Modern Academy for Engineering and Technology in Maadi
Mechanical Engineering Department

Architecture Engineering and Building Technology Bsc Program

(By Law 2020)

Page Intentionally Left Blank

INTRODUCTION

Engineers solve real-life problems. They find the best solutions through the application of their knowledge, experience, and skills. Engineers help to define and refine the way of life by providing innovative, higher-performance, safer, cleaner, or more comfortable day-use facilities for human beings. They seek improvement through the processes of invention, design, manufacturing, and construction.

The products of engineering activities are intended to be sustainable. However, drawbacks are associated with such activities; for example, the water, air, environment, and acoustic pollution resulting of the same engineering marvels of decades ago.

The engineer's problem-solving complexity grows as the world's social and technological problems become more closely related. For example, the problem of air pollution cannot be solved physically without considering the social, legal, political, and ethical conflicts. Moreover, the impact of the available engineering solutions on the interests of the individuals and groups should be considered.

The engineering study provides the students with the advanced, effective, technology-based education justifying the expectations of the future of science and technology. It should also provide the technical understanding and problem-solving skills, which allow coping with the challenges of tomorrow.

The discipline of architecture draws on knowledge and skills from the human and physical sciences, the humanities, and the fine and applied arts. It addresses the accommodation of all human activity in all places under all conditions, understanding our place within differing physical, historical, cultural, social, political, and virtual environments. Architecture proposes, forms, and transforms our built environment, and does so through an engagement with the spaces, buildings, cities, and landscapes in which we live. Architectural education is therefore rich, varied, and interdisciplinary.

While architectural education must be concerned with the constraints of the physical world and historical and cultural dimensions, it must also constantly adapt to a changing social, economic and environmental context nationally, regionally, and internationally

Associate Prof. Dr. Assmer Zakria .

Head Principal

Architectural Engineering and Building Technology Department

Page Intentionally Left Blank

Content

Page Intentionally Left Blank

Architecture Engineering and Building Technology
B.Sc. Program Specifications

1. General

1.1. Basic Information

Program Title: Architecture Engineering and Building Technology B Sc Program
Program Type: Single
Department: Architecture Engineering and Building Technology Department
Coordinator: Dr Asamer Zakria
Assistant Co-ordinator:
External Evaluators: The program specifications are submitted to external reviewing.
Academic Standard: The current program fulfills the requirements of the National Academic Reference Standards (NARS) Engineering, 2nd Edition, 2018, for the BASIC MECHANICAL Engineering graduate and similar programs.
Program Started on 2000
Dates of program specifications approval: August 2020

1.2. Staff Members

The Architectural Engineering and Building Technology Program is taught by 44 highly qualified faculty members, in addition to 15 full time employed staff members teaching the basic science courses. All the staff members are qualified to teach the courses allocated to them. The staff members are assisted by 79 full time teaching assistants in addition to 8 technicians.

1.3. Program Reviewing

1.3.1 Internal external Reviewer(s)

The program was evaluated internally by the quality office. The evaluation report showed that the program specification agrees with the Adopted Academic Reference Standards.

1.3.2 External Reviewer(s)

The program specifications are submitted to external reviewing

2. Professional Information

2.1. Preamble

Engineers solve real-life problems. They find the best solutions through the application of their knowledge, experience, and skills. Engineers help to define and refine the way of life by providing innovative, higher-performance, safer, cleaner, or more comfortable day-use facilities for human beings. They seek improvement through the processes of invention, design, manufacturing, and construction.
The discipline of architecture draws on knowledge and skills from the human and physical sciences, the humanities, and the fine and applied arts. It addresses the accommodation of all human activity in all places under all conditions, understanding our place within differing physical, historical, cultural, social, political, and virtual environments. Architecture proposes forms, transforms our built environment, and does so through an engagement with the spaces, buildings, cities, and landscapes in which we live. Architectural education is therefore rich, varied and interdisciplinary.

The current program fulfills the requirements of the academic referenced standard (ARS) of the architectural engineering and building technology engineering BSc program approved by the the National Authority for Quality Assurance and Accreditation in Education, June 2015. It includes distinguished building technology discretionary courses.

2.2. Program Mission and Aims

2.2.1. Program mission

The mission of the Bachelor of Architecture and Building Technology program is to prepare innovative graduates able to interact with the challenges in the fields of the Architecture and Building Technology scientifically and professionally at national and regional levels to satisfy the requirements of the society in governmental authorities and public and private sectors.

2.2.2. Academic mission

The Modern Academy for engineering and Technology aims at preparing distinguished engineering cadres capable of competing scientifically and professionally on the local and regional levels to meet the needs of the society in the various sectors of the country. This is achieved through providing students with modern advanced technological knowledge, concepts and skills via various programs, within a frame of cultural, social and ethical values.

2.2.3. Conformity of the program mission to the modern academy mission

		Modern Academy Mission Keywords			
		The graduates can compete scientifically and professionally on the local and regional levels	The graduate's qualification meets the needs of the society in the various sectors of the country	The graduates are provided with modern technological knowledge, concepts and skills	The graduated qualification is achieved within a frame of cultural, social and ethical values
Key words of the program mission	Prepare innovative graduates			x	x
	Interact with the challenges in the fields of the Architecture			x	
	Interact with the challenges in the fields of building technology			x	
	Fulfil market demand in arch. at national and regional levels	x	x		x
	Satisfy the requirements of the society in governmental authorities and public sector	x	x		x
	Satisfy the requirements of the society private sector	x	x		

2.2.4. Program aims

The architecture engineering and building technology program aims at providing future engineers with appropriate theoretical knowledge and technical skills to respond to professional market demands in the fields of **architectural design and building technology**.

1. Providing appropriate theoretical knowledge
2. Providing technical skills
3. Fulfil marker demand in architecture.
4. Fulfil market technological demand

2.2.5 Conformity of the program aims to its mission

		Program Mission Keywords			
		Prepare innovative graduates	Interact with the challenges in the fields of the Architecture and building technology	Fulfil market demand in arch. at national and regional levels	Satisfy the requirements of the society in governmental authorities and public sector
Key words of the program aim	Providing appropriate theoretical knowledge	x		x	x
	Providing technical skills	x		x	x
	Fulfil marker demand in arch.	x	x	x	x
	Fulfil market technological demand	x	x	x	x

2.2.6. Graduate career opportunities

Bachelor of Science in Architectural Engineering and Building Technology program prepare innovative graduates to interact with the challenges in diverse domains of his specialty, locally and regionally. This degree is also appropriate for students who plan to be researchers or who intend to pursue an advanced degree in engineering. A typical program curriculum incorporates analytical tools, creative thought, and diversity of skills as well as the state of art of the profession.

2.3. The attributes of the graduate

The Engineering Graduate must:

1. Master a wide spectrum of engineering knowledge and specialized skills and can apply acquired knowledge using theories and abstract thinking in real life situations.
2. Apply analytic critical and systemic thinking to identify, diagnose and solve engineering problems with a wide range of complexity and variation.
3. Behave professionally and adhere to engineering ethics and standards.
4. Work in and lead a heterogeneous team of professionals from different engineering specialties and assume responsibility for own and team performance.
5. Recognize his/her role in promoting the engineering field and contribute in the development of the profession and the community;
6. Value the importance of the environment, both physical and natural, and work to promote sustainability principles.
7. Use techniques, skills and modern engineering tools necessary for engineering practice.
8. Assume full responsibility for own learning and self-development, engage in lifelong learning and demonstrate the capacity to engage in post-graduate and research studies.
9. Communicate effectively using different modes, tools and languages with various audiences; to deal with academic/professional challenges in a critical and creative manner.
10. Demonstrate leadership qualities, business administration and entrepreneurial skills.

2.4. COMPETENCIES

COMETENCIES OF ENGINEERING GRADUATE, The Engineering Graduate must be able to:

NARS Competencies of Engineering Graduate	C1. Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics. C2. 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. C3. 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. C4. Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles. C5. Practice research techniques and methods of investigation as an inherent part of learning. C6. Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements. C7. Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams. C8. Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools. C9. Use creative, innovative, and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations. C10. Acquire and apply new knowledge, and practice self, lifelong and other learning strategies.

NARS Competences of Basic Elec. Eng & similar prog	In addition to the Competencies for All Engineering Programs, the Basic Architectural Engineering graduate similar programs must be able to: C1. 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. C2. 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. C3. Generate ecologically responsible, environmental conservation and rehabilitation designs; through understanding of structural design, construction, technology, and engineering problems associated with building designs. C4. 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. C5. 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.
ARS Competencies of the Program	**ARS Competencies for Architecture Engineering and Building Technology** C1. Apply and preform technological standardization concepts in building construction field and different Quality management systems. C2. Investigate, evaluate, and analyze problems relative to building technology environment and develop solutions that meet the economic, social, technical, engineering, and aesthetic needs of both client and society. C3. Assist and Complete work in compliance with the rights and conditions of contractual obligations, relevant law, legislation, codes, building technology standards, regulations, and bylaws C4. Implement new technologies to transfer and interpret specific architectural elements into working drawings that could be implemented considering the common standards and requirements needed to communicate with other disciplines in the construction process.

2.5. CURRICULUM STRUCTURE AND CONTENTS

The curriculum of the Architectural Engineering and Building Technology program consists of 165 credits spread over 67 courses covering topics in Social Sciences and Humanitarian Sciences (SHS), Business Administration (BA), Math and Basic Sciences (MBS), Engineering Culture (EC), Basic Engineering Sciences (BES), and Applied Engineering and Design (AED) as required by the Supreme Council of Universities (SCU).

2.5.1. University Requirements (General cultural courses requirements)

The main purpose of a university education is not only to prepare students for successful careers but also to provide them with the knowledge and skills to develop a rational, well-rounded and successful personal identity. The main purpose of a university education is not only to prepare students for successful careers but also to provide them with the knowledge and skills to develop a rational, well-rounded and successful personal identity through:

a) Acquiring knowledge of non-engineering fields that strengthen the consciousness of the engineer of the society and its culture, including business, marketing, wellness, ethics, law, arts, etc.
b) The ability to consider and evaluate the impact of the technology on the society, public health, and safety.
c) The ability to appreciate and engage in social and entrepreneurial activities essential to the engineering practice and reflect on the management of the economics and social science
d) The ability to engage in life-long learning and respond effectively to the needs of the society.

The university requirements courses are unified for all of the programs of the Modern Academy. They consist of 16 credits (9.7 % of total 165 credits), which are satisfied by completing eight (8) courses:

1. Six (6) compulsory courses equivalent to 12 credits (7.27%), as listed in table 1- a.
2. Two (2) elective courses equivalent to 2 credits (2.43%), as listed in table 1- b.

Table 1-a Compulsory Courses of University Requirements (12 credit Hours, 7.27% of total 165 credits).

Course Code	Total Credit	Contact Hours				Course Title	Prerequisites	Subject Area						
		L	T	P	Total			Hum. & Soc. Sc.	Business Admins.	Math. & B. Sc.	Engineering Culture	Basic Eng. Sc.	App. Eng. & Des.	Proj. & Ind. Training
GENn041	2	2	-	-	2	Contemporary Social Issues	None	2						
GENn042	2	2	-	-	2	English Language.	None	2						
GENn043	2	2	-	-	2	History of Engineering and Technology.	None	2						
GENn141	2	2	-	-	2	Presentation Skills.	None	2						
GENn142	2	2	-	-	2	Technical Report Writing.	None	2						
GENn341	2	2	-	-	2	Project Management.	None		2					
Total	**12**	**12**	**-**		**12**	**7.27 %**		**10**	**2**					

Table 1-b Elective Courses of University Requirements (4 Credits Hours, 2.43% of total 165 credits).

	Course Code	Total Credit	Contact Hours				Course Title	Prerequisites	Subject Area						
			L	T	P	Total			Hum. & Soc. Sc.	Business Admins.	Math. & B. Sc.	Engineering Culture	Basic Eng. Sc.	App. Eng. & Des.	Proj. & Ind. Training
Elective 1	GENn351	2	2	-	-	2	Technical English.	GENn042	2						
	GENn352	2	2	-	-	2	Risk Management	None							
	GENn353	2	2	-	-	2	Industrial Psychology.								
Elective 2	GENn451	2	2	-	-	2	Environmental Effects of Electromagnetic Waves.	None		2					
	GENn452	2	2	-	-	2	Civilization and heritage								
	GENn453	2	2	-	-	2	Marketing								
Total		**4***					**2.43 %**		**2***	**2***					

The University Requirements make 9.7% of the total credit hours.

2.5.2. Faculty/Institute requirements (Mathematics, Basic Science, and Engineering Culture Courses)
Mathematics, Basic Sciences & Engineering culture courses give the following skills:

Mathematics:

a) Acquiring knowledge in mathematical and analytical methods.
b) The ability to reason about and conceptualize engineering components, systems or processes using analytical methods as related to the Architectural Engineering and Building Technology.
c) The ability to analyze and model engineering components, systems and processes specific to the Architectural Engineering and Building Technology.
d) The skill of using probability and statistical methods

Basic Sciences:

a) Acquiring knowledge of physics, chemistry, mechanics, earth sciences, biological sciences and other specific subjects, which focus on understanding the physical world.
b) The ability to select and apply scientific principles in problem solving.
c) The ability to analyze, model and reason about engineering components, systems or processes using principles and knowledge of the basic sciences as applicable in each engineering disciplinary context.
d) The ability to adopt scientific evidence-based techniques in problem solving.

Engineering Culture:

a) Acquiring knowledge in the areas related to the different engineering trends.
b) The ability to overview basic knowledge about different engineering specializations.

The Institute Requirements (Mathematics, Basic Science, and Engineering Culture Courses) courses are unified for all of the programs of the Modern Academy. They consist of fourteen (14) courses with 40 credits (24.24 % of total 165 credits), as listed in table 2.

Table 2 Courses of Institute Requirements (40 credits, 24.24% of total 165 credits)

Course Code	Total Credit	Contact Hours				Course Title	Prerequisites	Subject Area						
		L	T	P	Total			Hum. & Soc. Sc.	Business Admins.	Math. & B. Sc.	Engineering Culture	Basic Eng. Sc.	App. Eng. & Des.	Proj. & Ind. Training
CHEN001	3	2	1	2	5	Chemistry.	None			3				
MECN001	2	1	3	-	4	Mechanics -1.	None			2				
MECN002	2	1	3	-	4	Mechanics-2.	MECN001			2				
MTHn001	3	2	3	-	5	Mathematics-1(Algebra and Calculus).	None			3				
MTHn002	3	2	3	-	5	Mathematics-2(Integration and Analytic Geometry).	MTHn001			3				
PHYn001	3	2	1	2	5	Physics-1.	None			3				
PHYn002	3	2	1	2	5	Physics -2.	PHYn001			3				
MNFn001	2	1	3	-	4	Engineering Graphics 1	None				1	1		
MNFn002	2	1	3	-	4	Engineering Graphics 2	MNFn001				1	1		
MNFn003	3	2	-	3	5	Principles of Production Engineering.	None				1	2		
CMPn010	4	2	3	2	7	Program Design and Computer Languages.	None				4			
MTHn107	3	2	2	-	4	Mathematics -7 (Introduction to Prob. and Statistics)	MTHn002			3				

Course Code	Total Credit	Contact Hours				Course Title	Prerequisites	Subject Area						
		L	T	P	Total			Hum. & Soc. Sc.	Business Admins.	Math. & B. Sc.	Engineering Culture	Basic Eng. Sc.	App. Eng. & Des.	Proj. & Ind. Training
ENGn213	3	2	-	2	4	Advanced Computer Systems Implementation.	CMPn010*					2	1	
ENGn311	2	2	1	-	3	Engineering Economy.	None		1			1		
ENGn312	2	2	-	-	2	Engineering Laws and Professional ethics.	None					2		
Total	**40**	**26**	**27**	**13**	**66**				**1**	**22**	**7**	**9**	**1**	

*Additional prerequisites will be added, approved by the relevant department council and Modern Academy council and stated in the course and program specifications.

2.5.3. Requirements of the general specialization of the program (Basic Engineering Courses)

The general specialization of the program enables the students to:

a) Integrating knowledge and understanding of mathematics and physical sciences to develop basic engineering laws and concepts related to the Architectural Engineering and Building Technology.
b) The ability to extend knowledge and develop models and methods and use techniques, principles and laws of engineering sciences in order to lead to engineering applications across disciplinary boundaries.
c) The ability to deal effectively with numbers and concepts to identify/solve complex and open-ended engineering problems.

The requirements of the general specialization of Architectural Engineering and Building Technology bachelor program consist of 59 credits (35.76% of total 165 credits), as listed in table 3.

Table -3 Requirements of the general specialization of the program (59 credits, 35.76% of total 165 credits)

Course Code	Total Credit	Contact Hours				Course Title	Prerequisites	Subject Area						
		L	T	P	Total			Social & Hum. Sc.	Business Administration	Math. & B. Science	Engineering Culture	Basic Engineering Sc.	Applied Eng. & Design	Project & Ind. Training
ARCn111	3	2	2	-	4	Architectural Construction (1)	None			1		2		
ARCn112	3	2	2	-	4	Architectural Construction (2)	ARCn111			1		2		
ARCn114	3	1	2	3	6	Computer Applications (1)	CMPn010					2	1	
ARCn115	2	1	3	-	4	Properties & Resistance of Materials	None			1		1		
ARCn116	2	1	1	2	4	Surveying	None			1		1		
ARCn117	2	1	3	-	4	Theory of Structures	None			1		1		
ARCn120	2	2	1	-	3	Theories of Architecture (1)	None					1	1	
ARCn124	2	1	3	1	5	Skiagraphy and perspective	None			1		1		
ARCn141	2	2	1	-	3	History of Architecture (1)	None	1			1			
ARCn210	2	2	-	-	2	Building Technology	None					2		
ARCn211	3	2	2	-	4	Architectural Construction & Building materials (1)	ARCn112			1		2		
ARCn212	3	2	3	-	5	Architectural Construction & Building materials (2)	ARCn211			1		2		
ARCn214	2	1	3	-	4	Reinforced concrete & Steel structures.	ARCn117			1		1		
ARCn215	2	2	-	-	2	Foundations	ARCn214					2		
ARCn216	2	2	1	-	3	Environmental Control	ARCn210					2		
ARCn217	3	1	2	3	6	Computer Applications (2)	ARCn114					2	1	
ARCn227	2	2	1	-	3	Theories of Architecture (2)	ARCn120					1	1	
ARCn241	2	2	1	-	3	History of Architecture (2)	ARCn141	1			1			
ARCn310	2	1	3	-	4	Technical Installations in buildings (1)	ARCn212			1		1		
ARCn311	2	1	3	-	4	Technical Installations in buildings (2)	ARCn310			1		1		
ARCn312	3	2	3	-	5	Working Drawing & Construction Methods (1)	ARCn212					3		
ARCn313	3	2	3	-	5	Working Drawing & Construction Methods (2)	ARCn312					1	2	
ARCn325	2	2	1	-	3	Theories of Architecture and Arts	ARCn227					1	1	
ARCn340	2	2	1	-	3	History of Architecture 3	ARCn241	1			1			
ARCn411	3	1	6	1	8	Working Drawing & Construction Documents	ARCn313					2		1
Total	**59**	**40**	**51**	**10**	**101**			**3**		**11**	**3**	**34**	**7**	**1**

2.5.4. Requirements of the specific specialization of the program

Applied Engineering and Design

a) Attaining knowledge of operational practice, engineering codes and design techniques relevant to the subject
b) The ability to apply engineering knowledge and creative, iterative, and open-ended procedures when conceiving and developing components, systems and processes.
c) The ability to integrate engineering knowledge, engineering codes, basic and mathematical sciences in designing a component, a system, or a process.

d) The ability to work under constraints, taking into account time, economy, health and safety, social and environmental factors and applicable laws

Projects and Architectural Training:

a) Gaining the knowledge and experience of applying the different principles and techniques introduced in the program of study.
b) The ability to work within defined constraints, tackle work which lacks a well-defined outcome, or which has a wide range of possible solutions and exhibit creativity in dealing with unfamiliar real-life problems.
c) The ability to investigate, plan and execute technical research specific to the Architectural Engineering and Building Technology over an extended period, meeting deadlines and putting technical work in a social and commercial context.
d) The ability to work in a team, search published sources of information, interprets technical data, analyzes, and presents findings in various ways.

The requirements of the specific specialization of the Architectural Engineering and Building Technology bachelor program consist of 50 credits (30.3% of total 165 credits), which are satisfied by completing Twenty-four (24) courses:

1. Nineteen (19) Compulsory Applied Engineering and Design Courses, Projects and Trainings equivalent to 40 credits (24.24%) as listed in table 4- a.
2. Five (5) Elective Applied Engineering and Design Courses equivalent to 10 credits (6.06%), as listed in table 4- b.

Table 4-a Requirement of the specific specialization of the program Compulsory Courses (40 credits, 24.24% of total 165 credits)

Course Code	Total Credit	Contact Hours				Course Title	Prerequisites	Subject Area						
		L	T	P	Total			Social & Hum. Sc.	Business Administration	Math. & B. Science	Engineering Culture	Basic Engineering Sc.	Applied Eng. & Design	Project & Ind. Training
ARCn060	-	-	-	-	-	Summer Training (1)	None							
ARCn121	3	1	6	-	7	Architectural Design (1)	ARCn060					1	2	
ARCn122	3	1	6	-	7	Architectural Design (2)	ARCn121					1	2	
ARCn123	2	1	3	-	4	Visual Training (1)	None						2	
ARCn160	-	-	-	-	-	Summer Training (2)	ARCn060							
ARCn222	3	1	6	-	7	Architectural Design (3)	ARCn122					1	2	
ARCn223	3	1	6	-	7	Architectural Design (4)	ARCn222					1	2	
ARCn225	2	1	3	-	4	Visual Training (2)	ARCn123						2	
ARCn260	-	-	-	-	-	Architecture Training (1)	ARCn211-ARCn160 +66 Credit Hours							
ARCn321	3	1	6	-	7	Architectural Design (5)	ARCn223					1	2	
ARCn322	3	1	6	-	7	Architectural Design (6)	ARCn321					1	2	
ARCn323	2	1	3	-	4	Housing & City Planning (1)	ARCn226						2	
ARCn324	2	1	3	-	4	Housing & City Planning (2)	ARCn323						2	

Course Code	Total Credit	Contact Hours				Course Title	Prerequisites	Subject Area						
		L	T	P	Total			Social & Hum. Sc.	Business Administration	Math. & B. Science	Engineering Culture	Basic Engineering Sc.	Applied Eng. & Design	Project & Ind. Training
ARCn360	-	-	-	-	-	Architecture Training (2)	ARCn312-ARCn260 +99 Credit Hours							
ARCn421	3	1	6	-	7	Architectural Design (7)	ARCn322						2	1
ARCn422	3	1	5	-	6	City Planning	ARCn324						3	
ARCn423	3	1	5	-	6	Urban Design	ARCn324						3	
ARCn460	1	1	1	-	2	Graduation Project (A)	ARCn322 +132 Credit Hours							1
ARCn461	4	2	6	-	8	Graduation Project (B)	ARCn421-ARCn460							4
Total	**40**	**16**	**71**	**-**	**87**							**6**	**28**	**5**

Table 4-b Requirements of the specific specialization of the program
Elective Courses
(10 credits, 6.06% of total 165 credits)

Electives' Group Number	Course Code	Total Credit	Contact Hours				Course Title	Prerequisites	Subject Area						
			L	T	P	Total			Social & Hum. Sc.	Business Administration	Math. & B. Science	Engineering Culture	Basic Engineering Sc.	Applied Eng. & Design	Project & Ind. Training
Elective 3	ARCn334	2	1	3	-	4	Advanced Studies in Interior Design	ARCn123						2	
	ARCn335		1	3	-		Landscape Design	ARCn223							
	ARCn336		1	-	3		Simulation Programs & Architecture	ARCn216+ ARCn217							
Elective 4	ARCn331	2	2	-	-	2	Sustainable Architecture	ARCn216						2	
	ARCn332						Design, Environment planning & Power	ARCn216							
	ARCn333						Building technology and structure systems	ARCn210							
Elective 5	ARCn430	2	2	-	-	2	Aesthetics and Formations	ARCn340						2	
	ARCn436						Design Methodology	ARCn122							
	ARCn437						Architecture & Human Studies	ARCn122							

Electives' Group Number	Course Code	Total Credit	Contact Hours				Course Title	Prerequisites	Subject Area						
			L	T	P	Total			Social & Hum. Sc.	Business Administration	Math. & B. Science	Engineering Culture	Basic Engineering Sc.	Applied Eng. & Design	Project & Ind. Training
Elective 6	ARCn431	2	2	-	-	2	Advanced Building Economics	ARCn313						2	
	ARCn432						Architecture Criticism	ARCn340							
	ARCn435						Urban & Environmental Conservation	ARCn324							
Elective 7	ARCn433	2	2	-	-	2	Modern Building Systems and Materials	ARCn313						2	
	ARCn434						Urban Renewal	ARCn226							
	ARCn438						Housing in Developing Countries	ARCn226							
	Total	**10***	**6.06%**											**10***	

2.5.5. A Sample Study Plan

A sample study plan for the program of architecture and building technology is presented as a recommended sequence to complete the graduation requirements over 10 main semesters, the Fall and Spring semesters per academic year. Since the program is based on the credit hours system of education, the student does not have to take the courses during the semester indicated in the study plan as long as the course prerequisites are satisfied.

Table 5 **First Semester (Level zero)**

Code	Subject	Total Credits	Contact Hours			
			L	T	P	Total
CMPn010	Program Design and Computer Languages.	4	2	3	2	7
GENn041	Contemporary Social Issues	2	2	-	-	2
MNFn001	Engineering Graphics-1	2	1	3	-	4
GENn043	History of Engineering and Technology	2	2	-	-	2
MECN001	Mechanics -1	2	1	3	-	4
MTHn001	Mathematics -1 (Algebra and Calculus)	3	2	3	-	5
PHYn001	Physics -1	3	2	1	2	5
Total		**18**	**12**	**13**	**4**	**29**

Table 6 **Second Semester (Level zero)**

Code	Subject	Total Credits	Contact Hours			
			L	T	P	Total
CHEN001	Chemistry.	3	2	1	2	5
MNFn002	Engineering Graphics-2	2	1	3	-	4
GENn042	English Language.	2	2	-	-	2
MECN002	Mechanics-2	2	1	3	-	4
MTHn002	Mathematics -2(Integration and Analytic Geometry)	3	2	3	-	5
PHYn002	Physics-2.	3	2	1	2	5
MNFn003	Principles of Production Engineering	3	2	-	3	5
Total		**18**	**12**	**11**	**7**	**30**

Table 6 **Summer Training**

Code	Subject	Total Credits	Contact Hours			
			L	T	P	Total
ARCn060	Summer Training (1)	-	-	-	-	-
Total		-	-	-	-	-

Table 7 **Third Semester (Level one)**

Code	Subject	Total Credits	Contact Hours			
			L	T	P	Total
GENn142	Technical Report Writing	2	2	-	-	2
ARCn111	Architectural Construction (1)	3	2	2	-	4
ARCn115	Properties & Resistance of Materials	2	1	3	-	4
ARCn116	Surveying	2	1	1	2	4
ARCn120	Theories of Architecture (1)	2	2	1	-	3
ARCn121	Architectural Design (1)	3	1	6	-	7
ARCn123	Visual Training (1)	2	1	3	-	4
Total		**16**	**10**	**16**	**2**	**28**

Table 8 **Fourth Semester (Level one):**

Code	Subject	Total Credits	Contact Hours			
			L	T	P	Total
MTHn107	Mathematics -7 (Introduction to Prob. and Statistics)	3	2	2	-	4
ARCn112	Architectural Construction (2)	3	2	2	-	4
ARCn114	Computer Applications (1)	3	1	2	3	6
ARCn117	Theory of Structures	2	1	3	-	4
ARCn122	Architectural Design (2)	3	1	6	-	7
ARCn124	Skiagraphy perspective	2	1	3	1	5
ARCn141	History of Architecture (1)	2	2	1	-	3
Total		**18**	**10**	**19**	**4**	**33**

Table 9 **Summer Training**

Code	Subject	Total Credits	Contact Hours			
			L	T	P	Total
ARCn160	Summer Training (2)	-	-	-	-	-
Total		**-**	**-**	**-**	**-**	**-**

Table 10 **Fifth Semester (Level two)**

Code	Subject	Total Credits	Contact Hours			
			L	T	P	Total
GENn141	Presentation Skills	2	2	-	-	2
ARCn210	Building Technology	2	2	-	-	2
ARCn211	Architectural Construction & Building materials (1)	3	2	2	-	4
ARCn214	Reinforced concrete & steel structures	2	1	3	-	4
ARCn217	Computer Applications (2)	3	1	2	3	6
ARCn222	Architectural Design (3)	3	1	6	-	7
ARCn227	Theories of Architecture (2)	2	2	1	-	3
Total		**17**	**11**	**14**	**3**	**28**

Table 11 **Sixth Semester (Level two)**

CODE	SUBJECT	TOTAL CREDITS	CONTACT HOURS			
			L	T	P	TOTAL
ARCn212	Architectural Construction & Building materials (2)	3	2	3	-	5
ARCn215	Foundation	2	2	-	-	2
ARCn216	Environmental Control	2	2	1	-	3

CODE	SUBJECT	TOTAL CREDITS	CONTACT HOURS			
			L	T	P	TOTAL
ARCn223	Architectural Design (4)	3	1	6	-	7
ARCn225	Visual Training (2)	2	1	3	-	4
ARCn241	History of Architecture (2)	2	2	1	-	3
GENn341	Project Management.	2	2	-	-	2
Total		**16**	**12**	**14**	**-**	**26**

Table 12 **Summer Training**

Code	Subject	Total Credits	Contact Hours			
			L	T	P	Total
ARCn260	Architecture Training (3)	-	-	-	-	-
Total		**-**	**-**	**-**	**-**	**-**

Table 13 **Seventh Semester (Level three)**

Code	Subject	Total Credits	Contact Hours			
			L	T	P	Total
ARCn310	Technical Installations in buildings (1)	2	1	3	-	4
ARCn312	Working Drawing & Construction Methods (1)	3	2	3	-	5
ARCn321	Architectural Design (5)	3	1	6	-	7
ARCn323	Housing & City Planning (1)	2	1	3	-	4
ARCn325	Theories of Architecture and Arts	2	2	1	-	3
Elective 1	Elective Courses of University Requirements: • GENn351 Technical English. • GENn352 Risk Management • GENn353 Industrial Psychology.	2	2	-	-	2
Elective 3	Elective Courses of Specific Specialization: • ARCn334 Advanced Studies in Interior Design • ARCn335 Landscape Design	2	1	3	-	4
	• ARCn336 Simulation Programs & Architecture		1	-	3	
Total		**16**	**-**	**-**	**-**	**29**

Table 14 **Eighth Semester (Level three)**

Code	Subject	Total Credits	Contact Hours			
			L	T	P	Total
ARCn311	Technical Installations in buildings (2)	2	1	3	-	4
ARCn313	Working Drawing & Construction Methods (2)	3	2	3	-	5
ARCn322	Architectural Design (6)	3	1	6	-	7
ARCn324	Housing & City Planning (2)	2	1	3	-	4
ENGn213	Advanced Computer Systems Implementation.	3	2	-	2	4
ARCn340	History of Architecture 3	2	2	1	-	3
Elective 4	Elective Courses of Specific Specialization: • ARCn331 Sustainable Architecture • ARCn332 Design, Environmental planning, and power • ARCn333 Building technology and structure systems	2	2	-	-	2
Total		**17**	**11**	**16**	**2**	**29**

Table 15 **Summer Training**

Code	Subject	Total Credits	Contact Hours			
			L	T	P	Total
ARCn360	Architecture Training (3)	-	-	-	-	-
Total		**-**	**-**	**-**	**-**	**-**

Table 16 **Ninth Semester (Level Four)**

Code	Subject	Total Credits	Contact Hours			
			L	T	P	Total
ARCn421	Architectural Design (7)	3	1	6	-	7
ARCn422	City Planning	3	1	5	-	6
ARCn423	Urban Design	3	1	5	-	6
ARCn460	Project (A)	1	1	1	-	2
ENGn311	Engineering Economy	2	2	1	-	3
Elective 2	Elective Courses of University Requirements: • GENn451 Environmental Effects of Electromagnetic Waves • GENn452 Civilization and heritage • GENn453 Marketing	2	2	-	-	2
Elective 5	Elective Courses of Specific Specialization: • ARCn430 Aesthetics and Formations • ARCn436 Design Methodology • ARCn437 Architecture & Human Studies	2	2	-	-	2
Total		**16**	**10**	**17**	**-**	**28**

Table 17 **Tenth Semester (Level Four)**

Code	Subject	Total Credits	Contact Hours			
			L	T	P	Total
ARCn411	Working Drawing & Construction Documents	3	1	6	1	8
ARCn461	Project (B)	4	2	6	-	8
ENGn312	Engineering Laws and Professional ethics.	2	2	-	-	2
Elective 6	Elective Courses of Specific Specialization: • ARCn431 Advanced Building Economics • ARCn432 Architecture Criticism • ARCn435 Urban & Environmental Conservation	2	2	-	-	2
Elective 7	Elective Courses of Specific Specialization: • ARCn433- Modern Building Systems and Materials • ARCn434- Urban Renewal • ARCn438- Housing in developing countries	2	2	-	-	2
Total		**13**	**9**	**12**	1	**22**

2.6.5. CONFORMITY TO THE ENGINEERING SECTOR OF THE SCU

The Architectural Engineering and Building Technology BSc program includes 67 courses of total 165 credit hours, equivalent to 281 contact hours. These courses are classified according to the requirements of the engineering sector of the supreme council of higher education to the following subject areas:

		Achieved	Range
1)	University Requirements	9.7%	(6-10%)
2)	Faculty/Institute requirements	24.24%	(22-30%)
3)	Requirements of the general specialization of the program	35.76%	(30-35%)
4)	Requirements of the specific specialization of the program	30.3%	(20-30%)

The program credit hours were also classified according to the reference framework approved by the (SCU) on 2016 to the following subject areas:

		Achieved	Range
1)	Social and Humanitarian Sciences	9.09%	(8-12%)
2)	Business Administration	3.03%	(2-4%)
3)	Mathematics and Basic Sciences	20%	(18-22%)
4)	Engineering Culture	6.06%	(4-6%)
5)	Basic Engineering Sciences	29.7%	(25-30 %)
6)	Applied Engineering and Design	27.88%	(25-30 %)
7)	Project & Industrial Training	4.24%	(4-6%)

The collective credit hours are shown in the following table. This table shows that the Credit hours' distribution of the Architectural Engineering and Building Technology BSc program agrees with the requirements of the Engineering Sector of the Supreme Council of Higher Education.

Table 18 Conformity to The Engineering Sector of the SCU

	Subject Area							Total Credit Hours	Percentage	Requirements of the Engineering Sector Committee
	Social & Hum. Sc.	Business Administration	Math. & B. Science	Engineering Culture	Basic Engineering Sc.	Applied Eng. & Design	Project & Ind. Training			
University Requirements	12	4						16	9.7%	6-10%
Faculty/Institute requirements		1	22	7	9	1		40	24.24%	22-30%
Requirements of the general specialization of the program	3		11	3	34	7	1	59	35.76%	30-35%
Requirements of the specific specialization of the program					6	38	6	50	30.30%	20-30%
Total Credit Hours	15	5	33	10	49	46	7	165	100.00	
Percentage	9.09%	3.03%	20%	6.06%	29.7%	27.88%	4.24%			
Requirements of the Engineering Sector Committee for subject areas	8--12%	2—4 %	18—22 %	4—6%	25—30%	25—30%	4—6%			

2.6. Program competencies/Course Competencies Mapping

The contribution of the individual courses to the program competences are indicated in the courses specifications and revised following the evaluation of the mapping matrix.

Table 19 Program competences/Course Competencies Mapping

Courses		Program Competencies																		
Code	Title	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
CMPn010	Program Design and Computer Languages	1	1	1	1	1	1			1	1									
GENn041	Contemporary Social Issues		1	1	1	1		1	1	1	1									
MNFn001	Engineering Graphics-1	1	1	1	1	1	1	1	1	1	1									
GENn043	History of Engineering and Technology							1	1	1	1									
MECN001	Mechanics -1	1				1		1	1	1										
MTHn001	Mathematics - 1 (Algebra and Calculus)	1				1		1	1	1	1									
PHYn001	Physics -1	1	1	1	1	1	1	1	1	1	1									
CHEN001	Chemistry.	1	1	1	1	1	1	1	1	1	1									
MNFn002	Engineering Graphics-2	1	1	1	1	1	1	1	1	1	1									
GENn042	English Language.					1			1	1	1									
MECN002	Mechanics-2	1				1		1	1	1	1									
MTHn002	Mathematics - 2(Integration and Analytic Geometry)	1	1			1		1	1	1	1									
PHYn002	Physics-2.	1	1	1	1	1	1	1	1	1	1									
MNFn003	Principles of Production Engineering	1	1	1	1	1	1	1	1	1	1									
ARCn060	Summer Training (1)	1		1				1	1	1	1		1							
GENn142	Technical Report Writing	1		1		1		1	1	1	1			1	1	1				
ARCn111	Architectural Construction (1)	1				1		1	1	1	1	1	1	1						
ARCn115	Properties & Resistance of Materials		1		1	1		1	1	1			1	1		1				
ARCn116	Surveying	1	1	1			1	1	1	1	1	1	1	1	1	1				
ARCn120	Theories of Architecture (1)	1	1	1	1	1	1	1	1	1										
ARCn121	Architectural Design (1)	1	1	1	1	1	1	1		1		1								
ARCn123	Visual Training (1)		1					1	1	1	1		1			1				
MTHn107	Mathematics - 7	1	1			1		1	1	1	1									
ARCn112	Architectural Construction (2)	1		1		1		1	1	1	1	1		1						
ARCn114	Computer Applications (1)				1					1	1	1								1
ARCn117	Theory of Structures	1	1	1	1	1	1	1	1	1										
ARCn122	Architectural Design (2)	1	1	1	1	1	1	1	1	1										
ARCn124	Skiagraphy perspective	1	1					1	1	1	1	1	1			1				
ARCn141	History of Architecture (1)	1	1	1		1	1													
ARCn160	Summer Training (2)			1			1		1	1	1		1		1					
GENn141	Presentation Skills					1		1	1	1	1									
ARCn210	Building Technology			1		1		1	1	1	1	1	1	1	1					
ARCn211	Architectural Construction	1				1	1		1	1	1	1	1	1						

Courses	Program Competencies																			
Code	Title	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	& Building materials (1)																			
ARCn214	Reinforced concrete & steel structures	1	1	1		1	1	1		1										
ARCn217	Computer Applications (2)	1		1		1		1	1	1	1	1								
ARCn222	Architectural Design (3)	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
ARCn227	Theories of Architecture (2)	1	1	1	1	1	1	1	1	1										
ARCn212	Architectural Construction & Building materials (2)	1			1	1	1	1	1	1	1		1	1						
ARCn215	Foundation	1	1	1	1	1		1	1	1			1	1		1	1			1
ARCn216	Environmental Control	1	1	1	1	1	1		1	1	1	1	1	1	1					
ARCn223	Architectural Design (4)	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
ARCn225	Visual Training (2)		1			1	1	1	1	1	1	1		1						
ARCn241	History of Architecture (2)	1	1	1	1			1	1	1		1	1							
GENn341	Project Management.	1	1	1	1	1	1			1	1	1		1		1				
ARCn260	Architecture Training (1)		1					1						1		1				
ARCn310	Technical Installations in buildings (1)	1	1	1	1			1	1			1	1	1						
ARCn312	Working Drawing & Construction Methods (1)	1			1		1	1	1	1	1		1	1	1					
ARCn321	Architectural Design (5)			1		1		1	1	1	1	1		1	1	1				
ARCn323	Housing & City Planning (1)			1		1		1	1	1	1	1		1	1					
ARCn325	Theories of Architecture and Arts	1	1	1	1			1	1	1		1	1							
GENn351	Technical English.					1			1	1	1									
GENn352	Risk Management		1	1	1	1	1	1	1	1	1									
GENn353	Industrial Psychology			1	1	1		1	1	1	1									
ARCn334	Advanced Studies in Interior Design	1		1	1			1	1	1	1	1	1			1				
ARCn335	Landscape Design			1		1		1	1	1	1	1		1	1					
ARCn336	Simulation Programs & Architecture	1	1	1		1	1		1											
ARCn311	Technical Installations in buildings (2)	1	1	1	1			1	1		1	1	1	1						
ARCn313	Working Drawing & Construction Methods (2)	1		1	1	1		1	1	1	1		1	1						
ARCn322	Architectural Design (6)			1		1		1	1	1	1	1		1	1	1				
ARCn324	Housing & City Planning (2)			1		1		1	1	1	1	1		1	1					
ENGn213	Advanced Computer Systems Implementation.	1		1		1		1	1	1	1	1								
ARCn340	History of Architecture 3	1	1	1	1			1	1	1		1	1							
ARCn331	Sustainable Architecture	1	1	1	1	1	1	1	1	1		1	1	1				1		

Courses	Program Competencies																			
Code	Title	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
ARCn332	Design, Environmental planning, and power			1		1		1	1	1	1	1		1	1					
ARCn333	Building technology and structure systems	1	1	1	1	1		1	1	1	1	1	1	1	1	1				
ARCn360	Architecture Training (3)	1	1	1	1															
ARCn421	Architectural Design (7)			1		1		1	1	1	1	1		1	1	1				
ARCn422	City Planning			1		1		1	1		1	1	1	1	1					
ARCn423	Urban Design			1		1		1	1	1	1	1	1	1	1					
ARCn460	Project (A)											1		1	1	1				
ENGn311	Engineering Economy	1	1	1		1	1	1	1	1	1	1	1							
GENn451	Environmental Effects of Electromagnetic Waves		1	1	1	1	1	1	1	1	1									
GENn452	Civilization and heritage	1		1		1		1	1	1	1			1	1	1				
GENn453	Marketing	1	1					1	1	1	1									
ARCn430	Aesthetics and Formation		1					1	1	1	1	1		1	1					
ARCn436	Design Methodology1		1			1				1	1	1	1							
ARCn437	Architecture & Human Studies					1		1	1	1	1									
ARCn411	Working Drawing & Construction Documents	1	1	1	1	1		1	1	1	1		1	1	1	1				
ARCn461	Project (B)			1		1		1	1	1	1	1		1	1	1				
ENGn312	Engineering Laws and Professional ethics.	1	1	1		1		1	1	1	1	1	1	1						
ARCn431	Advanced Building Economics	1			1	1	1	1	1	1	1	1	1	1	1	1				
ARCn432	Architecture Criticism		1			1		1		1	1	1	1							
ARCn435	Urban & Environmental Conservation	1	1		1	1		1		1	1	1	1	1						
ARCn433	Modern Building Systems and Materials	1		1	1	1		1	1	1	1	1	1	1		1				
ARCn434-	Urban Renewal			1		1		1	1	1	1	1	1	1	1					
ARCn438-	Housing in developing countries	1	1	1	1	1	1	1	1	1			1		1					
Number of Contributing Courses		55	48	59	40	67	31	73	74	78	66	43	36	40	26	19	1	1	0	2
percentage of Contributing Courses		7 %	6 %	8 %	5 %	9 %	4 %	10 %	10 %	10 %	9 %	6 %	5 %	5 %	3 %	3 %	0.1 %	0.1 %	0.0 %	0.3 %

The contribution of the individual courses to the program competences are marked in the courses specifications and revised following the evaluation of the mapping matrix. Therefore, the courses specifications are approved by the department scientific council following the program specification approval.

