if exists)			-

6. Learning Resources and Supportive Facilities

Learning resources (hooks, scientific references, etc.) The main (essential) reference for the course (must be written in full according to the scientific documentation method) Other References	Cartidge, Duncan. Quantity Surveyor's Pocket Book. 3rd edition, Routledge, 2017.		
	Other References	Schwalbe, Kathy, Introduction to Project Management, 3rd edition, Course Technology Cengage Learning,	

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		Boston, 2009. 2. Elkasaby, Elsayed Abdelfintah. Quantity Surveying. 1st edition, House of Scientific Books, 1993.
	(Links must be added)	
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	Al-Hallaq, S., and Al-Ajlouni, M. Economic Feasibility Study and Project Evaluation. 1st edition, Dar Al-Yazuri Scientific, Ammun, 2010.
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment	Supplies	Whiteboards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/ Simulators	-
and	Virtual Labs	-
learning	Other (to be mentioned)	

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Lecture	T/L	CLOs					
	- Contract		0.770	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
1-4	Detailed specifications for building items	8	н	x	x			x	
5+7	General and special conditions for a project	4	4			x		x	x
8			Mid	Term Ex	am				
9-10	Quantity and surveying methods- cost and bidding - contactor, client and consultant responsibilities	6	6		x	x	x		x
11 - 15	Contract types -bid analysis - project management (planning-scheduling-cash flow)-quality and quality control.	10	10	x	x	x	x		
16	Final Exam								

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7.2. Teaching and learning matrix with CLOs:

Teaching and Learning	Learning outcomes "CLOs"						
Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	
Face to face lecture	X	X	x				
Online education						X	
Tutorial / Exercise	X.	X	x	x	x		
Group discussion					x		
Luberatory						X	
Self-Learning							
Mini project	X			X	x	X	
Research and reporting		X	X				
Brainstorming						X	
Case study					x		

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLO's"							
ASSESSMENT STEEROUS	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6		
Final written exam	X	x	x	X	X			
Mid-term Exam	X	x	X					
Quizzes	x	x		x	x	x		
Research assignments				x		X		
In-class questions (formative assessment)	x				x	x		
Project assignments	x	x	x	X	x			

Course coordinator:

Name	bl Signature	Academic Year
Dr.Khaled Eltawel	1/3/9/6/	2025-2026
Program coordinator:	1	

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	100	2025-2026



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1. Basic Information:

The state of the s				
Course Title (according to the bylan	w)	Graduation project		
Course Code (according to the byla-	w)	ARE 423		
Department/s participating in offering	ng the course	Architecture Engineering Department		
Number of credit hours/points of the	e course (according t			
Lecture	Tutorial /	Laboratory	Total contact	
4	I	0	14	
Course Type		Compulsory	□ Elective	
Academic level at which the course	is taught	Fourth year		
Academic Program		Architecture Engineering Program		
Faculty/Institute		Higher Institute of Engineering and Technology Manzalla		
University/Academy		Manzalla Academy		
Name of Course Coordinator		Prof. Dr. Tarek Abu Auf		
Course Specification Approval Date		16 August 2025		
Course Specification Approval		Institute Council No. (12) on 16 August 2025		

3. Course Learning Outcomes CCLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program spees)		Upon completion of the course, the student will be able to:		
Code	Text	Code	Text	
Use creative, innovative, and flexible	CLO1	State and solve the problems of designing the project elements according to projects program.		
A9 thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations.		CL03	Apply sustainable design strategies to improve the project concept to respond to the users' needs, design problems and program requirements.	
	Produce designs that meet building users' requirements through understanding the		Analyze similar projects according to (circulation, entrances, form, etc.)	
112	relationship between people and buildings,	CLO6	Identify current trends in architectural design methods and examples locally and worldwide.	

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Program Outcomes (NARS/ARS) (according to the matrix in the program spees)		Course Learning Outcomes Upon completion of the course, the student v able to:			
Code	Text	Code	Text		
Generate ecologically responsible environmental conservation and rehabilitation designs through	CLO5	Analyze the site requirements and the functional and structural requirements for a specified design project.			
	understanding structural design, construction, technology and engineering problems associated with building designs.	CLO7	Design individually as a member in a team in the research of a certain project.		
	Transform design concepts into buildings and integrate plans into overall planning within the constraints of project financing.	CL04	Utilize sustainable building rating systems like LEED and Green Pyramid Rating System in developing the project design.		
В4	project companyment cost control and		Utilize sustainable building rating systems like LEED and Green Pyramid Rating System in developing the project design.		
B5	Prepare design project briefs and documents and understand the context of the architect in the construction industry, including the architect's role in the processes of bidding, procurement of architectural services and building production.	C1,06	Utilize sustainable building rating systems like LEED and Green Pyramid Rating System in developing the project design.		

4. Teaching and Learning Methods

∑ Face to face lecture	☐ Site visit
☐ Online education	⊠ Self-learning
⊠ Tutorial / Exercise	□ Presentation
⊠ Group discussion	⊠ Mini project
☐ Laboratory	Research and reporting (self-learning)
	Brainstormine

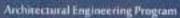
Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architectural Engineering Program



Course Schedule

	Scientific content of the	IISV/AS	Expo	setted number of the La	naming Hours	
No. of the Week	Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discussion groups/)	Training (Practical/Clinical/)	Self-learning (Tasks/ Assignments/ Projects/_)	Other (to be determined
1-2	Project definition (How architecture can solve problems?) Project research and groups formulation Selecting the project topic and suitable site.	28	4	20	4	
3	Site analysis Users & nocini Studies Preliminary studies	14	2	10	2	
4-5	Design requirements for project elements. Analyze similar projects.	28	4	20	4	
6-7	- Semi-final Research presentation	30	4	20	6	
8			Mid Term Exa	m		
9	 Final submission of the research 	15	2	10	3	
10-	- Final project Program - Mood board - Concept + Design scenarios - Ground floor plan. - Primary studies.	32	4	20	8	
12	Final ground floor plan. Floors plans. Form ideas	16	2	10	4	
13	- Final plans. - Sections	16	2	10	4	
14:	Elevations Advances studies Semi-final project presentation	18	2	10	6	
15	- final project	18	2	10	6	
16			Final Exam			

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5. Methods of students' assessment

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	23	5.75%
1.	Mid-Term Examination	- 8	44	115%
3.	Final Examination	(As Schedule)	200	50%
4.	Lab Exam	(As Schedule)	-11	
5.	Activities and assignments	Every week	83	20.75%
6.	Final Oral Exam (if exists)	(As Schedule)	50	12.5%

6. Learning Resources and Supportive Facilities

Learning resources (books, scientific references, etc.)	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Iyengar, K. Sustainable Architectural Design: An Overview, 1st edition, Routledge, 2015.			
	Other References	Anderson, J. Basics Architecture 03: Architectural Design. 1st edition, Bloomsbury Publishing, 2017			
	Electronic Sources (Links must be added)				
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/			
	Other (to be mentioned)	Aksamija, A. Integrating Innovation in Architecture: Design, Methods and Technology for Progressive Practice and Research. 1st edition, John Wiley & Sons, 2017.			
Supportive	#100-201-194-19-19-19-19-19-19-19-19-19-19-19-19-19-	Projectors, audio-visual systems, and			
facilities &	Devices/Instruments	Computers with internet access.			
equipment	Supplies	Whiteboards.			
for	Electronic Programs	Microsoft Office program, Acrobat Reader			
teaching	Skill Labs/ Simulators	44			
and	Virtual Labs	-			
learning *	Other (to be mentioned)				

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

		2000			Course	e Learn	ning ou	tcomes	"CLO	8**
Week	Topics	Lecture T/L CLO1	ctros	40.00	CLOS	CL.06	CL.07			
1	Project definition (How architecture can solve problems?) Project research and groups formulation Selecting the project topic and suitable site.	8	20	х		x				
3	Site analysis Users & social Studies Preliminary studies	4	10		N.			×	х	
5	Design requirements for project elements. Analyze similar projects.	8	20	х		х				
6-7	- Semi-final Research presentation	8	20				.8.		×	
8			Aid Ter	m Exam	13					
9	- Final submission of the research	-34	10		х			X		
10-	- Final project Program - Mood board - Concept + Design scenarios - Ground floor plan, - Primary studies.	4	10	x					х	
12	- Final ground floor plan. - Floors plans. - Form ideas	4	10							X
13	- Final plans. - Sections	4	10	X		×	X		×	
14:	Elevations Advances studies Semi- final project presentation	8	20		x			×		
15	- final project	4	10	X		N.				
16			Final I	Exam			-			

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7.2. Teaching and learning matrix with CLOs:

Total		1	Learning	outcon	nes "CLO)s"	
Teaching and Learning Methods	CLOI	CLO2	CLO3	101	CLOS	CL.06	2010
Face to face lecture	x	-	-			0	10
Online education		-	X	×	X		
Tutorial / Exercise							
Group discussion			X		X		1 3
Laboratory	X	X	X	x	X		x
			x	A	1		-
Self-Learning							-
Presentation							
Mini project					x		
Research and reporting			X	X.		x	
Frainstorming	x	X					
	X	x	x	x	*	-	+
ase study	X	x	x		-	-	4

7.3. Student assessment matrix with CLOs:

Assessment Methods	-		Course Learni	ng outcomes	"CLOS"		
The second second second second second	CLO1	CLO2	CLO3	CL04	CLO5	CLO6	#18 CL
Final written exam	X		X	-	1000000	CLO	CLO7
Oral exam				X	X		
Mid-term Exam			X		X		X
	X	X	X	x	x		X
Quizzes			X	X		-	Α.
Research					X		
assignments					x		
In-class questions					1.77		
(formative assessment)			X	x		x	
Project assignments	X	x					



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Course coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	1	2025-2026
Program coordinator:	790	2027-2020
Congram Coortinator		
Name Prof. Dr. Tarek Abu Auf	Signature	Acudemic Year

Ministry of Higher Education tigher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architectural Engineering Program



Third Year Elective Courses

List(1)