2.7. COURSES SPECIFICATIONS

The detailed program courses specifications are given in **Appendix 1.** These courses specifications were revised and approved in **August 2020**. The contribution of each course to the program competencies were considered during this revision.

3. Program Admission Requirements

- Admission is fully organized by the admission office of the Ministry of Higher Education.

- Secondary School Certificate Graduates of other countries are eligible to join this program if they met the minimum grades set by Admission Office of the Ministry of Higher Education.
- The study begins with the first year for all students before specialization in different disciplines. Students' departmental allocation is in accordance with the student's desire and the Academy Council regulations.

4. Regulations for Progression and Program Completion

1) Attendance of program is on full-time basis.
2) The study follows the credit hour system with two major semesters, 15-week each and one, 8-week-semesters per year.
3) A minimum of 75 % student attendance to lectures, tutorials and laboratory exercises per course is conditional for taking the final exams of the course, in accordance with the Departmental Board recommendation approved by the Faculty Council, otherwise students would be deprived from taking their final exam(s).
4) If a course includes written and oral / lab tests, the course evaluation is made according to the total mark of all tests in addition to the academic standing throughout the semester.
5) No mark is recorded for the student who fails to appear in the written examination.

The details of program progression and grades evaluation are explained by **Appendix 2**.

5. Teaching, Learning Assessment and Methods

Teaching methods

- Lecture
- Presentations and Movies
- Discussions
- Tutorials
- Problem solving

Learning methods

- Modeling and simulation
- Cooperative learning

Student Assessment

- Written exam
- Quizzes and reports
- Oral exams
- Practical

6. Program Evaluation of Quality of teaching and learning

Evaluator	Tool
1- Senior students	Questionnaires
2- Alumni	Questionnaires
3- Stakeholders	Questionnaires
4- External Evaluator(s) (External Examiner (s))	Reports
5- Other societal parties	Questionnaires

Page Intentionally Left Blank

Appendix 1

Courses Specifications

Page Intentionally Left Blank

The courses of the Architecture Engineering and Building Technology BSc Program are given in Table A1-1, Followed by the course's description.

Table A 1-1 Architecture Engineering and Building Technology BSc Program Courses

SN	Course Code	Course Title	Notes
1.	CMPn010	Program Design and Computer Languages.	
2.	GENn041	Contemporary Social Issues	
3.	MNFn001	Engineering Graphics-1	
4.	GENn043	History of Engineering and Technology	
5.	MECN001	Mechanics -1	
6.	MTHn001	Mathematics -1 (Algebra and Calculus)	
7.	PHYn001	Physics -1	
8.	CHEN001	Chemistry.	
9.	MNFn002	Engineering Graphics-2	
10.	GENn042	English Language.	
11.	MECN002	Mechanics-2	
12.	MTHn002	Mathematics -2(Integration and Analytic Geometry)	
13.	PHYn002	Physics-2.	
14.	MNFn003	Principles of Production Engineering	
15.	ARCn060	Summer Training (1)	Result P/F
16.	GENn142	Technical Report Writing	
17.	ARCn111	Architectural Construction (1)	
18.	ARCn115	Properties & Resistance of Materials	
19.	ARCn116	Surveying	
20.	ARCn120	Theories of Architecture (1)	
21.	ARCn121	Architectural Design (1)	
22.	ARCn123	Visual Training (1)	
23.	MTHn107	Mathematics -7	
24.	ARCn112	Architectural Construction (2)	
25.	ARCn114	Computer Applications (1)	
26.	ARCn117	Theory of Structures	
27.	ARCn122	Architectural Design (2)	
28.	ARCn124	Skiagraphy perspective	
29.	ARCn141	History of Architecture (1)	
30.	ARCn160	Summer Training (2)	Result P/F
31.	GENn141	Presentation Skills	
32.	ARCn210	Building Technology	
33.	ARCn211	Architectural Construction & Building materials (1)	
34.	ARCn214	Reinforced concrete & steel structures	
35.	ARCn217	Computer Applications (2)	
36.	ARCn222	Architectural Design (3)	
37.	ARCn227	Theories of Architecture (2)	
38.	ARCn212	Architectural Construction & Building materials (2)	
39.	ARCn215	Foundation	
40.	ARCn216	Environmental Control	
41.	ARCn223	Architectural Design (4)	
42.	ARCn225	Visual Training (2)	

SN	Course Code	Course Title	Notes
43.	ARCn241	History of Architecture (2)	
44.	GENn341	Project Management.	
45.	ARCn260	Architecture Training (1)	Result P/F
46.	ARCn310	Technical Installations in buildings (1)	
47.	ARCn312	Working Drawing & Construction Methods (1)	
48.	ARCn321	Architectural Design (5)	
49.	ARCn323	Housing & City Planning (1)	
50.	ARCn325	Theories of Architecture and Arts	
51.	GENn351	Elective1 Technical English.	Register Only One
52.	GENn352	Elective1 Risk Management	
53.	GENn353	Elective1 Industrial Psychology	
54.	ARCn334	Elective3 Advanced Studies in Interior Design	Register Only One
55.	ARCn335	Elective3 Landscape Design	
56.	ARCn336	Elective3 Simulation Programs & Architecture	
57.	ARCn311	Technical Installations in buildings (2)	
58.	ARCn313	Working Drawing & Construction Methods (2)	
59.	ARCn322	Architectural Design (6)	
60.	ARCn324	Housing & City Planning (2)	
61.	ENGn213	Advanced Computer Systems Implementation.	
62.	ARCn340	History of Architecture 3	
63.	ARCn331	Elective4 Sustainable Architecture	Register Only One
64.	ARCn332	Elective4 Design, Environmental planning, and power	
65.	ARCn333	Elective4 technology and structure systems	
66.	ARCn360	Architecture Training (2)	Result P/F
67.	ARCn421	Architectural Design (7)	
68.	ARCn422	City Planning	
69.	ARCn423	Urban Design	
70.	ARCn460	Graduation Project (A)	Oral
71.	ENGn311	Engineering Economy	
72.	GENn451	Elective2 Environmental Effects of Electromagnetic Waves	Register Only One
73.	GENn452	Elective2 Civilization and heritage	
74.	GENn453	Elective2 Marketing	
75.	ARCn430	Elective5 Aesthetics and Formation	Register Only One
76.	ARCn436	Elective5 Design Methodology	
77.	ARCn437	Elective5 Architecture & Human Studies	
78.	ARCn411	Working Drawing & Construction Documents	
79.	ARCn461	Graduation Project (B)	Oral
80.	ENGn312	Engineering Laws and Professional ethics.	
81.	ARCn431	Elective6 Advanced Building Economics	Register Only One
82.	ARCn432	Elective6 Architecture Criticism	
83.	ARCn435	Elective6 Urban & Environmental Conservation	
84.	ARCn433	Elective7 Modern Building Systems and Materials	Register Only One
85.	ARCn434	Elective7 Urban Renewal	
86.	ARCn438	Elective7 Housing in developing countries	

Modern Academy
for Engineering and Technology in Maddi

Course Specification
CMPn010: Program Design and Computer Languages

A- Affiliation

Relevant program: Manufacturing Engineering and Production Technology BSc Program
Electronic Engineering and Communication Technology BSc Program
Computer Engineering and Information Technology BSc Program
Architecture Engineering and Building Technology BSc Program
Civil Engineering and Building Technology BSc program

Department offering the program: Manufacturing Engineering and Production Technology Department
Electronic Engineering and Communication Technology Department
Computer Engineering and Information Technology Department
Architecture Engineering and Building Technology Department
Civil Engineering and Building Technology BSc program

Department offering the course: Computer Engineering and Information Technology Department.
Date of specifications approval: August 2020

B - Basic Information

Title: Program Design and Computer Languages
Code: CMPn010
Level: Freshman / Fall
Credit Hours: 4
Lectures: 2 **Tutorial/Exercise:** 3 **Practical:** 2
Pre-requisite: None

C - Professional information

1 – Course Learning Objectives:

By the end of this course, the students should have gained the planned competences related to the construction and operation of the concepts of programming, the steps of solving problems using flowcharts or using the C++ programming language. They should be able to develop and enhance programming using the Microsoft Visual C++ software (embedded in the Microsoft Visual Studio software package). also takes up various programming techniques such as design, implementation, testing, troubleshooting and documentation.

2 – Competencies

c1. use programming methodologies to design and implement programs. (C1, C2, C3
c2. Utilize codes of practice and contemporary technologies of programming(C4)
c3. explain fundamental concepts such as classes, information hiding, constructors, methods and other related, object-oriented concepts (C9, C10),
c4. Practice research to updates new algorithms and method of programming(C5)
c5. understand dynamic and static memory management(C3)
c6. Plan, supervise and carry out testing and troubleshooting (C6
c7 explain how to compile and run programs (C2, C3).
c8 Acquire and apply new application programs; and practice self-learning (C10)

This course contributes in the following program competencies: (C1, C2, C3, C4, C5, C6, C9&C10)

3. Contents

Weeks	Topic	Lecture hours	Tutorial hours	Practical hours
1.	Steps for solving programs by computer programs	2	3	2
2.	Program documentation and flow charts	2	3	2
3.	Program structure in C++	2	3	2
4.	Data types and declaration in C++	2	3	2
5.	Input/output in C++ and I/O stream class, I/O manipulation	2	3	2
6.	Operators and precedence in C++, Decision (Selection) Constructs in C++	2	3	2
7.	Assessment (M.T)	2	3	2
8.	Loops (Iterations) in C++	2	3	2
9.	Arrays, Pointers, References, and dynamic allocation	2	3	2
10.	Functions in C++, calling functions (by value, by reference)	2	3	2
11.	Structures, Unions, Enumeration, and user-defined data types	2	3	2
12.	Abstract data types (ADT), Concepts and Terminologies of Object-Oriented Programming (OOP)	2	3	2
13.	Classes and objects	2	3	2
14.	Constructors, destructors, friend functions	2	3	2
15.	Polymorphism, encapsulation, inheritance,	2	3	2
	Total hours	**30**	**45**	**30**

4. Course content/Course Competencies mapping matrix:

Topics	c1	c2	c3	c4	c5	c6	c7	c8
Steps for solving programs by computer programs	1						1	1
Program documentation and flow charts	1							1
Program structure in C++	1			1				
Data types and declaration in C++		1						
Input/output in C++ and I/O stream class, I/O manipulation				1		1	1	
Operators and precedence in C++, Decision (Selection) Constructs in C++		1		1				
Assessment (M.T)	1		1			1	1	
Loops (Iterations) in C++								
Arrays, Pointers, References, and dynamic allocation				1	1			
Functions in C++, calling functions (by value, by reference)			1	1		1	1	
Structures, Unions, Enumeration, and user-defined data types			1					
Abstract data types (ADT), Concepts and Terminologies of Object-Oriented Programming (OOP)		1	1	1	1			1
Classes and objects, Constructors, destructors, friend functions		1	1	1		1		
Polymorphism, encapsulation, inheritance,		1	1	1				

Topics	c1	c2	c3	c4	c5	c6	c7	c8
carry out testing and troubleshooting						1		1
Total	**4**	**5**	**6**	**8**	**2**	**5**	**4**	**4**

5 - Teaching and Learning and Assessment methods:

Course Competences	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports & Assignments	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1			1	1	1				1		1	1		1
c2	1			1	1	1				1		1	1		1
c3	1			1	1	1				1		1	1		1
c4	1			1	1	1				1		1	1		1
c5	1			1	1	1	1	1		1		1	1		1
c6	1			1	1	1	1	1		1		1	1		1
c7	1			1	1	1	1	1		1		1	1		1
c8	1			1			1	1							
∑	8			8	7	7	4	4	-	7	-	7	7	-	7

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
	Mid-Term Exam	7th Week	20
Semester Work	Quizzes	3 Quizzes (one each 4 weeks)	6
	Reports/Research	Two reports per semester	4
	Tutorials	3 Assignments per semester	6
	Mini project	Once per semester	4
	Practical Exam	Fifteenth week	20
	Written Exam	Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes:

- Lecture notes and handouts

7-2 Required books:

- Walter Savitch, (2006) Problem Solving with C++, Pearson Education Inc.
- Deitel & Deitel, (2001) C++ How to program, Prentice Hall.
- Al Stevens, (2000) C++ Programming Bible, IDG.

7-3 Recommended books:

- C++ Essentials, Sharam Hekmat, (2005) Programming Soft Corporation,www.pragsoft.com,

7-4 Periodicals, Web sites, etc.:

- http://www.cplusplus.com/.

8- Facilities required for teaching and learning:

- Computer Lab.
- Lecture and Exercise rooms equipped with projection and sound systems.
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr. Ehab El-Shimy
Head of the Department: Dr. Abdel-Moneam Foda
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
GENn041: Contemporary Social Issues

A- Affiliation

Relevant program: Manufacturing Engineering and Production Technology BSc Program
Electronic Engineering and Communication Technology BSc Program
Computer Engineering and Information Technology BSc Program
Architecture Engineering and Building Technology BSc Program
Civil Engineering and Building Technology BSc program

Department offering the program: Manufacturing Engineering and Production Technology Department
Electronic Engineering and Communication Technology Department
Computer Engineering and Information Technology Department
Architecture Engineering and Building Technology Department
Civil Engineering and Building Technology Department

Department offering the course: Basic science department

Date of specifications approval: August 2020

B - BASIC INFORMATION

Title Contemporary Social Issues: **Code:** GENn041 **Level:** ZREO

Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:** - **Practical:** -
Pre-requisite: non

C - PROFESSIONAL INFORMATION

1 – Course Learning Objectives:

في نهاية هذا المقرر يكون الطالب قد استوعب وحلل وطبق المعلومات والمعرفة بالاتي العلوم الأنسانية وأهميه دراستها وأصول المجتمع وبناء الأسرة و تكوينها والمكونات الاجتماعية والاقتصادية للمجتمع وأساليب القيادة وكيفية إعداد القادة وكذلك أساليب التفاوض وصفات الشخصية المفاوضة وكذلك مهارات العمل الجماعي وأهمية الفارق بين العمل الجماعي والفردي.كذلك التعرف علي بعض المشكلات الإجتماعية التي تظهر في الحياة العملية. و كذلك يدرك معنيالانتماء، أهميته - أصول المجتمع - العادات والتقاليد المرعية – المواطنة - العوامل المحفزة لحب الوطن (الحرية - احترام الرأي الآخر - عدم التمييز العنصري - الديمقراطية). وكذلك التخطيط والسكان والصحة الإنجابية .

2 – Competencies

c1- يدرس مفهوم العلوم الانسانية واهمية دراستها وانواعها (C7,C8,C9)
c2- يتعرف علي بناء الأسرة و تكوينها وتعريف التنشئة الاجتماعية والعوامل المؤثرة فيها (C7,C8 ,C9)
c3- يتعرف علي مفهوم القيادة والفرق بين القيادة والرئاسة وانواع القيادة (C8, C9)
c4-يتعرف علي معني التفاوض وصفات الشخصية المفاوضة والمفاهيم التي تتداخل مع مفهوم التفاوض(C8,C9,C10)
c5-يكون الطالب قادر علي معرفة معني الراي العام واهمية وسائل الاعلام والوسائل المستخدمة لقياس هذا المفهوم (C8,C9)
c6- يتعرف علي مفهوم النفاق والكذب والفرق بينهم وتاثير هذه الصفة علي المجتمع (C8,C9,C10)
c7-يمارس مهارات العمل الجماعي و الفردي خلال الدراسة (C5,C9,C10)
c8- يدرس منهجيات حل المشاكل الهندسية ، وجمع البيانات وتفسيرها (C4, C8)
c9-يبحث الطالب علي المعلومات من خلال شبكة المعلومات والمراجع (C5,C9)
c10- تدريب الطالب على التفكير و ايجاد التصميمات اللازمة لخلق كل ما هو جديد.(C7,C8,C10).
c11- يكتسب الطالب الخبرة فى ايجاد حلول عملية تخدم برامج خارج تخصصه (C7,C8).
c12-يكتسب الطالب كيفية وضع المعايير اللازمة لتكوين فريف بحثى متكامل(C10,C2,C3)

This course contributes in the following program competencies:C2,C3, C4,C5,C7, C8, C9, C10,

3 – Contents

week	Topic	Lecture hours	Tutorial hours	Practical hours
1	تعريف العلوم الانسانية واهمية دراستها وانواعها	2	-	-
2	تعريف التنشئة الاجتماعية والعوامل المؤثرة في هذه عملية التنشئة الاجتماعية	2	-	--
3	تعريف التنشئة الاجتماعية والعوامل المؤثرة في هذه عملية التنشئة الاجتماعية	2		
4	تعريف القيادة والفرق بين القيادة والرئاسة	2	-	-
5	السمات الشخصية للقائد ووظائفه واساليب القيادة ومفهوم القيادة والمواقف	2		
6	المفهوم اللغوي والاصطلاحي للتفاوض واهمية التفكير واللغة لاتمام عملية التفاوض وخصائص الشخصية المفاوضة	2	-	-
7	امتحان منتصف الفصل	2		
8	وسائل الاعلام والسلوك الاجتماعي ومفهوم الراي العام ووسائل قياس الراي العام	2	-	-
9	تعريف القيادة والفرق بين القيادة والرئاسة والسمات الشخصية للقائد ووظائفه واساليب القيادة ومفهوم القيادو والمواقف	2		
10	المنافق والسلوك الاجتماعي ومفهوم النفاق والفرق بين النفاق والكذب ودور المنافقين في العلاقات الاجتماعية	2		
11	المنافق والسلوك الاجتماعي ومفهوم النفاق والفرق بين النفاق والكذب ودور المنافقين في العلاقات الاجتماعية	2		
12	اللغة وعلاقتها بالبعد الاجتماعي	2		
13	القيم وطرق التعرف علي القيم وتأثيرها علي المجتمع	2		
14	مناقشة ابحاث علي الموضوعات السابقه	2		
15	مراجعة واجراء امتحان	2		
	Total hours	**30**	**-**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Knowledge				Skills						Attitude	
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12
تعريف العلوم الانسانية واهمية دراستها وانواعها	1							1	1	1	1	1
تعريف التنشئة الاجتماعية والعوامل المؤثرة في هذه عملية التنشئة الاجتماعية		1						1	1	1	1	1
تعريف القيادة والفرق بين القيادة والرئاسة والسمات الشخصية للقائد ووظائفه واساليب القيادة ومفهوم القياده والمواقف			1			1	1	1	1	1	1	1
المفهوم اللغوي والاصطلاحي للتفاوض واهمية التفكير واللغة لاتمام عملية التفاوض وخصائص الشخصية المفاوضة				1				1	1	1	1	1
وسائل الاعلام والسلوك الاجتماعي ومفهوم الراي العام ووسائل قياس الراي العام					1			1	1	1	1	1
المنافق والسلوك الاجتماعي ومفهوم النفاق والفرق بين النفاق والكذب ودور المنافقين في العلاقات الاجتماعية						1		1	1	1	1	1
اللغة وعلاقتها بالبعد الاجتماعي	1			1								
القيم وطرق التعرف علي القيم وتأثيرها علي المجتمع	1			1		1					1	1
Topics Covering Competences	3	1	1	3	1	3	1	6	6	6	7	7

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1		1				1	1		1			1	1	
c2	1	1	1				1	1		1			1	1	

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c3	1	1	1				1			1			1	1	
c4	1	1	**1**				**1**	**1**		1			**1**	**1**	
c5	1	1	1				1	1		1			1	1	
c6	1	1	1				1	1		1			1		
c7	1	1	1				1	1		1			1	1	
c8	1	1											1	1	
c9	1	1						1		1			1	1	
c10	1		1				1	1						1	
c11	1		1				1	1					1	1	
c12	1		1				1	1					1	1	
∑	12	8	10	0	0	0	10	11	0	8			11	12	
%	100	67	83	0	0	0	83	92	0	67			92	100	

6- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Assignments	Bi-Weekly	20
Quizes	13th and 14th	20
Mid-Term Exam	7-th Week	20
Written Exam	Sixteenth week	40
Total		100

7- List of references:

7-1 Course notes :

Shimaa Esmail, Contemporary Social Issues, Lecture note, Modern Academy Press, 2014..

7-2 Required books

S. Nasef (2007), Contemporary Social Issues, Cairo.

7-3 Recommended books:

None

7-4 Periodicals, Web sites, etc.:

www.bvsci.com
mawdoo3.com
www.aspdkw.com

8- Facilities required for teaching and learning:

Computer,
Data show
Computer programs
High speed internet and communication facilities for distance learning

Course coordinator: Dr. Shimaa Nabih Ebrahim Esmail
Head of the Department: Prof. Dr. Ashraf Taha
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
MNFn001: Engineering Graphics 1

A- Affiliation

Relevant Program: Manufacturing Engineering and Production Technology BSc Program
Electronic Engineering and Communication Technology BSc Program
Computer Engineering and Information Technology BSc Program
Architecture Engineering and Building Technology BSc Program
Civil Engineering and Building Technology BSc Program

Department Offering the Program: Manufacturing Engineering and Production Technology Department
Electronic Engineering and Communication Technology Department
Computer Engineering and Information Technology Department
Architecture Engineering and Building Technology Department
Civil Engineering and Building Technology Department

Department Offering the Course: Manufacturing Engineering and Production Technology Department.

Date of Specifications Approval: August 2020

B - Basic Information

Title: Engineering Graphics 1 **Code:** MNFn001 **Level:** Freshman, First Semester

Credit Hours: 2 **Lectures:** 1 **Tutorial:** 3 **Practical:** -

Pre-requisite: None

C - Professional information

1 – Course Learning Objectives:

By the end of this course, students should understand and apply how to read and draw components in different kinds of drawing, namely orthogonal, perspective and/or isometric drawings. The students will be able to apply and create the multi-views projections on the drawings. This course includes extensive details on isometric drawing including Vertical, Horizontal, inclined, and cylindrical surfaces. The student should understand these concepts and apply it in engineering drawing.

2 – Competencies:

On successful completion of the course, the student should:

c1. understand and apply how to use drawing instruments effectively to practice engineering drawing (C1, C4, C8).
c2. understand different types of graphical lines and lettering and their specifications (C1, C4, C8).
c3. practice how to draw geometrical constructions such as polygon 2D and 3D constructions (C1, C4, C8).
c4. solve and communicate problems in orthographic views (C2, C3, C7, C8, C9).
c5. produce orthographic views from 3D models. (C6, C9, C10)
c6. read and understand orthographic drawing and prepare and interpret engineering drawing. (C1, C8, C14)
c7. read orthographic drawing with multi views and make necessary views using multi view and isometric. (C3, C5, C6, C9, C10)
c8. solve and communicate problems in isometric and oblique drawings
c9. use the graphic language effectively and creatively to communicate with other disciplines using the graphical language and express their ideas in a meaningful manner. (C1, C5, C8, C9, C10)
c10. refer to relevant literature and search for information's in references and on the internet and practice self-learning and continuous learning (C5, C8, C9, C10)

This course contributes to the following program competencies: C1, C2, C3, C4, C5, C6, C7, C8, C9 & C10

3 – Contents:

Week	Topics	Lecture hours	Tutorial hours	Practical hours
1	Drawing instruments, draw sheets; Scales; Folding, Lettering.	1	3	-
2	Geometric Construction.	1	3	-
3	Alphabet of lines.	1	3	-
4	Theory of orthographic projection and perspective drawing: Projection of point; line and plane Projection of geometric solids.	1	3	-
5	Multi view drawing (of Vertical and Horizontal Surfaces).	1	3	-
6	Multi view drawing (of inclined Surfaces).	1	3	-
7	Assessment (Mid-Term Exam)	1	1	-
8	Multi view drawing (of cylindrical Surfaces).	1	3	-
9	Practices of multi view in all cases.	1	3	-
10	Pictorial drawing (isometric), Pictorial drawing (oblique).	1	3	-
11	Isometric drawing (of Vertical, Horizontal).	1	3	-
12	Isometric drawing (of inclined Surfaces).	1	3	-
13	Isometric drawing (of cylindrical Surfaces).	1	3	-
14	Practices of Isometric drawing in all cases.	1	3	-
15	Conventional practice in Engineering Drawing.	1	3	-
	Total hours	**15**	**43**	**-**

4 – Course Content / Course Competencies Mapping Matrix:

Topics	Course Competencies									
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10
1- Drawing instruments, draw sheets; Scales; Folding, Lettering.	1	1		1		1				
2- Geometrical constrictions	1	1	1		1	1	1			1
3- Alphabet of lines.		1			1	1	1	1	1	1
4- Theory of orthographic projection: Projection of point; line and plane Projection of geometric solids.	1	1		1	1	1	1	1	1	1
5- Multi view drawing (of Vertical and Horizontal Surfaces).	1	1			1	1	1			
6- Multi view drawing (of inclined Surfaces).		1	1			1	1			1
7- Multi view drawing (of cylindrical Surfaces).		1	1			1	1			1
8- Practices of multi view in all cases.	1	1	1			1	1	1	1	
9- Pictorial drawing (isometric), Pictorial drawing (oblique).		1	1			1	1	1	1	1
10- Isometric drawing (of Vertical, Horizontal).		1	1		1	1	1	1		1
11- Isometric drawing (of inclined Surfaces).		1	1			1	1	1	1	1
12- Isometric drawing (of cylindrical Surfaces).		1		1	1	1	1	1		1
13- Practices of Isometric drawing in all cases.		1		1	1	1	1	1		1
14- Conventional practice in Engineering Drawing.		1		1	1	1	1	1	1	1
Topics Covering Competencies	5	14	7	5	8	14	13	9	6	11

5 – Teaching, Learning, and Assessment Methods:

Course Competencies	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & Seminars	Tutorials	Problem Solving	Laboratory & Experiments	Research, Reports & Assignments	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1	1	1		1			1	1		1		1
c2	1	1	1	1	1		1			1	1		1		1
c3	1	1	1	1	1		1			1	1		1		1
c4	1	1	1	1	1		1			1	1		1		1
c5	1	1	1	1	1		1			1	1		1		1
c6	1	1	1	1	1		1			1	1		1		1
c7	1	1	1	1	1		1			1	1		1		1
c8	1	1	1	1	1		1			1	1		1		1
c9	1	1	1	1	1		1	1		1	1		1		1
c10					1		1	1						1	1
∑	9	9	9	9	10	0	10	2	0	9	9	0	9	1	10

6 – Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	3 Quizzes per semester	20
	Tutorials	3 Assignments per semester	20
Written Exam		16th Week	40
Total			**100**

7 – List of References:

7-1 Course notes:

- Engineering Graphics by Prof. Nabil Gadallah.

7-2 Required books

- James H.Earle, Graphics For Engineers, Addison Wesley Publishing Company 1991.

7-3 Recommended books

- None

7-4 Periodicals, websites, etc.

- None

8 – Facilities Required for Teaching and Learning:

- Overhead projector and screen.
- Models and prototypes as teaching aids.

Course Coordinator: Dr. Metwally Abd Elghaffar
Head of the Department: Dr. Metwally Abd Elghaffar
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
GENn043: History of Engineering & Technology

A- Affiliation

Relevant program: Electronic Engineering and Communication Technology BSc Program
Computer Engineering and Information Technology BSc Program
Manufacturing Engineering and Production Technology BSc Program
Architecture Engineering and Building Technology BSc Program
Civil Engineering and Building Technology BSc program

Department offering the program: E Manufacturing Engineering and Production Technology Department
Electronic Engineering and Communication Technology Department
Computer Engineering and Information Technology Department
Architecture Engineering and Building Technology Department
Civil Engineering and Building Technology Department

Department offering the course: ***Basic Science Department***

Date of specifications approval: August 2020

B - Basic information

Title: History of Science and Technology **Code:** GENn043 **Level:** Zero

Hours Credit/Total 2 hrs Lectures 2 hrs Tutorial - Practical -

C – Professional information

1 – Course Learning Objectives:

مع نهاية تدريس هذا المقرر يكون الطالب قد اكتسب المهارات التى تمكنه من فهم تاريخ الهندسه و التكنولوجيا فى مختلف العصور والفرق بين كل من العلم و الهندسة والتكنولوجيا – نقل التكنولوجيا – نشاطات العمل الهندسى و مسئوليات المهندس- امثلة على تطور اوجه النشاط الهندسى و التكنولوجى و أشهر علماء الهندسة كنماذج يحتذى بها

2 – Competencies

c1- يتعرف علي مفهوم العلم و الهندسة والتكنولوجيا و علاقتهم ببعضهم البعض و كيفية ابتكار معدات و منظومات تحقق احتياجات المجتمع طبقا لتلك المفاهيم (C7,C9)

c2- يدرس المعلومات التاريخية عن مهنه الهندسة و التكنولوجيا وكذا العلاقة بين مسمى المعهد او الكلية و بين ما يتم دراسته(C7,C8,C9).

c3- يدرس مفهوم التعليم الهندسى و مجالات العمل للمهندسين و كيفيه القيد و التسجيل بنقابة المهندسين و كذا حقوق وواجبات المهندس(C7,C8,C9)

c4-يتعرف علي تطور اوجه النشاط الهندسى و التكنولوجى و ايضا التعرف على الطرق المختلفة لنقل التكنولوجيا (C7,C8,C9)

c5- يكتسب الطالب مهارات توظيف النظريات و المعارف و البيانات و الافكار لابتكار معدات و منظومات متطورة (C7,C8,C9)

c6-يستخدم الطالب المنهج العلمى فى التفكير وصولا لتصميم و تركيب الفروض (C7,C8,C10)

c7- يستطيع الطالب التفكير فى حل مشكلة ما من خلال تفهمه لموضوعات الهندسة العكسية (C7,C9)

c8- يستطيع الطالب اتخاذ القرار السليم و اختيار انسب الحلول من خلال دراسته لنماذج و امثلة من المشاكل الهندسيه و عرض الحلول الممكنه لها (C7,C8,C9,C10)

c9-يتعرف الطالب بمعايير الجودة و نظم الامان فى استخدام المنظومات الهندسية(C10).

c10- تدريب الطالب على التفكير و ايجاد التصميمات اللازمة لخلق كل ما هو جديد.(C7,C8,C10).

c11- يكتسب الطالب الخبرة فى ايجاد حلول عملية تخدم برامج خارج تخصصه (C7,C10).

c12-يكتسب الطالب كيفية وضع المعايير اللازمة لتكوين فريف بحثى متكامل (C10)

This course contributes in the following program competencies: C7, C8, C9,C10

3 – Contents

week	Topic	Lecture hours	Tutorial hours	Practical hours
1	العلم و الهندسة والتكنولوجيا	2		
2	الهندسة و البحث العلمى – منظومة البحث العلمى	2		
3	عناصر و متطلبات البحث العلمى	2		
4	الهندسة وخريطة البحث العلمى – مراحل البحث العلمى	2		
5	تاريخ الهندسة و التكنولوجيا فى مختلف العصور	4		
6	نقل التكنولوجيا	2		
7	امتحان منتصف الفصل	2		
8	نشاطات العمل الهندسى و مسئوليات المهندس	2		
9	التعليم الهندسى	2		
10,11	نقابة المهندسين المصرية – جمعية المهندسين المصرية	4		
12,13	تطور اوجه النشاط الهندسى و التكنولوجى	4		
14,15	اشهر علماء الهندسة و التكنولوجيا	2		
	Total hours	**30**		

4. Course content/Course Competencies mapping matrix

Topic	Knowledge				Skills				Attitude			
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12
العلم و الهندسة والتكنولوجيا	1							1	1	1	1	1
الهندسة و البحث العلمى – منظومة البحث العلمى						1		1	1	1	1	1
عناصر و متطلبات البحث العلمى				1				1	1	1	1	1
الهندسة وخريطة البحث العلمى – مراحل البحث العلمى		1	1			1		1	1	1	1	1
تاريخ الهندسة و التكنولوجيا فى مختلف العصور		1			1			1	1	1	1	1
نقل التكنولوجيا						1		1	1	1	1	1
نشاطات العمل الهندسى و مسئوليات المهندس								1	1	1	1	1
التعليم الهندسى	1			1				1	1	1	1	1
نقابة المهندسين المصرية – جمعية المهندسين المصرية		1				1	1	1	1	1	1	1

Topic	Knowledge				Skills				Attitude			
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12
تطور اوجه النشاط الهندسى و التكنولوجى		1		1			1	1	1	1	1	1
اشهر علماء الهندسة و التكنولوجيا	1		1		1			1	1	1	1	1
Topics Covering Competences	3	4	2	3	2	4	2	11	11	11	11	11

5- Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1		1				1	1		1			1	1	1
c2	1	1	1				1	1		1			1	1	1
c3	1	1	1				1			1			1	1	1
c4	1	1	**1**				**1**	**1**		1			**1**	**1**	**1**
c5	1	1	1				1	1		1			1	1	1
c6	1	1	1				1	1		1			1		1
c7	1	1	1				1	1		1			1	1	1
c8	1	1											1	1	
c9	1	1						1		1			1	1	1
c10	1		1				1	1						1	
c11	1		1				1	1					1	1	
c12	1		1				1	1					1	1	
∑	12	8	10	0	0	0	10	11	0	8			11	12	7

6- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Assignments	Bi-Weekly	20
Quizes	5th and 10th	20
Mid-Term Exam	6-th Week	20
Written Exam	Sixteenth week	40
Total		100

7- List of references:

7-1 Course notes: -

Ghada Maher, History of Engineering and Technology, Lecture note, Modern Academy Press, 2019.

7-2 Required books: None

7-3 Recommended books

Wright, P. H., Introduction to engineering, second edition, John Wiley and Sons Inc., New York, 1994

7-4 Periodicals, Web sites, etc.

مواقع الانترنت الخاصة بنقابه المهندسين المصرية

8- Facilities required for teaching and learning:

- Computer, Data show and projector.
- High speed internet and communication facilities for distance learning

Course coordinator: Dr. Marwa Mohamed Fouad

Head of the Department: Prof. Dr. Ashraf Taha

Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
MECn001: Mechanics-1

A- Affiliation

Relevant program: Manufacturing Engineering and Production Technology BSc Program
Electronic Engineering and Communication Technology BSc Program
Computer Engineering and Information Technology BSc Program
Architecture Engineering and Building Technology BSc Program
Civil Engineering and Building Technology BSc program

Department offering the program: Manufacturing Engineering and Production Technology Department
Electronic Engineering and Communication Technology Department
Computer Engineering and Information Technology Department
Architecture Engineering and Building Technology Department
Civil Engineering and Building Technology Department

Department offering the course: Basic Science Department
Date of specifications approval: August 2020

B - Basic Information

Title: Mechanics-1 **Code:** MECn001 **Level:** Zero
Credit Hours: 2 **Lectures:** 1 **Tutorial/Exercise:**3 **Practical:** ---
Pre-requisite: None

C - Professional information

1 – Course Learning Objectives:

By the end of this course, the students should have gained the planned competencies (knowledge, skills, and attitudes) related to the basic concepts of statics in plane and space: (force resultant equilibrium analysis of structures).

2 – Competencies

c1-Identfiy of the basic of statics in plane and space (C1,C5).

c2- Identfiy the difference between the moment of force in plane and space (C1, C5).

c3- Classification the support reaction in plane and in space (C1, C5).

c4- Understand the structural analysis in plane (C1, C5).

c5- Analyze and classify between equilibrium in plane and equilibrium in space (C1, C5, C9).

c6- Classify and compare the different between equilibrium of a single rigid body and all forces involved were external to the rigid body (C1, C5, C9) .

c7- Solve the equations of equilibrium to get three unknowns (C1, C9).

c8- Solve the trusses to get the value of the forces in the structural by joints and by section methods (C1, C9).

c9- Work in a team to solve problem as a search (C7, C8).

c10- Search for information in references and in internet (C9, C7, C10)

This course contributes in the following program competencies: C1, C5, C7, C8, C9, C10

3 – Contents

week	Topic	Lecture hours	Tutorial hours	Practical hours
1	➢ Basic Concepts of statics.	1	1	—
2	➢ Resultant of concurrent forces in plane	1	1	—
3	➢ Resultant of concurrent forces in space	1	3	—
4	➢ Equilibrium of a particle (in plane and in space)	1	1	—
5	➢ Different types of support in plane	1	2	—
6	➢ Distributed loads	1	2	—
7	➢ Mid tearm	1	2	
8	➢ Equilibrium of rigid body in plane	1	2	—
9	➢ Different types of supports in space	1	3	—
10	➢ Equilibrium of rigid body in space	2	4	—
11	➢ Special cases of two, three and four force members	1	3	—
12	➢ Analysis of Trussess by the method of joints	1	3	—
13,14	➢ Analysis of Trussess by the method of section	1	2	—
15	➢ Final revision	1	1	—
	Total hours	**15**	**30**	**—**

4. Course content/Course Competencies mapping matrix

Topic	Knowledge				Skills				Attitude	
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10
Basic Concepts of statics.	1	1								1
Resultant of concurrent forces in plane		1							1	1
Resultant of concurrent forces in space		1							1	1
Equilibrium of a particle (in plane and in space)			1				1		1	1
Different types of support in plane			1				1		1	1
Distributed loads			1				1		1	1
Equilibrium of rigid body in plane			1		1		1		1	1
Different types of supports in space			1		1		1		1	1
Equilibrium of rigid body in space			1		1		1		1	1
Special cases of two, three and four force members				1		1	1		1	1
Analysis of Trusses by the method of joints				1		1	1	1	1	1
Analysis of Trusses by the method of section				1		1	1	1	1	1
Final revision	1	1	1	1	1	1	1	1	1	1
Topics Covering Competences	2	4	7	4	4	4	10	3	12	13

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods				Learning Methods	Assessment Method			
	Lecture	Discussions and seminars	Tutorials	Problem solving	Research and Reports	Written Exam	Quizes	Term papers	Assignments
c1	1		1	1	1	1	1	1	1
c2	1		1	1		1	1	1	1
c3	1		1	1	1	1	1	1	1
c4	1	1	1	1	1	1	1	1	1
c5	1	1	1			1	1		1
c6	1	1	1	1		1	1	1	1
c7	1	1	1	1		1	1	1	1
c8	1	1	1			1	1	1	1
c9				1	1			1	
c10					1			1	
∑	8	5	8	7	5	8	8	9	8
%	80	50	80	70	50	80	80	90	80

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	Bi-Weekly	40
	Reports/Research		
	Assignments		
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes:

Shimaa Lotfy and Moamen Wafaie, Engineering Mechanics (Statics), Lecture Notes, Modern Academy Press.

7-2 Required books:

Beer and Johnston, Vector Mechanics for Engineers- Statics, 8th Edition in SI Units, ISBN 978-007-125765-7, U.S.A., 2007)

7-3 Recommended books:

Beer and Johnston, Vector Mechanics for Engineers- Statics, 8th Edition in SI Units, ISBN 978-007-125765-7, U.S.A., 2007.

7-4 Periodicals, Web sites, etc.

Basic of mechanical engineering, engineering mechanics statics and dynamics, statics and dynamics hobbler 12th edition.

8- Facilities required for teaching and learning:

- Library.
- Internet.
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr. Moamen Wafaie
Head of the Department: Associate Professor / Ashraf Taha EL-Sayed
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
MTHn001: Mathematics -1(Algebra and Calculus)

A- Affiliation

Relevant program:	Manufacturing Engineering and Production Technology BSc Program Electronic Engineering and Communication Technology BSc Program Computer Engineering and Information Technology BSc Program Architecture Engineering and Building Technology BSc Program Civil Engineering and Building Technology BSc program
Department offering the program:	Manufacturing Engineering and Production Technology Department Electronic Engineering and Communication Technology Department Computer Engineering and Information Technology Department Architecture Engineering and Building Technology Department Civil Engineering and Building Technology Department
Department offering the course:	Basic Science Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Mathematics -1(Algebra and Calculus) **Code:** MTHn001 **Level:** Zero
Credit Hours: 3 **Lectures:** 2 **Tutorial/Exercise:**3 **Practical:** ---
Pre-requisite: None

C - Professional information

1 – Course Learning Objectives:

By the end of this course, students will master basic differential calculus, linear algebra, Taylor expansion and binomial expansion and polar coordinates and their applications.
Students will be able to use the above concepts to solve physics and geometry problems.
Students will understand the usage of mathematical notation in relation to the above topics.

2 – Competencies

c1- Identify rules of limits and continuity of functions of one variable. (C1)
c2- Apply concepts of differentiation. (C1)
c3- Identify rules of applications of differential calculus used engineering. (C1)
c4- Explain basic concepts of Taylor expansion and Binomial expansion. (C1)
c5-Apply basic concepts matrices and matrices algebra. (C1, C5, C9)
c6-Identify solutions of systems of linear equations. (C1, C5)
c7- Explain basic concepts of vectors, vector spaces and vector algebra. (C1)
c8- Solve problems on limits, continuity and differentiate all continuous function. (C1, C9)
c9- Use differential calculus to solve applied Engineering Models. (C1, C7, C9)
c10- Apply infinite series, power series, Taylor and Meclaurin series to applications. (C1, C9)
c11- Apply basic concepts of different methods to discuss solutions of linear systems. (C1, C5, C9)
c12- Solve problems on vectors, vector spaces and vector algebra. (C1, C9)
c13- Apply differential calculus in mechanics and electronics. (C1, C9)
c14- Apply concepts of matrices and vectors to solve engineering problems. (C1, C9)
c15- Write technical reports. (C7)
c16- Communicate effectively in written form. (C8)
c17- Expand students' awareness by urging them to search permanently in references and specialized websites. (C9, C7, C10)

This course contributes in the following program competencies: C1, C5, C7, C8, C9, C10

3 – Contents

week	Topic	Lecture hours	Tutorial hours	Practical hours
1	➢ Functions	3	4	—
2	➢ Differentiation	3	6	—
3,4	➢ Trigonometric and inverse trigonometric functions	4	6	—
5	➢ Exponential and logarithmic functions	2	4	—
6	➢ Hyperbolic and inverse hyperbolic functions	2	4	—
7	➢ Mid term	2	3	
8	➢ Taylor and binomial expansions	2	3	—
9,10,11	➢ Matrices with applications	6	6	—
12	➢ Vectors in the Euclidean space	2	3	—
13	➢ Real vector spaces	2	3	—
14,15	➢ Polar coordinates	2	3	—
	Total hours	**30**	**45**	**—**

4. Course content/Course Competencies mapping matrix

Topic	Knowledge							Skills							Attitude		
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15	c16	c17
Functions	1							1							1		1
Differentiation		1	1					1	1				1		1	1	1
Trigonometric and inverse trigonometric functions		1	1					1	1				1		1	1	1
Exponential and logarithmic functions		1	1					1	1				1		1	1	1
Hyperbolic and inverse hyperbolic functions		1	1					1	1				1		1	1	1
Taylor and binomial expansions				1						1					1	1	1
Matrices with applications					1	1					1			1	1	1	1
Vectors in the Euclidean space							1					1		1	1	1	1
Real vector spaces							1					1		1	1		1
Polar coordinates							1					1		1	1		1
Topics Covering Competences	1	4	4	1	1	1	3	5	4	1	1	3	4	4	10	7	10

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods				Learning Methods	Assessement Method		
	Lecture	Discussions and seminars	Tutorials	Problem solving	Research and Reports	Written Exam	Quizes	Assignments
c1	1	1	1	1	1	1	1	1
c2	1		1	1	1	1	1	1
c3	1		1	1	1	1	1	1
c4	1		1	1	1	1	1	1
c5	1		1	1	1	1	1	1
c6	1		1		1	1		1
c7	1	1	1	1	1	1		1
c8	1		1	1		1	1	1
c9	1				1	1		
c10	1	1		1	1	1		
c11	1		1	1	1	1	1	1
c12			1	1		1	1	1
c13	1	1						
c14	1	1						
c15		1		1	1			1
c16		1	1	1	1			1
c17	1				1			1
∑	14	7	11	12	13	12	8	13
%	82	41	65	71	76	71	47	76

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
	Mid-Term Exam	7th Week	20
Semester Work	Quizzes	Bi-Weekly	40
	Reports/Research		
	Assignments		
	Written Exam	Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes:

Osama Elgayar and Sabry Abd El-Aziz Algebra and Calculus, Lecture Notes, Modern Academy Press.

7-2 Required books:

Briggs (2013) Calculus for Scientists and Engineers, U.S.A: Pearson.

Stewart, J. (2012) Calclus early trancendentals, 7ed, Canada: brooks/cole.

7-3 Recommended books:

E. Kreyszig (1999) Advanced Engineering Mathematics, 8ed, John Willey & Sons, Inc.

7-4 Periodicals, Web sites, etc.

www.mathwords.com , www.17calculus.com, www.sosmath.com .

8- Facilities required for teaching and learning:

- Library.
- Internet.
- High speed internet and communication facilities for distance learning

Course coordinator:	Dr. Sabry Abd El-Aziz
Head of the Department:	Associate Professor / Ashraf Taha EL-Sayed
Date:	August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
PHYn001: Physics I

A- Affiliation

Relevant program: Manufacturing Engineering and Production Technology BSc Program
Electronic Engineering and Communication Technology BSc Program
Computer Engineering and Information Technology BSc Program
Architecture Engineering and Building Technology BSc Program
Civil Engineering and Building Technology BSc Program

Department offering the program: Manufacturing Engineering and Production Technology Department
Electronic Engineering and Communication Technology Department
Computer Engineering and Information Technology Department
Architecture Engineering and Building Technology Department
Civil Engineering and Building Technology Department

Department offering the course: Basic Science Department

Date of specifications approval: August 2020

B - Basic Information

Title: Physics I **Code:** PHYn001 **Level:** Zero

Credit Hours: 3 **Lectures:** 2 **Tutorial/Exercise:**1 **Practical:** 2

Pre-requisite: None

C - Professional information

1 – Course Learning Objectives:

This course will enable the student to have a clear presentation of the basic concepts and principles of fundamental topics in classical physics. Concerning properties of matter, heat and waves.

2 – Competencies

c1- Explain the basic principles of rotational motion, application of rotational motion. (C1, C8)
c2- Study laws of planetary motion derived from the law of gravity and driving a general expression for gravitational potential energy. (C1, C3)
c3 – Deduce mathematical relations describing the objects deform under load condition and defining of several elastic constants for different types of deformation. (C1, C2)
c4 – Apply a theoretical model with certain simplifying assumptions to descripe the wave motion and fluid motion. (C1, C2)
c5 – Analyze, thermal phenomena through important terms, temperature, heat & internal energy. (C1)
c6 - Use experimental facilities to explain the concept of internal energy and the process by which energy is transferred. (C2,C6, C8)
c7- Apply the first law of thermodynamic on different systems and its applications (C1, C2)
c8 -Learn the kinetic theory of gas, entropy, and engine efficiency. (C3, C4)
c9 - Work in a team and involve in group discussion and seminars. (C2, C3, C7)
c10 - Analyze and solve a wide variety of problems of the related subjects listed above, justify the suitability and limitations of the studied equations, and select the most appropriate equations for problem solutions. (C5, C10)
c11 - Differentiate and compare the different types of heat transfer in different walls. (C8, C9)
c12 - Search for information's in references and in internet. (C5, C9)
c13 - Communicate and interact effectively with other people and in a small group. (C5, C8)
c14 - Practice self-learning and communicate effectively orally and in written form. (C7, C8)

This course contributes in the following program competencies: C1, C2, C3, C4, C5,C6, C7, C8, C9, C10

3 – Contents

week	Topic	Lecture hours	Tutorial hours	Practical hours
1	➢ Rotational motion, angular displacement, velocity, acceleration	2		
2	• Relation between linear and angular quantities.	1	1	
3	• Applications on rotational motion	2	1	4
4	➢ Universal gravitational law	1	1	3
5	• Kepler's laws	2	1	
6	• Gravitational energy	1		
7	Mid term	2	1	1
8	• Escape speed and orbital energy	1	1	
9	➢ Elasticity: Linear, shear and Bulk deformation	3	2	4
10	➢ Characteristics of fluids and streamlines	1	1	4
11	• Fundamental laws of fluid	2	1	
12	• Applications on Bernoulli's equation	2	1	2
13	• Viscosity and Poiseulli's law	1	1	2
14	➢ Heat transfer by convection and conduction	2	1	2
14	➢ Work and heat in thermodynamic system	1		
14	• First law of thermodynamic	1		4
15	• Isothermal expansion of gases and Molar specific heat	2	1	
15	➢ Mathematical representation of transverse waves	1		
15	• The principle of superposition	1		
15	• Standing waves and Sound waves	1	1	4
		30	**15**	**30**

4. Course content/Course Competencies mapping matrix

Topic	Knowledge								Skills				Attitude	
	c1	c2	c3	c4	c5	c6	c7	C8	C9	c10	c11	c12	c13	c14
Rotational motion, angular displacement, velocity, acceleration	1	1		1					1			1		1
Relation between linear and angular quantities.	1	1		1					1			1		1
Applications on rotational motion	1	1		1					1			1		1
Universal gravitational law	1	1		1					1			1		1
Kepler's laws	1	1		1					1	1		1	1	1
Gravitational energy	1	1		1					1	1		1	1	1
Escape speed and orbital energy	1	1		1					1	1		1	1	1
Elasticity: Linear, shear and Bulk deformation			1						1	1		1	1	1
Characteristics of fluids and streamlines				1					1	1		1	1	1
Fundemental laws of fluid				1					1	1		1	1	1
Applications on Bernoulli's equation				1					1	1		1	1	1
Viscosity and Poiseulli's law				1					1	1		1	1	1
Heat transfer by convection and conduction					1	1	1	1	1	1	1	1	1	1
Work and heat in thermodynamic system					1	1	1	1	1	1	1	1	1	1
First law of thermodynamic					1	1	1	1	1	1	1	1	1	1
Isothermal expansion of gases and Molar specific heat					1	1	1	1	1	1	1	1	1	1
Mathematical representation of transverse waves				1					1	1		1	1	1
The principle of superposition				1					1	1		1	1	1

Topic	Knowledge								Skills				Attitude	
	c1	c2	c3	c4	c5	c6	c7	C8	C9	c10	c11	c12	c13	c14
Standing waves and Sound waves									1	1		1	1	1
Topics Covering Competences	7	7	1	13	4	4	4	4	19	14	4	19	15	19

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods					Learning Methods	Assessement Method		
	Lecture	Discussions and seminars	Tutorials	Problem solving	Laboratory & Experiments	Research and Reports	Written Exam	Quizes	Assignments
c1	1	1	1	1	1	1	1	1	1
c2	1	1	1	1	1	1	1	1	1
c3	1	1	1	1	1	1	1	1	1
c4	1	1	1	1		1	1	1	1
c5	1	1	1	1	1	1	1	1	1
c6	1	1	1	1	1	1	1	1	1
c7	1	1	1	1	1	1	1	1	1
c8	1	1	1	1	1	1	1	1	1
c9	1	1	1		1	1			
c10	1	1	1	1		1	1	1	1
c11	1	1	1	1	1	1	1	1	1
c12	1	1	1		1	1			
c13	1	1	1	1	1	1			
c14	1	1	1	1		1			
∑	14	14	14	12	11	14	10	10	10

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	Bi-Weekly	20
	Reports/Research		
	Assignments		
Practical Exam		Fifteenth week	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes:

Physics I, PHYn001. Dr. El-Tawab Kamal, Dr. Abo el Yazeed B. Abo el Yazeed, Dr. Marwa Y. Shoeib and Dr. Nagat A. Elmahdy. Modern Academy Press.

Physics Lab (1) Note

7-2 Required books:

Serway (2003) Physics for Scientists & Engineering, USA: Sundress College Pub.

Griffith Thomas (2008) The Physics of Everyday Phenomena, USA: Mc-Graw hill.

7-3 Recommended books:

Halliday, David, Robert Resnick, Jearl Walker (2005). Fundamentals of Physics, 7th ed. Hoboken, N.J.: John Wiley and Sons.

7-4 Periodicals, Web sites, etc.

http://www.physicsclassroom.com/calcpad/circgrav/
http://physicsworld.com/
http://www.britannica.com/science/wave-motion
http://physics.info/
https://en.m.wikipedia.org
https://openstax.org
https://courses.lumenlearning.com
https://www.accessscience.com
https://physicaacademy.org
https://www.physics-academy.com
https://physicsshadows.blogspot.ae
https://m.youtube.com

8- Facilities required for teaching and learning:

- Laboratories.
- Library.
- High speed internet and communication facilities for distance learning

Course coordinator: Dr. Marwa Shoeib
Head of the Department: Associate Professor / Ashraf Taha EL-Sayed
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
CHEn001: Chemistry

A- Affiliation

Relevant program: Manufacturing Engineering and Production Technology BSc Program
Electronic Engineering and Communication Technology BSc Program
Computer Engineering and Information Technology BSc Program
Architecture Engineering and Building Technology BSc Program
Civil Engineering and Building Technology BSc program

Department offering the program: Manufacturing Engineering and Production Technology Department
Electronic Engineering and Communication Technology Department
Computer Engineering and Information Technology Department
Architecture Engineering and Building Technology Department
Civil Engineering and Building Technology Department

Department offering the course: Basic Science Department
Date of specifications approval: August 2020

B - Basic Information

Title: Chemistry **Code:** CHEn001 **Level:** ZERO
Credit Hours: 3 **Lectures:** 2 **Tutorial/Exercise:**1 **Practical:** 2
Pre-requisite: non

C - Professional information

1 – Course Learning Objectives:

By the end of this course the students should be able to demonstrate the knowledge and understanding of the basic concepts and theory of chemical Engineering subjects such as: gas laws, gas liquidation, Electro chemistry and its applications, thermo chemistry and its applications, solutions and antifreezes to understand some of chemical industries in different fields Such as polymers, lubricants, Soaps and detergents, petrochemicals, cement Industry, water treatments and Desalination.

2 – Competencies

c1- Identify and formulate key facts, concepts, principles and techniques of Gas and Liquid states of Matter.(C1,C2)
c2- Identify theories relevant to Electrochemistry, solutions and thermo chemistry. (C1,C2,C3)
c3- Apply some chemical industries in different fields such as eng. practices and regulatory farm works in chem. Eng. Industry.(C1,C3)
c4- Identify technology Supporting water treatments and Desalination Techniques and Scientific principles of petroleum extraction and refining. (C1,C2,C4)
c5- Identify basic principles for fuel classification and knowing its optimum characteristics, also identify advantage and disadvantage of them.(C1,C2)
c6-Apply chem. Principles and analytical thinking to problems of Gases, Liquids and electrochemistry and determine its effective solutions. (C3,C4,C5)
c7- Select and develop appropriate Some petrochemical Technologies. (C4)
c8- Overlap different scientific subjects to reach a new scientific system with a better quality. (C5,C6,C7)
c9- Select appropriate solutions for corrosion problems based on analytical thinking. (C5,C6,C7)
c10- Apply knowledge of scientific equipment and instrumentation competently to determine known concentration and solve its problem.(C1,C2,C3,C6)
c11- Employ computational facilities, measuring instruments, Laboratory tools and equipment to design an experiment to treat underground water and make it safe for Human use. (C1,C4,C5,C9)
c12- Improve plan and execute project work including the preparation of descriptive and interpretative technical reports. (C8,C9,C10)
c13- Apply experimental facilities to investigate the system performance. (pH and water hardness degree).(C8,C9,C10)
c14- Prepare and present technical materials. (Soaps, detergents, and some polymeric samples).(C2,C3,C5)
c15- Observe, record and analyze data in lab. As well as in Field.(Lab Fresh water and underground water).(C3,C4)
c16- Use appropriate tools to measure system performance. (C3,C4)

c17- Improving own learning and performance, personal skills, working with others. (C9,C10)
c18- work both in written and oral form and search for information from references, journals and internet. (C8,C9,C10)

This course contributes in the following program competencies: C1, C2, C3,C4, C5, C6, C7, C8, C9, C10

3 – Contents

week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Gas law and gas liquefaction.	4	2	-
2	Acid - base titration	-	-	4
2	Liquid state, Refrigeration & heat pump.	4	1	-
3	Electrochemistry	2	1	2
3	Acid - base titration	-	-	6
4	Metallic corrosion.	2	1	
5	Solution & Antifreezes	2	1	-
6	Thermo chemistry & solar heat, Rocket.	2	1	2
7	Assessment (M.T)	2	1	-
8	Water treatment and destitution	2	1	10
9	Polymer and Industry	2	1	-
10	Fuels and combustion	2	1	-
11	Chemistry and tech. of petroleum new trends in energy resource	2	1	-
12	Chemistry and tech. of petroleum new trends in energy resource	-	1	-
13	Industrial detergents chemistry such cement, lubricants, soap	2	1	2
14	Industrial detergents chemistry such cement, lubricants, soap	-	-	2
15	Revision and sheets	2	1	2
	Total hours	**30**	**15**	**30**

4. Course content/Course Competencies mapping matrix

Topic	Knowledge						Skills								Attitude			
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15	c16	c17	c18
Gas law and gas liquefaction.	1					1											1	
Liquid state, Refrigeration & heat pump.						1											1	
Electrochemistry &Metallic corrosion.		1				1			1								1	
Solution & Antifreezes		1															1	
Thermo chemistry & solar heat, Rocket.		1																
Pollution																		1
Water treatment and destitution				1						1	1		1		1	1		

Topic	Knowledge						Skills								Attitude			
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15	c16	c17	c18
Polymer and Industry												1						
Fuels and combustion					1													
Chemistry and tech. of petroleum new trends in energy resource							1	1										1
Industrial detergents chemistry such cement, lubricants, soap			1					1		1				1			1	
Acid - base titration										1						1	1	
Topics Covering Competences	1	3	1	1	1	3	1	2	1	3	3	1	1	1	1	1	6	2

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1			1	1		1			1	1		1		
c2	1	1		1	1			1		1	1	1	1		
c3	1	1	1			1	1			1				1	
c4	1	1	**1**	**1**	**1**	**1**		**1**		1	1	1	**1**		
c5	1	1		1				1					1	1	
c6	1	1	1	1	1					1	1		1		
c7	1	1	1					1		1	1		1	1	
c8	1	1			1	1	1						1	1	
c9	1	1					1	1	1	1	1		1	1	
c10	1			1	1	1				1	1		1		
c11	1		1			1	1	1		1	1		1		
c12	1			1		1	1	1						1	
c13	1	1	1				1		1					1	
c14	1		1			1	1	1				1		1	
c15						1	1	1				1		1	
c16						1	1	1						1	
c17	1		1			1	1	1							
c18	1		1					1						1	
∑	17	9	9	7	6	10	11	12	2	9	8	4	10	11	0

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes (one each 4 weeks)	10
	Assignments	3 assignments per semester	5
	report	One report per semester	5
Practical Exam		Fifteenth week	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:
7-1 Course notes:

Goda, S. and Assran, A. Chemistry for engineering & applied sciences, Lecture note, 2012.

7-2 Required books
Sunita Rattan (2013**),** A Textbook of Engineering **Chemistry, Kaston Books, New Delhi**

7-3 Recommended books: None

7-4 Periodicals, Web sites, etc.

- www.seciensedaily.com
- www.encyclopedia.com
- www.nasa,com
- www.science.com

8- Facilities required for teaching and learning:

- Chemistry lab.
- Computer, Data show.
- Computer programs.
- High speed internet and communication facilities for distance learning

Course coordinator:	Dr Shaaban Ragab Goda
Head of the Department:	Prof. Dr. Ashraf Taha
Date:	August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
MNFn002: Engineering Graphics 2

A- Affiliation

Relevant program: Mechanical Design and Production Technology BSc Program
Department offering the program: Manufacturing Engineering and Production Technology Department
Department offering the course: Manufacturing Engineering and Production Technology Department.
Date of specifications approval: August 2020

B - Basic Information

Title: Engineering Graphics **Code:** MNFn002 **Level:** Freshman, first semester
Credit Hours: 3 **Lectures:** 1 **Tutorial/Exercise:**3 **Practical:** -
Pre-requisite: MNFn001

C - Professional information

1 – Course Learning Objectives:

The objective of this course is to enable the students to read and draw components in different drawing kinds, namely orthogonal, perspective and/or isometric drawings & missing views and sectional views as well as steel constructions. The students will be able to apply the dimensioning principles on the drawings.

2 – Competencies:

c1. Solve and communicate problems in orthographic views (C2, C7, C8).
c2. Solve and communicate problems in isometric and oblique drawings (C3, C9).
c3. Consider the benefits of solving problems of developments and intersections. (C3, C9)
c4. Draw different problems in sectional views. (C3, C4, C8)
c5. Select the proper section for each component. (C1, C4, C5)
c6. Draw dimensions for components from production point of view. (C4, C5, C8)
c7. Produce orthographic views from 3D models. (C6, C9 C10)
c8. Read and understand orthographic drawing. (C1, C8)
c9. Prepare and interpret engineering drawing. (C1, C8)
c10. Read orthographic drawing with missing views. (C3, C6, C9, C10)
c11. Make necessary views using missing view and isometric. (C5, C9)
c12. Communicate by graphic language. (C1, C5)
c13. Communicate effectively with other discipline using the graphical language. (C1, C5)
c14. Expand their creative talents and to communicate their ideas in a meaningful manner. (C8, C9, C10)
c15. Search for information and engage in life – long sell learning discipline. (C8, C10)
c16. Communicate graphically effectively. (C8, C9)
c17. Refer to relevant literature. (C9, C10)
c18. Search for information's in references and in internet (C8, C9)
c19. Practice self-learning (C5, C10)

This course contributes to the following program competencies: C1, C2, C3, C4, C5, C6, C7, C8, C9 & C10

3. Contents:

Weeks	Topics	Lecture hours	Tutorial hours	Practical hours
1	Revision of theory of orthographic projection: Projection of point; line and plane Projection of geometric solids.	1	3	0
2	Missing view drawing (of Vertical and Horizontal Surfaces).	1	3	0
3	Missing view drawing (of inclined Surfaces).	1	3	0
4	Missing view drawing (of cylindrical Surfaces).	1	3	0
5	Practices of multi view in all cases.	1	3	0
6	Pictorial drawing (isometric), Pictorial drawing (oblique).	1	3	0
7	Assessment (Mid-Term Exam)	1	1	0
8	Isometric drawing (of Vertical, Horizontal & inclined Surfaces and cylindrical Surfaces).	1	3	0
9	Sectional views	1	3	0
10	Sectional views**:** Basic types of sections: Full sections: longitudinal, cross – section.	1	3	0
11	Offset; Aligned sections; Half-section; Partial S.; Revolved & Auxiliary sections.	1	3	0
12	Steel constructions: Basic types of steel structures.	1	3	
13	Steel constructions**:** Projection of steel sectional.	1	3	0
14	Steel constructions: practices of constructions steel sectional.	1	3	0
15	Dimensioning – Arrangements of dimensions – Rules for dimensions of circles; radii ; angles ; plain holes.	1	3	0
	Total hours	**15**	**43**	**0**

4. Course content/Course Competencies mapping matrix:

Topics	Course Competencies																		
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15	c16	c17	c18	c19
1- Revision of theory of orthographic projection: Projection of point; line and plane Projection of geometric solids.	1	1						1											
2- Missing view drawing (of Vertical and Horizontal Surfaces).	1	1						1											
3- Missing view drawing (of inclined Surfaces).			1						1										
4- Missing view drawing (of cylindrical Surfaces).			1						1										
5- Practices of multi view in all cases.				1	1														
6- Pictorial drawing (isometric), Pictorial drawing (oblique).				1	1					1									

Topics	Course Competencies																		
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15	c16	c17	c18	c19
7- Isometric drawing (of Vertical, Horizontal & inclined Surfaces and cylindrical Surfaces).										1									
8- Sectional views						1													
9- Sectional views**:** Basic types of sections: Full sections: longitudinal, cross – section.							1			1									
10- Offset; Aligned sections; Half-section; Partial S.; Revolved & Auxiliary sections.							1			1									
11- Steel constructions: Basic types of steel structures.										1									
12- Steel constructions**:** Projection of steel sectional.					1			1											
13- Steel constructions: practices of constructions steel sectional.					1			1											
14- Dimensioning – Arrangements of dimensions – Rules for dimensions of circles; radii; angles ; plain holes.	1	1																	
Topics Covering Competencies	3	3	2	2	4	1	2	4	2	5	0	0	0	0	0	0	0	0	0

5 - Teaching, Learning, and Assessment Methods:

Course Competencies	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports & Assignments	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1			1			1	1		1	1		1		
c2	1			1	1		1	1		1	1		1		
c3	1		1	1	1		1	1		1	1		1		
c4	1			1	1	1			1	1	1	1	1		
c5	1			1	1	1			1	1	1	1	1		

Course Competencies	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports & Assignments	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c6	1			1	1	1			1	1	1	1	1	1	
c7	1	1	1				1		1	1	1				
c8	1	1		1	1		1	1	1		1		1	1	1
c9	1			1	1				1	1	1		1	1	
c10						1	1		1			1			
c11						1	1		1			1			
c12						1	1		1			1			
c13						1	1		1						
c14	1	1	1					1						1	1
c15	1	1	1					1							
c16		1	1					1							
c17	1	1	1					1						1	
c18	1										1		1	1	
c19	1										1		1		
∑	14	6	6	8	7	7	9	8	9	8	11	6	9	6	2

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	3 Quizzes (one each 4 Weeks)	10
	Tutorials	3 Assignments per semester	10
Practical Exam		15th Week	20
Written Exam		16th Week	40
Total			100

7- List of references:

7-1 Course notes:

- Engineering Graphics by Prof. Nabil Gadallah.

7-2 Required books

- James H.Earle, Graphics For Engineering, Addison Wesley Publishing Company 1991.

7-3 Recommended books

- None

7-4 Recommended Web Site

- None

8- Facilities required for teaching and learning:

- Overhead projector and screen.
- Models and prototype as teaching aids.

Course coordinator: Dr. Metwally Abd Elghaffar
Head of the Department: Dr. Metwally Abd Elghaffar
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
GENn042: English Language

A- Affiliation

Relevant program: Manufacturing Engineering and Production Technology BSc Program
Electronic Engineering and Communication Technology BSc Program
Computer Engineering and Information Technology BSc Program
Architecture Engineering and Building Technology BSc Program
Civil Engineering and Building Technology BSc program

Department offering the program: Manufacturing Engineering and Production Technology Department
Electronic Engineering and Communication Technology Department
Computer Engineering and Information Technology Department
Architecture Engineering and Building Technology Department
Civil Engineering and Building Technology Department

Department offering the course: Basic Sciences Department

Date of specifications approval: August 2020

B - Basic information

Title: English Language **Code:** GENn042 **Level:** ZERO

Credit Hours: 2 **Lectures:**2 **Tutorial:** **Practical:**

Pre-requisite: - None

C - Professional information

1 – Course Learning Objectives:

This course is designed for students of the pre-intermediate to upper-intermediate level of English. The course aims at developing students' reading, writing, speaking and listening skills with regard to the related topics. It is also designed to consolidate and extend Students' knowledge of situations of every day life. The course offers realistic and informative original situations introducing students to key concepts of different topics.

2 - Competencies

c1- Identify the most frequent words, phrases and grammar rules in everyday conversation. (C5)
c2- Communicate effectively, even at the very beginning levels. (C8)
c3- Differentiate between tenses in conversation. (C10)
c4-Enhance class interaction in terms of speaking, reading, listening and writing. (C10)
c5-Personalize the learning experience by offering students interesting topics relevant to their interests and experiences. (C10)
c6-Employ tasks which encourage students to take an active role in learning and using new vocabulary. (C9)
c 7-Write paragraphs and peer edit them using error detection. (C8)
c 8- Interact with each other and with the professor. (C8)
c9- Work in a team and involve in group discussion. (C8)
c10- Communicate effectively and present data and results orally and in written form. (C8, C10)
c11- Search for information in references and in internet. (C10)
c12- Practice self-learning. (C10)

This course contributes in the following program competencies:C5, C8, C9, C10

3 – Contents

week	Topic	Lecture hours	Tutorial hours	Practical hours
1	**Computer Hackers**	2		
2	**At the Doctor's** Reviewing tenses Reading	2		
3	**At the Doctor's**(to be continued) Grammar: perfect tenses& prefixes	2		
4	**Global Warming** Reading Speaking : English communication skills Suffixes & adj.&adv.	2		
5	**Computer Addiction** Reading: 53-55 Seaking: discussing the topic Grammar: adjectives	2		
6	**Earthquake** Reading: 59-61 Grammar: Suffixes	2		
7	**MID TEARM**	2		
8	**Words and their Stories** Reading Grammar: wh-questions and negatives	2		
9	**Revision** **7th week Exam**	2		
10	**Describing People &Things** **Reading :** **Grammar:**adj.& adv	2		
11	**Describing People &Things (to be contiued)** **Reading :** **Grammar : relative clauses**	2		
12	**Qualities and Flaws** Speak**:** dicussing qualities and flaws of each one (pair work **Grammar:** Possession Pronouns+ Adjectives	2		
13	**Qualities and Flaws (to be continued)** **List. & Speak:**dicussing the topic	2		
14	**People Idioms** **Grammar:**gerund "& to infinitive & adjectives with prepositions	2		
15	**English proverbs** **Grammar: problem verbs**	2		
	Total hours	**30**	**-**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Knowledge			Skills					Attitude			
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12
Computer Hackers	1	1	1	1	1	1	1	1	1	1	1	1
At the Doctor's Reviewing tenses Reading	1	1	1	1	1	1	1		1	1		1
Global Warming Reading Speaking : English communication skills Suffixes & adj.&adv.	1	1	1	1	1	1	1		1	1	1	1
Computer Addiction Reading: 53-55 Seaking: discussing the topic Grammar: adjectives	1	1	1		1	1	1		1	1		1
Earthquake Reading: 59-61 Grammar: Suffixes	1	1	1	1	1		1		1	1	1	
Words and their Stories Reading Grammar: wh-questions and negatives	1	1	1	1	1	1	1		1	1		1
Revision **7th week Exam**						1	1			2		1
Describing People &Things **Reading :** **Grammarly:** adj.& adv	1	1	1	1	1		1	1		1	1	1
Describing People &Things (to be contiued) **Reading :** **Grammar : relative clauses**	1	1	1		1	1	1	1		1	1	
Qualities and Flaws Speak**:** dicussing qualities and flaws of each one (pair work **Grammar:** Possession Pronouns+ Adjectives	1	1	1		1	1		1		1		1
Qualifies and Flaws (to be continued) **List. & Speak:**discussion the topic	1	1	1	1	1	1		1		1	1	
People Idioms **Grammar:** gerund "& to infinitive & adjectives with prepositions	1	1	1	1	1		1		1	1	1	1
Revision and sheets	1	1	1	1	1	1		1	1	1	1	1
Topics Covering Competences	12	12	12	9	12	10	10	6	9	12	8	8

5- Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1		1				1			1			1		1
c2	1							1							
c3	1						1			1			1	1	1
c4	1		1					**1**							
c5	1							1						1	1
c6	1														
c7	1		1					1		1			1	1	1
c8	1						1							1	1
c9	1						1	1						1	
c10	1		1											1	1
c11	1		1				1	1							
c12	1						1	1						1	
∑	12		5				6	7		3			3	7	6
%	100		42				50	58		25			25	58	50

6- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Assignments and Reports	Bi-Weekly	20
Two Quizzes	5th and 10th	20
Mid-Term Exam	7-th Week	20
Written Exam	Sixteenth week	40
Total		100

7- List of references:

7-1 Course notes:

The English Language Book by Dr Neveen Samir , 2015

7-2 Required books

Shelton, James, Handbook for technical writing, NTC publishing Group, Illinois, USA, 1998.

7-3 Recommended books: Non

7-4 Periodicals, Web sites, etc.:

- http://www.bbc.co.uk/learningenglish
- http://www.rong-chang.com/
- http://legacy.australianetwork.com/studyenglish/

8- Facilities required for teaching and learning:

Library

High speed internet and communication facilities for distance learning

Course coordinator: Dr. Neveen Samir

Head of the Department: Prof. Dr. Ashraf Taha

Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
MECn002: Mechanics-2

A- Affiliation

Relevant program: Manufacturing Engineering and Production Technology BSc Program
Electronic Engineering and Communication Technology BSc Program
Computer Engineering and Information Technology BSc Program
Architecture Engineering and Building Technology BSc Program
Civil Engineering and Building Technology BSc program

Department offering the program: Manufacturing Engineering and Production Technology Department
Electronic Engineering and Communication Technology Department
Computer Engineering and Information Technology Department
Architecture Engineering and Building Technology Department
Civil Engineering and Building Technology Department

Department offering the course: Basic Science Department

Date of specifications approval: August 2020

B - Basic Information

Title: Mechanics-2 **Code:** MECn002 **Level:** Zero

Credit Hours: 2 **Lectures:** 1 **Tutorial/Exercise:**3 **Practical:** ---

Pre-requisite: MECn001

C - Professional information

1 – Course Learning Objectives:

By the end of this course, the students should have gained the planned competencies (knowledge, skills, and attitudes) related to the basic concepts of the geometry of motion to relate displacement, velocity, acceleration and time without reference to the cause of the motion. The study of the relation existing between the forces acting on a body to determine the forces required to produce a given motion. The end of this course the students should demonstrate the knowledge that the equation of motion together with the principle of kinetics to obtain the two additional methods of analysis the method of the work and energy and the method of impulse and momentum.

2 – Competencies

c1- Identify basic of dynamics like velocity, acceleration, total distance, average velocity and average speed. (C1, C5).
c2- Identify of differentiation and integration (C1)
c3- Classification the particle's motion in straight line and in curved path and it's applications (C1, C5)
c4- Understand the dynamics system and the effect of forces on the system in different coordinates (C1).
c5- Classify of two methods of kinetics, namely, the method of work and energy and method of impulse and momentum. (C1, C5, C9)
c6- Analyze and classify between the force acting on the system to get it's value and the principle of work and energy to get the velocity of the particle (C1, C5, C9)
c7- Classify and compare the different between the average velocity and average speed (C1, C5, C9).
c8- Solve the equation of motion to get velocity, acceleration and total distance traveled at any time. (C1, C5, C9)
c9- Calculate the time of flight of projectile to get a target. (C1, C5, C9).
c10- Solve the equation of motion graphically. (C1, C5, C9)
c11- Work in a team to solve problem as a search. (C7, C8)
c12- Search for information in references and in internet (C7, C9, C10).

This course contributes in the following program competencies: C1, C5, C7, C8, C9, C10

3 – Contents

week	Topic	Lecture hours	Tutorial hours	Practical hours
1	➢ Rectilinear Motion of particles.	1	3	—
2	➢ Determination of the motion of a particle.	1	3	—
3	➢ Graphical Solution of Rectilinear Motion.	1	1	—
4	➢ Curvilinear Motion of particle, Free Flight Motion.	2	3	—
5	➢ Normal and Tangential.	1	3	—
6	➢ Plane Curvilinear Motion.	1	3	—
7	➢ Mid tearm	1	1	
8	➢ Polar Coordinates.	1	1	—
9,10	➢ Kinetics of Particles, Force and acceleration.	2	3	—
11,12	➢ Kinetics of Particles Energy and Momentum Methods	2	3	—
13	➢ Motion under a conservative centeral force.	1	3	—
14,15	➢ Principle of Impulse and Momentum for particle.	1	3	—
	Total hours	**15**	**30**	**—**

4. Course content/Course Competencies mapping matrix

Topic	Knowledge					Skills					Attitude	
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12
Rectilinear Motion of particles.	1											1
Determination of the motion of a particle.	1	1	1								1	1
Graphical Solution of Rectilinear Motion.	1		1								1	1
Curvilinear Motion of particle, Free Flight Motion.		1									1	1
Normal and Tangention.		1	1								1	1
Plane Curvilinear Motion.				1							1	1
Polar Coordinates.			1	1							1	1
Kinetics of Particles, Force and acceleration.					1	1	1				1	1
Kinetics of Particles Energy and Momentum Methods				1	1	1	1				1	1
Motion under a conservative central force.				1	1		1	1		1	1	1
Principle of Impulse and Momentum for particle.					1			1	1	1	1	1
Topics Covering Competences	3	3	4	4	4	2	3	2	1	2	10	11

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods				Learning Methods	Assessement Method			
	Lecture	Discussions and seminars	Tutorials	Problem solving	Research and Reports	Written Exam	Quizes	Term papers	Assignments
c1	1		1	1	1	1	1	1	1
c2	1		1	1		1	1	1	1
c3	1		1	1	1	1	1	1	1
c4	1	1	1	1	1	1	1	1	1
c5	1	1	1			1	1	1	1
c6	1	1	1			1	1		1
c7	1	1	1	1		1	1	1	1
c8	1	1	1	1		1	1	1	1
c9	1		1			1	1	1	1
c10	1		1	1				1	1
c11				1	1			1	
c12					1			1	
∑	10	5	10	8	5	9	9	12	10

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	Bi-Weekly	40
	Reports/Research		
	Assignments		
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes:

Moamen Wafaie, Engineering Mechanics (Dynamics), Lecture Notes, Modern Academy Press.