ARE 311 E: Environmental design

ARE 312E: Computer aided design

ARE 313E: Advanced building technologies

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L. Basic Information:

Course Title (according to the bylaw)	En	vironmental Design
Course Code (according to the bylaw)		ARE 311E
Department's participating in offering the	course Arch	dectural Engineering
Number of credit hours/points of the cour	se (according to the bylaw)	
Lecture	Tutorial / Laboratory	Total contact
2	2	4
Course Type	□Compulsory	⊠ Elective
Academic level at which the course is tau	ght	Third year
Academic Program	Architect	ural Engineering Program
Faculty/Institute	Higher Institute of	of Engineering and Technology at Manzalla
University/Academy	N	fanzalla Academy
Name of Course Coordinator	Dr	, Marwa El-adham
Course Specification Approval Date		16 August 2025
Course Specification Approval	Institute Coun	cil No. (12) on 16 August 2025

2. Course Overview (Brief summary of scientific content)

The variety of exiting environments- climate and climatic regions- human thermal comfort- environments impact on architectural designs- case studies and applicable researches.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Upon completion of the course, the student able to:			
Code	Text	Code	Text		
	Utilize contemporary technologies, codes of practice and standards,	CLo2	Apply the sustainable building materials and technologies to reduce the environmental impact of buildings.		
A4 quality guidelines, health and safety requirements, environmental issues, and risk management principles.		CLob	inspect the environmental design projects by using design software and other tool proficiency		
	Produce designs that meet building users' requirements through		Differentiate building energy systems that meet or exceed energy efficiency standards.		
812	understanding the relationship between people and buildings, and between buildings and their	CLo5	Sketch the principles of environmental design to the design of sustainable buildings and communities.		
	environment; and the need to relate buildings and the spaces between them to human needs and scale.	CLo7	Apply all communicate environmental design ideas effectively to both technical and non- technical audiences.		
	Generate ecologically responsible, environmental conservation and	CLo3	Identify the renewable energy systems into building design to meet or exceed energy needs.		
В3	rehabilitation designs; through understanding of structural design, construction, technology and engineering problems associated with building designs.	CLo4	Explain the principles of passive design and ability to use them to reduce energy consumption and improve indoor comfort.		

4. Teaching and Learning Methods

- Face to face lecture
- ☐ Online education
- M Tutorial / Exercise
- ☑ Group discussion
- ☐ Laboratory

⊠ Site visit

Self-learning

Presentation

Mini project

Research and reporting (self-learning)

Brainstorming
 □

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Course Schedule

			Expecia	d number of t	he Learning Hoo	rii.
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-tearning (Tasks/ Assignments / Projects/)	Other (to be determined)
1-3	The variety of exiting environments	16	6	6	4	
4-7	climate and climatic regions	24	8	8	6	
8		. М	d Term Exam			
9 - 10	human thermal comfort	16	6	- 6	.4	
11 - 12	Environments impact on architectural designs	.11	4	4	3	
13 - 15	Case studies and applicable researches.	16	6	6	4	
16			Final exam			

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	4.5	4.5%
2.	Mid-Term Examination	8	13.5	13,5%
3.	Final Examination	16	70	70%
4.	Lab Exam	(As Schedule)	ii ii	.%
5.	Activities and assignments	Every week	12	12%
6.	Final Oral Exam (if exists)	17/9/9		%

6. Learning Resources and Supportive Facilities

Learning resources (books,	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Wasson, C. S. (2015). System engineering analysis, design, and development: Concepts, principles, and practices. John Wiley & Sons.
scientific references,	Other References	Totten, C. W. (2019). Architectural Approach to Level Design. CRC Press.
etc.) *	Electronic Sources (Links must be added)	

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	Learning Platforms (Links must be added)	Manzala Academy LMS https://lms.manzalaacademy.edu.eg/				
	Other (to be mentioned)	Baxter, M. (2018). Product design. CRC press.				
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.				
equipment	Supplies	Whiteboards,				
for	Electronic Programs	Microsoft Office program				
teaching	Skill Labs/ Simulators	**				
and	Virtual Labs					
learning *	Other (to be mentioned)					

^{7.} Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Lecture	ure T/L	Course Learning outcomes "L					"LOs"	Os"
STEEK.	Topies	Lecture	-1715	LOI	LO2	LO3	1.04	LO5	LO6	LO7
1-3	The variety of exiting environments	6	6		x			×	х	X
4-7	climate and climatic regions	8	8		8			x		X
8			Mid Te	rm Exar	n					
9 - 10	human thermal comfort	4	4	X		X	X			
11 -	Environments impact on architectural designs	4	4					×	ж	×
13 -	Case studies and applicable researches.	6	6	×	ж			N		×
16	and and an and an		Final	Exam						

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods		Course Learning outcomes "CLOs"							
reacting and Learning stetnods	CL01	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7		
Face to face lecture	A CONTRACTOR	-300	X	X	X	X			
Tutorial / Exercise	1 (%X	OX V	X	X	X	X			
Group discussion	N.	VX.	11				X		
Site visit	*/		31	X-					
Self-Learning			71						
Presentation	X	N. S.	1				X		
Mini-project	() () () () ()						X		
Research and reporting	7	- x		X.					
Brain storming			X	X	X	X	X		

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7.3. Student assessment matrix with CLOs:

	Course Learning outcomes "CLOs"							
Assessment Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7	
Final written exam			X	X	X	X		
Oral exam							X	
Mid-term Exam			X	x	×	X		
Quizzes			N	×	X	X		
Research assignments	X	X						
In-class questions (formative assessment)			X	×	×	x		
Project assignments							X	

Course coordinator;

Name	Signature	Academic Year
Dr. Marwa El-adham	objust?	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	Sale -	2025-2026

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1. Basic Information:

DASK INDUMATION:				
Course Title (according to the bylaw)	Comp	outer Aided Design		
Course Code (according to the bylaw)		ARE 312 E		
Department's participating in offering the	course Archit	ectural Engineering		
Number of credit hours/points of the cour	se (according to the bylaw)			
Lecture	Tutorial / Laboratory	Total contact		
2	2	4		
Course Type	☐ Compulsory	⊠ Elective		
Academic level at which the course is tau	ght	Third year		
Academic Program	Architectur	Architectural Engineering Program		
Faculty/Institute	Higher Institute of	Higher Institute of Engineering and Technology a Manzalia		
University/Academy	Ma	nzalla Academy		
Name of Course Coordinator				
Course Specification Approval Date	- I	6 August 2025		
Course Specification Approval	Institute Council	l No. (12) on 16 August 2025		

2. Course Overview (Brief summary of scientific content)

Defining the tools, programs, and techniques needed- setting -up and analyzing programs- design presentation and evaluation- preparation and presentation of two and three - dimensional architectural designs- computer nided examples and case study applications.

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS)	Course Learning Outcomes
(according to the matrix in the program	Upon completion of the course, the student will be
specs)	able to:

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Code	Text	Code	Text
Α4	Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety	CLO)	Synthesise using CAD software to create an edit 2D and 3D models, drawings, uncassemblies.
1.5.1	requirements, environmental issues, and risk management principles.	CLO5	Describe the architectural and engineering standards for CAD drawings.
	Produce designs that meet building users' requirements through understanding the relationship	C1.02	Operate the CAD principles to solve real-work design and engineering problems.
B2:	between people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale.	CL04	Apply the communicate design ideas effectively using CAD drawings and models.
	Generate ecologically responsible, environmental conservation and rehabilitation designs; through	CLO3	Identify the advanced CAD features such as parametric modeling and rendering.
B3			Develop using CAD to collaborate with other professionals on design projects.

4. Teaching and Learning Methods

ene :	West Control	200 L	
200	Face to	ace	lecture:

☐ Online education

☑ Tutorial / Exercise

M Group discussion

□ Laboratory

☐ Site visit

⊠ Self-learning

Mini project

Research and reporting (self-learning)

Brainstorming

Course Schedule

		1	Expecte	d number of i	he Learning Hey	179
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching flectures/discus slon groups/	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determin ed)
1-4	Defining the tools, programs, and techniques needed- setting -	24	8	8	8	

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			Expected number of the Learning Hours					
No. of the Week	Scientific content of the course (Course Topics)	Total Workly Hours	Theoretical seaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determin ed)		
	up and analyzing programs							
5-7	Design presentation and evaluation	18	6	6	6			
8		Mic	Term Exam					
9 - 12	Preparation and presentation of two and three Dimensional architectural designs	24	8	8	8			
13 - 15	Computer aided examples and Case study applications.	18	6	6	6			
16		Final Exam						

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	4.5	4.5%
2.	Mid-Term Examination	8	13.5	13.5%
3.	Final Examination	16	70	70%
4.	Lab Exam	(As Schedule)	-	%
5.	Activities and assignments	Every week	12	12%
6.	Final Oral Exam (if exists)	-	120	%

6. Learning Resources and Supportive Facilities

Learning resources	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Wasson, C. S. (2015). System engineering analysis, design, and development: Concepts, principles, and practices. John Wiley & Sons.		
(books, scientific	Other References	Totten, C. W. (2019). Architectural Approach t Level Design, CRC Press.		
etc.) *	Electronic Sources (Links must be added)			
	Learning Platforms (Links must be added)	Manzala Academy LMS, https://lms.manzalaacademy.edu.eg/		

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	Other (to be mentioned)	Baxter, M. (2018). Product design. CRC press.
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment	Supplies	Whiteboards
for	Electronic Programs	Microsoft Office program
teaching	Skill Labs/ Simulators	+
and	Virtual Labs	
learning *	Other (to be mentioned)	
	the state of the Artifact Artifact and Artifact and Artifact Artif	

^{7.} Course Matrixes:

7.1. Course contents Matrix with CLOs:

				Cour	rse Lea	rning	outcom	es "Cl	Os"
Week	Topics	Lecture	T/L	CL O1	CL O2	CL O3	CL O4	CL O5	CL O6
1 - 4	Defining the tools, programs, and techniques needed- setting -up and analyzing programs	8	8	x	x	x			
5-7	Design presentation and evaluation	6	6			х	x		
8		Mic	Term	Exam					11
9 - 12	Preparation and presentation of two and three Dimensional architectural designs	8	8		x		x	х	
13 - 15	Computer aided examples and Case study applications.	6	6				×	x	x
16		Æ	inal F	капт	300				

7.2. Teaching and learning matrix with CLOs:

T	Course learning outcomes "CLOs"					
Teaching and Learning Methods	CLOI	CLO2		CLO4	CLO5	CLO6
Face to face lecture	NG.	X	X	X		
Tutorial / Exercise	X	X	X	X		
Group discussion		X	10-1			
Self-Learning						
Presentation	, ,	X				
Mini project						N.
Research and reporting		X				

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		Course	learning o	outcomes '	"CLOs"	
Teaching and Learning Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
Brain storming	X		X	X.	X	

7.3. Student assessment matrix with CLOs:

A CONTRACTOR OF THE PARTY OF TH	Course learning outcomes "CLOs"						
Assessment Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	
Final written exam		X	X	N	X		
Oral exam						X	
Mid-term Exam		X	X	X	X		
Quizzes	X	X	X	X	X		
Research assignments		X					
In-class questions (formative assessment)		х	x	×	X		
Project assignments						X	

Course coordinator;

Name	Signature	Academic Year	
Prof. Dr.	1	2025-2026	

Program coordinator:

Name	Signiture	Academic Year
Prof. Dr. Turck Abu Auf	4	2025-2026

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1. Basic Information:

Course Title (according to the bylav	v)	Advanced building technologies		
Course Code (according to the bylan	w)	ARE 313E		
Department's participating in offering	ng the course	Archite	ctural Engineering	
Number of credit hours/points of the	e course (secon	fing to the bylaw)		
Lecture	Tutorial	/ Laboratory	Total contact	
2		2	4	
Course Type		☐ Compulsory	50 Elective	
Academic level at which the course	is taught	Third year		
Academic Program		Architectural Engineering Program		
Faculty/Institute		Higher Institute of Engineering and Technology a Manzalla		
University/Academy		Manzalla Academy		
Name of Course Coordinator				
Course Specification Approval Date		16 August 2025		
Course Specification Approval		Institute Council No. (12) on 16 August 2025		

2. Course Overview (Brief summary of scientific content)

An approach to the study of advanced construction systems improved with the development of sophisticated technologies- loads and construction meyhods- structural materials- examples and case studies.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

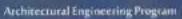
	Course Learning Outcomes Upon completion of the course, the student will able to:			
Text	Code	Test		
Utilize contemporary technologies, codes of practice and standards,		Employ advanced building technologies to the design and construction of sustainable, high- performance buildings.		
requirements, environmental issues, and risk management principles.	CL05	Develop communication and collaboration effectively with other professionals involved in the building design and construction process.		
Produce designs that meet building users' requirements through understanding the relationship		Use the building information modeling (BIM) to improve the efficiency and accuracy of building design and construction.		
between people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale.	CF04	Solve the complex building design and construction problems using advanced building technologies.		
Generate ecologically responsible, environmental conservation and	CLO3	Create the latest trends and developments in building technology.		
rehabilitation designs; through understanding of: structural design, construction, technology and engineering problems associated with		Apply the othical principles to the practice of architecture and engineering.		
	Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles. Produce designs that meet building users' requirements through understanding the relationship between people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale. Generate ecologically responsible, environmental conservation and rehabilitation designs; through understanding of: structural design, construction, technology and	Text Code Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles. Produce designs that meet building users' requirements through understanding the relationship between people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale. Generate ecologically responsible, environmental conservation and rehabilitation designs; through understanding of: structural design, construction, technology and engineering problems associated with		

4. Teaching and Learning Methods

- □ Face to face lecture
- ☐ Online education
- ☑ Tutorial / Exercise
- □ Laboratory

- Sile visit
- Seff-learning
 - E Presentation
 - Mini project
 - ⊠ Research and reporting (self-learning)
- Brainstorming

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Course Schedule

		-	Expected number of the Learning Hours					
the (Course Topics) We Week Ho	Total Weekly Hours	Theoretical teaching ()ectures/discus sion groups/	Training (Practical/ Clinical/)	Self-learning (Tanks/ Assignments / Projects/)	Other (to be determined)			
1 - 4	An approach to the study of advanced construction systems improved with the development of sophisticated technologies	20	8	8	4			
5-7	Loads and construction methods	15	6	6	3			
8		Mid Term Exam						
10-11	Structural materials	10	4	4	2			
12 - 15	Examples and case studies	20	8	8	4.			
16		" - 1	Final Exam					

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	4,5	4,5%
2.	Mid-Term Examination	-8	13.5	13.5%
3.	Final Examination	15	70	70%
4.	Lab Exam	(As Schedule)	.#:	4/4
5.	Activities and assignments	Every week	12	12%
6.	Final Oral Exam (if exists)	NO LONG	-	56
		The second secon		

6. Learning Resources and Supportive Facilities

Learning resources (books, scientific	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Hall, P., & Tewdwr-Jones, M. (2019). Lirban and regional planning. Routledge.
references, etc.) *	Other References	Chadwick, G. (2016). Models of urban & regional systems in developing countries: Some theories and their application in physical planning (Vol. 36). Elsevier.

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	Electronic Sources (Links must be added)	https://unhabitat.org/sites/default/files/2020/07/indi cator_11,7.1_training_module_public_space.pdf
	Learning Platforms (Links must be added)	Manzala Academy LMS https://lms.manzalaacademy.edu.eg/
	Other (to be mentioned)	
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment	Supplies	Whiteboards.
for	Electronic Programs	Microsoft Office program
teaching	Skill Labs/ Simulators	i en
and	Virtual Labs	
learning *	Other (to be mentioned)	

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

		1000		Co	urse Le	arning	outcom	es "CLO	Ds**
Week	Topics	Lecture	T/L	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5	CLO 6
1-4	An approach to the study of advanced construction systems improved with the development of sophisticated technologies	8	8	x	x	x			x
5 - 7	Loads and construction methods	6	6	Х	х		x		
8			Mid T	epm Exa	im.				
10 - 11	Structural materials	4.77	4.	X	N 10.23		X	X	
12 - 15	Examples and case studies	8	8	X	N	X		X	
16			Fina	d Exam	1/3	-			

7.2. Teaching and learning matrix with CLOs:

The state of the state of the state of		Course	learning outcomes		'CLOs"	-
Teaching and Learning Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
Face to face lecture		X	X	×		DALE SAN
Tutorial / Exercise	X	X	X	X		
Group discussion		X				
Self-Learning						

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ENGLISH OF THE PARTY OF	Course learning outcomes "CLOs"							
Teaching and Learning Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6		
Presentation		X						
Mini project						X		
Research and reporting		X						
Brain storming	X		N.	X	N.			

7.3, Student assessment matrix with CLOs:

		Course	learning o	outcomes '	"CLOs"	
Assessment Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6
Final written exam	X	X	×	N		
Oral exam					X	X
Mid-term Exam	X	X	X	X		
Ouizzes	X	×	X	X		
Research assignments	X					
In-class questions (formative assessment)			x	×		
Project assignments					X	X.

Course coordinator:

Name	Signature	Academic Year
Prof. Dr.	OX.	2025-2026

Program coordinator:

Signature	Academic Year
A	2025-2026
	Signature

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Third Year Elective Courses

List (2)

ARE 321E: Landscape design

ARE 322E: Urban conservation and maintenance

ARE 323E: Architectural Project's management

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1. Basic Information:

Course Title (according to the bylaw)		Landscape design			
Course Code (according to the bylaw)		ARE 321 E			
Department/s participating in offering the	course An	chitectural Engineering Department			
Number of credit hours/points of the cour	se (according to the byl	aw)			
Lecture	Tutorial / Laboratory	Total contact			
2	2	4			
Course Type	□Compo	alsory S Elective			
Academic level at which the course is tau	ght	Third year			
Academic Program	Α	Architectural Engineering Program			
Faculty/Institute	Higher Ir	Higher Institute of Engineering and Technology Manzalla			
University/Academy		Manzalla Academy			
Name of Course Coordinator		Dr. Marwa-eladham			
Course Specification Approval Date		16 August 2025			
Course Specification Approval	Institu	Institute Council No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Analytical studies of kite characteristics and its surrounding environment- urban database- social, economical, and cultural database- detailed study of transportation within the site- numerical analysis of functional relationships of the site study of design and shaping the space and the visual form-project of urban design and infrastructure planning.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	Program Outcomes (NARS/ARS) (according to the matrix in the program specis)		Course Learning Outcomes completion of the course, the student will be able to:
Code	Test	Code	Text
	Apply engineering design processes to produce cost-effective solutions that meet		Define hardscape materials and construction.
	A3 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 austainable design and development.	CL04	Identify grading and drainage.
A3		CL07	Apply the sustainable design principles.
	Communicate effectively - graphically,	CLO2	Discuss the plant selection and placement.
AS	verbally and in writing - with a range of	CLO5	Develop the various lighting and irrigation systems
Gift.	audiences using contemporary tools.	CLO8	Explain the professional practice.
	Transform design concepts into buildings and integrate plans into overall planning	CLOI	Schedule the principles of landscape design to creat functional and aesthetically pleaning outdoor spaces
82	within the constraints of: project financing, project management, cost control and methods of project delivery; while having adequate knowledge of industries, organizations, regulations and procedures involved.	CLO6	Analyze the site analysis and planning.