7-2 Required books:

F. Beer and Johnston Vector mechanics for Engineers, Dynamics, McGraw-Hill.

R.C. Hibbeler Engineering mechanics, Dynamics**.**

7-4 Recommended books:

None

7-4 Periodicals, Web sites, etc.

Basic of mechanical engineering, engineering mechanics statics and dynamics, statics and dynamics hibbeler 12th edition and there is teams link uploaded by videos concerning the course.

8- Facilities required for teaching and learning:

- Library.
- Internet.
- High speed internet and communication facilities for distance learning

Course coordinator: Dr. Shimaa Lotfy

Head of the Department: Associate Professor / Ashraf Taha EL-Sayed

Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
MTHn002: Mathematics -2(Integration and Analytic Geometry)

A- Affiliation

Relevant program: Manufacturing Engineering and Production Technology BSc Program
Electronic Engineering and Communication Technology BSc Program
Computer Engineering and Information Technology BSc Program
Architecture Engineering and Building Technology BSc Program
Civil Engineering and Building Technology BSc program

Department offering the program: Manufacturing Engineering and Production Technology Department
Electronic Engineering and Communication Technology Department
Computer Engineering and Information Technology Department
Architecture Engineering and Building Technology Department
Civil Engineering and Building Technology Department

Department offering the course: Basic Science Department
Date of specifications approval: August 2020

B - Basic Information

Title: Mathematics-2(Integration and Analytic Geometry) **Code:** MTHn002 **Level:** Zero

Credit Hours: 3 **Lectures:** 2 **Tutorial/Exercise:**3 **Practical:** ---
Pre-requisite: MTHn001

C - Professional information

1 – Course Learning Objectives:

By the end of this course, the students should have gained the planned competencies (knowledge, skills, and attitudes) related to the main concepts of integral calculus and analytic geometry with their applications.

2 – Competencies

c1. Definition of anti-derivative, indefinite integral, definite integrals. (C1, C5)
c2. Methods of integration (integration by parts, substitution). (C1, C5)
c3. Integration rules of trigonometric functions, integration of rational functions, improper integrals. (C1, C5)
c4. Basic concepts of convergence of infinite sequences and series. (C1, C5)
c5. Equations of lines, planes and conic sections. (C1, C5)
c6. Investigate the geometric interpretation of the integration. (C1, C5, C9)
c7. Develop techniques for using basic integration formulas to obtain indefinite integrals of complicated functions. (C1, C5, C9)
c8. Explore some of the geometric applications of the definite integral by using it to compute areas between curves, volumes of solids, arc length and surface area. (C1, C5, C9)
c9. Develop several tests to determine whether a series is convergent or divergent without explicitly finding its sum. (C1, C5, C9)
c10. Estimate of the sum of the convergent series and the error using various methods. (C1, C2)
c11. Derive the equation and main geometric properties of lines, planes and conic sections. (C1, C5, C9)
c12. Use integration to evaluate area between curves, volume of solids with known cross sections, arc length.
(C1, C2, C5, C9)
c13. Work in a team and involve in group discussion and seminars (C7).
c14. Communicate effectively and present data and results orally and in written form (C8).
c15. Search for information's in references and in internet (C9, C7, C10).

This course contributes in the following program competencies: C1, C2, C5, C7, C8, C9, C10

3 – Contents

week	Topic	Lecture hours	Tutorial hours	Practical hours
1	➢ Anti-derivative, indefinite integral	2	2	—
2	➢ Definite integrals and the fundamental thearem of calculus	2	3	—
3,4	➢ Methods of integration (integration by parts, substitution)	4	6	—
5	➢ Integration of trigonometric functions	2	4	—
6	➢ Trignometric Substitutions	2	2	—
7	➢ Mid term	2		
8	➢ Integration of rational functions	2	4	—
9	➢ Miscellaneous Substitutions, improper integrals	2	4	—
10,11	➢ Application of definite integral(area, volume, arc length, surface area)	3	4	—
12,13	➢ Sequences, series	4	6	—
14	➢ Equations of lines, planes and circles	3	4	—
15	➢ Conic sections (parabola, ellipse, hyperbola)	2	3	—
	Total hours	**30**	**42**	**—**

4. Course content/Course Competencies mapping matrix

Topic	Knowledge					Skills							Attitude		
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15
Anti-derivative, indefinite integral	1												1		1
Definite integrals and the fundamental thearem of calculus	1					1						1	1	1	1
Methods of integration (integration by parts, substitution)		1				1	1					1	1	1	1
Integration of trigonometric functions			1			1	1					1	1	1	1
Trignometric Substitutions			1			1	1					1	1	1	1
Integration of rational functions			1			1	1					1	1	1	1
Miscellaneous Substitutions, improper integrals			1			1						1	1	1	1
Application of definite integral(area, volume, arc length, surface area)				1			1	1				1	1	1	1
Sequences, series				1					1	1			1		1
Equations of lines, planes and circles					1						1		1		1
Conic sections (parabola, ellipse, hyperbola)					1						1	1	1	1	1
Topics Covering Competences	2	1	4	2	2	6	5	1	1	1	2	8	11	8	11

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods				Learning Methods	Assessment Method		
	Lecture	Discussions and seminars	Tutorials	Problem solving	Research and Reports	Written Exam	Quizes	Assignments
c1	1	1	1		1	1	1	1
c2	1		1	1		1	1	1
c3	1		1	1		1	1	1
c4	1	1	1	1	1	1	1	1
c5	1		1	1	1	1	1	1
c6	1		1	1		1	1	1
c7	1		1	1		1	1	1
c8	1	1	1	1	1	1		1
c9	1		1	1		1		1
c10	1		1	1		1		1
c11	1	1	1	1	1	1		1
c12	1	1	1	1	1	1		1
c13		1		1	1			
c14		1			1			
c15		1			1			
∑	12	8	12	12	9	12	7	12

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	Bi-Weekly	40
	Reports/Research		
	Assignments		
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes:

S. Shenawy and S. Abd-elaziz, Integration and Analytic Geometry, Lecture Notes, 2013

7-2 Required books:

E. W. Swokoski, Calculus, 6ed, PWS Publishing Company, Boston, 1994.

E. W. Swokoski, Algebra & trigonometry with analytic geometry, 10ed, brooks cole,U.S.A.,2002.

7-5 Recommended books:

E. Kreyszig (1999) Advanced Engineering Mathematics, 8ed, John Willey & Sons, Inc.

7-4 Periodicals, Web sites, etc.

www.sosmath.com .

8- Facilities required for teaching and learning:

- Library.
- Internet.
- Data show
- Required Computer programs

Course coordinator: Dr. Sabry Abd El-Aziz

Head of the Department: Associate Professor / Ashraf Taha EL-Sayed

Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
PHYn002: Physics II

A- Affiliation

Relevant program: Manufacturing Engineering and Production Technology BSc Program
Electronic Engineering and Communication Technology BSc Program
Computer Engineering and Information Technology BSc Program
Architecture Engineering and Building Technology BSc Program
Civil Engineering and Building Technology BSc Program

Department offering the program: Manufacturing Engineering and Production Technology Department
Electronic Engineering and Communication Technology Department
Computer Engineering and Information Technology Department
Architecture Engineering and Building Technology Department
Civil Engineering and Building Technology Department

Department offering the course: Basic Science Department

Date of specifications approval: August 2020

B - Basic Information

Title: Physics 2 **Code:** PHYn002 **Level:** Zero, Spring

Credit Hours: 3 **Lectures:** 2 **Tutorial/Exercise:**1 **Practical:** 2

Pre-requisite: PHYn001

C - Professional information

1 – Course Learning Objectives:

By the end of this course the students should be able to apply, demonstrate the knowledge and understanding of the concepts of the electricity and magnetism and learn the main laws of electromagnetism, understanding how to connect the actual phenomena with the theory, and learn the fundamentals of physical optics.

2 – Competencies

c1- Explain the fundamental and basic law of applications in electricity, magnetism, and electromagnetism. (C1)

c2- Study Gausses law in electricity for different type of charged bodies. (C1)

c3 - Deduce mathematical relations describing laws of electric capacitors and effect of dielectric. (C2)

c4 - Understand direct current, resistance and solution of simple electric circuits and kerchief's laws. (C1, C2)

c5 - Analogy between magnetic field and electric field., and application of Ampere's law, Gausse's law in magnetism. (C1)

c6 - Use experimental facilities to explain the Magnetic properties of matter. (C4)

c7- Explain fundamental theories of Electro-magnetic waves and main physical phenomena of physical optics (interference, diffraction, and polarization) (C1, C2)

c8 - Investigate electric force and electric field (using Gauss's law) and select the proper manner to solve problem. (C3, C4)

c9 - Work in a team and involve in group discussion and seminars. (C2, C3, C7)

c10 - Study of capacitors and dielectric effect, uses of capacitors, and use Kirchhoff's laws to solve simple electric circuits. (C5, C10)

c11 - Investigate and compare electric field, magnetic field, and magnetic force using Gauss law in magnetism and Ampere's law; studying the nature of each and identify magnetic properties and studying electromagnetic wave. (C8, C9)

c12 - Search for information's in references and in internet. (C5, C9)

c13 - Communicate and interact effectively with other people and in a small group. (C5, C8)

c14 - Practice self-learning and communicate effectively orally and in written form. (C7, C8)

This course contributes in the following program competencies: C1, C2, C3, C4, C5, C7, C8, C9, C10

3 – Contents

week	Topic	Lecture hours	Tutorial hours	Practical hours
1,2	➢ Charge and Matter, The Electric Field, Gauss' law	2	1	2
3	➢ Gauss's law applications	2	1	2
4	➢ Electric Potential	2		2
5	➢ Capacitors and Dielectric	2	1	2
6	➢ Capacitors and Dielectric	2	1	2
7	➢ Mid term			
8,9	➢ The Magnetic Field, Ampere's Law	2	1	2
10,11	➢ Ampere's law, Inductance	2	1	2
12	➢ Magnetic Properties of matter	2	1	2
12	➢ Magnetic Properties of matter, Electromagnetic Waves	2	1	2
13	➢ Electromagnetic Waves	2	1	2
13	➢ Electromagnetic Waves, Physical Optics, Polarization of light	2	1	2
14	➢ Polarization of light	2	1	2
14	➢ Interference of light	2	1	2
15	➢ Interference of light, Diffraction of light	2	1	1
15	➢ Diffraction of light, Some applications	2	1	1
		30	**15**	**30**

4. Course content/Course Competencies mapping matrix

Topic	Knowledge								Skills				Attitude	
	c1	c2	c3	c4	c5	c6	c7	C8	C9	c10	c11	c12	c13	c14
Charge and Matter, The Electric Field, Gauss' law	1	1	1	1	1		1	1	1		1	1		1
Gauss's law, Electric Potential	1	1	1	1	1		1	1	1		1	1		1
Gauss's law applications	1	1	1	1	1		1	1	1		1	1		1
Capacitors and Dielectric	1	1	1	1	1		1		1	1	1	1		1
Capacitors and Dielectric	1	1	1	1	1		1		1	1	1	1	1	1
The Magnetic Field, Ampere's Law	1		1	1	1	1	1		1	1	1	1	1	1
Ampere's law, Inductance	1		1	1	1	1	1		1	1	1	1	1	1
Magnetic Properties of matter	1			1	1	1	1		1	1	1	1	1	1
Magnetic Properties of matter, Electromagnetic Waves	1			1	1	1	1		1	1	1	1	1	1
Electromagnetic Waves	1				1	1	1		1	1	1	1	1	1
Electromagnetic Waves, Physical Optics, Polarization of light	1				1	1	1		1		1	1	1	1
Polarization of light					1	1	1		1		1	1	1	1
Interference of light						1	1	1	1		1	1	1	1
Interference of light, Diffraction of light						1	1	1	1		1	1	1	1
Diffraction of light, Some applications						1	1	1	1		1	1	1	1
Topics Covering Competences	11	5	7	9	12	10	15	6	15	7	15	15	11	15

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods					Learning Methods	Assessement Method		
	Lecture	Discussions and seminars	Tutorials	Laboratory & Experiments	Problem solving	Research and Reports	Written Exam	Quizes	Assignments
c1	1	1	1	1	1	1	1	1	1
c2	1	1	1	1	1	1	1	1	1
c3	1	1	1	1	1	1	1	1	1
c4	1	1	1	1	1	1	1	1	1
c5	1	1	1	1	1	1	1	1	1
c6	1	1	1	1	1	1	1	1	1
c7	1	1	1	1	1	1	1	1	1
c8	1	1	1	1	1	1	1	1	1
c9		1	1	1		1			
c10	1	1	1	1	1	1	1	1	1
c11	1	1	1	1	1	1	1	1	1
c12		1	1	1		1			
c13	1	1	1	1	1	1			
c14	1	1	1	1	1	1			
∑	12	14	14	14	12	14	10	10	10

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	Bi-Weekly	20
	Reports/Research		
	Assignments		
Practical Exam		Fifteenth week	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-5 Course notes:

PHYn002, Physics II.

Physics Lab (2) Note

7-2 Required books:

M. El- Tawab Kamal and Abo- Elyzeed B. Abo- Elyzeed, Marwa Shoeb, Nagat Elmahdy. Electricity, Magnetism and Optics Physics

Serway (2003) Physics for Scientists & Engineering, USA: Sundress College Pub.

Griffith Thomas (2008) The Physics of Everyday Phenomena, USA: Mc-Graw hill.

7-6 Recommended books:

David Halliday, Robert Resnick, JearlWallker, Fundamentals of Physics, John Wiley, New York, 1993.

Raymond A. Serway, Physics for Scientists and Engineers with Modern Physics, 3rd ed. Wiely, New Yourk, 1990.

7-4 Periodicals, Web sites, etc.

http.www.saunderscollege.cpm/physics

http://www.physicsclassroom.com/calcpad/circgrav/

http://physicsworld.com/

http://www.britannica.com/science/wave-motion

http://physics.info/

8- Facilities required for teaching and learning:

- Laboratories.
- Library.
- High speed internet and communication facilities for distance learning

Course coordinator:	Dr. Nagat A. Elmahdy
Head of the Department:	Associate Professor / Ashraf Taha EL-Sayed
Date:	August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
MNFn003: Principles of Production Engineering

A- Affiliation

Relevant Program:	Manufacturing Engineering and Production Technology BSc Program Electronic Engineering and Communication Technology BSc Program Computer Engineering and Information Technology BSc Program Architecture Engineering and Building Technology BSc Program Civil Engineering and Building Technology BSc Program
Department Offering the Program:	Manufacturing Engineering and Production Technology Department Electronic Engineering and Communication Technology Department Computer Engineering and Information Technology Department Architecture Engineering and Building Technology Department Civil Engineering and Building Technology Department
Department Offering the Course:	Manufacturing Engineering and Production Technology Department
Date of Specifications Approval:	August, 2020

B - Basic Information

Title: Principles of Production Engineering **Code:** MNFn003 **Level:** Zero, Second Semester

Credit Hours: 3 **Lectures:** 2 **Tutorial:** - **Practical:** 3

Pre-requisite: None

C - Professional Information

1 – Course Learning Objectives:

By the end of this course the student should have gained the planned competencies (based on the knowledge, skills, and personal attitude) related to the production system and different methods of production by cutting and non-cutting processes theoretically and practically.

2 – Competencies:

On successful completion of the course, the student should demonstrate knowledge and understanding of:

c1- Basic production methods related to casting, metal forming processes, welding, and metal cutting (C1)
c2- Design pattern, allowances in casting & solidification (C2), (C3).
c3- Fundamental of centrifugal casting process (C1)
c4- Classification of welding process (C1, C4).
c5- Basic methods of hot and cold forming (C1, C4).
c6- Applications of metal cutting processes (C1)
c7- Select the proper manufacturing process for a specific product (C3, C4)
c8- Design the pattern for sand casting (C3, C4)
c9- Choose the suitable welding method or different joining (C2, C3, C4)
c10- Use the principle of production engineering in producing good quality cheap product (C4)
c11- Solve some simple production problems related to method of production selection (C3)
c12- Use the studied manufacturing methods in producing prototypes during practical hours (C7).
c13- Collect, record and submitting data about production engineering (C10).
c14- Work in a team and involve in group discussion (C6, C7).
c15- Communicate effectively and present data and results orally (C8).
c16- Search for information's in references and in internet (C5).
c17- Practice self-learning (C10).

This course contributes to the following program competencies: C1, C2, C3, C4, C5, C6, C7, C8 & C10

3 – Contents:

Weeks	Topics	Lecture hours	Tutorial hours	Practical hours
1-3	Role of production engineering, production system objective, types of industries, classification of manufacturing processes.	4	-	-
4-6	Sand casting, melting of metal & furnaces. Solidification, pattern allowances, sand molding & gating system. Die casting, centrifugal & investment casting.	6	-	8
7	Assessment (Mid-Term Exam)	2	-	-
8-10	Types of welding, oxy- acetylene welding, electric- arc welding, submerged arc welding, MIG, TIG, resistance welding, soldering & brazing	6	-	8
11, 12	Hot & cold forming, rolling, extrusion, wire drawing & sheet metal forming	6	-	9
13-15	Metal cutting processes (Turning, milling, shaping, grinding and drilling)	6	-	20
	Total hours	**30**	**-**	**45**

4 – Course Content / Course Competencies Mapping Matrix:

Topics	Course Competencies																
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15	c16	c17
1- Role of production engineering, production system objective, types of industries, classification of manufacturing processes ..	1	1	1					1									
2- Sand casting, melting of metal & furnaces. Solidification, pattern allowances, sand molding & gating system. Die casting, centrifugal & investment casting.	1	1	1					1		1	1	1	1	1		1	1
3- Types of welding, oxy-acetylene welding, electric- arc				1					1	1	1	1	1	1		1	1

Topics	Course Competencies																
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15	c16	c17
welding, submerged arc welding, MIG, TIG, resistance welding, soldering & brazing.																	
4- Hot & cold forming, rolling, extrusion, wire drawing & sheet metal forming					1			1	1	1	1	1	1				
5- Metal cutting processes (Turning, milling, shaping, grinding, and drilling)	1					1	1		1	1	1	1	1	1		1	1
6- Practical training in different production methods (Workshops during the whole semester)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Topics covering Competencies	4	3	3	2	2	2	2	4	4	5	5	5	5	4	1	4	4

5 – Teaching, Learning, and Assessment Methods:

Competencies	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & Seminars	Tutorials	Problem Solving	Laboratory Experiment	Research, Reports & Assignments	Self-learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1			1				1		1	1	1	
c2	1	1	1			1			1	1		1	1	1	
c3	1	1	1			1			1	1		1	1	1	
c4	1	1	1			1			1	1		1	1	1	
c5	1	1	1			1			1	1		1	1	1	
c6	1	1	1			1			1	1		1	1	1	

Competencies	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & Seminars	Tutorials	Problem Solving	Laboratory Experiment	Research, Reports & Assignments	Self-learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c7	1	1	1			1				1		1	1	1	
c8	1	1	1			1			1	1		1	1	1	
c9	1	1	1			1				1		1	1	1	
c10	1	1	1			1				1			1	1	
c11	1		1			1				1		1			
c12	1	1				1				1		1			
c13	1	1				1		1		1				1	
c14		1	1			1									
c15			1			1							1		
c16														1	
c17								1				1			
∑	13	13	13	0	0	15	0	2	6	13	0	12	11	12	0

6 – Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes, assignments, and reports	Bi-Weekly	20
Mid-Term Exam	7th Week	20
Practical Exam	15th Week	20
Written Exam	16th Week	40
Total		**100**

7 – List of References:

7-1 Course notes:

- Lecture notes & workshop training notes

7-2 Required books:

- Serope Kalpakjiam," Manufacturing Engineering and technology", prentice hall, 2010

7-3 Recommended books:

- None

7-4 Periodicals, websites, etc.:

- None

8 – Facilities Required for Teaching and Learning:

- Lecture room, and workshops

Course Coordinator: Dr. Maher Khalifa
Head of the Department: Dr. Metwally Abd Elghaffar
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn060: Summer Training (1)

A- Affiliation

Relevant program: Architecture Engineering and Building Technology BSc Program
Department offering the program: Architecture Engineering and Building Technology Department
Department offering the course: Architecture Engineering and Building Technology Department
Date of specifications approval: August 2020

B - Basic Information

Title: Summer Training (1) **Code:** ARCn060 **Level:** 1st summer
Credit Hours: - **Lectures:** 2 **Tutorial/Exercise:** 4 **Practical:** -
Pre-requisite: None

C - Professional information

1 – Course Learning Objectives:

The objective of the course is to qualify the student to Architecture Department by illustrating basics of architectural and contractual drawing, including the study of architecture and construction symbols and terminology, in addition of studying the potential of using computers in the field of architecture throughout studying and applying on one of the computer software for architectural design and presentation.

2 – Competencies

c1. Apply The fundamental engineering sciences relevant to architectural practices, Recognizing professional standards of architectural practice (C1)
c2. Produce professional workshop and technical drawings using traditional drawing and computer-aided drawi techniques. (C7, C8)
c3. Think systematically along the design process, and its details, analyze construction problems, propose alternative solutions, and select the best solutions (C3)
c4. Analyze the building elements, details, materials, and methods of execution. (C12)
c5. Practice Basic techniques of computer presentation using different tools (C10)
c6. Display imagination and creativity. (C9)
c7. Communicate effectively (C8)
c8. Acquire entrepreneurial skills. (C10)

This course contributes to the following program competencies: C1, C3, C7, C8, C9, C10, C12

3 – Contents

Day	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to Architectural and contractual drawing	2	4	-
2	Architectural and contractual drawing basics	2	4	-
3	Architecture and construction drawing symbols	2	4	-
4	Architectural Projection	2	4	-
5	Final mini Project	2	4	-
6	Introduction to Adobe photoshop	2	4	-
7	Architectural presentation by photoshop	2	4	-
8	Architectural presentation by photoshop	2	4	-
9	Architectural presentation by photoshop	2	4	-
10	Final mini Project by photoshop	2	4	-
	Total hours	**20**	**40**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies							
	c1	c2	c3	c4	c5	c6	c7	c8
Architectural and contractual drawing	1	1	1	1			1	1
MINI Project	1	1	1	1			1	1
Architectural presentation by photoshop		1		1	1	1	1	1
MINI Project by photoshop		1		1	1	1	1	1
Topics Covering Competences	2	4	2	4	2	2	4	4

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports &	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1		1			1		1					1	1
c2	1	1		1			1		1					1	1
c3	1	1		1			1		1					1	1
c4	1	1		1			1		1					1	1
c5	1	1		1			1		1					1	1
c6	1	1		1			1		1					1	1
c7	1	1		1			1		1					1	1
c8	1	1		1			1		1					1	1
∑	8	8	-	8	-	--	8	-	8	-	-	-	-	8	8

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Semester Work	Tutorials	Assignments DAILY	60
	Mini project	5th & 10th day	40
Total			100

7- Facilities required for teaching and learning:

- White boards and markers. Drawing hall.
- Laboratories with net meetings and Datashow
- Photoshop software

Course coordinator: Dr. Marwa Elbasyoni
Head of the Department: Associate Professor: Asamer zakria

Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
GENn142: Technical Report Writing

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology Department Civil Engineering and Building Technology BSc program
Department offering the program:	Architecture Engineering and Building Technology Department Civil Engineering and Building Technology BSc program
Department offering the course:	Architecture Engineering and Building Technology BSc Program
Date of specifications approval:	August 2020

B - Basic Information

Title: Technical Report Writing	**Code: GENnN142**	**Level** :1th., **First Semester (Level one)**	
Credit Hours: 2	**Lectures:** 2	**Tutorial/Exercise:** -	**Practical:** -
	Pre-requisite: None		

C - Professional information

1 – Course Learning Objectives:

By the end of this is course the student should have background to present a solution to a problem in order to prompt action. **Technical reports** provide a record of your developing expertise and are a legal record of your work and decision making.

2 - Competencies

c1. Classify and compare between Heritage buildings and Architecture (C1)
c2. Explain, Analyze and Adapt innovative approaches in urban and architectural design considering the cultural backgrounds and realities of the local community. (C3, C5)
c3. Explain the theoretical background needed and Generate and develop selective interventions that cope with the significance of Architectural Heritage (C1, C7,C13).
c4. Investigate and evaluate and criticize the outcomes of urban and Architectural projects in relation to cultural and heritage considerations (C12, C14)
c5. Practice self-learning and communicate effectively orally and in written form (C8, C10).
c6. Search for information required to develop successful approaches in design. (C15).
c7. Evaluate environmental conservation and rehabilitation designs. (C13)

This course contributes in the following program competencies: C1, C3, C5, C7, C8, C9, C10,C13 C14 & C15

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Important of Technical Writing.	2		
2	Report writing structure	2		
3	Report writing structure-part 2	2		
4	Topic sentences principle	2		
5	Supporting sentences	2		
6	Research Problem	2		
7	Midterm Exam			
8	Reports Types	2		
9	Paragraph Types	2		
10	Effective Research	2		
11	Letters, Memos, and E-Mail	2		
12	Letters, Memos, and E-Mail (2)	2		
13	Research project presentation and discussion (semi final)	2		
14	Research project presentation and discussion	2		
15	Revision	2		
	Total hours	**28**		

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies																		
	c1	c2	c3	c4	c5	c6	c7												
General definitions, terms, and characteristics of Technical report	1		1																
Definitions, Classification of Technical report	1	1	1	1	1	1	1												
Report writing structure		1	1		1	1													
Topic sentences principle	1	1		1	1		1												
Supporting sentences	1	1	1	1	1	1													
RESEARCH PROBLEM		1	1	1	1														
Reports Types	1	1		1	1	1													
Paragraph Types	1	1	1	1	1	1	1												
Letters, Memos, and E-Mail		1	1	1		1													
The role of participation and community involvement in Architectural for Letters, Memos, and E-Mail	1	1		1	1	1	1	1											
A brief discussion of the Research project presentation	1	1	1	1	1	1													
architectural expression of Technical report	1	1		1	1		1	1											
A review of interventions of Technical report			1	1	1		1												
Research project presentation and discussion	1	1	1		1		1	1											
Topics Covering Competences	10	12	11	11	11	10	6	6											

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Assignments	Practical Exam	Quizzes	Research & Presentations	Project Report
c1	1	1	1				1	1		1	1		1		
c2	1	1						1		1	1			1	1
c3	1	1								1	1		1	1	
c4	1	1	**1**							1	1				
c5	1	1	1					1		1	1		1	1	
c6	1	1	1		1		1	1		1	1		1	1	1
c7	1	1					1			1				1	1
Σ	7	7	4		1		3	4		7	6		4	4	3

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
	Mid-Term Exam	7th Week	20
Semester Work	Quizzes	2 Quizzes (one each 4 weeks)	20
	Reports/Research	Two reports per semester	20
	Written Exam	Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: None

- Lammott A. Some instructions on writing and life. Peterborough: Anchor Books, 1994; p 153
- Swap W, Leonard D, Sheilds M, Abrams L. Using mentoring and story telling to transfer knowledge in the workplace. J Manag Inform Systems 2001;18:95–114.
- Beech N, Brockbank A. Power/knowledge, and psychosocial dynamics in mentoring. Manag Learning 1999; 30:7–24.
- Gibb S. The usefulness of theory: A case study in evaluating formal mentoring schemes. Human Relations 1999; 52:1055–75.
- Daft RL, Lengel RH. Organizational information requirements, media richness and structural design. Manag Sci 1986; 32:554–71.

7-2 Recommended books: None

- زكريا فؤاد, (1978التفكير العلمى, الكويت: المجلس الوطنى للثقافه و الأداب, عالم المعرفة)
- توماس كون,(1992بنية الثورات العلمية, المجلس الوطنى للثقافة و الأداب)
- قنصوه, صلاح, (1998فلسفة العلم. القاهرة: دار قباء)
- Thomas S. Kuhn, (1970), The Structure of Scientific Revolutions, University of Chicago Press
- Fuller, S., (2003). Kuhn vs Popper: The Struggle for the Soul of Science. UK: Icon Books.

7-3 Periodicals, Web sites, etc.

- https:// Purpose and Uses of Technical Reports (aboutcivil.org)
- https:// Guide to Technical Report Writing : Study guides : ... : School of Engineering and Informatics : Schools and services : University of Sussex
- https:// Microsoft Word - ce3502report format.doc (mtu.edu)

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped with projection and sound systems.
- Computer, Data show
- High speed internet and communication facilities for distance learning.

Course coordinator:	Lecturer Aayh Moahmed Ezzat
Head of the Department:	Dr. Asamer Zakrya
Date:	August -2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn111: Architectural Construction 1

A- Affiliation

Relevant program: Architectural Engineering and Building Technology BSc Program
Department offering the program: Architectural Engineering and Building Technology
Department offering the course: Architectural Engineering and Building Technology
Date of specifications approval: ugust 2020

B - Basic Information

Title: Architectural Construction 1 **Code:** ARCn111 **Level:** 1st Fall (third semester)
Credit Hours: 3 **Lectures:** 2 **Tutorial/Exercise:**2 **Practical:** -
Pre-requisite: None

C - Professional information

1 – Course Learning Objectives:

Helps the student to understand the basic construction methods and how to implement the various structural elements of the building, such as foundations, walls, and others. Providing students with special skills in expressing structural elements in correct architectural drawing methods using standard architectural symbols.

2 – Competencies

c1. Classify and Know about symbols of construction different materials (C10)
c2. Explain the basic structural and foundation systems, as well as their components and constraints. (C1,C10).
c3. Learn the main types of wall masonry, and their various bonding systems. (C1,C11).
c4. Differentiate between construction insulation methods and how to select materials that are suitable for specific purposes (C1).
c5. Investigate to learn about different concepts, methods and techniques of building construction processes and their installation (C1)
c6. Analyze to Solve technical problems related to structural systems (C1)
c7. Read and identify the properties of different materials of the main building elements (C10).
c8. Prepare technical and professional drawings using engineering tools. (C8,C12,C13)
c9. Use traditional materials and co-ordinate different construction elements into an integral whole (C1,C11)
c10. Express components of the basic elements of building and their different connections through detailed drawings. (C1,C11)
c11. Collaborate and communicate ideas visually through drawings. (C5,C7,C9).
c12. Consider the impact of construction on the environmental protection (C13).
c13. Develop the research skills to transfer techniques and solutions from one field of architecture to another (C8,C10).

This course contributes in the following program competencies: C1, C5, C7, C8, C9, C10, C11, C12 & C13

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to Building construction	2	2	
2	Architectural and construction symbols and terminology of materials	2	2	
3	The main building elements and construction types (bearing walls)	2	2	
4	The main building elements and construction types (skeleton)	2	2	
5	Foundation types: Shallow foundations	2	2	
6	Foundation types: deep foundations	2	2	
7	Mid term	2	2	
8	Masonry (Brickwork) English Bonds	2	2	
9	Masonry (Brickwork) Flemish Bond	2	2	
10	Masonry (Stone) Rabble and Ashlar	2	2	
11	Lintels	2	2	
12	Arches	2	2	
13	Introduction to flooring systems	2	2	
14	Portfolio's submission	2	2	
15	Revision	2	2	
	Total hours	**30**	**30**	

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies												
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13
Introduction to Building construction	1						1	1		1	1	1	
Architectural and construction symbols and terminology of materials	1						1	1			1		
The main building elements and construction types (bearing walls)				1	1	1	1	1	1		1		
The main building elements and construction types (skeleton)				1	1	1	1	1	1		1		
Foundation types: Shallow foundations		1		1			1	1			1		1
Foundation types: deep foundations		1		1			1	1			1		1
Masonry (Brickwork) English Bonds			1				1	1			1		
Masonry (Brickwork) Flemish Bond			1				1	1			1		
Masonry (Stone) Rabble and Ashlar			1				1	1			1		
Lintels								1		1	1		
Arches								1		1	1		
Introduction to flooring systems								1		1	1		1
Topics Covering Competences	2	2	3	4	2	2	9	12	2	4	12	1	3

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods					Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Researches, Reports & Assignments	Self-Learning	Modeling and Simulation	Written Exam	Assignment	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1					1			1	1				1
c2	1													
c3	1													
c4	1													
c5	1													
c6	1		1		1	1	1	1	1	1			1	1
c7	1													
c8	1	1		1		1	1		1	1			1	1
c9	1													
c10	1					1	1		1				1	1
c11	1	1	1	1	1	1	1	1		1			1	1
c12	1													
c13	1					1	1	1					1	1
∑	13	2	2	2	2	6	5	3	4	4	-	-	5	6

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Submissions	Assignment per week	20
	Reports/Research	Two reports per semester	10
	Mini project	Once per semester	10
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: ok

7-2 Required books None

7-7 Recommended books: None

- Rangwala, S. C., (2016), "Building Construction Book", Charotar Publishing House Pvt. Ltd., 33rd Edition, India.
- Dawson, S., (2004), "Architect's working details", Volume 10, Emap Construct.
- Abdullah, M., (1999), "Building Construction. (Arabic)", The Anglo bookshop, Cairo, Egypt.
- Chudley, R., & Greeno, R., (2014), "Building Construction Handbook", 10th Edition, Routledge, UK.
- Abdullah, M., (1999), "Building Construction. (Arabic)", The Anglo bookshop, Cairo, Egypt.
- Hassid. S., (1984), "Architectural Construction Details", Dar Al Nahda Al Arabia, Beirut, Lebanon.

7-8 Periodicals, Web sites, etc. None

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped wirh projection and sound systems.
- Computer, Data show and Computer programs.
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr Amr Soliman ElGohary
Head of the Department: Dr Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn115: Properties & Resistance of Materials

A- Affiliation

Relevant program/s: Architecture Engineering and Building Technology BSc Program
Department offering the program: Architecture Engineering and Building Technology Department
Department offering the course: Civil Engineering and Building Technology Department
Date of specifications approval: August 2020

B - Basic Information

Title: Properties & Resistance of Materials **Code:** ARCn115 **Level:** 1st , third Semester
Credit Hours: 2 **Pre-requisite:** None
Contact Hours: **Lectures:** 1 **Tutorial:**3 **Practical: 0** **Total:** 4

C - Professional Information

1 – Course Learning Objectives:

The course aims to identify some essential technical concepts to the architecture field such as; engineering materials, standard specifications, codes, and construction materials technology with their recent developments and innovations. It also discusses the tests conducted for cement and fresh and solidified concrete in addition to tension for reinforcing steel, with the required additional studies students will need in the field of architecture.

2 – Competencies

c1 fundamental knowledge of properties of construction materials relevant to architectural practices building codes and regulations (C3, C4, C8)
c2 materials properties and uses in different building contexts. (C4, C9, C14)
c3 Deduce grounded criteria and guidelines from a given construction problem. (C2, C8, C15)
c4 Promote investigation and exploration abilities in research work. (C3, C8, C16)
c5 Integrate theoretical studies with practical reality. (C3, C7, C12)
c6 Improve creative problem-solving and decision-making faculties (C15)
c7 Develop visual sensitivity towards materials, colors, and textures (C14, C15)
c8 Selecting construction materials that are functionally sound, environmentally appropriate aesthetically plausible, users' friendly and technologically up to date. (C12)
c9 Mastering material testing skills and site work (C13)
c10 Coordination between architectural, structural, technical, and economic considerations of a project (C3, C7, C9)
c11 Improve communication skills with versatile backgrounds in field research [laymen, administrative (C4,C9)

c12 personnel, construction labor, academic staff (C7)

This course contributes in the following program competencies:C3, C4, C7, C8, C9, C12 & C13.C14.C15

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. Introduction of Properties of Materials	1	3	
2. Aggregates	1	3	
3. Aggregate Tests	1	3	
4. Artificial Stones	1	3	
5. Cement Tests	1	3	
6. Testing on Bricks	1	3	
7. Mid-Term Exam	-	-	
8. Lime	1	3	
9. Gypsum	1	3	
10. Fresh Concrete	1	3	
11. Testing on Concrete	1	3	
12. Testing of Hardened concrete	1	3	
13. Steel Tension Test	1	3	
14. Example of Steel Tension Test	1	3	
15. Review	1	3	
Total hours	**14**	**42**	

4 - Teaching and Learning and Assessment methods:

Competences	Teaching Methods					Learning Methods			Assessment Method				
	Lecture	Presentations and Movies	Discussions and seminars	Tutorials	Problem solving	Laboratory & Experiments	Research and Reports	Modeling and Simulation	Written Exam	Practical Exam	Quizzes	Term papers	Assignments
c1	1						1		1		1	1	
c2	1			1					1		1	1	1
c3	1			1					1		1	1	1
c4	1			1	1		1		1		1		1
c5	1			1	1				1		1	1	1
c6	1			1	1								
c7	1			1	1								
c8	1			1	1								
c9	1	1		1	1				1	1	1	1	1
c10	1			1					1		1	1	1
c11	1		1	1	1		1	1				1	1
c12	1		1	1	1		1	1				1	1

5- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7-th Week	20
Semester Work	Quizzes	5 Quizzes (every 3 weeks)	15
	Reports	Two reports per semester	10

	Assignments	Weekly	15
Practical Exam		---	--
Written Exam		Sixteenth week	40
Total			100

6- List of references:

6-1 Course notes: Properties & Resistance of Materials.

6-2 Required books

Egyptian code of practice for design and construction of reinforced concrete structures, (2007).

Park, R., and Paulay, T. (1975). “Reinforced concrete structures”, John Wiely & Sons, Inc.

Robert L. (2008). " Applied Strength of Materials", John Wiely & Sons, Inc.

6-3 Recommended books: Non

6-4 Periodicals, Web sites, etc.

http://www.ACI.com.

https://www.ASCE.com.

https:// www.hbrc.edu.eg.

7- Facilities required for teaching and learning:

- Data show and Computer programs.

Course coordinator: Professor Adham El Alfy

Head of the Department: Dr Assamer Zakria

Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn116 : Surveying

A- Affiliation

Relevant program: Architecture Engineering and Building Technology BSc Program
Department offering the program: Architecture Engineering and Building Technology Department
Department offering the course: Civil Engineering and Building Technology Department
Date of specifications approval: August 2020

B - Basic Information

Title: Surveying **Code: ARCn116** **Level:** 1st Fall
Credit Hours: 2 **Lectures: 1** **Tutorial/Exercise:1** **Practical: 2**
TOTAL: 4 **Pre-requisite: None**

C - Professional information

1 – Course Learning Objectives:

The course aims to illustrate the fundamentals and techniques of plane and topographic surveying and its applications in architecture which includes studying; preface, drawing scales, longitudinal measurements, leveling, and angle measurements by theodolites, drawing maps and the principles of topographic surveying and their uses in architecture.