4. Teaching and Learning Methods

- Face to face lecture
- ☐ Online education
- □ Tutorial / Exercise
- ⊠ Group discussion
- ☐ Laboratory

- M Site visit
- ☐ Self-learning
 - Presentation
 - Mini project
 - Research and reporting (self-learning)

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Course Schedule

No. of the Work			Expected number of the Learning Hours					
	Scientific content of the course (Course Topics)	Yotal Weekly Hours	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments/ Projects/)	Other (to be determined)		
1-4	Analytical studies of kite characteristics and its surrounding environment	20	8	8	-4			
5-7	Urban database	15	6	- 6	3			
8		Mic	Term Exam					
9-10	Social, economic, and cultural database	10	4	4	2			
11:	Detailed study of transportation within the site	5	2	2	1			
12-13	Numerical analysis of functional relationships of the site study of design and shaping the space and the visual form	10	4	4	2			
14-15	Project of urban design and infrastructure planning.	10	4	4.	2			
16	Final Exam							

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks	
1.	Quizzes	6, 11	4.5	4.5%	
2.	Mid-Term Examination	8	13.5	13,5%	
3,	Final Examination	(As Schedule)	70	70%	
4.	Lab Exam	(As Schedule)		0%	
5.	Activities and assignments	Every week	12	12%	
6.:	Final Oral Exam (if exists)	- 1	14	09%	

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6. Learning Resources and Supportive Facilities

Learning resources (books, scientific references, etc.) *	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Fletcher, B. (1919). A history of architecture on the comparative method for the student, craftsman, and amateur. Batsford.				
	Other References	Thurley, S. (2013). The building of England: How the history of England has shaped our buildings. HarperCollins UK				
	Electronic Sources (Links must be added)	https://www.firstinarchitecture.co.uk/how to-develop-architectural-concepts/				
	Learning Platforms (Links must be added)	Manzala Academy LMS, https://lms.manzalaacademy.edu.eg/				
	Other (to be mentioned)	Hind, C. (2015). The Collections of The Royal Institute of British Architects, The Classicist, (12), 50.				
Summention						
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.				
equipment	Supplies	Whiteboards				
for	Electronic Programs	Microsoft Office program, Acrobat Reader				
teaching and learning	Skill Labs/ Simulators	Acrobat Reader				
	Virtual Labs	-				
	Other (to be mentioned)					

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

					Co	urse Le	arning :	g outcomes "CLOs"			
Week	Topics	Lec.	T/L	CLO	CLO 2	CLO 3	CLO 4	CLO 5	CLO	CLO 7	CL OS
1-4	Analytical studies of kite characteristics and its surrounding environment	8	8	x	x						
4-7	Urban database	6	6		X				X		
8				Mid T	erm Ex	am					
9-10	Social, economic, and cultural database	6	6	х							×
11	Detailed study of transportation within the site	2	2			х			x	x	
12-13	Numerical analysis of functional relationships of the site study of design and shaping the space and the visual form	4	4				х	x		х	
14-15	Project of urban design and infrastructure planning.	4	4				x	x		N	х
16				Fin	al Exan	n					

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning	Course Learning outcomes "CLOs"								
Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7	CLOS	
Face to face lecture	N		X	X			X	X	
Tutorial / Exercise		X		X	×	8	X	X	
Group discussion	X.	X		x	N.			N.	
Site visit						X	X	X	
Self-Learning									
• Presentation	X	X			X	X			
Mini project						- %			
Research and reporting	X.	x			x	×	x	х	
Brain storming		x	X	X			X.	X	

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7.3. Student assessment matrix with CLOs:

	Course Learning outcomes "CLOs"								
Assessment Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO 6	CLO7	CLOS	
Final written exam	х	N	X	x	X	×	x	X	
Mid-term Exam	×	X.	x	×	×		x	X	
Quizzes	x	x	x	N.	X:	х		X	
Research assignments		x		×		N			
In-class questions (formative assessment)		х		x	x	х	*	×	
Project assignments	×	X		X	x	×	X	X	

Course coordinator:

Name	Signature	Academic Year
Dr. Marwa AL adham	Co'linds	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	A.	2025-2026

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1. Basic Information:

" Truthe rintellmetour.						
Course Title (according to the bylan	w).	Urban conservation and maintenance				
Course Code (according to the byla	w)	ARE 322E Architectural Engineering Department				
Department/s participating in offeri	ng the course					
Number of credit hours/points of th	e course (accordi	ng to the bylaw)				
Lecture	Tutorial	Laboratory	Total contact			
2	2		4			
Course Type		□Compulsory	№ Elective			
Academic level at which the course	e is taught	Third year				
Academic Program		Architectural Engineering Program				
Faculty/Institute		Higher Institute of Engineering and Technology a Manzalla				
University/Academy		Manzalla Academy				
Name of Course Coordinator						
Course Specification Approval Dat	e	16 August 2025				
Course Specification Approval		Institute Council No. (12) on 16 August 2025				

2. Course Overview (Brief summary of scientific content)

Preparation detailed working drawings of buildings both architectural and structural connections and elements-preparation of sanitary, electrical, and mechanical drawings of architecturally design projects.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes completion of the course, the student will be able to:
Code	Test	Code	Text
	Apply engineering design processes to produce cost-	CLOI	Apply the principles and practices of urban conservation and maintenance.
	effective solutions that meet specified needs with consideration for global, cultural, social,	CLO3	Operate the principles of sustainable urban development to the conservation and maintenance of urban environments.
A3	The state of the s	CLO6	Develop working effectively with other professionals involved in the urban conservation and maintenance process.
	Transform design concepts into buildings and integrate plans into overall planning within the constraints of: project financing.		Identify the history of urban development and the different types of buildings and structures that make up urban environments.
B4	project management cost control	CLO5	Support the research and prepare reports on urban conservation and maintenance issues.
В5	Prepare design project briefs and documents, and understand the context of the architect in the construction industry, including the architect's role in the processes of bidding, procurement of architectural services and building production.	CLO4	Define the different techniques that can be used to conserve and maintain buildings and structures.

4. Teaching and Learning Methods

M Face to face lecture

⊠ Site visit

□ Online education

⊠ Self-learning

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Architectural Engineering Program



☑ Tutorial / Exercise

□ Group discussion

☐ Laboratory

□ Presentation

Mini project

□ Research and reporting (self-learning)

Brainstorming
 Bra

Course Schedule

			Expected number of the Learning Hours					
No. of Scientific content of the course the (Course Topics) Week		Total Weekly Hours	Theoretical teaching (loctures/discus sion groups/)	Training (Practical/ Clinical/	Self-learning (Tasks) Assignments/ Projects/)	Other (to be determin ed)		
3-4	Concepts of urban conservation and maintenance.	20	8	8	:4:			
5.7	historical and invaluable buildings	15	- 6	6	3			
8	Mid Tenn Exam							
9-10	Methodologies of dealing with urban heritage: reclamation- character preservation.	10	4	4	2			
11	Methodologies of dealing with urban heritage: elimination.	5	2	2	3			
12	Methodologies of dealing with urban heritage: renewal – upgrading.	5	2	2	1			
13-14	Present case Studies	10	4	4	2			
15	Methodologies of dealing with urban heritage; rehabilitation.	.5	2	2	. 1			
16	Final Exam							

5. Methods of students' assessment

No.	Assessment Methods *	thods * Assessment Timing (Week Number)		Percentage of Total Course Marks	
1.	Quizzes	6, 11	4.5	4.5%	
2.	Mid-Term Examination	8	13.5	13.5%	
3.	Final Examination	(As Schedule)	70	70%	
4.	Lab Exam	(As Schedule)	(4)	-	
5.	Activities and assignments	Every week	12	12%	
6.	Final Oral Exam (if exists)	50	-1		

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6. Learning Resources and Supportive Facilities

Learning resources (books, scientific references, etc.) *	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Wasson, C. S. (2015). System engineering analysis, design, and development: Concepts, principles, and practices. John Wiley & Sons.		
	Other References	Totten, C. W. (2019). Architectural Approach to Level Design. CRC Press.		
	Electronic Sources (Links must be added)	https://www.firstinarchitecture.co.uk/how-to- develop-architectural-concepts/		
	Learning Platforms (Links must be added)	Manzala Academy LMS, https://lms.manzalaacademy.edu.eg/		
	Other (to be mentioned)			
Supportive facilities	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.		
&	Supplies	Whiteboards.		
equipment	Electronic Programs	Microsoft Office program, Acrobat Reader		
for	Skill Labs/ Simulators			
teaching	Virtual Labs			
and learning *	Other (to be mentioned)			

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

Week	Topics	Lecture	200		Course le	arning o	utcomes	"CLOs"	
WEEK	Topics	Lecture	17/14	CL01	CLO2	CLO3	CLO4	CLO5	CLO6
1-4	Concepts of urban conservation and maintenance.	8	8	х		х	х	х	
5-7	historical and invaluable buildings	6	6		х			x	
8	THE SHAPE OF THE S		Mi	d Term E	xam				
9-10	Methodologies of dealing with urban heritage: reclamation- character preservation.	4	4	x			х		х
11	Methodologies of dealing with urban heritage; elimination.	2	2				x	x	x
12	Methodologies of dealing with urban heritage: reformation.	2	2		х	х		x	х
13-14	Methodologies of dealing with urban heritage; renewal – upgrading.	4	4	8		x	×	x	
15	Methodologies of dealing with urban heritage: rehabilitation.	2	2		х	х	x		
16			1	inal Exa	m				

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course learning outcomes "CLOs"							
reaching and Learning Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO		
Face to face lecture	X		X	X	X.	X		
Tutorial / Exercise		X	X	X	X	X		
Group discussion	X	X						
Site visit	x							
Self-Learning								
Presentation	X	X		x				
Research and reporting	x	X		x	x			
Brain storming			X	×	X	×		

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7.3. Student assessment matrix with CLOs:

		Course	learning o	outcomes "	CLOs"	
Assessment Methods	CLOI	CLO2	CLO3	CLO4	CL05	CLO6
Final written exam	X		x	x	N.	X
Mid-term Exam	X		×	X	X	X
Quizzes	X		X	×	×	N.
Research assignments	×	X				
In-class questions (formative assessment)		X	×	x	x	x
Project assignments	x	X	×		8	X

Cou	nie	con	rdi	nat	brit:

Signature	Academic Year	
A	2025-2026	
	Siglature	

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	- Set	2025-2026

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1. Basic Information:

Course Title (according to the bylaw)		Architectural Project's Management				
Course Code (according to the bylar	w)	ARE 323E Architectural Project's Management				
Department/s participating in offering course	ng the					
Number of credit hours/points of the	e course (accor	rding to the bylaw)				
Lecture Tutorial /		aboratory	Total contact			
2	2		4			
Course Type		□Compulsory	El Elective			
Academic level at which the course	is taught	+	Third year			
Academic Program		Architectural Engineering Program				
Faculty/Institute		Higher Institute of Engineering and Technology Manzalla				
University/Academy		Manzalla Academy				
Name of Course Coordinator						
Course Specification Approval Date		16	August 2025			
Course Specification Approval		Institute Council No. (12) on 16 August 2025				

Course Overview (Brief summary of scientific content)
 Study of making executive programs for site management (time, labor, equipment) - project management methods - management principals - implementation policies, programs, and schedules - economical management of projects.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student w able to:			
Code	Text	Code	Text		
A6 Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements.		CLO1	Apply the various architectural project plans.		
		CLO3	Identify and manage risks to architectural projects.		
	Function efficiently as an	CLO2	Develop the work of different stakeholders involved in architectural projects.		
A7 individual and as a member of multi-disciplinary and multi-cultural teams.		CL04	Develop the communication with all stakeholders involved in architectural projects effectively.		
A8	Communicate effectively – graphically, verbally and in writing – with a range of	CL05	Apply the project management tools and techniques to effectively manage architectural projects.		
	audiences using contemporary tools.	CL06	Apply sustainable design and construction principles to architectural projects.		

4. Teaching and Learning Methods

DOM:	William College		and the	Wilder Co.	
123	Face	TO:	tace	tect	urc

Online education

☑ Tutorial / Exercise

☐ Laboratory

☐Site visit

Self-learning

Presentation

Mini project

⊠ Research and reporting (self-learning)

☑ Brainstorming

Course Schedule

			Expected number of the Learning Hours					
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (lectures/discus sion groups/	Training (Practical/ Clinical/)	Self-Icarning (Tasks/ Assignments / Projects/)	Other (to be determin ed)		
1-4	Study of making executive programs for site management (time, labor, equipment).	20	8	8	4			

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			Expected number of the Learning Hours					
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Flours	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determined)		
5-7	Project management methods.	15	6	6	3			
8		Mid	Term Exam					
9-12	Management principals.	20	8	8	4			
12-13	Implementation policies, programs, and schedules.	10	4	4	2			
14-15	Economical management of projects.	10	4	4	2			
16	Final Exam							

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
I.	Quizzes	6, 11	4.5	4.5%
1.	Mid-Term Examination	8	13.5	13.5%
3.	Final Examination	(As Schedule)	70	70%
4.	Lab Exam	(As Schedule)	144	0%
5.	Activities and assignments	Every week	12	12%
6.	Final Oral Exam (if exists)			0%

6. Learning Resources and Supportive Facilities

Learning	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Styles, K., & Bichard, A. (2012). Working drawings handbook. Routledge.	
(books, scientific	Other References	Allen, E., & Jano, J. (2019). Fundamentals of building construction; materials and methods. Jo Wiley & Sons.	
references, etc.) *	Electronic Sources (Links must be added)	https://www.firstinarchitecture.co.uk/how- to-develop-architectural-concepts/	
	Learning Platforms (Links must be added)	Manzala Academy LMS, https://lms.manzalancademy.edu.eg/	
	Other	ننسة التثبيد (الجزء الذي الشثيات المبكى - الجزء الثاث	

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	(to be mentioned)	مرافق الدياه والصرف الصنحي)، محمود جنين المصياحي، 2018
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment	Supplies	Whiteboards
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/ Simulators	
and	Virtual Labs	144
learning *	Other (to be mentioned)	

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

	1997/1997	Maria Line	1919		Learn	ing oute	omes "C	LOs"	
Week	Topics	lecture	174.	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6
1-4	Study of making executive programs for site management (time, labor, equipment).	8	8	x				x	
5-7	Project management methods.	6	6		x	x		x	
8			Mid 7	ferm Exa	nero .				
9-12	Management principals.	8	8			X		X	X
12-13	Implementation policies, programs, and schedules.	4	4				x		x
14-15	Economical management of projects.	4	4		x		x		x
16			Fin	al Exam					

7.2. Teaching and learning matrix with CLOs:

and the second of the second of the second	Learning outcomes "CLOs"						
Teaching and Learning Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6	
Face to face lecture	X	x	x	×	×	X	
Tutorial / Exercise			X	×	X	×	
Group discussion			X		x		
Self-Learning							
Presentation			X.		X		
Mini project						X	
Research and reporting			- X		X		
Brain storming	X	X	x	X	X	N.	

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7.3. Student assessment matrix with CLOs:

	Learning outcomes "CLOs"						
Assessment Methods	CLOI	CI.O2	CLO3	CLO4	CLO5	CLO6	
Final written exam	X	×	x	X	х		
Oral exam						X	
Mid-term Exam	×	N.	X	X	×		
Quizzes	×	X	×	X	X		
Research assignments			8:		N.		
In-class questions (formative assessment)	X	X	N.	X	8		
Project assignments						×	

Course coordinator:

Name	Signature	Academic Year
	State	2025-2026
Program coordinator:		
Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	A-	2025-2026

Ministry of Higher Education

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Architectural Engineering Program



Fourth Year (Elective Courses)

List (3)

ARE 411E: Architectural criticism and competition.

ARE 412E: Advanced architectural design.

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Architectural Engineering Program



1. Basic Information:

Course Title (according to the bylaw)		Architectural Criticism and Competition ARE 411E			
Course Code (according to the bylaw)					
Department/s participating in offering the	course	Architectural Engineering Department			
Number of credit hours/points of the cour	se (accord	ing to the bylaw)			
Lecture	Tutorial	Laboratory	Total contact		
4			4		
Course Type		☐ Compulsory	™ Elective		
Academic level at which the course is tau	ght	4 ⁿ Level			
Academic Program		Architectural Engineering Program			
Faculty/Institute		Higher Institute of Engineering and Technology Manzalla			
University/Academy		Manzalla Academy			
Name of Course Coordinator		Prof. Dr. Tarek Abu Auf			
Course Specification Approval Date		16 August 2025			
Course Specification Approval		Institute Council No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Defining the concepts and history of architectural criticism - tools and parameters of architectural criticism- outlines of architectural criticism trends and concepts- criteria and principals of architectural criticism, evaluation and assessment- defining the concept of architectural competitions, their importance, and their aims- concepts and trends of design- preparation of drawings and technical reports- application studies of architectural criticism processes.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

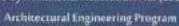
Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:		
Code	Text	Code	Text	
А3	Defining the concepts and history of architectural criticism - tools and parameters of architectural criticism- outlines of architectural criticism trends and concepts-criteria and principals of architectural criticism, evaluation and assessment- defining the concept of architectural competitions, their importance, and their aims- concepts and trends of design- preparation of drawings and technical reports-application studies of architectural criticism processes.	CLO6	Prepare students for professional architectural practice, equipping them with the ability to critically assess and refine their own designs as well as those of others.	
	Defining the concepts and history of architectural criticism - tools and parameters of architectural criticism- outlines of architectural	CLOI	Understand the historical evolution and key theories of architectural criticism, exploring its impact on contemporary architectural discourse.	
Α6	criticism trends and concepts- criteria and principals of architectural criticism, evaluation and assessment- defining the concept of architectural competitions, their importance, and their aims- concepts and trends of design- preparation of drawings and technical reports- application studies of architectural criticism processes.	CLO2	Analyze and apply various tools and parameters of architectural criticism, using them to assess architectural works effectively.	

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Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Upon	Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
B2	Defining the concepts and history of architectural criticism - tools and parameters of architectural criticism- outlines of architectural criticism trends and concepts-criteria and principals of architectural criticism, evaluation and assessment- defining the concept of architectural competitions, their importance, and their aims- concepts and trends of design- preparation of drawings and technical reports-application studies of architectural criticism processes.	CLO4	Enhance students' ability to engage in architectural competitions, focusing on conceptual development, design presentation, and technical report writing.
0.1	Defining the concepts and history of architectural criticism - tools and parameters of architectural criticism- outlines of architectural criticism trends and concepts-criteria and principals of architectural criticism, evaluation and assessment- defining the concept of architectural competitions, their importance, and their aims- concepts and trends of design- preparation of drawings and technical reports-application studies of architectural criticism processes.		Evaluate architectural projects based on diverse criteria, including aesthetic, functional, social, and environmental factors.
134			Develop critical and creative thinking skills enabling students to challenge conventional architectural norms and propose innovative design solutions.