2 – Competencies

c1 Identify the historical drivers for surveying and their development. (C1, C2, C3)
c2 Identify and analyze current uses and the importance of surveying to society. (C3)
c3 Demonstrate hands-on skills in the use of basic measuring tools by. (C6, C8)
c4 Perform field measurement exercises using basic measuring tools. (C6, C8)
c5 Determine the individual pacing. (C7, C8)
c6 Perform surveying using tapes/chains and will correctly record field data. (C6, C19)
c7 Perform data error checks and correctly recording the results. (C12)
c8 Collect field measurements of angles, bearings, and azimuths. (C7, C18)
c9 Perform field differential leveling surveys. (C11, C14)
c10 Perform computations to analyze field data and analyze horizontal distance corrections. (C7, C18)
c11 Perform field exercises to collect data for latitudes and departures, errors and compass adjustments. (C6, C13)
c12 Perform field exercises to collect grid survey data (C6, C9, C10, C15)

This course contributes in the following program competencies: C1, C2, C3, C6, C7, C8, C9, C10, C11, C12, C13,C14 , C15, C18,C19

SN	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction	1	1	2
2	Measurements	1	1	2
3	Angles and Directions	1	1	2
4	Leveling	1	1	2
5	Leveling	1	1	2
6	Theodolites	1	1	2
7	Mid-Term	0	0	0
8	Theodolites	1	1	2
9	Total Station	1	1	2
10	Total Station	1	1	2
11	Total Station	1	1	2
12	Coordinate Systems	1	1	2
13	Coordinate Systems	1	1	2
14	Coordinate Systems	1	1	2
15	Earth work calculations	1	1	2
Total hours		14	14	28

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies											
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12
Introduction	1	1	1									
Measurements	1	1	1	1	1	1	1	1			1	
Angles and Directions				1	1	1			1		1	1
Leveling		1	1	1	1		1	1	1	1		
Leveling		1	1	1	1		1	1	1	1	1	
Theodolites				1	1	1	1		1	1	1	1
Mid-Term												
Theodolites				1	1	1	1		1	1	1	1
Total Station				1	1	1	1		1	1	1	1
Total Station				1	1	1	1		1	1	1	1
Total Station				1	1	1	1		1	1	1	1
Coordinate Systems	1	1	1	1	1	1	1	1			1	
Coordinate Systems	1	1	1	1	1	1	1	1			1	
Coordinate Systems	1	1	1	1	1	1	1	1			1	
Earth work calculations	1	1	1	1					1	1	1	1
Topics Covering Competences	6	8	8	13	12	10	11	6	9	8	12	7

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method				
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations
c1	1	1	1	1						1	1	1		
c2	1	1	1	1				1		1	1			
c3	1	1	1	1						1	1			
c4	1	1	1	1				1		1	1		1	
c5	1	1	1	1						1	1			

Course Competences	Teaching Methods						Learning Methods			Assessment Method				
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations
c6	1	1	1	1	1	1		1		1	1			
c7	1	1	1	1		1				1	1			
c8	1	1	1	1		1				1	1			
c9	1	1	1	1		1					1			
c10	1	1	1	1	1	1					1			
c11	1	1	1	1		1					1			
c12	1	1	1	1	1						1			
∑	12	12	12	12	3	6	0	3	0	8	12	1	1	0

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	1 Quiz (one each 4 weeks)	5
	Reports/Research	None	0
	Tutorials	6 Assignments per semester	15
	Mini project	None	0
Practical Exam		Twelvth week	20
Written Exam		Twelvth week	40
Total			100

7- List of references:

- Surveying principles and applications by Barry Kavanagh

7-1 Course notes: Surveying by Dr. Mohamed Elmasry

7-2 Required books: None

7-3 Recommended books: Shahin, A., (2014), "Surveying Professional Eng. Service", Inc. (PES), USA.

الشحات بركه، (1997)،" مساحة الأراضي"، دار الكتب المصرية، القاهرة، مص.v

علي سالم شكري، (1995)،" المساحة المستوية"، منشأة المعارف، القاهرة، مصر

7-4 Periodicals, Web sites, etc.:

https://misq.org/skin/frontend/default/misq/surveys98/survrefs.htm

8- Facilities required for teaching and learning:

- Surveying Labs equipped with relevant surveying equipment's such as levels and theodolite and total station
- Lecture and Exercise rooms equipped with projectors/ data shows.
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr Mohamed Elmasry
Head of the Department: Dr Assamer Zakeria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn120: Theories of Architecture (1)

A- Affiliation

Relevant program: Architecture Engineering and Technology Department
Department offering the program: Architecture Engineering and Technology Department
Department offering the course: Architecture Engineering and Technology Department
Date of specifications approval: August, 2020

B - Basic Information

Title: Theories of Architecture (1) **Code:** ARCn120 **Level:** 2
Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:**1 **Practical:** 0
Pre-requisite:

C - Professional information

1 – Course Learning Objectives:

By the end of this course, the students should Understand the concept of architecture and the goals that should be met in a building to reach a successful architecture from functional, strength and aesthetical point of views. Knowing the functional requirements in designing private and public spaces in residential buildings and their elements, users need. Recognize who to provide comfort and safety in them.

2 – Competencies

c1. Identify the architecture problems depending on applying theories of architecture (C1).
c2. Utilize the functional requirements in designing residential buildings and their elements (C4)
c3. Investigate the impact of culture, social, economic, environmental in residential buildings (C3).
c4. Evaluate the Architectural building to reach a successful architecture from functional, strength and aesthetical point of views (C1,C4,C2)
c5. Prepare and present technical reports (C5)
c6. Discuss research and formulate informed opinions in architectural context (C5, C6)
c7. Collaborate effectively within multidisciplinary team (C5,C7,C9).
c8. Consider the impact of designs on the environmental protection (C3).
c9. Practice self-learning and communicate effectively orally and in written form (C8).

This course contributes in the following program competencies: C1, C2, C3, C4, C5,C6, C7, C8, C9

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction: about the architecture and relationship between architecture and theories of architecture.	2	1	0
2	Architectural definitions and constrains	2	1	0
3	Types and typologies of private and public residential buildings	2	1	0
4	The basic elements of the architectural building) Accommodation/Service Elements)+ research1	2	1	0
5	The basic elements/ different residential spaces of the architectural building (Circulation Elements/Architectural Spaces forming:: circulation ,vertical, horizontal	2	1	0
6	The basic elements of the architectural building(Ventilation/lighting /Protecting Elements)	2	1	0
7	Assessment (Mid Term Exam)			
8	The basic elements of the architectural building (Structural Elements)	2	1	0
9	Researches Discussion (final research1)	2	1	0
10	The basic elements of the architectural building (Beauty Elements)	2	1	0
11	Design Process: -Briefing -Analysis - synthesis	2	1	0
12	Design Process: - Design- Appraisal Evaluation. - Communications	2	1	0
13	The Principles of Architectural Forming Process	2	1	0
14	Revision + final sketch	2	1	0
15	Researches Discussion	2	1	0
	Total hours	**28**	**14**	**0**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies																		
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15	c16	c17	c18	c19
Introduction: about the architecture and relationship between architecture and theories of architecture.	1																		
Architectural definitions and constrains	1			1				1	1										
Types and typologies of Buildings		1				1			1										
The basic elements of the architectural building Accommodation/Service Elements)		1	1	1		1			1										
The basic elements of the architectural building (Circulation Elements/Architectural Spaces forming: circulation, vertical, horizontal		1	1	1					1										
The basic elements of the architectural building (Ventilation/lighting /Protecting Elements)		1	1	1				1	1										
The basic elements of the architectural building (Structural Elements)		1	1	1				1	1										
Research Discussion (final research1)					1	1	1		1										
The basic elements of the architectural building (Beauty Elements)		1	1	1				1	1										
Design Process: -Briefing - Analysis - synthesis- Design- Appraisal Evaluation.- Communications			1					1	1										
The Principles of Architectural Forming Process								1	1										
Research Discussion					1	1	1		1										
Topics Covering Competences	2	6	6	6	2	4	2	6	11										

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports &	Self-Learning	Modeling and Simulation	Written Exam	Assignments	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1								1	1				
c2	1	1		1						1	1				
c3	1	1		1						1	1				
c4	1	1		1				1		1	1				
c5	1	1		1				1	1	1	1			1	
c6	1	1	1	1				1		1	1			1	
c7	1	1		1			1	1		1	1				
c8	1	1		1			1	1		1	1			1	
c9	1	1		1			1	1		1	1			1	
∑	9	9	1	8	0	0	3	6	1	9	9	0	0	4	0

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	Quizzes (one each 4 weeks)	-
	Reports/Research	Two research per semester	20
	Tutorials	3 Assignments per semester	10
	Final sketch	Once per semester	10
Practical Exam			-
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes:

https://youtu.be/_AWHFaVquu8	8	https://youtu.be/jrS8cAdrw6o	9
https://youtu.be/zpe6Zff0IW4	10	https://youtu.be/bIq46oxhzIY	11
https://youtu.be/GxYT3hJzfnc	12	https://youtu.be/ZL2DtAFPTwM	13
https://youtu.be/Z7LmeAPrpvI	14	https://youtu.be/SNzugGxE7YI	15
https://youtu.be/d0p-jpwGGH0	16		17

7-2 Required books

Space form and order in Architecture.

7-3 **Recommended books:**

- Ching, F. D., (2014), "Architecture: Form, Space and Order", John Wily & Sons, Inc., USA.
- Grobow, S., & Spreckelmeyer, K., (2014), "The Architecture of Use: Aesthetics and Function in Architectural Design", 1st Edition, Routledge, UK.
- علي رأفت، مصر."الابداع الفني والابداع المعماري -البيئة والفراغ (1997)"، مطابع الأهرام، القاهرة
- Les Elements Des Projects Du Construction, TIME SAVER STANDARDS FOR INTERIOR DESIGN

7-4 Periodicals, Web sites, etc.

8- Facilities required for teaching and learning:

- Microsoft Teams (online Learning)
- High speed internet and communication facilities for distance learning.

Course coordinator: Assistant professor Nermen Matter
Head of the Department: Professor Assamer Zakaria
Date: August, 2020

Modern Academy for Engineering and Technology in Maadi

Course Specification
ARCn121: Architectural Design (1)

A- Affiliation

Relevant program/s:	Architectural Engineering & Building Technology B.Sc.Program
Department offering the program:	Architectural Engineering & Building Technology B.Sc.Program
Department offering the course:	Architectural Engineering & Building Technology B.Sc.Program
Date of specifications approval:	August 2020

B - Basic Information

Title: Architectural design	**Code:** ARCn121	**Level:** 1st (first Semester)	
Credit Hours:3	**Pre-requisite:** ARCn060		
Contact Hours:	**Lecture:** 1 **Tutorial:**6	**Laboratory:-**	**Total:**7

C - Professional Information

1 – Course Learning Objectives:

The course aims to introduce the design process to the students with its various dimensions and its application on private or public residential buildings. It focuses on illustrating many concepts that involves the meaning of home, correct distribution of spaces and their linkage with the movement elements. It also includes studying the sections, elevations and the openings needed for each space, regarding the functional, humanitarian, and climatic needs, while emphasizing on the scale concept and the practical application on a residential project.

2 –Competencies

c1 - Apply engineering design processes to Integrate knowledge of design concepts and standards needed (C1, C4)
c2 - Analyze and understand the fundamental Principles of impact of designs on the environmental protection (C3,C11)
c3. Utilize the functional requirements in designing private or public residential buildings and their elements (C4)
c4. Investigate and illustrating many concepts in residential buildings correct distribution of spaces and their linkage with the movement elements (C3).
c5. Evaluate the Architectural building to reach a successful architecture from functional, strength and aesthetical point of views (C1,C4,C2)
c6. Discuss assignments and formulate informed opinions in architectural context (C5, C6)
c7. Collaborate effectively within multidisciplinary team (C5,C7,C9).

This course contributes in the following program competencies: C1, C2, C3,C4,C5, C6,C7, C9, C11

3- CONTENTS:

Topic	Lecture hours	Tutorial hours	Practical hours
1. project program.	1	6	
2. Research.	1	6	
3. Initial plans + final research.	1	6	
4. plans + study model .	1	6	
5. study model + plans+ initial section.	1	6	
6. final plans + final sections	1	6	
7. Mid-Term Exam.	1	6	
8. Initial layout + initial elevations	1	6	
9. layout + elevation	1	6	
10. 3d model + studies	1	6	
11. plans + elevations + sections + layout	1	6	
12. plans + elevations + sections + layout (without presentation)	1	6	
13. plans + elevations + sections + layout (presentation)	1	6	
14. plans + elevations + sections + layout (presentation)+3d model	1	6	
15. final project	1	6	
Total hours			

4. COURSE CONTENT/COURSE COMPETENCIES MAPPING MATRIX

Topic	Course Competencies									
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c11
Research.		1								
Initial plans + final research.	1	1	1					1		
plans + study model.			1	1		1	1	1		1
study model + plans+ initial section.			1	1		1	1	1		1
final plans + final sections			1				1	1	1	1
initial layout + initial elevations		1					1	1	1	
layout + elevation							1			
3d model + studies							1	1	1	
plans + elevations + sections + layout						1	1	1	1	1
Research.						1	1	1	1	1
Pre-Final research submission and discussion.						1	1	1	1	1
Final research discussion and submission						1	1	1		1
Quiz							1	1		1
Topics Covering Competences	1	4	4	2	1	6	12	12	7	9

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods										Learning Methods				Assessment Method							
	Lectures	Presentations and Movies	Discussions	Tutorials/Sketches	Practical and Laboratory	Problem solving	Brain storming	Projects	3-D Modeling	Playing	Researches and Reports	Modeling and Simulation	Site Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments	Tutorials		
c1	1		1			1									1					1		
c2	1					1	1				1				1		1			1		
c3	1		1								1									1		
c4	1	1													1					1		
c5	1		1									1			1				1	1		
c6	1										1	1			1				1	1		
c7	1		1			1														1		
c8	1	1					1												1	1		
c9			1			1	1					1			1		1			1		
c11						1	1										1			1		
∑	8	1	5			4	4				3	3			6		3		3	10		

6- ASSESSMENT TIMING AND GRADING:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	40
Mid-Term Exam	7-th Week	20
Written Exam	Sixteenth week	40
Total		100

7- List of references:

7-1 Course notes:

7-2 Required books

7-3 Recommended books:

- Ching, F. D., (2014), "Architecture: Form, Space and Order", John Wily & Sons, Inc., USA.
- Steele, J., (2001), "Architecture Today", Second Edition, Phaeton Press Limited, London, UK.
- انتركونسلت للنشر العلمي والتوزيع، مصر."على رأفت، (1994)،" ثلاثية الابداع المعماري – البيئة والفراغ

Course coordinator: Prof. Ibrahim – Dr. Mohamed Mahmoud
Head of the Department: Professor Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn123: Visual Training (1)

A- Affiliation
Relevant program: Architecture Engineering and Building Technology BSc Program
Department offering the program: Architecture Engineering and Building Technology Department
Department offering the course: Architecture Engineering and Building Technology Department
Date of specifications approval: August, 2020

B - Basic Information
Title: Visual Training (1) **Code:** ARCn123 **Level:** 1st Fall
Credit Hours: 2 **Lectures:** 1 **Tutorial/Exercise:** 3 **Practical:** 0
Pre-requisite: None

C - Professional information
1 – Course Learning Objectives:

The objective of the course is to develop students' abilities in expressing ideas through freehand sketches. Pencil techniques for graphic presentation. Proportions. Representing bi-dimensional compositions. Drawing three-dimensional views. Spatial compositions representation. Composition meanings and values. Shading principles.

2 – Competencies

c1. Integrating different scales of freehand sketching, ranging from interior details to landscape details. (C8,C9)
c2. Integrating theoretical studies with practical reality. (C9,C12)
c3. Developing architectural and structural sense of scale and proportions (C2)
c4. Developing visual sensitivity towards materials, colors and textures (C2)
c5. Manual drafting and freehand sketching(C8,C15)
c6. Professional techniques of manual presentation using different tools and media. (C7,C15)
c7. Producing Three-dimensional visualization and representation in terms of shades, shadows and perspective. (C7,C12,C15)
c8. Communicate ideas verbally and visually in a clear coherent manner. (C8)
c9. Work in team environments. (C7)
c10. Acquire entrepreneurial skills (C10)
c11. Preparing & representing design with fundamental different techniques for sketching, relationships between shade, shadows, and direction of light. (C15)

This course contributes in the following program competencies: C2, C7, C8, C9, C10, C12, C15

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Thickness of lines using pencil.	1	3	-
2	Texture of different materials using pencil	1	3	-
3	Copying a drawing with different scale.	1	3	-
4	Different techniques for sketching.	1	3	-
5	Sketching 2D drawings.	1	3	-
6	Sketching 2D drawings/ Presentation for different architectural drawings.	1	3	-
7	Assessment (Midterm)	-	-	-
8	Techniques for sketching 3D drawings	1	3	-
9	Rules for freehand perspective.	1	3	-
10	Techniques for sketching 3D drawings.	1	3	-
11	Sketching 3D drawings from nature.	1	3	-
12	Sketching 3D drawings from nature.	1	3	-
13	Sketching 3D drawings from nature.	1	3	-
14	Shade and shadows in 3D drawings	1	3	-
15	Shade and shadows in 3D drawings	1	3	-
	Total hours	**14**	**42**	

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies										
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11
Thickness of lines using pencil.		1				1				1	1
Texture of different materials using pencil	1			1		1	1	1		1	1
Copying a drawing with different scale.	1		1			1				1	1
Different techniques for sketching.	1	1		1		1	1	1		1	1
Sketching 2D drawings.	1		1		1	1				1	1
Presentation for different architectural drawings.	1		1		1	1			1	1	1
Techniques for sketching 3D drawings	1	1		1		1	1	1		1	1
Rules for freehand perspective.	1	1	1		1	1	1	1		1	1
Sketching 3D drawings from nature.	1	1	1	1	1	1	1	1	1	1	1
Shade and shadows in 3D drawings	1	1	1	1		1	1	1		1	1
Topics Covering Competences	9	6	6	5	4	10	6	6	2	10	10

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researched, Reports &	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1		1			1			1	1		1	1	1
c2	1	1		1			1			1	1		1	1	1
c3	1	1		1			1	1		1	1		1	1	1
c4	1	1		1			1			1	1		1	1	1
c5	1	1		1			1	1		1	1		1	1	1
c6	1	1		1			1			1	1		1	1	1
c7	1	1		1			1			1	1		1	1	1

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researched, Reports &	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c8	1	1		1			1			1	1		1	1	1
c9	1	1		1			1	1		1	1		1	1	1
c10	1	1		1			1			1	1		1	1	1
c11	1	1		1			1			1	1		1	1	1
∑	11	11	0	11	0	0	11	3	0	11	11	0	11	11	11

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Tutorials	Assignments Bi-Weekly	30
	Mini project	14 th week	10
Practical Exam		-	-
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: Lecture notes

7-2 Required books

- Neil birghan,2013, 100 year of arch drawing,King,China
- Matt bua, 2012, architectural inventions visionary drawings, IK, China
- ربيع الحرستانى ،الاظهار المعماري واللون ، دار قابس ، 1987، بيروت ، لبنان.
- محمد احمد عبد الله ، الاظهار المعماري ،1997 ، الانجلو ، جمهورية مصر العربية

7-3 Recommended books:

- Joseph D. Amelio, 2000, Perspective drawing handbook, Dover Publications, Canada.
- E. L. KOLLER, 2012, LIGHT, SHADE AND SHADOW, Dover Publications, Canada.

7-4 Periodicals, Web sites, etc.

https://www.sketchbook.com/blog/how-to-draw-architectural-street-scenes/ (Last accessed January 2020).
https://shalumrendering.com/renderings-pencil/ (Last accessed January 2020).

8- Facilities required for teaching and learning:

- White boards and markers.
- Drawing halls for exercises

Course coordinator: Professor. Mona Albasyoni
Head of the Department: Associate Professor: Asamer zakria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
MTHn107: Mathematics -7(Introduction to Probability and Statistics)

A- Affiliation

Relevant program:	Manufacturing Engineering and Production Technology BSc Program Electronic Engineering and Communication Technology BSc Program Computer Engineering and Information Technology BSc Program Architecture Engineering and Building Technology BSc Program Civil Engineering and Building Technology BSc program
Department offering the program:	Manufacturing Engineering and Production Technology Department Electronic Engineering and Communication Technology Department Computer Engineering and Information Technology Department Architecture Engineering and Building Technology Department Civil Engineering and Building Technology Department
Department offering the course:	Basic Science Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Mathematics-7(Introduction to Probability and Statistics) **Code:** MTHn107 **Level:** (1st Spring) and (2nd Fall & Spring)

Credit Hours: 3 **Lectures:** 2 **Tutorial/Exercise:**2 **Practical:** ---

Pre-requisite: MTHn002

C - Professional information

1 – Course Learning Objectives:

By the end of this course, the students should have gained the planned competencies (knowledge, skills, and attitudes) related to gain, investigate and learn the main concepts of functions, set theory, random events, probability functions, mathematical expectation, conditional probability, Binomial distribution, normal distribution, Sampling and the central limit theorem, Estimation, hypothesis testing, regression and correlation and Chi-square analysis and analysis of variance.

2 – Competencies

c1- Develop the ain rules and notions of functions and set theory. (C1, C5)

c2- List the basics and different rules of probability theory. (C1, C2, C5)

c3- Apply discrete and continuous probability distributions and rules of their expectation and their standard deviation (C1, C2, C5).

c4- Explain main notions of descriptive statistics, probability concepts, binomial, and normal distributions, as well as the notions of conditional probability and counting techniques. (C1, C2, C5)

c5- Investigate many principles of sampling and the central limit theorem, estimation, and regression. (C1, C2, C5)

c6- Explain basic concepts of statistics, measures of location and measures dispersion. (C1, C2)

c7- Describe discrete data graphically and compute measures of centrality and dispersion. (C1, C2)

c8- Compute probabilities by applying different probability rules and theorems of probability. (C1, C2, C9)

c9- Construct the probability distribution of a random variable, based on a real-world situation, and use it to compute expectation and variance. (C1, C2, C9)

c10- Apply basic concepts of probability functions, Mathematical expectation, variables, discrete distribution, binomial distribution, continuous distribution, and normal distribution to applications. (C1, C2)

c11- Evaluate and analyze basic concepts of statistics, sampling, the central limit theorem, estimation, correlation, and regression. (C1, C2, C5, C9)

c12- Apply probability and statistics methods to engineering problems (C1, C2, C5, C9)

c13- Write technical reports and E-mails. (C7, C8).

c14- Do related research on internet (C7, C9, C10).

This course contributes in the following program competencies: C1, C2, C5, C7, C8, C9, C10

3. Contents

	Topic	Lecture hours	Tutorial hours	Practical hours
1	Functions, curve equation relationship, Set theory	2	2	
2	Experiments, Sample space, Random events, and Counting Techniques	2	2	
3	Basic Probability Rules	2	2	
4	Mathematical expectation, conditional probability, and independent events	2	2	
5	Random variables and Discrete Distributions	2	2	
6	Binomial distribution, Poisson distribution.	2	2	
7	MT Exam	2	2	
8	Continuous Distribution.	2	2	
9	Normal Distribution.	2	2	
10	Data types, population, sample, and Data presentation.	2	2	
11	Measures of central tendency (all types of data)	2	2	
12	Measures of deviation (all types of data)	2	2	
13	Sampling and the central limit theorem	2	2	
14	Estimation, hypothesis testing.	2	2	
15	Regression and correlation.	2	2	
Total hours		**60**	**60**	

4. Course content/Course Competencies mapping matrix

Topic	Knowledge						Skills						Attitude		
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	
Functions, curve equation relationship.	1						1						1		
Set theory, Random events, and probability functions.	1							1	1	1		1	1	1	
Mathematical expectation, conditional probability.		1	1	1				1	1	1		1	1	1	
Binomial distribution, normal distribution.		1	1	1				1	1	1		1	1	1	
Sampling and the central limit theorem.					1						1	1	1	1	
Estimation, hypothesis testing.					1						1	1	1	1	
Regression and correlation.					1						1	1	1	1	
Chi-square analysis and analysis of variance.						1					1	1	1	1	
Topics Covering Competences	2	2	2	2	3	1	1	3	3	3	4	7	8	7	

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods				Learning Methods		Assessement Method		
	Lecture	Discussions and seminars	Tutorials	Problem solving	Research and Reports	Modeling and Simulation	Written Exam	Quizes	Assignments
c1	1	1	1	1	1		1	1	1
c2	1		1	1	1		1	1	1
c3	1		1	1	1		1	1	1
c4	1	1	1	1	1	1	1	1	1
c5	1	1	1	1	1	1	1	1	1
c6	1	1	1	1	1	1	1	1	1
c7	1		1	1			1	1	1
c8	1				1	1	1		
c9	1	1		1	1		1		
c10	1		1	1	1		1	1	1
c11	1		1		1		1		
c12	1	1			1	1	1		
c13		1		1	1				1
c14	1	1	1	1	1				1
∑	14	8	10	11	14	5	12	8	11

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	Bi-Weekly	40
	Reports/Research		
	Assignments		
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes:

Sameh Shenawy, Introduction to Probability and Statistics, Lecture Notes, Modern Academy, Egypt, 2019.

7-2 Required books:

Douglas C. Montgomery and George C. Runger, Applied Statistics and Probability for Engineers, 6th ed., John Willey & Sons, Inc., 2014

R.E. Walpole, R.H. Myers and S.L. Meyers, Probability and Statistics for Engineers and Scientists, sixth edition. Prentice-Hall 1998

7-3 Recommended books:

John Neter, G.A. Whitmore, William Wasserman, Applied Statistics, Fourth Edition, Needham Heights, MA: A Division of Simon & Schuster, Inc.,1993.

7-4 Periodicals, Web sites, etc.

www.mathworlds.com., www.sosmath.com

8- Facilities required for teaching and learning:

- Library.
- High speed internet and communication facilities for distance learning

Course coordinator: Associate Prof. Sameh Shenawy
Head of the Department: Associate Professor / Ashraf Taha EL-Sayed
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn112: Architectural Construction 2

A- Affiliation

Relevant program: Architectural Engineering and Building Technology BSc Program
Department offering the program: Architectural Engineering and Building Technology
Department offering the course: Architectural Engineering and Building Technology
Date of specifications approval: August 2020

B - Basic Information

Title: Architectural Construction 2 **Code:** ARCn112 **Level:** 1st Spring (forth semester)
Credit Hours: 3 **Lectures:** 2 **Tutorial/Exercise:**2 **Practical:** -
Pre-requisite: ARCn111

C - Professional information

1 – Course Learning Objectives:

Build students' knowledge of the basic elements of buildings (walls, floors, roofs) with different light building materials to enhance their understanding of different types of construction and finishing. Focuses on the relationship between the used building materials and the construction methods. The students also complete the study of some buildings structural elements such as retaining walls and insulating materials, in order to apply what was previously studied in a small working drawings project.

2 – Competencies

c1. Classify and compare construction systems in different materials (C13)
c2. Explain the construction, operation and specification of flooring, walls and roofing systems (C3).
c3. Explain the theoretical background needed to calculate the systems depth and its components dimensions (C1,C11).
c4. Differentiate between construction materials to select materials that are suitable for specific purposes (C11).
c5. Investigate to learn about different concepts, methods and techniques of building construction processes and their installation (C10)
c6. Analyze the building elements and solve their structural problems (C1)
c7. Read and identify the properties of different materials of the main building elements (roofs, floors and walls) and the connections between them (C3).
c8. Prepare and interpret technical drawings using manual drawing techniques (C13)
c9. Use traditional or modern materials and information technologies required for sound professional practice (C1)
c10. Analyze and Express components of the basic elements of building and their different connections through detailed drawings. (C1,C11)
c11. Use experimental facilities to visualize, discuss and present ideas in a professional way. (C8).
c12. Collaborate effectively within multidisciplinary team and listen and critically respond to the views of others. (C5,C7,C9).
c13. Consider the impact of construction on the environmental protection (C3).
c14. Practice self-learning and communicate effectively orally and in written form (C5,C10).

This course contributes in the following program competencies: C1,C3, C5, C7, C8, C9, C10, C11& C13

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction & general review of Building Technology 1	2	2	
2	Woodworking in construction (Wooden Flooring Systems)	2	2	
3	Woodworking in construction (Wooden Roofing Systems)	2	2	
4	Steel flooring systems (light gauge steel structure)	2	2	
5	Steel roofing and wall systems (light gauge steel structure)	2	2	
6	Expansion and settlement joints	2	2	
7	Mid term	2	2	
8	moisture and heat isolation	2	2	
9	Retaining walls	2	2	
10	Concrete stairs	2	2	
11	Project - Introduction to working drawing concept (plans)	2	2	
12	Working drawing (Sections)	2	2	
13	Working drawing (Elevations)	2	2	
14	project and Portfolio's submission	2	2	
15	Revision	2	2	
	Total hours	**30**	**30**	

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies													
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14
Introduction & general review of Building Technology 1	1	1		1	1			1					1	
Woodworking in construction (Wooden Flooring Systems)		1	1		1	1	1	1	1	1	1	1		
Woodworking in construction (Wooden Roofing Systems))		1	1		1	1	1	1	1	1	1	1		
Steel flooring systems (light gauge steel structure)		1	1		1	1	1	1	1	1	1	1		
Steel roofing and wall systems (light gauge steel structure)		1	1		1	1	1	1	1	1	1	1		
Expansion and settlement joints		1			1	1	1	1	1	1	1			
Water and heat isolation		1			1	1	1	1	1	1	1			
Retaining walls		1			1	1	1	1	1	1	1			
Concrete stairs			1	1		1		1		1	1			
Project - Introduction to working drawing concept (plans)				1		1		1		1	1			1
Working drawing (Sections)				1		1		1		1	1			1
Working drawing (Elevations)				1		1		1		1	1			1
Topics Covering Competences	1	8	5	5	8	11	7	12	7	11	11	4	1	3

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving		Research, Reports & Assignments	Self-Learning	Modeling and Simulation	Written Exam	Assignment			Research & Presentations	Mini Project Report
c1	1														
c2	1														
c3	1														
c4	1														
c5	1														
c6	1				1					1					1
c7	1														
c8	1			1			1			1	1				1
c9	1				1										
c10	1			1			1		1		1			1	
c11	1	1	1	1			1		1		1			1	1
c12	1		1				1	1							
c13	1													1	
c14	1		1				1	1						1	1
∑	14	1	3	3	2		5	2	2	2	3		-	4	4

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Submissions	Assignment per week	20
	Reports/Research	Two reports per semester	10
	Mini project	Once per semester	10
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: Yes

7-2 Required books None

7-3 Recommended books: None

- Chudley, R., & Greeno, R., (2014), "Building Construction Handbook", 10th Edition, Routledge, UK.
- Abdullah, M., (1999), "Building Construction. (Arabic)", The Anglo bookshop, Cairo, Egypt.
- Hassid. S., (1984), "Architectural Construction Details", Dar Al Nahda Al Arabia, Beirut, Lebanon.

7-4 Periodicals, Web sites, etc. None

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped with projection and sound systems.
- Computer, Data show and Computer programs.
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr Amr Soliman ElGohary
Head of the Department: Dr Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn114: Computer Applications (1)

A- Affiliation

Relevant program: Architectural Engineering and Building technology BSc Program
Department offering the program: Architectural Engineering and Building technology BSc Department
Department offering the course: Architectural Engineering and Building technology Department
Date of specifications approval: August 2020

B - Basic Information

Title: Computer Applications (1) **Code:** ARCn114 **Level:** 1st , fourth Semester (Spring)
Credit Hours: 3 **Lectures:** 1 **Tutorial/Exercise:**2 **Practical:** 3
Pre-requisite: CMPn010

C - Professional information

1 – Course Learning Objectives:

The course aims to identify the potential of using computers and digital methods of constructing technical drawings in the field of architecture. It focuses on graphic design and computer-aided dual dimensional drawings, throughout studying one of the current software such as AutoCAD or any equivalent software.

2 - Competencies

c1. Identifying the basics of computer technology in architecture and the current available programs used by architects. (C4)
c2. Knowing the potential computer uses and CAD applications in architecture and its use. (C4, C19)
c3. Learning the basic 2D orders and functions in the AutoCAD program. (C4, C19)
c4. Understanding the principles of designing and drawing in 2D using computer software. (C4, C19)
c5. Preparing and presenting 2D drawings using AutoCAD program. (C9)
c6. Analyzing the drawing problems into sub-problems towards a controllable handling of elements and thus determining the best and easiest way to draw the required drawings. (C9)
c7. Producing innovative design and creative planning ideas & concepts using 2D commands. (C11)
c8. Integrate different scales of design, ranging from interior details to urban scales with the 2D computer applications. (C11)
c9. Creating professional 2D working drawings for architectural projects. (C10, C19)
c10. Interact with computer. (C4)

This course contributes in the following program competencies: C4, C9, C10, C11 & C19

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction & Getting Started	1	2	3
2	Drawing & Modifying Commands	1	2	3
3	Drawing & Modifying Commands	1	2	3
4	Drawing & Modifying Commands	1	2	3
5	Layers Management	1	2	3
6	Revision & Mid Term Practical Exam	1	2	3
7	Mid Term Exam	1	-	-
8	Blocks & Modifying Commands	1	2	3
9	Hatch, Dimension & Text	1	2	3
10	Raster Image, Xref & Modifying Commands	1	2	3
11	Plotting & Paper space & Project Introduction	1	2	3
12	Revision & Makeup Class	1	2	3
13	Practical Exam	-	-	3
14	Project Submission & Makeup Class	1	2	3
15	Final Exam Preparation & Revision	1	2	-
	Total hours	**14**	**26**	**39**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies									
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10
Introduction & Getting Started	1	1		1	1					1
Drawing & Modifying Commands			1		1					1
Drawing & Modifying Commands			1		1					1
Drawing & Modifying Commands			1		1					1
Layers Management			1	1	1	1		1	1	1
Blocks & Modifying Commands			1	1	1	1	1	1	1	1
Hatch, Dimension & Text			1	1	1	1	1	1	1	1
Raster Image, Xref & Modifying Commands			1	1	1	1	1	1	1	1
Plotting & Paper space			1		1	1	1	1	1	1
Exams & quizes	1	1	1	1	1	1			1	1
Project			1	1	1	1	1	1	1	1
Topics Covering Competences	**2**	**2**	**10**	**7**	**11**	**7**	**5**	**6**	**7**	**11**

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Assignments (Weekly)	Practical Exam	Quizzes	Research & Presentations	Project
c1	1			1		1		1					1		
c2	1		1	1		1		1		1			1		
c3	1			1		1	1	1		1	1	1	1		1
c4	1			1		1	1	1		1	1	1			1
c5	1			1		1	1	1			1	1	1		1
c6	1		1	1		1	1	1		1	1	1			1
c7	1		1	1		1	1	1			1	1			1

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Assignments (Weekly)	Practical Exam	Quizzes	Research & Presentations	Project
c8	1			1		1	1	1			1	1			1
c9	1			1		1	1	1			1	1			1
c10	1			1		1	1	1			1				
∑	10			6		10	9	10		4	8	7	4		7

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		6th - 7th Week	20
Semester Work	Class work	weekly	20
Practical Exam		Fifteenth week	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: Computer Applications (1)

7-2 Required books

- Course Booklets
- Leach, J. A., (2016), "AutoCAD 2016 Instructor", SDC Publication, USA.

7-3 Recommended books: None

- AutoCAD 2016 Help Manual.
- Hamad, M. M., (2010), "AutoCAD 2010 Essentials", Published by Jones and Bartlett Publishers, LLC, United Kingdom.
- McGraw−Hill Primis, (2009), "AutoCAD® 2010 Instructor: A Student Guide to Complete Coverage of AutoCAD's Commands and Features", 6th edition, Published by the McGraw−Hill Companies, Inc., United States of America.
- Omura, G., (2009), "Mastering AutoCAD 2010 and AutoCAD Lt 2010", Published by Wiley Publishing Inc., Indeana, United States of America.

7-4 Periodicals, Web sites, etc.

- Electronic Pub. URL: www.autocad.com, www.autodesk.com, www. Fleixcad.com
- Architectural record, Computer Sector, Published monthly by the McGraw – Hill companies
- Videos uploaded to Academy YouTube Channel. https://www.youtube.com/channel/UCD-fbpWQiDy3GDWuLUwlKpg/playlists

8- Facilities required for teaching and learning:

- Computer Laboratories with net meetings and Data show
- CAD software program

Course coordinator: Associate Prof. Reham Mostafa
Head of the Department: Associate Prof. Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn117: Theory of Structure

A- Affiliation

Relevant program: Architecture Engineering and Building Technology BSc Program
Department offering the program: Architecture Engineering and Building Technology Department
Department offering the course: Civil Engineering and Building Technology Department
Date of specifications approval: August 2020

B - Basic Information

Title: Theory of Structure **Code:** ARCn117 **Level:** third semester, 1st ,Spring
Credit Hours: 2 **Lectures:** 1 **Tutorial/Exercise:**3 **Practical:** 0
Pre-requisite: None

C - Professional information

1 – Course Learning Objectives:

The course aims to introduce students with the different elements and types of structures, in addition to the types of loads and supports and the resultant total loads. It also illustrates the types of supports that achieve the building stability and thus determining the internal forces values, and the moment with its highest value that can affect the building elements such as the beams, frames and trusses. Students will be able to identify the properties of sections in order to calculate their internal stresses.

2 – Competencies

..

C1 Analyze statically determinate trusses (C1 & C5).

C2 Analyze statically determinate Beams (C1, C2 & C5).

C3 Analyze statically determinate Frames (C1, C2 & C5).

C4 Solve statically determinate structures using classical methods (C3 & C6).

C5 Interpret the various methods of structural displacements (C1, C2 & C5).

C6 Analyze the determinate structure and its reaction diagram (C2 & C5).

C7 Analyze the normal forces diagram for the determinate structure (C2 & C5).

C8 Analyze the shear forces diagram for the determinate structure (C1, C2 & C5).

C9 Analyze the bending moment diagram for the determinate structure (C1, C2 & C5).

C10 Learn the usage of drawing equipment's (C2 & C9).

C11 Learn projection methods (C3 & C5).

C12 Calculate loads for no tension criteria on domes chimneys and retaining walls (C1, C2 & C7).

C13 Interpret the various methods of structural displacements (C3 & C6).

C14 Draw the influence line diagram for rolling loads (C2 & C5).

This course contributes in the following program competencies: C1, C2, C3, C4, C5, C6, C7, C8, & C9

SN	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction	1	3	0
2	Types of Supports	1	3	0
3	Reactions on Beams	1	3	0
4	Reactions on Frames	1	3	0
5	Reactions on Arches	1	3	0
6	Internal Forces on Beams-Normal,shear Forces	1	3	0
7	Mid-Term	0	0	0
8	Internal Forces on Beams-Bending Moments	1	3	0
9	Stability on Beams	1	3	0
10	Stability on Frames	1	3	0
11	Stability on Trusses	1	3	0
12	Analysis of Arches Normal Forces	1	3	0
13	Analysis of Arches Shear Forces	1	3	0
14	Analysis of Arches Bending Moment	1	3	0
15	Indeterminate Structures	1	3	0
	Total			

4. Course content/Course Competencies mapping matrix

Topic	Competencies													
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14
Introduction	1	1					1			1				
Types of Supports	1	1	1		1		1			1	1	1	1	1
Reactions on Beams	1	1	1		1		1	1		1	1	1	1	1
Reactions on Frames	1	1	1	1	1	1		1	1	1	1	1	1	1
Reactions on Arches	1	1	1		1	1	1			1	1	1	1	1
Internal Forces on Beams-notrmal ,Shear Forces	1	1	1	1	1	1		1	1	1	1	1	1	1
Internal Forces on Beams-Bending Moments		1	1	1	1	1		1	1	1	1	1	1	1
Stability on Beams	1	1	1		1					1	1	1	1	1
Stability on Frames	1	1	1		1					1	1	1	1	1
Stability on Trusses	1	1	1		1					1	1	1	1	1
Analysis of Arches Normal Forces	1	1	1		1	1		1		1	1	1	1	1
Analysis of Arches Shear Forces		1	1		1	1		1		1	1	1	1	1
Analysis of Arches Bending Moment		1	1		1	1		1		1	1	1	1	1
Indeterminate Structures	1	1	1	1	1	1		1	1	1	1	1	1	1
Topics Covering Competences	11	12	13	4	13	9	5	8	4	15	14	14	14	14

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods				Learning Methods	Assessement Method		
	Lecture	Discussions and seminars	Tutorials	Problem solving	Research and Reports	Written Exam	Quizes	Assignments
c1	1	1	1	1	1	1	1	1
c2	1	1	1	1	1	1	1	1
c3	1		1	1	1	1	1	1
c4	1		1	1	1	1	1	1
c5	1		1	1	1	1	1	1
c6	1	1	1	1		1	1	1
c7	1		1	1	1	1	1	1
c8	1	1	1		1	1	1	1
c9	1	1	1		1	1	1	1
c10	1	1	1		1	1		
c11			1	1	1			1
c12		1	1	1	1			1
c13		1						1
c14		1						1
∑	10	9	12	9	11	10	9	13

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	Bi-Weekly	40
	Reports/Research		
	Assignments		
Written Exam		Sixteenth week	40
Total			100

7- List of references:

- Choong, K., (2014), “Theory of structure”, Penerbit USM, Malaysia.
- Wrigh, W., (1995), “Theory of Structures”, Dar Elmaaref, Cairo, Egypt.Martin, H. S., "Elasticity Theory, Applications and Numerics", Elsevier Inc., 2005.
- Dr. Eldakhakhni W.M. “Theory of Structures – part 2”, Fifth edition, Dar Elmaaref, Cairo, 1995.
- Norris C. H., Wilbur J. B., and Utku S., "Elementary Structural Analysis", McGraw Hill, 1976.