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4. Teaching and Learning Methods

M Face to face lecture	⊠ Site visit
☐ Online education	⊠ Self-learning
☐ Tutorial / Exercise	□ Presentation
☑ Tutorial / Exercise	

☐ Mini project ☐ Laboratory

⊠ Research and reporting (self-learning)

Brainstorming

Course Schedule

			Expecte	d number of t	he Learning Hou	0
No. of the Week	the (Course Topics) Weekly	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determined)	
1	Introduction to architectural criticism, its definition, scope, and historical development.	6	4		2	
2	Key theories and approaches in architectural criticism, analyzing different schools of thought.	6	4	4	2	
3	Tools and parameters of architectural criticism, methods for evaluating architectural works.	6	4	4	2	
4	Trends and concepts in urchitectural criticism, contemporary perspectives, and evolving methodologies.	6	4	1.4	2	
5	Criteria and principles for architectural evaluation, including nesthetic, functional, environmental, and social aspects.	6	4	100	2	
6-7	Architectural competitions, their history, evolution, types, and objectives.	12	8	2.5	4	
8	TAIL	Mid-	Term Exam			
9	Design process in competitions, including concept development and ideation.	6	14.	-	2	
10	Presentation techniques for competitions, including drawings,	6	-4		2:	

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			Expecte	d number of t	he Learning Hos	us
No. of the Week	of the (Course Topics) We Week He	Total Weekly Hours	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determined)
	reports, and effective visual communication.					
ti	Case studies in architectural criticism and competitions, analyzing past competition- winning projects.	6	4	24	2	
12	Application of architectural criticism in real-world projects, evaluating existing buildings and urban spaces.	6	- 34	s.	2	
13	Preparation of drawings and technical reports for architectural competitions.	6	4	÷	2	
14	Final project submission and review, applying criticism tools and competition methodologies.	6	4	4	2	
15	General discussion and course wrap-up, reflecting on learning outcomes and future applications.	6	4	•	2	
16		Fir	tal Exam			

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	4.5	4.5%
2.	Mid-Term Examination	8	13.5	13.5%
3.	Final Examination	(As Schedule)	70	70%
4.	Lab Exam	(As Schedule)	**	96
5.	Activities	Every week	12	12%
6.	Final Oral Exam (if exists)		2	%

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6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Jencks, Charles, and Kropf, Karl, Theories and Manifestoes of Contemporary Architecture, Wiley, 2010.				
Learning resources (books, scientific references, etc.) **	Other References	Chupin, Jean-Pierre, Cucuzzella, Carmela, and Helal, Bechara. Architecture Competitions and the Production of Culture, Quality and Knowledge: An International Inquiry, Editions Ashgate, 2015.				
	Electronic Sources (Links must be added)	Word - PowerPoint - Photoshop.				
	Learning Platforms (Links must be added)	Manzala Academy LMS, https://lms.manzalaacademy.edu.eu/				
	Other (to be mentioned)	Alraouf, Ali A. Architectural Criticism and I Role in Developing Contemporary Urbanisa Available online at academia.edu.				
Our meters		Policy of the second				
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.				
equipment	Supplies	Whiteboards.				
for	Electronic Programs	Microsoft Office program, Acrobat Reader				
teaching	Skill Labs/Simulators	**				
and	Virtual Labs					
learning *	Other (to be mentioned)					

7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

	Topics	Lec.	T/L	Course Learning outcomes "CLO's"					
Week				CL OI	CL O2	CL O3	CL O4	CLO5	CL O6
1	Introduction to architectural criticism, its definition, scope, and historical development.	4		x					
2	Key theories and approaches in architectural criticism, analyzing different schools of thought.	4			X				

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	Topics	Lec.	T/L	Course Learning outcomes "CLO's"					
Week		2.550	1000	CL O1	CL O2	CL O3	CL O4	CLO5	CI 06
3	Tools and parameters of architectural criticism, methods for evaluating architectural works.	4.			x				
4	Trends and concepts in architectural criticism, contemporary perspectives, and evolving methodologies.	4				x			
5	Criteria and principles for architectural evaluation, including aesthetic, functional, environmental, and social aspects.	4				x			
6-7	Architectural competitions, their history, evolution, types, and objectives.	4				x			
8		- 1	tid Te	rm Exa	im.				
9	Design process in competitions, including concept development and ideation.	4	-	х			х		
10	Presentation techniques for competitions, including drawings, reports, and effective visual communication.	4		x			x		
11	Case studies in architectural criticism and competitions, analyzing past competition- winning projects.	4		x			х		
12	Application of architectural criticism in real-world projects, evaluating existing buildings and urban spaces.	4	*	х			x		
13	Preparation of drawings and technical reports for architectural competitions.	4	ã.					x	x
14	Final project submission and review, applying criticism tools and competition methodologies:	4	2					x	x

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Week	Topics	Lec.	T/L	Course Learning outcomes "CLO's"					
				CL OI	CL O2	CL O3	CL O4	CLO5	CL O6
15	General discussion and course wrap-up, reflecting on learning outcomes and future applications.	4	-					x	×
16			Fina	Exam		-			

7.2. Teaching and learning matrix with CLOs:

	Course Learning outcomes "CLO's"									
Teaching and Learning Methods	CLO1	CLO2	CLO3	CLO4	CL05	CLO6				
Face to face lecture	X	X	X	X	X	Х				
Tutorial / Exercise		X	X	X	X	X				
Group discussion	X	X				X				
Site visit					X					
Presentation	X	X			X	X				
Research and reporting	X	X		X		X				
Brain storming			X	X	X	X				

7.3. Student assessment matrix with CLOs:

A STATE OF	Course Learning outcomes "CLO's"									
Assessment Methods	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6				
Final written exam			X	X	X	X				
Mid-term Exam	X	x	X							
Quizzes		X	X	X	X					
Research assignments	X	X				X				
In-class questions (formative assessment)			x	X	x					
Project assignments						X				

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Course coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	CXII	2025-2026

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	A	2025-2026

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1. Basic Information:

Course Title (according to the bylaw)		Advanced Architectural Design				
Course Code (according to the bylaw)		ARE 412E				
Department/s participating in offering	the course	Architectural Engineering Department				
Number of credit hours/points of the c	ourse (accordin	ng to the bylaw)				
Lecture	Tutorial /	Laboratory	Total contact			
4			4			
Course Type		☐ Compulsory	III Elective			
Academic level at which the course is	taught	4 th Level				
Academic Program		Architectural Engineering Program				
Faculty/Institute		Higher Institute of Engineering and Technology a Manzalla				
University/Academy		Mar	nzalla Academy			
Name of Course Coordinator						
Course Specification Approval Date		16 August 2025				
Course Specification Approval		Institute Council	No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Issues and subjects of advanced architectural design trends- study of design principles and constraints of the advanced trends- case studies covering the advanced trends.

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	ogram Outcomes (NARS/ARS) ording to the matrix in the program specs)	Upon	Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
А3	Defining the concepts and history of architectural criticism - tools and parameters of architectural criticism- outlines of architectural criticism trends and concepts-criteria and principals of architectural criticism, evaluation and assessment- defining the concept of architectural competitions, their importance, and their aims- concepts and trends of design- preparation of drawings and technical reports-application studies of architectural criticism processes.	CLO6	Develop leadership skills in architectural design by engaging with professional challenges and future trends.
	Defining the concepts and history of architectural criticism - tools and parameters of architectural criticism- outlines of architectural	CLO2	Apply advanced design methodologies and cross-disciplinary tools to enhance architectural creativity and problem- solving.
A6	criticism trends and concepts- criteria and principals of architectural criticism, evaluation and assessment- defining the concept of architectural competitions, their importance, and their aims- concepts and trends of design- preparation of drawings and technical reports- application studies of architectural criticism processes.	CLO4	Integrate case study analysis into the design process to explore and implement cutting- edge architectural concepts.

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	gram Outcomes (NARS/ARS) rding to the matrix in the program spees)	Upon	Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
В2	Defining the concepts and history of architectural criticism - tools and parameters of architectural criticism- outlines of architectural criticism trends and concepts-criteria and principals of architectural criticism, evaluation and assessment- defining the concept of architectural competitions, their importance, and their aims- concepts and trends of design- preparation of drawings and technical reports-application studies of architectural criticism processes.	CLO1	Analyze contemporary architectural design trends, principles, and constraints to develop innovative solutions.
B4	Defining the concepts and history of architectural criticism - tools and parameters of architectural criticism- outlines of architectural criticism trends and concepts- criteria and principals of architectural criticism, evaluation and assessment- defining the	CLO3	Evaluate the impact of emerging technologies on architectural theory, digital fabrication, and construction processes.
	concept of architectural competitions, their importance, and their aims- concepts and trends of design- preparation of drawings and technical reports- application studies of architectural criticism processes.	CLO5	Demonstrate proficiency in advanced digital modeling techniques to support material production and sustainable architectural practices.

4. Teaching and Learning Methods

E Face to face lecture

Site visit

☐ Online education

⊠ Self-learning

□ Tutorial / Exercise

□ Presentation

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M Group discussion

Mini project

☐ Laboratory

☑ Research and reporting (self-learning)

☐ Brainstorming

Course Schedule

			Expecte	d number of t	he Learning Hou	ns:
Nn. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (fectures/discus sint groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determined)
1	Introduction to Advanced Architectural Design Trends	6	4	*	2	
2	Exploring Contemporary Architectural Issues and Innovations	6	4	*	2	
3	Principles of Advanced Architectural Design	6	4	5	2	
4	Sustainable and Smart Design Strategies	6	4	5	2	
5-6	Digital Fabrication and Parametric Design Applications	12	8		4	
7	Constraints and Challenges in Advanced Architectural Trends	6	4	*	2	
8		Mid	Term Exam			
9	Integration of Technology in Architectural Design	6	4	5.	2	
10	Urban and Environmental Considerations in Advanced Design	6	4		2	
11	Human-Centered and Responsive Design Approaches	6	4	*	2	
12	Case Studies of Cutting-Edge Architectural Projects	6	4	*:	2	
13	Experimental and Future-Oriented Architectural Concepts	6	4	25	2	
14	Presentation Techniques and Design Critique Sessions	6	4	97	2	
15	Final Project Submission and Review	6	4	- 4	2	
16		Fi	nat Exam			4

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5. Methods of students' assessment

Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
Quizzes	6, 11	4.5	4,5%
Mid-Term Examination	8	13.5	13,5%
Final Examination	(As Schedule)	70	70%
Lab Exam	(As Schedule)	+	96
Activities	Every week	12	12%
Final Oral Exam (if exists)		- 27	%
	Quizzes Mid-Term Examination Final Examination Lab Exam Activities	Quizzes 6, 11 Mid-Term Examination 8 Final Examination (As Schedule) Lab Exam (As Schedule) Activities Every week	Assessment Methods * (Week Number) Scores Quizzes 6, 11 4.5 Mid-Term Examination 8 13.5 Final Examination (As Schedule) 70 Lab Exam (As Schedule) - Activities Every week 12

6. Learning Resources and Supportive Facilities

	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Schittich, Christian. In Detail: Building Skins. Birkhliuser, 2019.
Learning resources (books, scientific references, etc.) *	Other References	Mostafavi, Mohsen, and David Leatherbarrow. On Weathering: The Life of Buildings in Time. MIT Press, 2021.
	Electronic Sources (Links must be added)	Microsoft Word, PowerPoint, and Adobe Photoshop (software tools used for documentation and presentation).
173	Learning Platforms (Links must be added)	Manzala Academy LMS, https://lms.manzalaucademy.edu.eg/
	Other (to be mentioned)	=
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and Computers with internet access.
equipment	Supplies	Whiteboards.
for	Electronic Programs	Microsoft Office program, Acrobat Reader
teaching	Skill Labs/ Simulators	**
and	Virtual Labs	#
learning *	Other (to be mentioned)	

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7. Course Matrixes:

7.1. Course contents Matrix with CLOs:

		Lec.	T/L	Cour	se Lea	rning o	utcome	es "CLO's	-
Week	Topics			CL OI	CL O2	CL O3	CL O4	CLO5	C1.
1	Introduction to Advanced Architectural Design Trends	4		X					
2	Exploring Contemporary Architectural Issues and Innovations	4	1/2	X					
3	Principles of Advanced Architectural Design	4	3	X					
4	Sustainable and Smart Design Strategies	4	*		x.				
5-6	Digital Fabrication and Parametric Design Applications	8			х				
7	Constraints and Challenges in Advanced Architectural Trends	4	2		x				
8		N	fid Te	m Exa	m				
9	Integration of Technology in Architectural Design	4	*	х			×		
10	Urban and Environmental Considerations in Advanced Design	4	•	х			×		
11	Human-Centered and Responsive Design Approaches	4	+	х			x		
12	Case Studies of Cutting- Edge Architectural Projects	4	+	x			x		
13	Experimental and Future- Oriented Architectural Concepts	4	*					x	x
14	Presentation Techniques and Design Critique Sessions	4	- 62					×	х
15	Final Project Submission and Review	4	20					x	х
16			Final	Exam					

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7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course	Learning	outcome	s "CLO"	411	_
	CL01	CLO2	CLO3	CLO4		L
Face to face lecture	X			CLO4	CL05	CLO
Tutorial / Exercise		X	X	X	X	X
Group discussion		X	X	X	X	
Laboratory	X	X			^	X
			X			X
Site visit			176			X
					X	
Presentation	X	-				
Mini-project	^	X			X	X
Research and reporting						
Brain storming	X	X		X		
Community and the community of the commu			X	-	-	X
Student assessment matrix with CLO	Links .		100	X	X	X

Teaching and Learning Methods	Course	Learning	outcome	s "CLO	.**	
Face to face lecture	CL01	CLO2	CLO3	CLO4	CLO5	Tere
Tutorial / Exercise	X	X	X	X	The state of the last of the l	CLO
Group discussion		X	X	X	X	X
Laboratory	X	X			X	X
Site visit			X			X
one visit						X
A Province					X	
Presentation	X	X	1		**	
Research and reporting	X	X	-	N .	X	X
Brain storming			X	X		X
rse coordinator:			A.	X	X	X

Prof. Dr. Tarek Abu Auf	Signature	Academic Year
rogram coordinator:	- Ann	2025-2026
Name rof, Dr. Tarek Abu Auf	Signaugre	Acudemic Year

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Fourth Year (Elective Courses)

List (4)

ARE 421E: Detailed planning

ARE 422E: Urban renovation and upgrading

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1. Basic Information:

Course Title (according to the bylaw)		De	tailed planning		
Course Code (according to the bylaw)			ARE 421E		
Department/s participating in offering the	course	Architectural Engineering Department			
Number of credit hours/points of the cours	se (according to	the bylaw)			
Lecture	Tutorial / Labo	natory	Total contact		
2	2		4		
Course Type	0	Compulsory	⊠ Elective		
Academic level at which the course is taug	ht	Fourth year			
Academic Program		Architectural Engineering Department			
Faculty/Institute	Hip	Higher Institute of Engineering and Technology Manzalla			
University/Academy		Manzalla Academy			
Name of Course Coordinator					
Course Specification Approval Date		16	August 2025		
Course Specification Approval	1	Institute Council No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

The role of planning in achieving a strong relationship between the built-up areas and spacesforming of spaces, their sequential arrangement dimensions, detailing, and relationships- visual forming with its variable parameters-circulation paths-landscaping and its corresponding parameters and details

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3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	gram Outcomes (NARS/ARS) rding to the matrix in the program specs)	Upon	Course Learning Outcomes completion of the course, the student will be able to:
Code	Text	Code	Text
A3.	Apply engineering design processes to produce cost- effective solutions that meet	CLOI	Define the role of planning in integrating built- up areas with open spaces to achieve spatial harmony.
A7.	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. Function efficiently as an	CLO6	Design urban layouts that balance built-up areas open spaces, and circulation networks effectively. Describe the principles of space formation, sequencing, and detailing in urban
	individual and as a member of multi-disciplinary and multi- cultural teams.	CLO2	environments. Apply knowledge of landscaping to enhance site
B2.	Produce designs that meet building users' requirements through understanding the relationship between people and buildings, and between buildings and their environment; and the need to relate buildings and the spaces between them to human needs and scale.	CLO5	Evaluate different planning approaches in optimizing space utilization and connectivity.
B4	Transform design concepts into buildings and integrate plans into overall planning within the constraints of: project financing, project management, cost control and methods of project delivery;	CLO3	Analyze the impact of visual parameters and circulation paths on urban spatial organization.

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111	ding to the matrix in the program specs)	Upon completion of the course, the student was table to:		
Code	Text	Code	Text	
	while having adequate knowledge of industries, organizations, regulations and procedures involved.			

4. Teaching and Learning Methods

- Face to face lecture
- ☐ Online education
- D Tutorial / Exercise
- □ Group discussion
- ☐ Laboratory

- ☐ Site visit
- Self-learning
 - El Presentation
 - Mini project
 - Research and reporting (self-learning)
- Brainstorming

Course Schedule

			Expected number of the Learning Hours					
No. of the Week	Scientific content of the course (Course Topics)	Total Workly Hours	Theoretical teaching (lectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/_)	Other (to be determined)		
1	Introduction to Urban Space Planning	6	2	2	2			
2	The Role of Planning in Connecting Built-Up Areas and Open Spaces	б	2	2	2			
3	Principles of Space Formation: Sequencing, Dimensions, and Relationships	6	2	2	2			
4	Detailing and Spatial Organization in Urban Design	6	2	2	2			
5	Visual Forming and Its Variable Parameters in Urban Spaces	6	2	2	2			
6	Circulation Paths: Movement Strategies and Connectivity	6	2	2	2			
7	Landscaping Elements and Their Impact on Urban Spaces	6	2	2	2			
8		Mid	Term Exam					

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9	Integrating Built and Open Spaces through Effective Design Strategies	6	2:	2	2	
10	Evaluating Spatial Relationships and Functional Zoning	6	2	2	2	
11	Suggesting and Evaluating Alternative Urban Design Solutions	6	2	2	2	
12	Review of Problems, Constraints, and Potentials in Urban Planning	6	2	2	2	
13	Final project submission and review, applying criticism tools and competition methodologies.	6	2	2	2	
15	Final Review and Discussion of Project Outcomes	12	4	4	4	
16		Fic	ad Exam		-	-

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course Marks
1.	Quizzes	6, 11	4.5	4.5 %
2.	Mid-Term Examination	8	13.5	13.5%
3.	Final Examination	16	70	70%
4.	Lab Exam	(As Schedule)		%
5,	Activities and assignments	Every week	12	12%
6.	Final Oral Exam (if exists)	14	46	.55

6. Learning Resources and Supportive Facilities

Learning resources	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Wasson, C. S. (2015). System Engineering Analysis, Design, and Development: Concepts, Principles, and Practices (2nd Edition). John Wiley & Sons, ISBN-13: 978-1118442265.		
(books, scientific references,	Other References	Barron, M. (2024). Auditorium Acoustics a Architectural Design (2nd Edition). Spon Pre ISBN-13: 978-1032836690.		
etc.) *	Electronic Sources (Links must be added)	Totten, C. W. (2019). Architectural Approach to Level Design. CRC Press.		
	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/		

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	Other (to be mentioned)	Clark, K. (2021). Power of place-heritage policy a the start of the new millennium. In Engaging with Heritage and Historic Environment Policy (pp. 11- 37). Routledge.
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and
equipment	Supplies	Compoters with internet access.
for	Electronic Programs	Whiteboards
teaching	Skill Labs/Simulators	Microsoft Office program, Acrobat Reader
and	Virtual Labs	-
Course Matrix	Other (to be seemed to	-

7.1. Course contents Matrix with CLOs:

	rek Topics	L	ee	T/L	C	ourse Le	arning	mtoom	es "CLO	W - 10
1	Introduction to Urban Space	1 50	33	nunu	CLOI	CLO2	CLO3	CL04		-
	4.300000000	2		2	X			CLU	CLO5	CLO
2	and Open Spaces	2	1	2		х			X.	
3	Principles of Space Formation: Sequencing, Dimensions, and Relationships	2	T	2		X				
4	Detailing and Spatial Organization in Urban Design	2	+	2	-	-	×			
5	Visual Forming and Its Variable Parameters in Urban Spaces	100	1	2	+	+	x	x	-	
6	Circulation Paths: Movement Strategies and Connections	2	-	2	-	-	x			
7	Landscaping Elements and Their Impact on Urban Spaces	2	-	2	N	-	-	+	X	х
8		-				- 1		- 1	- 1	
9	Integrating Built and Open	-	M	id Te	rm Exam	1	-			
9	Design Strategies	2	2		X		T	T		x
0	Evaluating Spatial Relationships and Functional Zoning	2	2	+	x	+	+	+	-	X
1	Suggesting and Evaluating	2	2	-						

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Week	Ter Inc.	Lee Tr		Course Learning outcomes "CLO's"					
		CLO1	CLO2	CLO3	CL04	CLO5	CL06		
	Alternative Urban Design Solutions							VIELES.	
12	Review of Problems, Constraints, and Potentials in Urban Planning	2	2			X	×	х	×
13	Final Submission and Presentation of the Urban Space Design Exercise	2	2			х	×	x	х
14-15	Final Review and Discussion of Project Outcomes	4	4	×	х	x	N	N	X:
16			Fir	nal Exam					