7-1 Course notes:

Tamer Selim, Structure Analysis 1, Lecture Notes, Modern Academy, 2020.

7-2 Required books

7-3 Recommended books: None

7-4 Periodicals, Web sites, etc.: None

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped with projectors/ data shows.
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr Tamer Seleem
Head of the Department: Dr Asamer Zakria
Date: August 2020

Modern Academy for Engineering and Technology in Maadi

ARCn122: Architectural Design (2)

A- Affiliation

Relevant program/s: Architectural Engineering & Building Technology B.Sc.Program
Department offering the program: Architectural Engineering & Building Technology B.Sc.Program
Department offering the course: Architectural Engineering & Building Technology B.Sc.Program
Date of specifications approval: August 2020

B - Basic Information

Title: Architectural design (2) **Code:** ARCn122 **Level:** 1st (Second Semester)

Credit Hours:3 **Pre-requisite:** ARCn121
Contact Hours: **Lectures:** 1 **Tutorial:**6 **Laboratory:** **Total:**7

C - Professional Information

1 – Course Learning Objectives:

The course aims to follow up with introducing the design process to the students with its various dimensions. It focuses on finding a design concept and its gradual development while being subjected to the designing process of simple public buildings, in scale and construction. It also emphasizes on the linkage between the spaces throughout using vertical and horizontal movement elements. In addition, it allows students to develop their ability in forming the exteriors and the practical application on a simple public building.

2 –Competencies

c1. Identify the architecture problems depending on various dimensions (C1,C2)
c2. Utilize the function requirements in designing different types of public buildings and their elements. (C4)
c3. Investigating the cultural, social and environmental linkage between the spaces in general. (C3)
c4. Achieving the standards and design foundations of public buildings (C5,C7,C9)
c5. Evaluate the architecture building to reach a successful architecture from function, strength and aesthetical point of views (C1, C2, C4).
c6. Discuss and formulate informed opinions in architectural context (C5,C6)
c7.
c8. Consider the impact of designs on maximizing the user's benefit within spaces in addition to forming exteriors. (C3)
c9. Practices self -learning and communicate effectively orally and in written exam (C8)

This course contributes in the following program competencies: C1, C2, C3, C4, C5, C6,C7, C8, C9

3- CONTENTS:

Topic	Lecture hours	Tutorial hours	Practical hours
1. project program.	1	6	
2. Research.	1	6	
3. Initial plans + final research.	1	6	
4. plans + study model.	1	6	
5. study model + plans+ initial section.	1	6	
6. final plans + final sections	1	6	
7. Mid-Term Exam.			
8. initial layout + initial elevations	1	6	
9. layout + elevation	1	6	
10. 3d model + studies	1	6	
11. plans + elevations + sections + layout	1	6	
12. plans + elevations + sections + layout (without presentation)	1	6	
13. plans + elevations + sections + layout (presentation)	1	6	
14. plans + elevations + sections + layout (presentation)+3d model	1	6	
15. final project	1	6	
Total hours			

4. COURSE CONTENT/COURSE COMPETENCIES MAPPING MATRIX

Topic	Course Competencies									
	c1	c2	c3	c4	c5	c6	c7	c8	c9	
Research.		1								
Initial plans + final research.	1	1	1					1		
plans + study model.			1	1		1	1	1		
study model + plans+ initial section.			1	1		1	1	1		
final plans + final sections			1				1	1	1	
Mid-Term Exam.		1			1		1	1	1	
initial layout + initial elevations		1					1	1	1	
layout + elevation							1			
3d model + studies							1	1	1	
plans + elevations + sections + layout						1	1	1	1	
Research.						1	1	1	1	
Pre-Final research submission and discussion.						1	1	1	1	
Final research discussion and submission						1	1	1		
Quiz							1	1		
Topics Covering Competences	1	4	4	2	1	6	12	12	7	

5 - TEACHING AND LEARNING AND ASSESSMENT METHODS:

Course Competences	Teaching Methods										Learning Methods				Assessment Method							
	Lectures	Presentations and Movies	Discussions	Tutorials/Sketches	Practical and Laboratory	Problem solving	Brain storming	Projects	3-D Modeling	Playing	Research and Reports	Modeling and Simulation	Site Visits	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments	Project		
c1	1		1												1					1		
c2	1						1				1				1		1			1		
c3	1		1								1									1		
c4	1	1													1					1		
c5	1		1									1			1				1	1		
c6	1										1	1			1				1	1		
c7	1		1																	1		
c8	1	1					1												1	1		
c9			1				1					1			1		1			1		

6- ASSESSMENT TIMING AND GRADING:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	40
Mid-Term Exam	7-th Week	20
Written Exam	Sixteenth week	40
Total		100

7- List of references:

7-1 Course notes:

7-2 Required books

7-3 Recommended books:

- Ching, F. D., (2014), "Architecture: Form, Space and Order", John Wily & Sons, Inc., USA.
- Steele, J., (2001), "Architecture Today", Second Edition, Phaeton Press Limited, London, UK.
- على رأفت، (1994)،" ثلاثية الابداع المعماري – البيئة والفراغ ،انتركونسلت للنشر العلمي والتوزيع، مصر."

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped with projection and sound systems.
- Computer, Data show.
- High speed internet and communication facilities for distance learning.

Course coordinator: Prof. Dr. Ibrahim Gouda
Dr. Mohamed Mahmoud
Head of the Department: Professor Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn124: Skiagraphy perspective

A- Affiliation

Relevant program: Architecture Engineering and Building Technology BSc Program
Department offering the program: Architecture Engineering and Building Technology Department
Department offering the course: Architecture Engineering and Building Technology Department
Date of specifications approval: August, 2020

B - Basic Information

Title: Skiagraphy perspective **Code:** ARCn124 **Level:** 1st spring
Credit Hours:2 **Lectures:** 1 **Tutorial/Exercise:** 3 **Practical:** 1
Pre-requisite: None

C - Professional information

1 – Course Learning Objectives:

The course aims at the development of students' abilities for three-dimensional visualization and representation in terms of shades, shadows, and perspective views.

2 – Competencies

c1. Appling The fundamental engineering sciences relevant to architectural practices (C1)
c2. Producing Three-dimensional visualization and representation in terms of shades, shadows and perspective. (C7, C12, C15)
c3. Appling Perspective rules to create architectural designs. (C1, C11)
c4. Integrate shadow for different shapes. (C1, C11)
c5. Relate different shadows together to an architectural elevation. (C8, C9)
c6. Developing visual sensitivity towards light, shades, and shadows. (C2)
c7. Integrate different perspective rules. (C8, C9)
c8. Use techniques of manual presentation using rules for shade and shadows. (C7,C15)
c9. Communicate ideas verbally and visually in a clear coherent manner. (C8)
c10. Determine levels in space. (C8, C9)
c11. Acquire entrepreneurial skills (C10)

This course contributes in the following program competencies:C1, C2, C7, C8, C9, C10, C11, C12 , C15

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to shades and shadows, Shade of points and lines.	1	3	1
2	Shades of plains and surfaces	1	3	1
3	Shades of plains and surfaces	1	3	1
4	Shades of circles	1	3	1
5	Shades and shadows of objects and masses (prisms)	1	3	1
6	Shades and shadows of objects and masses (cone and cylinder)	1	3	1
7	Assessment (Midterm)	-	-	-
8	Architectural applications	1	3	1
9	Architectural applications	1	3	1
10	One vanishing point perspective	1	3	1
11	Interior perspective	1	3	1
12	Two vanishing points perspective	1	3	1
13	Two vanishing points perspective	1	3	1
14	Applications on two vanishing points perspective	1	3	1
15	Revision	1	3	1
	Total hours	**14**	**42**	**14**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies										
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11
Introduction to shades and shadows, Shade of points and lines.	1			1	1	1		1	1	1	1
Shades of plains and surfaces	1			1	1	1		1	1	1	1
Shades of circles	1			1	1	1		1	1	1	1
Shades and shadows of objects and masses	1			1	1	1		1	1	1	1
Architectural applications	1	1	1	1	1	1		1	1	1	1
One vanishing point perspective	1	1	1			1	1		1	1	1
Interior perspective	1	1	1			1	1		1	1	1
Two vanishing points perspective	1	1	1			1	1		1	1	1
Topics Covering Competences	8	4	4	5	5	8	3	5	8	8	8

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1		1			1			1	1		1	1	
c2	1	1		1			1			1	1		1	1	
c3	1	1		1			1			1	1		1	1	
c4	1	1		1			1			1	1		1	1	
c5	1	1		1			1			1	1		1	1	
c6	1	1		1			1	1		1	1		1	1	
c7	1	1		1			1			1	1		1	1	
c8	1	1		1			1			1	1		1	1	
c9	1	1		1			1			1	1		1	1	
c10	1	1		1			1			1	1		1	1	
c11	1	1		1			1	1		1	1		1	1	
∑	11	11	0	11	0	0	11	3	0	11	11	0	11	11	0

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Tutorials	Assignments Bi-Weekly	40
Practical Exam		-	-
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: Lecture notes

7-2 Required books

- John Montague,2013, Basic Perspective Drawing: A Visual Approach, John Wiley And Sons Inc,
- Mc Goodwin, Henry, 1991, Architectural shades and shadows, American Institute of Architects press.
- Montague, J., (2013), "Basic Perspective Drawing: A Visual Approach", John Wiley & Sons, Inc., Canada.
- Shafie, Z., (1977), "Shades and Shadows - Presentation by scientific rules", Dar Al-Alahram Al-Araby print, Cairo. Egypt.
- فواز القضاة، (2000)،" الظل والمنظور الهندسي"، دار مجدلاوي للنشر والتوزيع، عمان.

7-3 Recommended books:

- Shafie, Zakia, 1977, Shades and shadows, presentation by scientific rules, Dar Al-Alam Al-Araby print, Cairo.
- Shafie, Zakia, 1997, Architectural perspective, Cairo University press.

7-4 Periodicals, Web sites, etc.

http://www.artyfactory.com/perspective_drawing/perspective_index.html (Last accessed January 2020).

8- Facilities required for teaching and learning:

- White boards and markers.
- Engineering tools (Triangles + Ruler + Compass + ……).
- Drawing halls for exercises.

Course coordinator: Professor. Mona Albasyoni
Head of the Department: Associate Professor: Asamer zakria
Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn141: History of Architecture (1)

A- Affiliation

Relevant program: Architecture Engineering and Building Technology BSc Program
Department offering the program: Architecture Engineering and Building Technology Department
Department offering the course: Architecture Engineering and Building Technology Department
Date of specifications approval: August, 2020

B - Basic Information

Title: History Of Architecture (1) **Code:** ARCn141 **Level:** 1rd Spring
Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:**1 **Practical:** None
Pre-requisite: None

C - Professional information

1 – Course Learning Objectives:

The main objective of this course to illustrate the different historical civilizations and the aesthetical values in their different styles, throughout conducting an analytical study for the elements affecting on the formation of the various architectural styles and characters in different ages. It also traces the evolvement of architecture throughout history; since the dawn of history, passing by the ancient Egyptian, the Mesopotamia and until the classical architecture: Greek and Romanian. Using sketches, students will also be able to criticize and analyze the buildings with their distinguished elements in the different eras.

2 - Competencies

c1. Concepts the History of architecture Through Time (C2, C3).
c2. Think systematically within the Historical Features and Heritage along the design process (C1, C3).
c3. Identify philosophical analogies and symbolic metaphors in Historical architecture (C1, C2,C4).
c4. Analyze Historical Architecture Features and Characters and Draw effectively sketches (C2, C3).
c5. Ability to search for information's from references and internet (C2, C3).
c6. Prepare convenient presentations (C2,C3,C4,C5).

This course contributes in the following program competencies: C1, C2, C3, C5, C4, C6

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction and history of Prehistoric Civilization	2	1	-
2	Mesopotamia Civilization – (Character and Features)	2	1	-
3	Mesopotamia Civilization - (Houses – Palaces – Temples)	2	1	-
4	Egyptian Civilization - (Character and Features)	2	1	-
5	Egyptian Civilization - (Tombs)	2	1	-
6	Egyptian Civilization - (Temples)	2	1	-
7	Mid-Term Exam	-	-	-
8	Greek Civilization - (Character and Features)	2	1	-
9	Greek Civilization - (Tombs -Temples – Palace - .....)	2	1	-
10	Roman Civilization - (Character and Features)	2	1	-
11	Roman Civilization - (Tombs -Temples - Palace - .....)	2	1	-
12	Seminars	-	3	-
13	Researches Discussion	-	3	-
14	Researches Discussion	-	3	-
15	Revision	3		-
	Total hours	**23**	**19**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies																	
	c1	c2	c3	c4	c5	c6												
Introduction and history of Prehistoric Civilization	1	1	1	1	1	-												
Mesopotamian Civilization – (Character and Features)	-	1	1	1	1	-												
Mesopotamian Civilization - (Houses – Palaces – Temples)	-	1	1	1	1	-												
Egyptian Civilization - (Character and Features)	-	1	1	1	1	-												
Egyptian Civilization - (Tombs)	-	1	1	1	1	-												
Egyptian Civilization - (Temples)	-	1	1	1	1	-												
Final Sketches Drawing (1)	1	-	1	1		1												
Researches Discussion	-	1		1	1	-												
Greek Civilization - (Character and Features)	-	1	1	1	1	-												
Greek Civilization - (Tombs - Temples - Palace)	-	1	1	1	1	-												
Roman Civilization - (Character and Features)	-	1	1	1	1	-												
Roman Civilization - (Tombs -Temples - Palace)	-	1	1	1	1	-												
Final Sketches Drawing (1)	1	-	1	1	-	1												
Research Discussion	-	1		1	1	1												
Revision	1	1	1	-	-	-												
Topics Covering Competences	3	13	13	14	12	3												

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project
c1	1	-		1	-	-	1	-	-	1	1	-	1	1	-
c2	1	-	1	1	-	-	1	1	1	1	1	-	1	1	-
c3	1	-	1	1	-	-	1	-	1	1	1	-	1	1	-
c4	1	-	1	1	-	-	1	-	1	1	1	-	1	1	-
c5	-	1	1		-	-	1	1	1	1	1	-	1	1	-
c6	-	1	1	1	-	-	1	1	1	1	1	-	-	1	-
∑	4	2	5	5	-	-	6	3	6	6	6	-	5	6	-

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes (one each 4 weeks)	5
	Reports/Research	Two reports per semester	15
	Tutorials	Assignments per semester	20
	Mini project	Once per semester	-
Practical Exam		Fifteenth week	-
Written Exam		Sixteenth week	40
Total			100

7- List of references: None

7-1 Course notes: None

7-2 Required books

Fletcher, B., & Cruickshank, D. (1996). A history of architecture. Oxford: Architectural Press. Chicago (Author-Date, 15th Ed).

CHING, F. D. K. (2007). Architecture: form, space, & order. Hoboken, N.J., John Wiley & Sons.

7-3 Recommended books:

Fletcher, B., & Cruickshank, D. (1996). A history of architecture. Oxford: Architectural Press. Chicago (Author-Date, 15th Ed).

CHING, F. D. K. (2007). Architecture: form, space, & order. Hoboken, N.J., John Wiley & Sons.

7-4 Periodicals, Web sites, etc.

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped with projection and sound systems.
- Computer, Data show and Computer programs.
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr. Hesham Yahia Abd El Malek
Head of the Department: Associate Professor Asamir Zakria
Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn160: Summer Training (2)

A- Affiliation
Relevant program: Architecture Engineering and Building Technology BSc Program
Department offering the program: Architecture Engineering and Building Technology Department
Department offering the course: Architecture Engineering and Building Technology Department
Date of specifications approval: August, 2020

B - Basic Information
Title: Architecture Training (2) **Code:** ARCn160 **Level:** 2nd summer
Credit Hours: - **Lectures:**2 **Tutorial/Exercise:**4 **Practical:** -
Pre-requisite: ARCn060

C - Professional information
1 – Course Learning Objectives:

The objective of the course is to improve the skills and capabilities of the student in designing and building up of study modeling using different materials and various modeling techniques. In addition of developing the student's practical possibilities throughout field visits to buildings during execution to practically view some construction and finishing stages, under the supervision of faculty members and a technician.

2 – Competencies

c1. Apply Current engineering technologies as related to disciplines. (C10)
c2. Apply Principles of building technologies, structure & construction methods, technical installations, properties of materials, and the way they may influence design decisions. (C3)
c3. Think three-dimensionally and engage images of places & times with innovation and creativity in the exploration of design. (C8, C14)
c4. Integrate relationship of structure, building materials, and construction elements into design process. (C3, C12)
c5. Use a wide range of analytical tools, techniques, equipment, and software packages pertaining to the discipline and develop required computer programs. (C6,C8)
c6. Display imagination and creativity. (C9)
c7. Communicate effectively (C8)
c8. Acquise entrepreneurial skills. (C10)

This course contributes in the following program competencies: C3, C6, C8, C9, C10, C12, C14

3 – Contents

Day	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to modeling	2	4	-
2	Study modeling using different materials and techniques	2	4	-
3	Laser cut modeling	2	4	-
4	Architectural modeling projection	2	4	-
5	Final modeling project	2	4	-
6	Introduction to field visits	2	4	-
7	Site Visit	2	4	-
8	Site Visit	2	4	-
9	Site Visit	2	4	-
10	RESEARCH	2	4	-
	Total hours	**20**	**40**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies							
	c1	c2	c3	c4	c5	c6	c7	c8
Architectural modeling	1	1	1	1	1	1	1	1
Modeling project	1	1	1	1	1	1	1	1
Site Visit	1	1		1	1		1	1
RESEARCH	1	1		1	1		1	1
Topics Covering Competences	4	4	2	4	4	2	4	4

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1	1			1							1	1
c2	1	1		1			1							1	1
c3	1	1		1			1		1					1	1
c4	1	1	1	1			1	1	1					1	1
c5	1	1		1			1		1					1	1
c6	1	1		1			1	1	1					1	1
c7	1	1		1			1	1	1					1	1
c8	1	1		1			1							1	1
∑	8	8	2	8	0	0	8	3	5	0	0	0	0	8	8

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Semester Work	Tutorials	Assignments DAILY	60
	Mini project - Research	5th & 10th day	40
Total			100

7- Facilities required for teaching and learning:

- White boards and markers.
- 3d modeling equipment's.
- Site visits.

Course coordinator: Dr. Marwa Elbasyoni
Head of the Department: Associate Professor: Asamer zakria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
GENn141 Presentation Skills

A- Affiliation Architectural Engineering Department
Relevant program: Civil Engineering & Architectural Engineering BSc Programs
Department offering the program: Civil Engineering & Architectural Engineering Departments
Department offering the course: Architectural Engineering Department

Date of specifications approval: August 2020

B - Basic Information

Title: Presentation Skills **Code:** GENn141 **Level:** General, 1st FALL
Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:** None **Practical:** None
Pre-requisite: None

C - Professional information

1 – Course Learning Objectives:

This is a course that requires the student to combine both written knowledge with oral performance criteria. The course gives practical advice on the different modes of communication skills and focusing on the leadership communication skills as well as formal writing, CV writing, body language, art of listening, speeches, negotiation and face-to-face interactions. By the end of this course, students will become more confident and less fearful, more skillful, and less clumsy, more understanding of others and less threatened by them. Students will practice leadership communication, searching, brainstorming with their colleagues and examine how to design and deliver an effective attractive presentation as well as presenting an effective poster for the presented topic.

2 - Competencies

c1. Practice Technical language and report writing (C5,C10)
c2. Design, assemble a report on a project or assignment (C5,C10)
c3. Practice Collaborating effectively within multidisciplinary team (C7, C8)
c4. Practice Work in stressful environment and within constraints (C8,C9)
c5. Communicate effectively (C8,C9)
c6. Learn Leading and motivating individuals (C8,C9)
c7. Learn searching for information and adopt life-long self-learning (C5,C10)

This course contributes in the following program competencies: C5,C7,C8,C9,C10

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Structuring and designing a précised presentation, techniques for using slides and projector for better interpretation.	2		
2	Fundamentals of preparing an attractive style for a short talk. Using the power point technique for achieving and ideal short talk through a lab top and a data show / Seminar training. To understand and practice what's body language and guestures.	2		
3	Public Speeches vs. presentations, and training on active listening and negotiation.	2		
4	How to write an effective speech , prepare it, perform it as well as practicing it , in addition to knowing the psychology of audience	2		
5	Developing the student Leadership communications skills	2		
6	Developing the student communications skills and collaborating in teams	2		
7	Mid Term			
8	Preparing Job materials and knowing the ethics of Job search communication	2		
9	C.V Writing: Preparation of an attractive C.V. containing personal data qualifications, posts, and publications - Interview Preparations	2		
10	Workshop on the effective skills of presentations	2		
11	Suggested topic presented by the students / Seminar training 1	2		
12	Suggested topic presented by the students / Seminar training 2	2		
13	Suggested Poster presented by the students for the previous topic 1	2		
14	Suggested Poster presented by the students for the previous topic 2	2		
15	Open Discussion	2		
	Total hours	**28**		

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies						
	c1	c2	c3	c4	c5	c6	c7
Structuring and designing a précised presentation, techniques for using slides and projector for better interpretation.		1					
Fundamentals of preparing an attractive style for a short talk. Using the power point technique for achieving and ideal short talk through a lab top and a data show / Seminar training. To understand and practice what's body language and guestures.	1	1	1		1	1	
Public Speeches vs. presentations, and training on active listening and negotiation.	1	1	1		1	1	
How to write an effective speech , prepare it, perform it as well as practicing it , in addition to kowing the psychology of audience	1	1	1		1		1
Developing the student Leadership communications skills			1	1	1	1	
Developing the student communications skills and collaborating in teams			1	1	1	1	
The Legal System and Societies & the Professional Ethics	1	1		1			1
Preparing Job materials and knowing the ethics of Job search communication	1	1					1
C.V Writing: Preparation of an attractive C.V. containing personal data qualifications, posts, and publications - Interview Preparations	1	1	1	1	1	1	1

Workshop on the effective skills of presentations	1	1	1	1	1	1	1
Suggested topic presented by the students / Seminar training 1	1	1	1	1	1	1	1
Suggested topic presented by the students / Seminar training 2	1	1	1	1	1	1	1
Suggested Poster presented by the students for the previous topic 1	1	1	1	1	1	1	1
Suggested Poster presented by the students for the previous topic 2	1	1	1	1	1	1	1
Topics Covering Competences	11	12	11	9	11	10	9

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1				1			1			1	1	
c2	1	1	1				1	1		1			1	1	
c3	1	1	1				1			1			1	1	
c4	1	1	1				1			1			1	1	
c5	1	1	1				1			1			1	1	
c6	1	1	1				1			1			1	1	
c7	1	1	1				1	1		1			1	1	
∑	7	7	7				7	2		7			7	7	

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
	Mid-Term Exam	7th Week	20
Semester Work	Research/Presentations	4th, 9th week	30
	Quizzes	5th, 10th week	10
	Written Exam	Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: Course booklets in the Academic Library

7-2 Required books

Anderson, Paul, Technical Communication: A Reader-Centered Approach, 5th. Edition MacMillan Publishing., 2003.

17-1 Recommended books: None

- Strunck, William, Jr.; and white, E. B., The Elements of style, 3rd edition", MacMillan Co., 2000
- Nikitina,A., Successful Public Speaking, Academic Transfer, 2011
- Gerson Sharon J. and Gerson Steven M., Technical Communication Process and Product, 7th edition, Prentice Hall, 2012.
- Deborah J.Barett, Leadership Communication, McGraw-Hill companies, 3rd edition, 2010
- Riordan Daniel G. Technical Report Writing Today, 9th edition", Houghton Mifflin, 2005.
- Stephen Lucas, The Art of Public Speaking, 9th edition, McGraw Hill. 2007.
- Julius Fast, Body Language, MJF books, 1970.

7-4 Periodicals, Web sites, etc.

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped wirh projection and sound systems.

Course coordinator: DR./ Nouran Magdy Mohamed
Head of the Department: Assoc. Prof./ Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn210: Building Technology

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Building Technology	**Code: ARCn210**	**Level:** 2rd Fall	
Credit Hours: 2	**Lectures:** 2	**Tutorial/Exercise:** -	**Practical:** -
	Pre-requisite: -		

C - Professional information

1 – Course Learning Objectives:

The course aims to introduce several definitions and essential basics related to building technology and its evolution throughout different eras in addition to its levels and relations. It provides students with the required understanding of advanced equipment, building materials, techniques and its practices used in the construction sites. In addition, it presents a general information about the historical development of construction systems and their implementation until reaching the latest modern systems.

2 - Competencies

c1. Classify and compare between different construction systems (traditional, new &prefab).. (C12,C13)
c2. Design of building technology through ages until modern age. (C11,C13).
c3. Classify of construction materials& systems. (C12).
c4. Collaborate effectively within multidisciplinary team. (C5,C7,C9).
c5. Consider the impact of designs on the environmental protection. (C3).
c6. Practice self-learning and communicate effectively orally and in written form. (C8,C10).
c7. Classify and compare between different construction Equipment .(C12,C13)

This course contributes in the following program competencies: C3, C5, C7, C8 , C9, C10, C11,C12, C13 & C14

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to building Technology.	2	-	-
2	Introduction to building Technology (Historical overview)	2	-	-
3	Construction Equipment (classifications & types).	2	-	-
4	Construction Equipments(site,transportation&concrete equipments)	2	-	-
5	Construction methods (traditional methods)	2	-	-
6	Construction methods (new construction methods)1	2	-	-
7	Assessment (Midterm Exam)	2	-	-
8	Construction methods (new construction methods)3	2	-	-
9	Construction methods (new construction methods)4	2	-	-
10	Future building technology &expected development in construction systems	2	-	-
11	Prefabricated buildings.	2	-	-
12	Modules of Prefabricated buildings.	2	-	-
13	Structural units of Prefabricated buildings	2	-	-
14	Prefabrication industry & construction future in Egypt	2	-	-
15	Final Research Presentation	2		
	Total hours	**30**	**-**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies								
	c1	c2	c3	c4	c5	c6			
Introduction to building Technology.	1	1							
Introduction to building Technology (Historical overview)	1			1					
Construction Equipment (classifications & types).			1		1				
Construction Equipments (site, transportation&concrete equipments)			1						
Construction methods (traditional methods)		1		1		1			
Construction methods (new construction methods)1		1							
Assessment (Midterm Exam)									
Construction methods (new construction methods)3	1		1						
Construction methods (new construction methods)4			1						
Future building technology &expected development in construction systems			1		1				
Prefabricated buildings.		1	1						
Modules of Prefabricated buildings.			1			1			
Structural units of Prefabricated buildings									
Prefabrication industry & construction future in Egypt			1						
Final Research Presentation			1			1			
Topics Covering Competences	3	4	9	2	2	4			

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1	1				1		1	1	1	1		
c2	1	1						1		1	1			1	1

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c3	1	1		1						1	1		1		
c4		1		1											1
c5								1						1	
c6			1					1						1	
∑	3	4	2	3				3		3	3	1	2	2	2

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Research	Two research per semester	40
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: Zakaria Ahmed, Dr. Asamer, "Building Technology "(Arabic), 2008

1-https://youtu.be/E7zoJdGPbIQ	2-https://youtu.be/qwFr5Qu4Egg
3- https://youtu.be/wlgaS6RghWE	4- https://youtu.be/SdGkEAdMmUo
5https://mega.nz/file/ZxoWGJJI#Y3LCLiJSpNo39pvoe16H8gbN97XKi-VZFbbJIAMAaE4	6https://mega.nz/file/B14GTL5T#AvHl6fm1zlicrZ1hdpIR9_l_OZI2F9RF7P3B1BEEMH0
https://mega.nz/file/5phijLiA#JUoMHnxw6W2vkjngmNuQJwIqqJRYnFKCXs9RlItdIVo	

7-2 Required books

- Abd Allah, M., (2002), "انشاء مبانى تكنولوجيا البناء", Al Anglo Publication , Egypt.
- BARRY, R., (1999), "The Construction of Building (Vol 2)", Wiley Blackwell Publication.
- Watson,D., (2011), "time-saver standards for building materials & syst", Mc-Graw hill, India
- Michael, C. Y. L., (2017), "Construction Technology for Tall Buildings", 5th Edition, World Scientific Publishing Company, Singapore.
- Brayan, T., (2010), "Construction Technology: Analysis and Choice", 2nd Edition, Wiley Blackwell Publication.
- Hawass. Z., (1985), "The Art of contemporary Building (Arabic)", Alam El Kottob, Cairo, Egypt

7-3 Recommended books : None

7-4 Periodicals, Web sites, etc : None

8- Facilities required for teaching and learning

- White board
- overhead projector / Data Show
- Audio Video facilities: Video, T.V, P.C

Course coordinator: DR. Khaled Hesham, Associate Professor: Asamer Zakaria

Head of the Department: Associate Professor: Asamer Zakaria

Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn211: Architecture Construction & Building Materials 1

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Architecture Construction & Building Materials 1 **Code:** ARCn211 **Level:** 2rd Fall

Credit Hours: 3 **Lectures:** 2 **Tutorial/Exercise:**2 **Practical:** -

Pre-requisite: ARCn112

C - Professional information

1 – Course Learning Objectives:

The course aims to complete the student's familiarization with the basic building elements like insulation materials, whether moisture, heat or sound insulating materials, expansion joints. It also aims to prepare students to deal with the carpentry works of doors and windows for various openings types, after studying the wooden used sections and connections.

2 – Competencies

c1. Use current engineering basics to enhance buildings quality. (C1,C12).
c2. Explain the role of the architecture professions relative to building stability and aesthetic details. (C11,C12).
c3. Practice thinking in a creative and innovative way in problem solving and design. (C9,C10).
c4. Classify and compare between different types of building elements according to the design process. (C12,C13).
c5. Specify the standard symbols and prepare reports of materials and technological methods used in buildings. (C4,C10).
c6. Explain using appropriate construction techniques and materials to specify and implement different designs. (C12).
c7. Use neat hand drawings to produce professional technical drawings. (C8, C10).
c8. Collaborate effectively within multidisciplinary team (C7, C8).
c9. Differentiate between construction insulation methods and how to select materials that are suitable for specific purposes (C1).
c10.Practice managing tasks and resources efficiently(C5,C9,C10).

This course contributes in the following program competencies: C1, C4, C5,C7,C8,C9,C10,C11,C12& C13

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to course building construction materials	2	2	-
2	Isolation (moisture, heat , sound)	2	2	-
3	Construction Joints	2	2	-
4	Construction Joints + Research (1) (isolation +joints)	2	2	-
5	Concrete Structure Systems - Stairs (1)	2	2	-
6	Concrete Structure Systems - Stairs (2) + Research (2) (Stairs+ structure systems)	2	2	-
7	➢ Mid-Term Exam	2	2	-
8	(Introduction to Wooden Works+ Wood Connections)	2	2	-
9	(Wooden Doors – Flush Doors)	2	2	-
10	(Wooden Doors – Paneled Doors)	2	2	-
11	(Wooden Doors – Sliding Doors)	2	2	-
12	(Wooden Doors – Folding Doors)	2	2	-
13	(Wooden Windows – Louvered Shutters)	2	2	-
14	(Wooden Windows – Over Head)	2	2	-
15	➢ Folder submission	2	2	-
	Total hours	**30**	**30**	

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies									
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10
Introduction to course building construction materials	1									
Isolation (moisture, heat , sound)	1	1			1	1	1		1	
Construction Joints	1	1			1	1	1			
Construction Joints + Research (1) (isolation +joints)	1	1	1				1	1		1
Concrete Structure Systems - Stairs (1)	1	1	1	1		1	1		1	
Concrete Structure Systems - Stairs (2) + Research (2) (Stairs+ structure systems)	1	1	1	1		1	1	1	1	1
(Introduction to Wooden Works+ Wood Connections)	1	1	1	1	1		1			
(Wooden Doors – Flush Doors)	1	1		1	1		1			
(Wooden Doors – Paneled Doors)	1	1		1	1		1			
(Wooden Doors – Sliding Doors)	1	1		1	1		1			
(Wooden Doors – Folding Doors)	1	1		1	1		1			
(Wooden Windows – Louvered Shutters).	1	1		1	1		1			
(Wooden Windows – Over Head)	1	1		1	1		1			
Topics Covering Competences	13	12	4	9	9	4	12	2	3	2

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Assignment	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1			1				1			1				1
c2	1			1				1			1				
c3	1			1				1		1	1				1
c4	1			1				1			1		1		1
c5	1			1				1		1	1		1		1
c6	1			1				1		1	1		1		1
c7	1			1				1		1	1		1		1
c8	1							1			1				
c9	1			1				1		1	1				1
c10	1			1				1		1	1				1
∑	10	-	-	9	-	-	-	10	-	6	10	-	4	-	8

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes - 6th Week, 11th Week	10
	Tutorials	Weekly Assignments	10
	Final project	Once per semester	20
Practical Exam		-	-
Written Exam		After fifteenth week (according to exam schedul)	40
Total			100

7- List of references:

7-1 Course notes: Pdf. lectures

7-2 Required books

Building Construction and Materials Lectures and Detailed sheets (Part 1) by Prof. Dr. Magdy Tammam

7-3 Recommended books:

- W.B.McKay (vol.1), Building Construction.
- Sami Hassid, Architectural Construction Details.
- Farouk Abas Heidar "Building Construction " 4th edition
- Ching, F., (2014), "Building Construction Illustrated", 5th Edition, John Willy & Sons Publishing Inc., New York, USA.
- Allen, E. & Iano, J., (2014), "Fundamentals of Building Construction – Materials and Methods", John Wiley & Sons, Inc., New Jersey, USA.
- Abd Allah, M., (2011), "Building Construction &Building Technology", Anglo Library, Cairo, Egypt.

7-4 Periodicals, Web sites, etc.

None

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped with projection and sound systems.
- Computer, Data show.
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr Magdy Tammam
Head of the Department: Professor Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn214: Reinforced Concrete & Steel Structures

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Civil Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Reinforced Concrete & Steel Structures **Code:** ARCn214 **Level:** Level 3,(Fall)

Credit Hours: 2 **Lectures:** 1 **Tutorial/Exercise:**3 **Practical:** 0

Total:4 **Pre-requisite:** ARCN117

C - Professional information

1 – Course Learning Objectives:

By the end of this course, the students should have gained the knowledge about fundamentals of designing concrete and steel structures, analyzing and designing of sections subjected to bending, load distribution, details of beam reinforcement, solid slabs, columns, stairs, ribbed and hollow block slabs, paneled beams and flat slabs. The students should have gained the knowledge about structural systems for steel structures, design loads, design of sections subjected to axial loads, design of bolted and welded connections, structural details of trusses and frames and finally details of connections.

2 – Competencies

c13 Understand fundamental knowledge about reinforced concrete & steel structures relevant to architectural practices (C1 & C5).

c14 Familiarize with building codes and regulations of reinforced concrete & steel structures (C1, C2 & C5).

c15 Draw details of reinforced concrete structural elements (C1, C2 & C5).

c16 Draw details of steel structural elements (C3 & C6).

c17 Understand properties and uses of reinforced concrete & steel sections (C1, C2 & C5).

c18 Coordinate between architectural, structural, technical and economic considerations of a project (C2 & C5).

c19 Explain professional 2D drawings (C2 & C5).

c20 Understand the principles of reinforced concrete & steel construction and design criteria (C1, C2 & C5).

c21 Learn properties and uses of reinforced concrete & steel sections (C1, C2 & C5).

c22 Learn basic reinforced concrete & steel structural analyses and design methods (C2 & C9).

c23 Learn execution skills and site work of R.C & steel structures (C3 & C5).

c24 Classify, compare, examine and assess the validity / feasibility of pre-set alternatives (C1, C2 & C7).

c25 Improve creative problem-solving and decision-making facilities (C3 & C6).

c26 Familiarize with data analyses, interpretation, and manipulation (C2 & C5).

This course contributes in the following program competencies: C1, C2, C3, C5, C6, C7 and C9.

SN	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to R.C. structures.	2	3	0
2	Design of R.C. beams (R-sec).	2	3	0
3	Design of R.C. beams (T-sec).	2	3	0
4	Design of R.C. beams (L-sec).	2	3	0
5	Design of R.C. solid slab (one-way).	2	3	0
6	Design of R.C. solid slab (two-way).	2	3	0
7	Midterm	0	0	0
8	Design of R.C. solid slab (cantilever).	2	3	0
9	Load distribution	2	3	0
10	Load distribution	2	3	0
11	Introduction to steel structures.	2	3	0
12	Details for trusses.	2	3	0
13	Design of tension members	2	3	0
14	Design of compression members	2	3	0
15	Design of bolted connections	2	3	0

4. Course content/Course Competencies mapping matrix

Topic	Knowledge					Skills					Attitude			
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14
Introduction to R.C. structures.	1	1					1			1				
Design of R.C. beams (R-sec).	1	1	1		1		1			1	1	1	1	1
Design of R.C. beams (T-sec).	1	1	1		1		1	1		1	1	1	1	1
Design of R.C. beams (L-sec).	1	1	1	1	1	1		1	1	1	1	1	1	1
Design of R.C. solid slab (one-way).	1	1	1		1	1	1			1	1	1	1	1
Design of R.C. solid slab (two-way).	1	1	1		1	1	1			1	1	1	1	1
Design of R.C. solid slab (cantiliver).	1	1	1	1	1	1		1	1	1	1	1	1	1
Load distribution		1	1	1	1	1		1	1	1	1	1	1	1
Load distribution	1	1	1		1					1	1	1	1	1
Introduction to steel structures.	1	1	1		1					1	1	1	1	1
Details for trusses.	1	1	1		1					1	1	1	1	1
Design of tension members	1	1	1		1	1		1		1	1	1	1	1
Design of compression members		1	1		1	1		1		1	1	1	1	1
Design of bolted connections		1	1		1	1		1		1	1	1	1	1
Topics Covering Competences	11	14	13	3	13	8	5	7	3	14	13	13	13	13

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods				Learning Methods	Assessement Method		
	Lecture	Discussions and seminars	Tutorials	Problem solving	Research and Reports	Written Exam	Quizes	Assignments
c1	1	1	1	1	1	1	1	1
c2	1	1	1	1	1	1	1	1
c3	1		1	1	1	1	1	1
c4	1		1	1	1	1	1	1
c5	1		1	1	1	1	1	1
c6	1	1	1	1		1	1	1
c7	1		1	1	1	1	1	1
c8	1	1	1		1	1	1	1
c9	1	1	1		1	1	1	1
c10	1	1	1		1	1		
c11			1	1	1			1
c12		1	1	1	1			1
c13		1						1
c14		1						1
∑	10	9	12	9	11	10	9	13

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	Bi-Weekly	40
	Reports/Research		
	Assignments		
Written Exam		Sixteenth week	40
Total			100

7- List of references:

- Bhavikatti, S. S., (2014), “Design of Steel Structures”, I. K. International Publishing House Pvt. Ltd., India.
- Egyptian code of practice for steel construction and bridges – allowable stress design, (2008), Egypt.
- Egyptian code of practice for design and construction of reinforced concrete structures, (2007), Egypt.
- Park, R., & Paulay, T. (1975), “Reinforced concrete structures”, John Wiely & Sons, Inc., USA.
- Mashhou G, and Mahmoud M. "Design of reinforced concrete structures", faculty of Engineering, Cairo University, second edition, 2008.

7-1 Course notes:

Aiman Ezzat, Reinforced Concrete and Steel Structures, Lecture Notes, Modern Academy, 2020.

7-2 Required book None

7-3 Recommended books:

Mashhou G, and Mahmoud M. "Design of reinforced concrete structures", faculty of Engineering, Cairo University, second edition, 2008.