7.2. Teaching and learning matrix with CLOs:

Teaching and Learning Methods	Course Learning outcomes "CLO's"							
reaching and Learning Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6		
Face to face lecture	X	x		x		100000		
Tutorial / Exercise					x	x		
Group discussion			x		-	-		
Self-learning			-		_			
Presentation				x	x			
Mini project						x		
Research and reporting	x							
Brainstorming			x	x	x	-		
Case study	x	x	-	x	x			

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLO's"								
Seminative representation	CLOI	CLO2	CLO3	CLO4	CLO5	CLO6			
Final written exam	X	x	X	X	X				
Mid-term Exam	×	X	x	x	×	_			
Quizzes		8	×	x		i ari			
In-class questions (formative assessment)	X			x		x			
Project assignments	x	x	x	-	X	×			

Ministry of Higher Education figher Institute of Engineering and Textinology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architectural Engineering Program



Course coordinator:

Name	Signature	Academic Year
Prof. Dr.	- D.	2025-2026
Program coordinator:	4	_
Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf		2025-2026

Ministry of Higher Education Higher Institute of Engineering and Technology at Manzalla Established by Ministerial Resolution No. (2354) of 2019 Architectural Engineering Program



1. Basic Information:

Course Title (according to the bylaw)		Urban Renovation and Upgrading			
Course Code (according to the bylaw)		ARE 422E			
Department/s participating in offering the	course A	rchitectural Engineering Department			
Number of credit hours/points of the cour	se (according to the by	ylaw)			
Lecture	Tutorial / Laborator;	y Total contact			
2	2	4			
Course Type	□ Comp	oulsory 21 Elective			
Academic level at which the course is tang	ght	Fourth year			
Academic Program	A	Architectural Engineering Department			
Faculty/Institute	Higher	Institute of Engineering and Technology a Manzalla			
University/Academy		Manzalla Academy			
Name of Course Coordinator		Dr. Murwa Al-Adham			
Course Specification Approval Date		16 August 2025			
Course Specification Approval	Institu	ute Council No. (12) on 16 August 2025			

2. Course Overview (Brief summary of scientific content)

Maximum use of available environmental possibilities and human and urban resources-study of local and global experiments in development and upgrading-standing problems of urban decay, its causes and factors- tools and techniques of rectification used in renovation and upgrading- conservation and maintenance- case studies and applications.

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Architectural Engineering Program

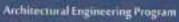


3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with Competencies (NARS/ARS)

	ogram Outcomes (NARS/ARS) ording to the matrix in the program specs)	Upon completion of the course, the student will able to:			
Code	Text	Code	Text		
A3,	Apply engineering design processes to produce cost- effective solutions that meet	CL04	Design urban spaces that integrate economic, social, cultural, environmental, and urban aspects.		
	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.	CLO6	Develop small-scale models (maquettes) to demonstrate methods of assembling urban spaces and buildings.		
A7.	Function efficiently as an individual and as a member of multi-	CLOI	Apply effective solutions for urban renovation and upgrading at different urban scales.		
	disciplinary and multi-cultural teams.	CLO2	Explain the causes of urban-decay and the challenges facing the built environment in Egypt.		
B2.	Produce designs that meet building users' requirements through understanding the relationship between people and buildings, and between buildings and their environment, and the need to relate buildings and the spaces between them to human needs and scale.		Utilize appropriate tools and techniques for urban rectification, conservation, and maintenance.		
B4	Transform design concepts into buildings and integrate plans into overall planning within the constraints of: project financing, project management, cost control and methods of project delivery; while having adequate knowledge of industries, organizations, regulations and procedures involved.	CLO3	Analyze global and local case studies to extract best practices for urban development and upgrading.		

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4. Teaching and Learning Methods

33	Face to face lecture	☐ Site visit
	Online education	⊠ Self-Jearning

☐ Tutorial / Exercise ☐ Presentation

☑ Group discussion
☐ Mini project

☐ Laboratory

☐ Research and reporting (self-learning)

☑ Brainstorming

Course Schedule

			Expecte	d number of t	he Learning Hou	IFR)	
No. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Theoretical teaching (bectures/discus sion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/)	Other (to be determined)	
1	Introduction to Urban Renovation and Upgrading	6	2	2	2		
2	Optimizing Environmental, Human, and Urban Resources in Development	6	2	2	2		
3	Analysis of Global and Local Urban Upgrading Strategies	6	2	2	2		
4	Challenges of Urban Decay: Causes, Impacts, and Contributing Factors	6	2	2	2		
5	Innovative Tools and Techniques for Urban Rectification and Renewal	6	2	2	2		
6	Conservation, Maintenance, and Sustainable Urban Regeneration	6	2	2	2		
7	Case Studies on Successful Urhan Upgrading Projects	6	2	2	2		
8	Mid Term Exam						
9	Identifying Problems, Constraints, and Opportunities in Urban Areas	6	2	2	2	1	
10	Strategic Analysis of Urban Issues and Development Potentials	6	2	2	2		
11	Integrated Approaches to Urban Rehabilitation and Upgrading	6	2	2	2		
12	Final Review and Student	6	2	2	2		

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cussions neral revision and students*					
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scritation		4	4.	4	
		il Project Submission and 12	Project Submission and 12 4	Project Submission and 12 4 4	Project Submission and 12 4 4 4

No.	Assessment Methods	Assessment Timing (Week Number)	Marks/ Scores	Percentage of Total Course
1.	Quizzes	6, 11		Marks
2.	Mid-Term Examination	36.11	4.5	4.5 %
3.	Final Examination	8	13.5	13,5%
4.		16	70	70%
	Lab Exam	(As Schedule)		000000
Š.	Activities and assignments		10	%
	Final Oral Exam (if exists)	Every week	12	12%
Loos	ning Resources and Supportive	40	141	%

Learning	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Wasson, C. S. (2015). System Engineering Analysis, Design, and Development: Concepts Principles, and Practices (2nd Edition). John Wiley & Sons. ISBN-13: 978-1118442265.		
resources (books, scientific references,	Other References	Barron, M. (2024). Auditorium Acoustics at Architectural Design (2nd Edition). Spon Pres ISBN-13: 978-1032836690.		
	Electronic Sources (Links must be added)	Fotten, C. W. (2019). Architectural Approach to Level Design, CRC Press.		
etc.) *	Learning Platforms (Links must be added)	https://lms.manzalaacademy.edu.eg/		
	Other (to be mentioned)	Clark, K. (2021). Power of place-beritage policy at the start of the new millennium. In Engaging with Heritage and Historic Environment Policy (pp. 11- 37). Routledge.		
Supportive facilities &	Devices/Instruments	Projectors, audio-visual systems, and		
equipment	Supplies	Computers with internet access. Whitebourds		

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Architectural Engineering Program



Electronic Programs	1 10
Skill Labs/Simulators	Microsoft Office program, Acrobat Reader
Virtual Labs	-
Other (to be mentioned)	
	Electronic Programs Skill Labs/Simulators Virtual Labs Other (to be mentioned)

7.1. Course contents Matrix with CLOs:

	Veck	Topics		Lec	T/L	(ourse	Le	arning	outen	mes "CL	(31.11
	1	Introduction to Urban	-	E.		CLO	CLC	72	CL03	CLO		Published State Commercial
-		Renovation and Hermitian	1	2	2	x					CLOS	CLO
The same	2	Optimizing Environmental, Human, and Urban Resource in Development		2	2	x		1			+	+
-	3	Analysis of Global and Loci Urban Upgrading Strategies		2	2			1		N	+	-
4		Challenges of Urban Decay; Causes, Impacts, and Contributing Factors		2	2			1		-	-	X
5		Innovative Tools and Techniques for Urban Rectification and Renewal	1	2	2	ĸ		t	x	x		X
6		Conservation, Maintenance, and Sustainable Urban Regeneration	1	1	2	1	X	-	-			
7	11	Case Studies on Successful Irban Upgrading Projects	2	+	2	-		-	+			
8	100		-	-	47.4 %	-	X		1			
9	1.0	dentifying Problems, constraints, and	1			rm Exa	m		1			
10	Is	pportunities in Urban Areas trategic Analysis of Urban sucs and Development	2	+	+	+	-	_	-	X	8	
-	4.3	OSCHETALS.	2	1 2						x.	×	
11	U	tegrated Approaches to rhan Rehabilitation and ograding	2	2	1		+	,	+	+	+	-
12	1.71	nal Review and Student scussions	2		+	-	+		-	+	_	X
13	SEU	neral revision and dents' questions	2	2	1		+	X	-	-		X
-15	L-113	al Project Submission and sentation	4	4	1 x		-	-	-	-	х :	X
6			-	- 10	inal E				N		3	X

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7.2. Teaching and learning matrix with CLOs:

	Course Learning outcomes "CLO's"								
Teaching and Learning Methods	CLOI	CLO2	CLO3	CL04	CL05	CLO6			
Face to face lecture	x	·x	×		х	Х			
Group discussion									
V CONTRACTOR OF THE PARTY	-					1 20			
Presentation						X			
Presentation Research and reporting	x	x			*	X			
The second secon	x	×.		x	x	X			

7.3. Student assessment matrix with CLOs:

Assessment Methods	Course Learning outcomes "CLO's"								
Assessment Methods	CLOI	CLO2	CLO3	CLO4	CLO5	CL06			
Final written exam		x	x			X			
Oral exam			X	x		X			
Mid-term Exam			x	x		X			
Lab Exam	x				x				
Research assignments	X					X			
In-class questions (formative assessment)	х	x	x	x					

Course coordinator:

Name	Signature	Academic Year	
Dr. Marwa Al-Adham	421100	2025-2026	

Program coordinator:

Name	Signature	Academic Year
Prof. Dr. Tarek Abu Auf	B	2025-2026

Course specification 2025-2026



Higher Institute of Engineering and Technology at Manzala



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