7-4 Periodicals, Web sites, etc.: None

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped with projectors/ data shows.
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr Ayman Ezzat
Head of the Department: Associate Prof. Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn217: Computer Applications (2)

A- Affiliation

Relevant program: Architectural Engineering and Building Technology BSc Program
Department offering the program: Architectural Engineering and Building Technology Department
Department offering the course: Architectural Engineering and Building Technology Department
Date of specifications approval: August 2020

B - Basic Information

Title: Computer Applications (2) **Code:** ARCn217 **Level:** 2nd Fall
Credit Hours: 3 **Lectures:** 1 **Tutorial/Exercise:** 2 **Practical:** 3
Pre-requisite: ARCn114

C - Professional information

1 – Course Learning Objectives:

Following one semester of two-dimensional digital modeling, this course introduces three-dimensional object generation and surfacing, through lectures and demonstrations with different digital tools (AutoCAD, 3D Max, or any equivalent software). This course allows students to understand and investigate technology's potential as a tool for creative exploration and presentation. Students will explore 3D modeling, cameras, lighting, surface textures, material mapping, and rendering output.

2 - Competencies

c1. Classify Potential computer uses in architectural applications (C3,C7)
c2. Explain Potential computer uses in architectural applications (C1,C7,C11).
c3. Explain how to convert 2d drawings to a 3d models using the AutoCAD & 3D Max programs (C3,C7).
c4. Investigate the best and easiest way to create the required 3d models (C1).
c5. Produce innovative design and creative planning ideas & concepts using 3D software (C1).
c6. Analyze problems into sub-problems towards controllable handling of elements (C1)
c7. Collaborate effectively within a multidisciplinary team (C5,C7,C9).
c8. Consider the impact of designs on environmental protection (C3).
c9. Practice self-learning and communicate effectively orally and in written form (C8,C10).

This course contributes in the following program competencies: C1, C3, C5, C7, C8, C9, C10, C11

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction, start up an AutoCAD 3D file and using draw modeling Commands	1	2	3
2	3d solid editing Commands	1	2	3
3	3d operation Commands & creating advanced models	1	2	3
4	Standard shapes, drawing & modifying surface and Meshes commands	1	2	3
5	Creating camera, lighting, shadows, and Materials to export a rendered shot	1	2	3
6	Introduction to 3dmax program interface & Midterm revision	1	2	3
7	Assessment (Mid Term)	-	-	-
8	Modeling, Selection, and transform commands	1	2	3
9	Modifier list commands and creating 2d shapes	1	2	3
10	Importing AutoCAD drawings to 3d max, Creating walls and slabs, Compound objects commands	1	2	3
11	Editable poly (selection & soft selection, Edit vertices, edit edges & polygons), generate topology, FFD command	1	2	3
12	Practical Exam	-	-	-
13	Importing elements to 3d max, Standard Materials, UVW map command, Lighting, Cameras, and Rendering.	1	2	3
14	Project Submission & Makeup Class	1	2	3
15	Final Revision & Makeup Class	1	2	3
	Final Exam	**12**	**24**	**36**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies																		
	c1	c2	c3	c4	c5	c6	c7	c8	c9										
Introduction, start up an AutoCAD 3D file and using draw modeling Commands	1	1	1																
3d solid editing Commands			1	1	1	1	1	1	1										
3d operation Commands & creating advanced models			1	1	1	1	1	1	1										
Standard shapes, drawing & modifying surface and Meshes commands			1	1	1	1	1	1	1										
Creating camera, lighting, shadows, and Materials to export a rendered shot			1	1	1	1													
Introduction to 3dmax program interface & Midterm revision			1	1	1	1	1	1	1										
Mid Term Exam				1	1	1			1										
Modeling, Selection, and transform commands			1	1	1	1													
Modifier list commands and creating 2d shapes			1	1	1	1													
Importing AutoCAD drawings to 3d max, Creating walls and slabs, Compound objects commands			1	1	1	1													
Editable poly (selection & soft selection, Edit vertices, edit edges & polygons), generate topology, FFD command			1	1	1	1													

Topic	Course Competencies																		
	c1	c2	c3	c4	c5	c6	c7	c8	c9										
Practical Exam				1	1	1			1										
13. Importing elements to 3d max, Standard Materials, UVW map command, Lighting, Cameras, and Rendering				1	1	1													
Project Submission & Makeup Class				1	1	1													
Final Revision & Makeup Class				1	11														
Topics Covering Competences	1	1	10	14	14	14	4	4	5										

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory	Researches, Reports &	Self-Learning	Modeling and Simulation	Written Exam	Assignments	Practical Exam	Quizzes	Research & Presentations	Mini Project
c1	1	1	1	1				1	1		1				
c2	1		1	1				1	1		1	1			
c3	1	1	1	1				1	1	1	1	1			
c4	1			1				1	1	1	1	1			
c5	1							1	1	1	1	1			
c6	1							1	1	1	1	1			
c7				1				1	1		1				
c8	1	1	1	1				1							
c9	1	1	1					1		1					
∑	8	4	5	6				9	7	5	7	5			

6- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work Assignments & Project	Weekly	20
Mid-Term Exam	7th Week	20
Practical Exam	12th week	20
Written Exam	Depending on the exams schedule	40
Total		100

7- List of references:

7-1 Course notes: Lecture notes

7-2 Required books

- Course Booklets
- Leach, J. A., (2016), "AutoCAD 2016 Instructor", SDC Publication, USA.

7-3 Recommended books: None

- AutoCAD 2016 Help Manual.
- Hamad, M. M., (2010), "AutoCAD 2010 Essentials", Published by Jones and Bartlett Publishers, LLC, United Kingdom.
- McGraw−Hill Primis, (2009), "AutoCAD® 2010 Instructor: A Student Guide to Complete Coverage of AutoCAD's Commands and Features", 6th edition, Published by the McGraw−Hill Companies, Inc., United States of America.
- Omura, G., (2009), "Mastering AutoCAD 2010 and AutoCAD Lt 2010", Published by Wiley Publishing Inc., Indeana, United States of America.

7-4 Periodicals, Web sites, etc.

- Electronic Pub. URL: www.autocad.com, www.autodesk.com, www. Fleixcad.com
- Architectural Record, Computer Sector, Published monthly by the McGraw – Hill companies
- 3D MAX script references

8- Facilities required for teaching and learning:

- Laboratories with net meetings and Data show
- Computer Laboratories, AutoCAD, and 3D Studio Max programs

Course coordinator: Dr. Sherif Salah el din
Head of the Department: Assoc prof. Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn222: ARCHITECTURAL DESIGN 3

A- Affiliation

Relevant program: Architecture Engineering and Building Technology BSc Program
Department offering the program: Architecture Engineering and Building Technology Department
Department offering the course: Architecture Engineering and Building Technology Department
Date of specifications approval: August, 2020

B - Basic Information

Title: Architectural Design 3 **Code:** ARCn222 **Level:** 2nd Fall

Credit Hours: 3 **Lectures:**1 **Tutorial/Exercise:**6 **Practical:** -

Pre-requisite: ARCn122

C - Professional information

1 – Course Learning Objectives:

By the end of this course, the students should have gained the planned competences (knowledge, skills and attitudes) to deal with the architectural design, in order to solve spatial problems on different design levels, starting from the layout relationships and ending with the masses and spaces in a more complex buildings, also emphasizes on the effect of construction in modelling the domestic spaces and architectural forms putting in consideration the functional, social and cultural needs

2 - Competencies

c1 – Identify the Fundamental engineering sciences relevant to architectural design practices (C1)
c2 – recognize the phases, methods and approaches to design process and the relationship between built forms, socio-economic and environmental parameters taking cultural context and environmental constraints in consideration (C3)
c3 - apply aesthetics and functionality, flexibility, adaptability, technology and humanity requirements in design (C3,C4)
c4 -Deduce grounded criteria and guidelines from a given design problems (C2)
c5 - Distill knowledge from precedent architectural design experiences (C2)
c6 - Integrate theoretical studies with practical reality in design (C2,C6)
c7 - compare, examine and assess the validity / feasibility of pre-set alternatives in design (C2,C3)
c8- Develop architectural and structural sense of scale and proportions (C1,C2)
c9 - create philosophical analogies and symbolic metaphors in architectural context (C11,C12)
c10 - producing architectural designs of various scales and levels of complexity that are functionally sound, environmentally appropriate, aesthetically plausible, users' friendly and technologically up to date. (C11,C12,C13)
c11- demonstrate new aspects of imaginative abilities and environmental sense in design process and respecting the constrains of the project (financial, social, regulations, environmental, conservation…etc) (C13,C14)
c12 - Improve creative problem-solving and decision-making in design process (C9,C11,C12)
c13 - Introduce professional 2Dand 3D drawings manually or using computer –aided design (C8,C11)
c14 - Promote investigation and exploration abilities in research work (C5)
c15 – Involve actively in-group discussions and mutual critiques (C7)
c16 - Improve communication skills with versatile backgrounds in field of architectural design (C5,C8)
c17 - Presenting seminars and public talks individually or in groups (C7,C8)
c18 – use properly new knowledge from different sources (libraries, books, periodicals, internet ...etc)(C10)

This course contributes in the following program competencies: C1, C2, C3,C4, C5, C6, C7, C8, C9, C10, C11, C12 & C13, C14

3 – Contents

SN	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to the project :school with specific requirements (economic –environmental-social….etc)	1	6	-
2	Gathering data phase + site analysis	1	6	-
3	Design criteria of school buildings	1	6	-
4	Bubble diagram + zoning of elements	1	6	-
5	Developing zoning of elements – concept- plans(initial ideas)	1	6	-
6	Masses – model - Concept development- plans development	1	6	-
7	Assessment (midterm)	1	6	
8	Drawing plans (semi-final)	1	6	-
9	Solving design – problems in plan	1	6	-
10	Final plans	1	6	-
11	Drawing main sections	1	6	-
12	Drawing elevations (alternatives)	1	6	-
13	Formation development in elevations (final)	1	6	-
14	Drawing 3d perspectives or isometric	1	6	-
15	Final presentation of project + jury	1	6	-
		15	**90**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies																	
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15	c16	c17	c18
Introduction to the project :school with specific requirnments	1	1			1													
Gathering data phase + site analysis	1	1			1									1	1	1	1	1
Design criteria of school buildings (case studies)	1	1	1	1	1									1	1	1	1	1
Bubble diagram + zoning of elements	1	1	1			1	1											
Developing zoning of elements – concept- plans(initial ideas)		1	1	1		1	1	1	1	1	1	1	1	1	1	1		1
Masses – model - Concept development- plans development		1	1	1		1		1	1	1	1	1	1		1	1		1
Drawing plans (semi final)						1		1	1	1	1	1	1					
Solving design – problems in plan				1			1			1	1	1	1		1	1		1
Final plans										1	1	1	1					
Drawing main sections		1	1	1		1	1	1	1	1	1	1	1					
Drawing elevations(alternatives)				1		1	1	1	1	1	1	1	1		1	1		1
Formation development in elevations (final)			1							1	1	1	1					1
Drawing 3d perspectives or isometric	1	1						1		1	1	1	1					1
Final presentation of project + jury										1	1	1	1		1	1	1	1
Topics Covering Competences	5	8	6	6	3	6	5	5	5	10	10	10	10	3	7	7	3	9

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials		Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	final Project
c1	1	1	1	1			1	1						1	1
c2	1	1	1				1	1						1	1
c3	1	1		1			1	1		1				1	1
c4		1	1				1	1		1				1	1
c5		1	1					1		1				1	1
c6	1	1	1					1		1				1	1
c7	1	1	1	1						1				1	
c8	1	1	1	1			1	1		1				1	1
c9	1	1	1	1			1	1		1				1	1
c10	1	1	1	1			1	1	1	1				1	1
c11	1	1	1	1				1	1	1				1	1
c12		1	1					1		1				1	1
c13	1	1						1	1	1				1	1
c14			1				1	1						1	
c15	1		1					1						1	
c16		1	1				1	1						1	
c17		1	1				1	1						1	
c18	1	1	1				1	1						1	1
∑	12	16	16	7			11	17	3	11				18	13

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	sketches	weekly	20
	Reports/Research	One research	10
	Final project	At the end of semester	10
Written Exam		Depending on the exams schedule	40
Total			100

7- List of references:

7-1 Course notes: lecture notes & handouts

7-2 Required books

- Lockard, M. S., (2017), "The Nature of Design: Principles, Processes and the Preview of the Architect", ORO Editions, USA.
- Boswell, C. K., (2013), "Exterior Building Enclosures: Design Process and Composition for Innovative Facades", Wiley Publishing, USA.
- Steele, J., (2001), "Architecture Today", Second Edition, Phaeton Press Limited, London, UK.

7-3Recommended books: None

7-4 Periodicals, Web sites, etc.

http://www.archinform.com/, (Last accessed January, 2021)

http://www.greatbuildings.com/, (Last accessed January, 2021)

8- Facilities required for teaching and learning:

- Computer Labs.

- Maquettes Lab
- Lecture and drawing halls equipped with boards, data show and sound systems.
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr.Asamer Zakaria
Head of the Department: Dr.Asamer Zakaria
Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn227: Theories of Architectural (2)

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Theories of Architectural (2) **Code:** ARCn227 **Level:** 2rd Fall

Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:** 1 **Practical:** -

Pre-requisite: ARCn120

C - Professional information

1 – Course Learning Objectives:

This course aims to continue with studying the design parameters for public and services building, it includes educational and cultural buildings, educational buildings, libraries, museums, theaters. Health and recreational buildings, active and inactive, community centers, commercial buildings, markets of all kinds, office building, and touristic projects.

The practical application will be through conducting applied research.

2 - Competencies

c1. Identify the architecture problems depending on applying theories architecture (C1,C2)
c2. Utilize the function requirements in designing different types of buildings and their elements. (C4)
c3. Investigating the cultural, social and environmental impact of different buildings in general. (C3)
c4. Achieving the standards and design foundations of different buildings (C5,C7,C9)
c5. Evaluate the architecture building to reach a successful architecture from function, strength and aesthetical point of views (C1, C2, C4).
c6. Prepare and present technical reports. (C5)
c7. Discuss research and formulate informed opinions in architectural context (C5,C6)
c8. Consider the impact of designs on maximizing the user's benefit within the building spaces. (C3)
c9. Practices self -learning and communicate effectively orally and in written form. (C8)

This course contributes in the following program competencies: C1, C2, C3, C4 , C5, C6, C7, C8, C9

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to architecture theories	2	1	-
2	Concepts of foundations and design standards - Explanation of **educational buildings**	2	1	-
3	Explanation of the design criteria for **parking buildings** (All kinds of buildings for different parking spaces)	2	1	-
4	Explanation of the design criteria for **cultural buildings**	2	1	-
5	Explanation of the design criteria for **office buildings**	2	1	-
6	Explanation of the design criteria for **theaters buildings**	2	1	-
7	(Mid-Term Exam)	2	1	-
8	Explanation of the design criteria for **healthy buildings**	2	1	-
9	Research: relevant architectural data and similar projects either International or local projects.	2	1	-
10	seminars	2	1	-
11	Researches Discussion	2	1	-
12	Explanation of the design criteria for **museums buildings**	2	1	-
13	Design standards for **Commercial buildings** with a presentation of similar projects and the appearance of defects and advantages	2	1	-
14	Explanation of the design criteria for **touristic buildings**	2	1	-
15	Displays a variety of buildings and shows their design concept, defects and advantages to benefit from them - Analyzing one project and showing the design concept with it.	2	1	
	Total hours	**30**	**15**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies								
	c1	c2	c3	c4	c5	c6	c7	c8	c9
Introduction to architecture theories	1	1	1	1	1			1	
Concepts of foundations and design standards - Explanation of **educational buildings**	1	1	1	1	1			1	
Explanation of the design criteria for **parking buildings** (All kinds of buildings for different parking spaces)	1	1	1	1	1			1	
Explanation of the design criteria for **cultural buildings**	1	1	1	1	1			1	
Explanation of the design criteria for **office buildings**	1	1	1	1	1			1	
Explanation of the design criteria for **theaters buildings**	1	1	1	1	1			1	
(Mid-Term Exam)	1	1	1	1	1			1	
Explanation of the design criteria for **healthy buildings**	1	1	1		1			1	
Research: relevant architectural data and similar projects either International or local projects.						1	1		1
seminars						1	1		1
Researches Discussion						1	1		1
Explanation of the design criteria for **museums buildings**	1	1	1	1	1			1	
Design standards for **Commercial buildings** with a presentation of similar projects and the appearance of defects and advantages	1	1	1	1	1			1	
Explanation of the design criteria for **touristic buildings**	1	1	1	1	1				
Displays a variety of buildings and shows their design concept, defects and advantages to benefit from them - Analyzing one project and showing the design concept with it.						1	1		1
Topics Covering Competences	11	11	11	11	11	4	4	11	4

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1												
c2	1	1	1	1				1			1				
c3	1		1	1				1		1	1	1	1		
c4	1	1	1	1				1		1	1	1	1		
c5	1	1	1	1				1		1	1	1	1		
c6		1	1		1		1	1	1					1	
c7		1	1		1		1	1	1					1	
c8	1	1	1	1				1		1	1	1	1		
c9		1	1		1		1	1	1					1	1
∑	6	8	9	5	3	0	3	8	3	4	5	4	3	3	1

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Assessment (Mid-Term Exam)		7th Week	20
Semester Work	Research	Two research per semester	20
	Quizzes	2 Quizzes	10
Final Project		fourteen weeks	10
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes

Handouts, Research papers and lectures will be given at appropriate time of the project progress depending on the studied project

7-2 Required books

7-3 Recommended books

- **التصميم المعمارى للأبنية التعليمية - سعيد على خطاب - دار الكتب العلمية – 2007-**
- **التصميم المعمارى للمستشفيات - سعيد على خطاب - دار الكتب العلمية – 2007**
- **المبانى التعليمية – ماجد خلوصي – 2005**
- modernity community -davide robon -thomas Hudson -2001

8 Jencks, C., (2000), "Architecture 2000 and Beyond", John Wiley & Sons Ltd, UK.

Edward, W., (1975), "A vocabulary of Architectural Forms", Architectural Media, USA

7-4 Periodicals, Web sites, etc

- Architectural record, Published monthly by the McGraw – Hill companies
- Al – Benaa Magazine, Published monthly by Medina Publishing Inc., Kingdom of Saudi Arabia.
- Electronic Pub. URL: www.greatbuildings.com

8- Facilities required for teaching and learning

- Appropriate teaching design studios including presentation board, data show, models, computer lab
- Lecture and exercise rooms equipped with projection and sound systems
- High speed, internet and communication facilities for distance learning.

Course coordinator: DR. MARWA ABBAS

Head of the Department: Associate Professor: Asamer Zakaria

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn212: Architecture Construction & Building Materials 2

A- Affiliations

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Architecture Construction & Building Materials 2 **Code:** ARCn212 **Level:** 2rd Fall

Credit Hours: 3 **Lectures:** 2 **Tutorial/Exercise:**3 **Practical:** -

Pre-requisite: ARCn211

C - Professional information

1 – Course Learning Objectives:

The course aims to shed light on finishing materials for floors and walls, as well as presenting non-traditional construction systems such as construction using prefabricated concrete and metal structures. This is after studying the structural elements and metal connections. Then the course aims to introduce the student to some construction problems such as cracking and the means of treating and maintaining them as a main approach that must be addressed.

2 – Competencies

c1. Introduce different options for construction and finishing materials. (C10).
c2. Explore some non-traditional construction methods. (C10).
c3. Introduce some construction problems with treatment and maintenance methods. (C1,C4,C13).
c4. Use engineering technologies as related to disciplines. (C4,C6).
c5. Explain the role of the architecture profession relative to the construction industry,(C12).
c6. Practice thinking in a creative and innovative way in problem solving and design. (C9,C10).
c7. Classify and compare the relationship of structure, building materials, and construction elements with design process. (C12,C13).
c8. Use quality assurance procedures and follow codes and standards for building construction and maintenance. (C4,C12).
c7. Use neat hand drawings to produce professional technical drawings. (C8, C10).
c8. Explain using appropriate construction techniques and materials to specify and implement different designs.(C12).
c9. Collaborate effectively within multidisciplinary team (C7, C8).
c10.Practice managing tasks and resources efficiently (C5,C9,C10).

This course contributes in the following program competencies: C1, C4, C5,C6,C7,C8,C9,C10,C12& C13

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to course - differentiations between building construction materials	2	2	-
2	Skeleton materials (timber, concrete, steel….)	2	2	-
3	Floor and Wall finishing materials	2	2	-
4	Pre-cast construction drawings and details	2	2	-
5	Steel Structure (Basic structural elements and connections)	2	2	-
6	Steel Structure (Building's construction using steel members)	2	2	-
7	➢ Mid-Term Exam	2	2	-
8	Vertical Elements (Steel Stairs – Elevators – Escalator)	2	2	-
9	Introduction to Working Drawing (plans)	2	2	-
10	Working Drawing (section)	2	2	-
11	Working Drawing (elevation)	2	2	-
12	Working Drawing (layout)	2	2	-
13	Concrete building cracks (types, causes, methods)	2	2	-
14	Building maintenance techniques treatment and cracks prevention	2	2	-
15	➢ Folder submission for a simple project	2	2	-
	Total hours	**30**	**30**	

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies									
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10
Introduction to course building construction materials	1	1			1					
Skeleton materials (timber, concrete, steel….)		1		1	1		1	1	1	
Pre-cast construction drawings and details		1		1	1		1			
Floor and Wall finishing materials	1				1		1		1	
Steel Structure		1		1	1		1	1	1	
Vertical Elements (Steel Stairs – Elevators – Escalator)				1	1	1	1	1		
Introduction to Working Drawing (plans)	1	1			1	1	1	1		
Working Drawing (section)	1				1	1	1			1
Working Drawing (elevation)	1				1	1	1			1
Working Drawing (layout).	1				1	1	1			1
Working Drawing (details)					1	1	1			1
Concrete building cracks (types, causes, methods)			1	1	1	1		1		
Building maintenance techniques treatment and cracks prevention			1	1		1		1		
Topics Covering Competences	6	5	2	6	12	8	10	6	3	4

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Assignment	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1			1			1	1			1				1
c2	1			1			1	1		1	1		1		
c3	1						1	1		1	1				
c4	1			1			1	1			1				1
c5	1			1			1	1		1	1		1		1
c6	1			1			1	1		1	1		1		1
c7	1			1				1		1	1		1		1
c8	1			1			1	1			1		1		1
c9	1						1	1			1				
c10	1			1			1	1		1	1		1		1
∑	10	-	--	8	-	-	9	10	-	6	10	-	6	-	7

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes - 6th Week, 11th Week	10
	Tutorials	Weekly Assignments	10
	Final project	Once per semester	20
Practical Exam		-	-
Written Exam		After fifteenth week (according to exam schedul)	40
Total			100

7- List of references:

7-1 Course notes: Pdf. lectures

7-2 Required books

Building Construction and Materials Lectures and Detailed sheets (Part 2) by Prof. Dr. Magdy Tammam

7-3 Recommended books:

- Mohamed Abd Allah , Building Construction &Building Technology, Anglo Library, Cairo 2002.
- W.B.McKay (vol.1), Building Construction.
- Mohamed Abd Allah , Building Construction &Building Technology, Anglo Library, Cairo 2011.
- Sami Hassid, Architectural Construction Details.
- Farouk Abas Heidar " Building Construction " 4th edition

7-4 Periodicals, Web sites, etc. None

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped wirh projection and sound systems.
- Computer, Data show.
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr Magdy Tammam
Head of the Department: Professor Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn215: Foundations

A- Affiliation

Relevant program/s:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Civil Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Foundations	**Code:** ARCn215		**Level:** 2nd, Sixth Semester (Spring)	
Credit Hours: 2	**Pre-requisite:** ARCN214			
Contact Hours:	**Lectures:** 2	**Tutorial:** 0	**Practical: 0**	**Total:** 2

C - Professional Information

1 – Course Learning Objectives:

The course aims to introduce students with some fundamental concepts in the study of soil mechanics and foundation throughout studying basic soil properties and its classification. It also includes soil compaction, stresses transfer in soil, and soil consolidation. It will also discuss lateral earth pressure, design of shallow footings, pile foundation, soil investigation, and finally how to determine and test the suitable type of foundation.

2 – Competences

c1 Student shall issue the Soil investigation. (C1, C4, C8)
c2 Principles of determining bearing capacity of soil. (C1, C5, C7)
c3 Basics of foundation design. (C7, C8, C13)
c4 The use of deep foundation. (C13, C12)
c5 Select the type of foundation to be used for building. (C15)
c6 Choose the most suitable way for soil classification. (C6, C9)
c7 Use the principles of Design-to-Design economical foundation. (C8, C16)
c8 Choose the suitable types of piles to be used. (C13, C19)
c9 Utilize the soil investigation report. (C3)
c10 Design different types of foundations. (C2, C3, C9)
c11 Check if the foundation can be safe or not. (C5, C7)
c12 Supervise foundation work in the site. (C7)
c13 Cooperate with other students. (C9)

This course contributes in the following program competencies: C1, C4, C5,C6,C7,C8,C9,C12,C13.C15.C16

3 – Contents			
Topic	Lecture hours	Tutorial hours	Practical hours
1 Introduction to Soil Mechanics	2	0	0
2 Soil Exploration	2	0	0
3 Soil classification	2	0	0
4 Physical properties of soil	2	0	0
5 Mechanical properties	2	0	0
6 Active soil pressure	2	0	0
7 Mid-Term Exam	0	0	0
8 Bearing Capacity of the types of soil Compaction of soil	2	0	0
9 Foundation introduction	2	0	0
10 Design of isolated square footing	2	0	0
11 Design of isolated rectangular footing	2	0	0
12 Design of combined footing	2	0	0
13 Design of raft foundation	2	0	0
14 Deep foundation	2	0	0
15 Deep foundation	2	0	0
Total hours	28	0	0

4 - Teaching and Learning and Assessment methods:

Competences	Teaching Methods					Learning Methods			Assessment Method				
	Lecture	Presentations and Movies	Discussions and seminars	Tutorials	Problem solving	Laboratory & Experiments	Researches and Reports	Modeling and Simulation	Written Exam	Practical Exam	Quizzes	Term papers	Assignments
c1	1						1		1		1	1	
c2	1			1					1		1	1	1
c3	1			1					1		1	1	1
c4	1			1									
c5	1			1	1		1		1		1		1
c6	1			1	1				1		1	1	1
c7	1			1	1								
c8	1			1	1								
c9	1	1		1	1				1	1	1	1	1
c10	1			1					1		1	1	1
c11	1		1	1	1		1	1				1	1
c12			1	1			1						1
c13			1				1						1
sum	11	1	3	11	6	0	5	1	7	1	7	7	9

5- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7-th Week	20
Semester Work	Quizzes	5 Quizzes (every 3 weeks)	15
	Reports	Two reports per semester	10
	Assignments	Weekly	15

Practical Exam	---	--
Written Exam	Sixteenth week	40
Total		100

6- List of references:

- Saran, S., (2017), "Shallow Foundations and Soil Constitutive Laws", CRC Press, USA.
- Radwan, A., (2010), "Fundamental of Soil Mechanics", Dar Elkotob, Cairo, Egypt.
- Muni, B., (2010), "Soil Mechanics and Foundations", Vol. 3, Wiley.

6-1 Course notes: Foundations.

6-2 Required books :Non

6-3 Recommended books: Non

6-4 Periodicals, Web sites, etc.

http://www.ACI.com.
https://www.ASCE.com.
https:// www.hbrc.edu.eg.

7- Facilities required for teaching and learning:

- Data show and Computer programs.

Course coordinator: Professor Adham El Alfy
Head of the Department: Asst Professor Asamer Zakria
Date: August,2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn216: Environmental Control

A- Affiliation

Relevant program:	Architecture Engineering and Production Technology BSc Program
Department offering the program:	Architecture Engineering and Production Technology Department
Department offering the course:	Architecture Engineering and Production Technology Department
Date of specifications approval:	August, 2020

B - Basic Information

Title: Environmental Control **Code:** ARCn216 **Level:** 2rd Spring

Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:**1 **Practical:** -

Pre-requisite: ARCn210

C - Professional information

1 – Course Learning Objectives:

By the end of this course, the students should have gained the planned competences (knowledge, skills and attitudes) related to basics of environmental performance of buildings deals with the definitions of environment and its elements such as: climate types, the climate levels ,impacts of climate change on the human, heat exchange for a person with the surrounding environment, thermal comfort and its standards and rates ,climate partitions, Egypt climatic regions, the structure of ,the design process from the environmental control perspective, the thermal behavior of buildings, solar design, the basics of natural ventilation of buildings, air movement inside and outside the building, natural lighting and architectural control elements and Building & sustainability

2 – Competencies

c1. Solving engineering problems according to the surrounding and user's needs. (C1, C2, C3,C4)
c2. Practice self-learning and communicate effectively orally and in written form. (C5, C8, C9,C10)
c3. Analyze, mathematically, the effect of the Basic of climate types according to buildings features. (C12, C13)
c4. compare between social needs of any community to achieve environmental buildings. (C12,C13)
c5 . design environmental buildings depend on wind movement, sun path, daylighting to can decrease the amount of energy used. (C6,C13,C14)
c6. analysis the environmental data to of each site to can increase the quality of interior environment. (C11,C14)
c7. Evaluate the site environmental problems to achieve thermal, visual and acoustic comfort. (C10,C13)

This course contributes in the following program competencies: C1, C2, C3, C4, C5,C6,C8, C9, C10, C12, C13, C14.

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction of Course content Environment type	2	1	0
2	Climate elements analysis	2	1	0
3	Climate types and buildings features	2	1	0
4	Solar radiation properties	2	1	0
5	Building interaction with solar gain	2	1	0
6	Building interaction with solar loss	2	1	0
7	Mid term			
8	Nature lighting and building features	2	1	0
9	wind movement analysis	2	1	0
10	Building properties interact with wind	2	1	0
11	Natural ventelation1	2	1	0
12	Natural ventelation2	2	1	0
13	Thermal comfort and climate needs	2	1	0
14	Designing environmental buildings in different issues	2	1	0
15	Final research	2	1	0
	Total hours	**28**	**14**	**0**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies												
	c1	c2	c3	c4	c5	c6	c7						
INTRODUCTION OF COURSE CONTEN		1											
Environment type		1		1									
Climate elements analysis		1		1		1	1						
Climate types and buildings features	1		1		1								
Solar radiation properties	1		1		1	1							
Building interaction with solar gain	1		1		1	1							
Building interaction with solar loss	1		1		1	1							
Nature lighting and building features	1				1	1							
wind movement analysis		1	1			1							
Natural ventelation1	1				1	1							
Natural ventelation2	1			1	1								
Thermal comfort and climate needs	1	1	1			1	1						
Designing environmental buildings in different issues	1	1	1			1	1						
Final research	1	1	1	1	1	1	1						
Topics Covering Competences	10	7	8	4	8	10	4						

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving		Researche, Reports &	Self-Learning	Modeling or Simulation	Written Exam	Tutorials		Quizzes	Research & Presentations	
c1				1	1					1	1		1		
c2	1	1	1	1			1	1	1	1				1	
c3				1	1			1		1	1		1		

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving		Researche, Reports &	Self-Learning	Modeling or Simulation	Written Exam	Tutorials		Quizzes	Research & Presentations	
c4	1	1	1					1		1				1	
c5	1	1	1				1	1		1	1		1	1	
c6	1	1	1				1	1	1	1				1	
c7	1	1	1					1	1	1				1	
∑	5	5	5	3	2		3	6	3	7	3		3	5	

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	3 Quizzes (one each 4 weeks)	5
	Reports/Research	Two paper report per semester One research per semester	5 20
	Tutorials	5 Assignments per semester	10
Written Exam		Sixteenth week	40
Total			100

7- List of references:

- العماره البيئيه" الدين سلقيني, دار قابس , بيروت(2004).
- "مصادر الطاقه و البيئه "محمد احمد السيد, دار الكتب العلميه, مصر(2009).
- "sustainable buildings and infrastructure",annie R. pearce,usa,routledge,(2012).
- "Green buildings pay design productivity and ecology "Brain w. Edwards, published by Routledge, new York(2013)
- "ZERO CARBON HOME,"A road map,(2012),", published by Routledge, USA2012)
- Archicture in aclimate of chang aguid to sustinabl,peter f. smith U.K,Great britaniam.
- Mary, J., (2015), "Architecture and Passive Design", Design Media Publishing Limited, UK.
- Moore, F., (1993), "Environmental Control (heating, cooling, lighting)", McGraw-Hill. Inc., USA.
- "المناخ وعمارة المناطق الحارة"،(2016) شفق الوكيل، مكتبة دار المعارف، القاهرة.

7-1 Course notes:

محاضرات التحكم البيئي, هبه محروس, الاكاديميه الحديثه للهندسه و التكنولوجيا

7-2 Required books

7-3 Recommended books:

- شفق الوكيل,(2016) , المناخ و عمارة المناطق الحارة",مكتبة دار المعارف.
- James Mary ,(2015),"ARCHITECTURE & PASSIVE DESIGN" , Published by Design Media Publishing Limited,.
- Steve V., (2014),"The Basic of Sustainable Design", Introduction to architectural science.
- Moore,F.,(1993), "Environmental Control (heating, cooling, lighting)",McGraw-Hill, Inc. U.S.A

7-4 Periodicals, Web sites, etc.-

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped wirh projection and sound systems.
- Data show
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr.Heba Mahrous Ali
Head of the Department: Dr Asamer Zakarea
Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn223: ARCHITECTURAL DESIGN 4

A- Affiliation

Relevant program: Architecture Engineering and Building Technology BSc Program
Department offering the program: Architecture Engineering and Building Technology Department
Department offering the course: Architecture Engineering and Building Technology Department
Date of specifications approval: August, 2020

B - Basic Information

Title: Architectural Design 4 **Code:** ARCn223 **Level:** 2nd Fall

Credit Hours: 3 **Lectures:**1 **Tutorial/Exercise:**6 **Practical:** -

Pre-requisite: ARCn222

C - Professional information

1 – Course Learning Objectives:

The course aims to continue with guiding and developing the students' abilities and talents while dealing with different building constructions, as a main constrain in modeling spaces and architectural forms. This was achieved throughout different applications, depending on the structural concept as a defining element for spaces and aesthetical architectural design, while fulfilling the functional and environmental needs. The practical application will be on a slightly complex public project with a structural and formal dimension

3 - Competencies

c1 – Identify the Fundamental engineering sciences relevant to architectural design practices (C1)
c2 – recognize the phases, methods and approaches to design process and the relationship between built forms, socio-economic and environmental parameters taking cultural context and environmental constraints in consideration (C3)
c3 - apply aesthetics and functionality, flexibility, adaptability, technology and humanity requirements in design (C3,C4)
c4 -Deduce grounded criteria and guidelines from a given design problems (C2)
c5 - Distill knowledge from precedent architectural design experiences (C2)
c6 - Integrate theoretical studies with practical reality in design (C2,C6)
c7 - compare, examine and assess the validity / feasibility of pre-set alternatives in design(C2,C3)
c8- Develop architectural and structural sense of scale and proportions (C1,C2)
c9 - create philosophical analogies and symbolic metaphors in architectural context (C11,C12)
c10 - producing architectural designs of various scales and levels of complexity that are functionally sound, environmentally appropriate, aesthetically plausible, users' friendly and technologically up to date. (C11,C12,C13)
c11- demonstrate new aspects of imaginative abilities and environmental sense in design process and respecting the constrains of the project (financial, social, regulations, environmental, conservation…etc) (C13,C14)
c12 - Improve creative problem-solving and decision-making in design process (C9,C11,C12)
c13 - Introduce professional 2Dand 3D drawings manually or using computer –aided design (8,11)
c14 - Promote investigation and exploration abilities in research work(C5)
c15 – Involve actively in-group discussions and mutual critiques(C7)
c16 - Improve communication skills with versatile backgrounds in field of architectural design (5,8)
c17 - Presenting seminars and public talks individually or in groups (C7,C8)
c18 – use properly new knowledge from different sources (libraries, books, periodicals, internet ...etc.)(C10)

This course contributes in the following program competencies: C1, C2, C3,C4, C5, C6, C7, C8, C9, C10, C11, C12 & C13, C14

3 – Contents

SN	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to the project: Exhibition with specific requirements (economic – environmental-social, Structure sys….etc)	1	6	-
2	Gathering data phase + site analysis	1	6	-
3	Design criteria of Exhibition buildings	1	6	-
4	Bubble diagram + zoning of elements	1	6	-
5	Developing zoning of elements – concept- plans(initial ideas)	1	6	-
6	Masses – model - Concept development- plans development	1	6	-
7	Assessment (midterm)	1	6	
8	Drawing plans (semi-final)	1	6	-
9	Solving design – problems in plan	1	6	-
10	Final plans	1	6	-
11	Drawing main sections	1	6	-
12	Drawing elevations (alternatives)	1	6	-
13	Formation development in elevations (final)	1	6	-
14	Drawing 3d perspectives or isometric	1	6	-
15	Final presentation of project + jury	1	6	-
		15	**90**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies																	
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15	c16	c17	c18
Introduction to the project: Exhibition with specific requirements	1	1			1													
Gathering data phase + site analysis	1	1			1									1	1	1	1	1
Design criteria of Ex bination buildings (case studies)	1	1	1	1	1									1	1	1	1	1
Bubble diagram + zoning of elements	1	1	1			1	1											
Developing zoning of elements – concept- plans(initial ideas)		1	1	1		1	1	1	1	1	1	1	1	1	1	1		1
Masses – model - Concept development- plans development		1	1	1		1		1	1	1	1	1	1		1	1		1
Drawing plans (semi final)						1		1	1	1	1	1	1					
Solving design – problems in plan				1			1			1	1	1	1		1	1		1
Final plans										1	1	1	1					
Drawing main sections		1	1	1		1	1	1	1	1	1	1	1					
Drawing elevations(alternatives)				1		1	1	1	1	1	1	1	1		1	1		1
Formation development in elevations (final)			1							1	1	1	1					1
Drawing 3d perspectives or isometric	1	1						1		1	1	1	1					1
Final presentation of project + jury										1	1	1	1		1	1	1	1
Topics Covering Competences	5	8	6	6	3	6	5	5	5	10	10	10	10	3	7	7	3	9

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	final Project
c1	1	1	1	1			1	1						1	1
c2	1	1	1				1	1						1	1
c3	1	1		1			1	1		1				1	1
c4		1	1				1	1		1				1	1
c5		1	1					1		1				1	1
c6	1	1	1					1		1				1	1
c7	1	1	1	1						1				1	
c8	1	1	1	1			1	1		1				1	1
c9	1	1	1	1			1	1		1				1	1
c10	1	1	1	1			1	1	1	1				1	1
c11	1	1	1	1				1	1	1				1	1
c12		1	1					1		1				1	1
c13	1	1						1	1	1				1	1
c14			1				1	1						1	
c15	1		1					1						1	
c16		1	1				1	1						1	
c17		1	1				1	1						1	
c18	1	1	1				1	1						1	1
∑	12	16	16	7			11	17	3	11				18	13

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	sketches	weekly	20
	Reports/Research	One research	10
	Final project	At the end of semester	10
Written Exam		Depending on the exams schedule	40
Total			100

7- List of references:

7-1 Course notes: lecture notes & handouts

7-2 Required books

- Lockard, M. S., (2017), "The Nature of Design: Principles, Processes and the Preview of the Architect", ORO Editions, USA.
- Boswell, C. K., (2013), "Exterior Building Enclosures: Design Process and Composition for Innovative Facades", Wiley Publishing, USA.
- Steele, J., (2001), "Architecture Today", Second Edition, Phaeton Press Limited, London, UK.
- **sam kuppa, (2012), "handbook of green building design &cars",ph,USA**
- **annie R. pearce,(2012)," sustainable buildings and infrastructure",routledge,USA**
- **علي رافت ،2003"ثلاثيه لابداع المعماري (الابداع الانشائي) "، انتركونسلت ,القاهرة**
- Clemens,(2013)," "exhibtion halls constuction design manuall",dom,Belrin

7-3 Recommended books: None

7-4 Periodicals, Web sites, etc.

- https://youtu.be/BN9_dlggit8
- https://youtu.be/xutlbOKIPDI
- https://youtu.be/TIKN9hmytes
- https://youtu.be/NBtYOCO2vS4
- https://youtu.be/se08QA-Ho-A
- https://youtu.be/d13Id2UytuY
- www.archdaily.com

8- Facilities required for teaching and learning:

- Computer Labs.
- Maquettes Lab
- Lecture and drawing halls equipped wirh boards, data show and sound systems.
- High speed internet and communication facilitits for distance learning.

Course coordinator: Dr.Asamer Zakaria
Head of the Department: Dr.Asamer Zakaria
Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn225: Visual Training (2)

A- Affiliation

Relevant program: Architecture Engineering and Production Technology BSc Program
Department offering the program: Architecture Engineering and Production Technology Department
Department offering the course: Architecture Engineering and Production Technology Department
Date of specifications approval: August 2020

B - Basic Information

Title: Visual Training (2) **Code:** ARCn225 **Level:** 2rd Fall
Credit Hours: 2 **Lectures:** 1 **Tutorial/Exercise:**3 **Practical: -**
Pre-requisite: ARCn123

C - Professional information

1 – Course Learning Objectives:

. The course aims at improving students' freehand skills and aesthetic sense using different types of presentations, using different types of colors in presenting visual concepts, and architectural projects.

2 – Competencies

c1. Different color theories and philosophy of color (C5) (C11).
c2. The coloring techniques in architectural presentation (C15) (C5).
c3. different elements of presentation of architectural projects (C2) (C11).
c4. Think systematically along the design process, and its color scheme, propose alternative solutions(C2) (C13).
c5. Integrate theoretical studies of colors with practical reality and select the best color scheme for architectural projects (C9).
c6. Develop visual sensitivity towards materials, colors and textures (C9)(C10).
c7. Practice techniques of manual presentation using different tools and media (C6) (C8).
c8. Introduce professional 2D drawings and 3D perspective views with full presentation of colors shades and shadow(C13) (C15).
c9. Communicate effectively and acquire entrepreneurial skills.(C9)(C10)(C7).

This course contributes in the following program competencies: C2, C5, C6, C7, C8, C9, C10, C11,& C13

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction of color as phenomena, color symbol, properties, and psychology of color effect	1	3	-
2	Painting circle of (3)basic color (6 -12)	1	3	-
3	color theory of Ostwald and coloring techniques	1	3	-
4	color notation (Mansell theory) and coloring techniques	1	3	-
5	Color value and Grey scale	1	3	-
6	Intensity of color (chrome) Cool & warm colors	1	3	-
7	Mid –Term Exam	-	-	-
8	Combining & contrasting colors	1	3	-
9	Harmony & disharmony of colors	1	3	-
10	Drawing architectural water colors project and manual presentation	1	3	-
11	water colors in presenting layout and plans	1	3	-
12	water colors in presenting elevations	1	3	-
13	water colors in presenting Perspective	1	3	-
14	Final Project discussion and submission	1	3	-
15	One Day Project (Mini Project)	1	3	-
	Total hours	**14**	**42**	**-**

4. Course content/Course Competencies mapping matrix

Topic	C2	C5	C6	C7	C8	C9	C10	C11	C13
Introduction of color as phenomena, color symbol, properties, and psychology of color effect	1	1							
Painting circle of (3)basic color (6 -12)	1						1	1	
. color theory of Ostwald and coloring techniques			1	1		1		1	
color notation (Mansell theory) and coloring techniques			1	1	1	1		1	1
Color value and Grey scale		1			1			1	1
Intensity of color (chrome) Cool & warm colors		1						1	1
Combining & contrasting colors									
Harmony & disharmony of colors								1	1
Drawing architectural water colors project and manual presentation						1		1	1
water colors in presenting layout and plans						1		1	1
water colors in presenting elevations						1		1	1
water colors in presenting Perspective						1		1	
Final Project discussion and submission								1	
One Day Project (Mini Project)						1		1	1
Topics Covering Competences	2	3	2	2	2	8	2	13	9

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1			1				1		1	1		1		
c2	1							1		1	1				

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c3	1			1				1		1	1		1		
c4	1			1				1		1	1				
c5	1			1				1		1	1		1		
c6	1			1	1			1		1	1		1		
c7	1			1				1		1	1				
c8	1			1				1		1	1				1
c9	1			1				1		1	1		1		1
∑	9			8	1			9		9	11		5		2

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes - 6th Week, 11th Week	5
	Tutorials	Weekly Assignments	30
	Final project	Once per semester	5
Practical Exam		-	
Written Exam		After fifteenth week (according to exam schedule)	40
Total			100

7- List of references:

7-1 Course notes: Pdf lectures

7-2 Required books

Dr. Amira Mostafa. Visual Training (2). Modern Academy Handbook ,2019

7-3 Recommended books:

- **1-David Roth, B & Q understanding colors at home, Thames & Hudson,1991**
- **2- 1997 – د.محمد عبدالله – الاظهار المعمارى – الانجلو المصريه**
- **3- 1987 - ربيع الحرستانى – الاظهار المعمارى واللون – دار القابس بيروت**

7-4 Periodicals, Web sites, etc. None

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped with projection and sound systems.
- Computer, Data show.
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr Amira Mostafa
Head of the Department: Professor Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn241: History of Architecture 2

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: History of Architecture 2 **Code:** ARCn241 **Level:** 2-
Credit Hours: 3 **Lectures:** 2 **Tutorial/Exercise:**1 **Practical:** -
Pre-requisite: ARCn141

C - Professional information

1 – Course Learning Objectives:

The course aims to increase the student's historical background throughout explaining the formation and evolvement of buildings and architectural and artistic elements in the world from the first century AD to the thirteenth century AD.

. The course discusses different periods starting with early Christianity, passing by The Byzantine Empire, then the medieval period, the Romanesque style, and the Gothic style in Europe, in addition to illustrating its effect in Egypt and the world. Students also study selected examples of religious, civic, and residential buildings in chronological order while continue with developing their criticizing and analyzing skills by making sketches for some buildings and their distinguished elements.

2 - Competencies

c1. Identify, formulate the relationship between the development of the ecological sittings (socio-culture, technological and physical factors in different societies) and development architecture (C1, C2)
c2. Identify, formulate the main features of Early Christianity reign, as well recognize the art schools and its pioneers in 19th and 20th century (C1, C2)
c3. Criticize objectively the architectural forms and styles and understanding the influences, which oriented guide them, studying how to produce 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. (C3, C11).
c4. 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 (C12).
c5. 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. (C3, C11).
c6. Identify the development process of architecture within its historical context. (C3).
c7. Utilize contemporary technologies, codes of practice and standards to expand and correct their artistic and design experiences. (C4)
c8. Development of architectural forms and styles. (C3).
c9. Improve evaluation skills of architectural forms and recognize the different forces which guide it. (C8)
c10. Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams (C7)
c11. Use creative, innovative tools to present work documentation in written and oral form. (C9)

This course contributes in the following program competencies: C1, C2, C3, C4, C7, C8, C9 , C11,C12

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	1. General introduction for the course	2	1	-
2	2. Christian age	2	1	-
3	3. Christian age	2	1	-
4	4. Coptic architecture	2	1	-
5	5. Byzantine architecture	2	1	-
6	6. Byzantine architecture	2	1	-
7	7. Mid-Term Exam	2	1	-
8	8. Romanesque architecture	2	1	-
9	9. Gothic style in France	2	1	-
10	10. Gothic style in Italy	2	1	-
11	11. Gothic style in Europe	2	1	-
12	12. Digital Presentation of the Final Researches: 13. (Jury) : *Staff's Criticism / Evaluation for each Student*	2	1	-
13	14. Digital Presentation of the Final Researches:	2	1	-
14	15. (Jury) : *Staff's Criticism / Evaluation for each Student*	2	1	-
15	16. General introduction for the course	2	1	-
	Total hours	**30**	**15**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies										
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11
General introduction for the course	1	1	1	1	1	1	1	1			
Christian age	1	1	1	1	1	1	1	1			
Christian age	1	1	1	1	1	1	1	1			
Coptic architecture	1	1	1	1	1	1	1	1			
Byzantine architecture	1	1	1	1	1	1	1	1			
. Byzantine style in church design	1	1	1	1	1	1	1	1			
Romanesque architecture	1	1	1	1	1	1	1	1			
Gothic style in France	1	1	1	1	1	1	1	1			
Gothic style in Italy	1	1	1	1	1	1	1	1			
Site Visit							1	1	1	1	1
Gothic style in Europe	1	1	1	1	1	1	1	1			
Digital Presentation of the Final Researches: (Jury) : Staff's Criticism / Evaluation for each Student	1	1	1	1	1	1	1	1			
Research									1	1	1
Individual presentation.									1	1	1
Topics Covering Competences	11	11	11	11	11	11	12	12	3	3	3

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1				1	1		1			1		
c2	1	1	1				1	1		1			1		
c3	1	1	1	1			1	1		1	1		1		
c4	1	1	1	1			1	1		1	1		1		
c5	1	1	1	1			1	1		1	1		1		
c6	1	1	1	1			1	1		1	1		1		
c7	1	1	1	1			1	1		1	1		1		
c8	1	1	1	1			1	1		1	1		1		
c9	1	1	1				1							1	
c10	1	1	1				1	1						1	
c11	1	1	1				1	1						1	
∑	11	11	11	6	0	0	11	10	0	8	6	0	8	3	

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes (one each 3 weeks)	10
	Reports/Research	2 researchs per semester	10
	Tutorials	2 Assignments per semester	10
	Mini project	-	-
Final research& Presentation		Fifteenth week	10
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes :**non**

7-2 Required books

Reham Ibrahem momtaz – 2009

7-3 Recommended books: None

8 Koch, G., (2012), “Early Christian Art and Architecture”, Hymns Ancient & Modern Ltd, UK.

9 Gllancy, J., (2002), “The Story of Architecture”, D.K. Publishing, NY, USA.

Mcnutt, S., (1997), “Church & Cathedrals Masterpieces of Architecture”, Smithmark Publishers, New York, USA.

7-4 Periodicals, Web sites, etc.

- Progressive Architecture
- www.Greatbuilgings.com
- www.Archinform.com

8- Facilities required for teaching and learning:

- Blackboard / whiteboard & chalk.
- Listing methods.
- Books, scientific references, specific internet sites.
- Data show High speed internet and communication facilitits for distance learning.

Course coordinator: Faten salah soliman

Head of the Department: Associate Professor: Asamer Zakaria

Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
GENn341: Project Management

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August, 2020

B - Basic Information

Title: Project Management **Code:** GENN341 **Level:** 3rd Fall
Credit Hours:2 **Lectures:** 2 **Tutorial/Exercise:**0 **Practical:** 0
Pre-requisite: -

C - Professional information

1 – Course Learning Objectives:

By the end of this course, the students should have gained the planned competences (knowledge, skills and attitudes) related to the construction project management and its basic fundamentals. The course aims to discuss the basic principles and various steps, techniques and skills required for projects management. This is achieved throughout studying the management systems and their implementation in regard to planning, organizing, supervising, developing and coordinating of the project, while considering its different goals. It also includes studying the quality control, time management, labors, costs, risk control and reasons of delay, in addition to evaluating the project management systems, their efficiency and computer use in project management.

2 - Competencies

c1-Knowledge of Construction project and project management definitions (C3,C4,C15)
c2-Knowing the different Managerial levels and involved parties (C3)
c3- Knowing the project management main objectives and knowledge area (C4)
c4-Knowledge of the construction project main and sub phases and life span (C3,C6)
c5-The ability to use the cost estimating methods (C1,C3)
c6-the ability to use the different planning techniques (C2,C3,C6)
c7- WBS creation in construction projects (C2,C3,C6,C9,C13)
c8-Have the ability to use the Managerial computer software's such as MS project (C2,C3,C6)
c9- Creating a complete time plan for construction projects (C1,C6,C10)
c10-Knowing the project management history and the theories development across the time (C11)
c11- Knowing the scientific research basics and fundamentals and Write technical reports and prepare convenient presentations (C5)

This course contributes in the following program competencies: C1, C2, C3, C4, C5, C6, C9, C10, C11, C13 & C15

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	1. Project management history and definitions	2		
2	2. Project management Knowledge Area 1	2		
3	3. Project management Knowledge Area 2	2		
4	4. Quiz 1	2		
5	5. Construction Project Planning	2		
6	6. Cost & resources management	2		
7	7. Mid term	2		
8	8. Project Planning Techniques 1	2		
9	9. Project Planning Techniques 2	2		
10	10. Project Planning Techniques 3	2		
11	11. Resources leveling and crashing	2		
12	12. Microsoft project introduction	2		
13	13. Microsoft project Practice	2		
14	14. Project Discussion	2		
15	15. Quiz 2 and open discussion	2		
	Total hours	**30**		

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies										
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11
Project management history and definitions	1									1	1
Project management Knowledge Area		1	1	1							
Construction Project Planning		1	1	1	1	1	1	1	1		
Cost & resources management					1	1	1				
Project Planning Techniques						1	1	1	1		
Resources leveling and crashing						1	1	1	1		
Microsoft project introduction								1	1		
Microsoft project Practice								1	1		
Project Discussion					1			1	1		1
Topics Covering Competences	1	2	2	2	3	5	4	6	6	1	2

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1							1			1		
c2	1	1	1							1			1		
c3	1	1	1							1			1		
c4	1	1	1							1			1		
c5	1	1	1							1			1		
c6	1	1	1		1					1			1		
c7	1	1	1					1	1	1			1		1
c8	1	1	1	1						1			1		1
c9	1	1	1					1	1	1			1		1
c10	1	1	1		1					1			1		
c11	1	1	1				1	1	1	1			1	1	1
∑	11	11	11	1	3	0	1	3	3	11	0	0	11	1	4

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	3 Quizzes (one each 4 weeks)	12
	Reports/Research	Two reports per semester	8
	Mini project	Once per semester	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: Construction Project Management Notes

7-2 Required books: None

7-3 Recommended books:

‘‘A Guide to the project management body of knowledge”, Project management Institute, 2000 Edition, Newtown square, Pennsylvania, USA.

MCGraw Hill, (2006), " PMP Project Management Professional", McGraw Hill Professional Publisher

ادارة مشروعات التشييد

7-4 Periodicals, Web sites, etc.

URL: http://corasystems.com/blog/2012/03/01/work-breakdown-structure-inproject-management/sebtember 2013, Accessed in September, 2019.

URL: http://www.chambers.com.au/glossary/precedence_diagram.php, Accessed in january. 2018.

URL: http://www.jiscinfonet.ac.uk/infokits/projectmanagement/ planning/scheduling/accessed, Accessed in june, 2020.

URL: http://www.successful-project-management.com/project-managementcommunication.html. Accessed in September 2019

URL: http://www.wisegeek.com/what-is-quality-assurance.htm. Accessed in may, 2019

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped with projection and sound systems.
- Computer, Data show and Computer program MS project
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr. Moutaz Elbaz
Head of the Department: Dr. Asamer Zakaria
Date: August, 2020

Modern Academy for Engineering and Technology

Course Specification
ARCn 260: Architecture Training (1)

A- Affiliation

Relevant program:	**Architecture Engineering and Building Technology BSc Program**
Department offering the program:	**Architecture Engineering and Building Technology**
Department offering the course:	**Architecture Engineering and Building Technology**
Date of specifications approval:	**August 2021**

B - Basic information

Title: Architecture Training	**Code: ARCN 260**	**level:Junior -Level 2 –Summer**
Credit Hours:0	**Lectures: --**	**Tutorial/Exercise: -**
	Pre-requisite :ARCn 211 – ARCn 160+ 66 Credit Hours.	

C - **Professional information**

1 – **Course Learning Objectives:**

By the end of this course, the students should have gained the planned competences (knowledge, skills and attitudes) related to the construction and operation in site and practical capabilities by practicing. in one of the national construction companies and learning computer skills such as Primavera Program Level (1), Site Visit. .

2 - Competencies

C1, ANALYZE AND INTERPRET DATA, ASSESS AND EVALUATE FINDINGS, AND USE STATISTICAL ANALYSES AND OBJECTIVE ENGINEERING JUDGMENT TO DRAW CONCLUSION. (C2)

C2- MONITOR IMPLEMENTATION OF ENGINEERING PROJECTS, TAKING INTO CONSIDERATION OTHER TRADES REQUIREMENTS(C6)

C3- INTEGRATE PLANS INTO OVERALL PLANNING WITHIN THE CONSTRAINTS OF PROJECT FINANCING, PROJECT MANAGEMENT, COST CONTROL AND METHODS(C13)

C4- PREPARE DESIGN PROJECT BRIEFS AND DOCUMENTS, AND UNDERSTAND THE CONTEXT OF THE ARCHITECT IN THE CONSTRUCTION INDUSTRY(C15)

Competencias: C2.C6, C13,C15

3 – **Contents**

	Topic	Lecture hours	Tutorial hours	Practical hours
1	Computer Skills (CAD –REVIT -3D MAX ……)	-	-	20
3	Project management	-	-	10
4	Site Visit	-	-	30
	Total hours	**-**	**-**	**60**

4 - Teaching and Learning and Assessment methods:

Course Output		Teaching Methods										Learning Methods				Assessment Method				
		Lectures	Presentations and Movies	Discussions	Tutorials/Sketches	Practical and Laboratory	Problem solving	Brain storming	Projects	3-D Modeling	Playing	Researches and Reports	Modeling and Simulation	Site Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Researches and Reports
	c1	1		1				1				1		1				1		1
	c2	1		1										1				1		1
	c3	1		1				1				1	1							
	c4	1		1				1				1						1		**1**

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (%)	Grade (Degrees)
Semester Work: assignments, Research	Bi-Weekly	60%	60
Final Report	Fourth week	20%	20
Oral Test	Fourth week	20%	20
Total Pass /Fail		100%	100

6- FACILITIES REQUIRED FOR TEACHING AND LEARNING:

White boards and markers.

Well-equipped space for lectures and digital presentation.

Site visits

Course coordinator: Dr. Nahed Omran

Head of the Department: Associate Professor Asamer Zakaria

Date: August 202**0**

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn310: Technical Installations in Buildings (1)

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Technical Installations in Buildings (1)	**Code: ARCn310**	**Level:** 3rd Fall	
Credit Hours: 2	**Lectures:** 1	**Tutorial/Exercise:** 3	**Practical:** -
	Pre-requisite: -		

C - Professional information

1 – Course Learning Objectives:

The course aims to introduce several definitions and essential basics related to Industrial Control and Technical Installation in Buildings in the fields of air conditioning and lighting. The course aims to provides students with the required understanding of the basics calculations needed to achieve thermal comfort in buildings and the design of HVAC systems. It also aims to gain the student knowledge about visual mechanisms, sources, design and calculations of artificial lighting.

2 – Competencies

c1. Identify thermal comfort and ventilation requirements in buildings. (C12, C13)
c2. Calculate cooling requirements and air conditioning capacities in buildings. (C1, C12, C13)
c3. Classify and compare between different mechanical and natural ventilation, heating and cooling systems in buildings. (C4, C11, C12)
c4. Identify the principles and characteristics of light as a phenomenon. (C11, C12)
c5. Calculate lighting requirements for various spaces. (C1, C12, C13)
c6. Design taking into consideration daylighting and artificial lighting. (C2, C3, C4, C11, C12)
c7. Practice self-learning and communicate effectively orally and in written form. (C8, C11)
c8. Collaborate effectively within multidisciplinary team. (C1, C7, C8, C11, C13)

This course contributes in the following program competencies: C1, C2, C3, C4, C7, C8, C11, C12 & C13

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to the Course – Nature and Characteristics of Light.	1	3	-
2	Daylighting Design Principles – Applications of Daylighting I.	1	3	-
3	Applications of Daylighting II.	1	3	-
4	Indoor Natural Lighting Design, Calculations and Management.	1	3	-
5	Introduction to Artificial Lighting, Lumens, Lamps and Luminaries.	1	3	-
6	Applications of Artificial Lighting.	1	3	-
7	Artificial Lighting Design, Calculations and Management.	1	3	-
8	Mid-Term Assessment.	1	3	-
9	Nature and Characteristics of Heat.	1	3	-
10	Climate, Thermal Comfort, and Ventilation.	1	3	-
11	Design Strategies for Achieving Thermal Comfort and Low-energy Approaches	1	3	-
12	Heat Transfer Calculations in Buildings	1	3	-
13	Cooling Loads Calculations in Buildings	1	3	-
14	Mechanical Heating, ventilation, and air conditioning systems in Buildings.	1	3	-
15	Final Research Presentation.	1	3	
	Total hours	**15**	**45**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies							
	c1	c2	c3	c4	c5	c6	c7	c8
Nature and Characteristics of Light.				1				
Daylighting Design Principles.				1		1		
Applications of Daylighting.						1	1	
Indoor Natural Lighting Design, Calculations and Management.					1	1		
Introduction to Artificial Lighting, Lumens, Lamps and Luminaries.						1		
Applications of Artificial Lighting.						1	1	1
Artificial Lighting Design, Calculations and Management.					1	1		1
Nature and Characteristics of Heat.	1							
Climate, Thermal Comfort, and Ventilation.	1							
Design Strategies for Achieving Thermal Comfort and Low-energy Approaches			1				1	1
Heat Transfer Calculations in Buildings		1						1
Cooling Loads Calculations in Buildings		1						1
Mechanical Heating, ventilation, and air conditioning systems in Buildings.			1				1	
Topics Covering Competences	2	2	2	2	2	6	4	5

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research and Reports	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Assignments	Research & Presentations	Mini Project Report
c1	1		1							1					
c2	1			1	1					1			1	1	
c3	1	1	1	1				1		1			1	1	
c4	1		1							1					

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research and Reports	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Assignments	Research & Presentations	Mini Project Report
c5	1			1	1					1			1	1	
c6	1	1	1	1				1		1			1	1	
c7								1		1			1	1	
c8								1						1	
∑	6	2	4	4	2	-	-	4	-	7	-	-	5	6	

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Research	Two Research per Semester	20
	Assignment	Weekly	20
Written Exam		Sixteenth Week	40
Total			100

7- List of references:

7-1 Course notes: Pdf Lectures

7-2 Required books

- Mcmullan, R., (2016), "Environmental science in Building", 7th edition, Ashford Colour Press Ltd, Palgrave.
- Lechner, N., (2015), "Heating, Cooling, Lighting – Sustainable Methods for Architects", 4th edition, John Wiley & Sons, Inc., Hoboken, New Jersey, USA.
- Yee, R. (2007). Lighting Spaces. Visual Reference Publications.

7-3 Recommended books : None

7-4 Periodicals, Web sites, etc : None

8- Facilities required for teaching and learning

- White board
- overhead projector / Data Show
- Audio Video facilities: Video, T.V, P.C
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr. Mohamed Mahmoud, Dr. Sayed Abdul-khalik

Head of the Department: Associate Professor: Asamer Zakaria

Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn312: Working Drawing & Construction Methods (1)

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Working Drawing & Construction Methods (1) **Code:** ARCn312 **Level:** 3rd Fall

Credit Hours: 3 **Lectures:** 2 **Tutorial/Exercise:**3 **Practical:** -

Pre-requisite: ARCn212

C - Professional information

1 – Course Learning Objectives:

By the end of this course, students will have the ability to manipulate working drawings of buildings of varying sizes and turn an initial design project into executable drawings with a range of standard specifications and dimensions applied to different architectural plans, sections, and elevations. The student also learns how to identify elements such as concrete stairs and openings (doors and windows) in separate detail drawings.

2 – Competencies

c1. Analyze solving technical problems related to various structural systems (C1,C4)
c2. Explain the role of the working drawings relative to the construction industry and the overlapping interests of organizations representing the built environment. (C3,C12).
c3. Prepare technical and professional drawings using engineering standards. (C3,C4)
c4. Classify and compare the relationship of structure, building materials, and construction elements with design process. (C13,C14).
c5. Read the standard symbols and prepare reports of materials and technological methods used in buildings. (C10,C14).
c6. Use quality assurance procedures and follow codes and standards. (C4).
c7. Use experimental facilities to produce professional workshop and technical drawings using traditional drawing and computer aided drawings' techniques. (C4,C8,C10).
c8. Practice thinking in a creative and innovative way in problem solving and design. (C9,C10).
c9. Collaborate effectively within multidisciplinary team (C7,C8,C9).
c10.Practice managing tasks and resources efficiently(C6,C9).

This course contributes in the following program competencies: C1, C3,C4, C6,C7,C8,C9,C10,C12,C13 &C14

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Concrete Structure Systems	2	3	-
2	**Introduction to working drawing -** Floor plans (Ground floor plans) Lecture discusses basic information in how to delineate lengths, thicknesses, and character of the outside walls and inside partitions at the floor level. It also shows how to mark out the axis, dimensions, widths and locations of doors and windows, and other utility features	2	3	-
3	Floor plans (Ground floor plans). finishing materials & specifications- . and Typical floor plans	2	3	-
4	Floor plans Basement plans	2	3	-
5	Site plan (Layout) – **soft scape** - (Lecture discuss the essential data for laying out the building considering any contours, boundaries, roads, utilities, trees, structures, and any other significant physical features on or near the construction site.)	2	3	-
6	Site plan (Layout)- **hard scape -** (Lecture discuss the essential data for laying out the building considering any contours, boundaries, roads, utilities, trees, structures, and any other significant physical features on or near the construction site.)	2	3	-
7	➢ Mid-Term Exam	2	3	-
8	Elevations (Lecture discusses how to draw the front, rear, and sides of a structure, as they would appear projected on vertical planes in order to give a working idea of the appearance and overall shape and finishes of the structure)	2	3	-
9	Sections (Lecture discusses how a structure looks when cut vertically by a cutting plane, providing important information about construction systems, heights, levels and materials used.)	2	3	-
10	Stairs – (Concrete Stairs Plans & Sections)	2	3	-
11	Stairs – (Steel Stairs)	2	3	-
12	Openings – (Windows & doors) types and schedules	2	3	-
13	Pre-Final Project submission and discussion.	2	3	-
14	Final Project discussion and submission	2	3	-
15	Revision	2	3	-
	Total hours	**30**	**45**	

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies									
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10
Concrete Structure Systems	1			1				1		
Introduction to working drawing - Floor plans (Ground floor plans) Lecture discusses basic information in how to delineate lengths, thicknesses, and character of the outside walls and inside partitions at the floor level. It also shows how to mark out the axis, dimensions, widths and locations of doors and windows, and other utility features	1	1	1	1	1		1	1		1
Floor plans (Ground floor plans). finishing materials & specifications- . and Typical floor plans	1	1	1	1	1		1	1		1
Floor plans (Ground floor plans) finishing materials & specifications	1	1	1	1	1		1	1		1
Floor plans Basement plans	1	1	1	1	1	1	1	1		1
Site plan (Layout) – **soft scape** - (Lecture discuss the essential data for laying out the building considering any contours, boundaries,		1	1	1	1		1	1	1	1

Topic	Course Competencies									
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10
roads, utilities, trees, structures, and any other significant physical features on or near the construction site.)										
Site plan (Layout)- **hard scape -** (Lecture discuss the essential data for laying out the building considering any contours, boundaries, roads, utilities, trees, structures, and any other significant physical features on or near the construction site.)		1	1	1	1		1	1	1	1
Elevations (Lecture discusses how to draw the front, rear, and sides of a structure, as they would appear projected on vertical planes in order to give a working idea of the appearance and overall shape and finishes of the structure)		1	1	1	1		1			1
Sections (Lecture discusses how a structure looks when cut vertically by a cutting plane, providing important information about construction systems, heights, levels and materials used.)		1	1	1	1		1			1
Stairs – (Concrete Stairs Plans & Sections					1	1	1		1	1
Stairs – (Steel Stairs).					1		1		1	1
Openings – (Windows & doors) types and schedules					1		1		1	1
Topics Covering Competences	5	8	8	9	11	2	11	7	5	11

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & experiments	Researche, Reports & Assignments	Self-Learning	Modeling and Simulation	Written Exam	Tutorials Assignments	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1			1			1	1		1	1		1		1
c2	1			1			1	1			1				1
c3	1			1			1	1		1	1		1		1
c4	1			1			1	**1**	1	1	1		1		1
c5	1			1			1	1		1	1				1
c6	1			1			1	1			1				1
c7	1			1			1	1	1	1	1				1
c8	1			1			1	1	1		1				1
c9	1	1	1	1			1	1			1				
c10	1	1	1	1			1	1		1	1				
∑	10	2	2	10	-	-	10	10	3	6	10	-	3	-	8

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes - 6th Week, 11th Week	10
	Tutorials	Weekly Assignments	10
	Final project	Once per semester	20
Practical Exam		-	-
Written Exam		After fifteenth week (according to exam schedul)	40
Total			100

7- List of references:

7-1 Course notes: Pdf. lectures

7-2 Required books

د.عزه جمال حجاج, د. شيماء حسن " الرسومات التنفيذية وطرق الانشاء" مذكرات الأكاديمية الحديثة للهندسة والتكنولوجيا – (2017)

7-3 Recommended books: None

- Kaliel Walked, Design of reinforced concreate stairs , Dar Elkotob, 1998.
- Ching, F., (2001) Building Construction Illustrated, 3rd Ed. John Willy & Sons Publishing Inc., New York, 2001
- McKay, W.B., (1971) Building Construction, 5th Ed. Longmans.
- Alexander, Metal building system design & specification, Graw hill,2015.
- Paul barto, Detail in contemporary stair design, King,2014.

محمد عبد الله, انشاء المباني وتكنولوجيا المباني , مطبعة محمد كريم , 1996.

محمد أحمد عبد الله , الرسومات التنفيذية والتفاصيل المعمارية , كتبة الأنجلو المصرية , 1989.

7-4 Periodicals, Web sites, etc. Non

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped with projection and sound systems.
- Computer, Data show.
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr Azza Gamal Haggag
Head of the Department: Professor Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn321: Architectural Design (5)

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Architectural Design (5) **Code: ARCn321** **Level:** 3rd Fall

Credit Hours: 3 **Lectures:** 1 **Tutorial/Exercise:** 6 **Practical:** -

Pre-requisite: ARCn223

C - Professional information

1 – Course Learning Objectives:

The course aims to continue with studying the design principles of public buildings with mixed programs throughout following the steps of the scientific approach in design (BASDAC). It involves conducting various analytical studies for the project including environmental, site analysis, uses, structure system, interior and exterior spaces, etc. The practical application will be on complex public project with various structural systems and many masses, while studying the landscape and site organizing elements in between them.

2 - Competencies

c1. Classify and compare Principles of architectural design, human dimensions as a prime determinant of the scale, proportions, and spatial arrangement of a building spaces. (C13)
c2. Use of various structural systems and its role in the design product. (C11,C14).
c3. Analyze Principles of environmental and contextual forces that influence how we might situate a building, layout, and orient its spaces, articulate its enclosure, and establish its relation to the landscape. (C11).
c4. Calculate and analyze of exchange and assess different ideas, views and knowledge from given architectural designs and projects. (C11, C15).
c5. Integrate relationship of appropriate structural solutions into the design process. (C11).
c6. Use appropriate construction and structural techniques to achieve creative designs. (C11).
c7. Collaborate effectively within multidisciplinary team. (C5,C7,C9).
c8. Consider the impact of designs on the environmental protection. (C3).
c9. Practice self-learning and communicate effectively orally and in written form. (C8,C10).

This course contributes in the following program competencies: C3, C5, C7, C8 , C9, C10, C11, C13, C14&C15

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to the design 1st project (A type of a project with a complex and multipurpose functions and spaces)	1	6	-
2	Research: relevant architectural data and similar projects either International or local projects.	1	6	-
3	Research: Data gathering, site analysis, climatic studies, zoning and analysis of similar projects	1	6	-
4	Sketch 1 (Schematic / conceptual design)	1	6	-
5	Sketch 2 (focuses on designing and formulating project plans)	1	6	-
6	Sketch 3 (Design development for plans) + Sketch 4 (focuses on designing and formulating project elevations)	1	6	-
7	Mid-Term Exam			-
8	Sketch 5 (focuses on preparing project sections)	1	6	-
9	Semi final sketch (Design Development for Layout, plans, elevations, sections and 3d models)	1	6	-
10	Final sketch (Presenting Layout, plans, elevations, sections and 3d models for approval). Presentation and rendering sessions	1	6	-
11	Final Submission and Project Discussion	1	6	-
12	Introduction to 2nd project(A type of a building of symbolic and structural implications)	1	6	-
13	Sketch 1 (Schematic / conceptual design)	1	6	-
14	Sketch 2 (Presenting proposed layout, plans, elevations, sections and 3d models)	1	6	-
15	Final Submission and Project Discussion	1	6	
	Total hours	**14**	**84**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies								
	c1	c2	c3	c4	c5	c6	c7	c8	c9
Introduction to the design 1st project (A type of a project with a complex and multipurpose functions and spaces)	1	1							
Research: relevant architectural data and similar projects either International or local projects.	1			1			1		
Research: Data gathering, site analysis, climatic studies, zoning and analysis of similar projects			1		1	1		1	
Sketch 1 (Schematic / conceptual design)			1			1			
Sketch 2 (focuses on designing and formulating project plans)		1		1			1		1
Sketch 3 (Design development for plans) + Sketch 4 (focuses on designing and formulating project elevations)		1							
Mid-Term Exam									
Sketch 5 (focuses on preparing project sections)	1		1			1			
Semi final sketch (Design Development for Layout, plans, elevations, sections and 3d models)			1			1			
Final sketch (Presenting Layout, plans, elevations, sections and 3d models for approval). Presentation and rendering sessions			1		1	1		1	
Final Submission and Project Discussion		1	1			1			
Introduction to 2nd project (A type of a building of symbolic and structural implications)			1			1			1
Sketch 1 (Schematic / conceptual design)		1		1					

Topic	Course Competencies								
	c1	c2	c3	c4	c5	c6	c7	c8	c9
Sketch 2 (Presenting proposed layout, plans, elevations, sections and 3d models) Final Submission and Project Discussion			1			1			
Topics Covering Competences	3	4	8	2	2	8	2	2	2

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1	1				1		1	1		1		
c2	1	1						1		1	1			1	1
c3	1	1		1						1	1		1		
C4	1	1	1	1				1		1	1		1		
C5	1	1						1		1				1	1
C6		1		1						1	1				
C7		1		1											1
C8								1						1	
C9			1					1						1	
∑	5	7	3	5				6		6	5		3	4	3

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Research	Two research per semester	10
	Quizzes	2 Quizzes	10
Final Project		Fourteen weeks	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes

Handouts, Research papers and lectures will be given at appropriate time of the project progress depending on the studied project

7-5 Required books

7-6 Recommended books

- Ching, F. D. K., (2014), "Building Structures Illustrated: Patterns, Systems and Design", John Wiley & Sons Ltd., UK.
- Jencks, C., (2000), "Architecture 2000 and Beyond", John Wiley & Sons Ltd, UK.

Edward, W., (1975), "A vocabulary of Architectural Forms", Architectural Media, USA

7-4 Periodicals, Web sites, etc

- Architectural record, Published monthly by the McGraw – Hill companies
- Al – Benaa Magazine, Published monthly by Medina Publishing Inc., Kingdom of Saudi Arabia.
- Electronic Pub. URL: www.greatbuildings.com

8- Facilities required for teaching and learning

- Appropriate teaching design studios including presentation board, data show, models, computer lab

Course coordinator:	DR. Ahmed Nour
Head of the Department:	Associate Professor: Asamer Zakaria
Date:	August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn323: Housing & City Planning (1)

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August, 2020

B - Basic Information

Title: Housing & City Planning (1)	**Code: ARCn323**	**Level:** 3rd Fall	
Credit Hours: 2	**Lectures:** 1	**Tutorial/Exercise:** 3	**Practical:** -
	Pre-requisite: -		

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to know about: Urban theory and interdisciplinary explanations offered by urban geographers, sociologists, economists, and historians, The 'city' as a modular for planning ,Land-use theories and fundamentals& Residential communities.

2 - Competencies

c1. Design a residential complex in existing urban areas. (C13)
c2. Solve urban problems. (C11,C14).
c3. Analyze data affecting the design process. (C11).
C4. Collaborate effectively within multidisciplinary team. (C5,C7,C9).
C5. Consider the impact of designs on the environmental protection. (C3).
C6. Practice self-learning and communicate effectively orally and in written form. (C8,C10).

This course contributes in the following program competencies: C3, C5, C7, C8 , C9, C10, C11, C13 & C14

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Planning definition, elements & level	1	3	-
2	Thinking methodology	1	3	-
3	Site analysis studies	1	3	-
4	Methods of planning for neighbor hoods	1	3	-
5	Following up the project	1	3	-
6	Evaluating site analysis studies	1	3	-
7	Assessment (Mid Term exam)			-
8	Examples & Analysis for similar projects	1	3	-
9	Simian on neighbor hoods (Introducing neighbor hoods)	1	3	-
10	Following up the Analysis with P.C.P	1	3	-
11	Following up the alternatives + Evaluation	1	3	-
12	Presentation (Following up the project)	1	3	-
13	Evaluating alternatives	1	3	-
14	Semifinal presentation (Following up the project)	1	3	-
15	Final Project	1	3	-
	Total hours	**14**	**42**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies								
	c1	c2	c3	C4	C5	C6			
Planning definition, elements & level	1	1							
Thinking methodology	1			1					
Site analysis studies			1		1				
Methods of planning for neighbor hoods			1						
Following up the project		1		1		1			
Evaluating site analysis studies		1							
Examples & Analysis for similar projects	1		1						
Simian on neighbor hoods (Introducing neighbor hoods)	1		1						
Following up the Analysis with P.C.P			1		1				
Following up the alternatives + Evaluation		1	1						
Presentation (Following up the project)			1			1			
Evaluating alternatives			1						
Semifinal presentation (Following up the project)			1						
Final Project	1	1	1	1	1	1			
Topics Covering Competences	5	5	10	3	3	3			

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1	1			1	1		1	1	1	1		
c2	1	1					1	1		1	1			1	1
c3	1	1		1						1	1		1		
C4		1		1			1								1
C5							1	1						1	
C6			1				1	1						1	
∑	3	4	2	3			5	4		3	3	1	2	3	2

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Assessment (Mid Term exam)		7th Week	20
Semester Work	Research	Two research per semester	10
	Mini project	Once per semester	10
Final Project		Fifteen weeks	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

- احمد خالد علام ، (1997) ، "تجديد الاحياء" ، مكتبة الانجلو المصرية ، القاهرة ، مصر .
- وحيد حلمي حبيب ، (1990) ، "تخطيط المدن الجديدة" ، دار مكتبة المهندسين، القاهرة، مصر.
- شفق العوض الوكيل ، (2006) ، "التخطيط العمراني" ، الجزء الاول، دار المعارف، القاهرة، مصر.
- احمد خالد علام ، (1995) ، "تخطيط المجاورة السكنية" ، مكتبة الانجلو المصرية، القاهرة، مصر.

7-1 Course notes:

1. https://www.youtube.com/watch?v=JnqWcx3wU6c&list=PLrQsv5YoPWYgbwfCrWGgn6A4_9N1aRiTE&index=33
2. https://www.youtube.com/watch?v=4ttnQAq9gRc&list=PLrQsv5YoPWYgbwfCrWGgn6A4_9N1aRiTE&index=34
3. https://www.youtube.com/watch?v=V-NyG2ZP7FE&list=PLrQsv5YoPWYgbwfCrWGgn6A4_9N1aRiTE&index=35
4. https://www.youtube.com/watch?v=eFzWFRG2lYQ&list=PLrQsv5YoPWYgbwfCrWGgn6A4_9N1aRiTE&index=36
5. https://www.youtube.com/watch?v=mQXCFFQUahs&list=PLrQsv5YoPWYgbwfCrWGgn6A4_9N1aRiTE&index=37
6. https://www.youtube.com/watch?v=ElsZnbGZeac&list=PLrQsv5YoPWYgbwfCrWGgn6A4_9N1aRiTE&index=38
7. https://www.youtube.com/watch?v=3BgVnyIXp0s&list=PLrQsv5YoPWYgbwfCrWGgn6A4_9N1aRiTE&index=52
8. https://www.youtube.com/watch?v=Cb4vPs0Yi6M&list=PLrQsv5YoPWYgbwfCrWGgn6A4_9N1aRiTE&index=51

7-5 Required books: None

7-3 Recommended books

- The Residential neighborhood – M. Hasan Allana

7-4 Periodicals, Web sites, etc

- **www.clac.com**
- **www.googleearth.com**

8- Facilities required for teaching and learning

- Data Show
- Blackboard / white board and chalk

Course coordinator: DR. Shahenaz Taie
Head of the Department: Associate Professor: Asamer Zakaria
Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn325: Theories of Architecture and Arts

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	June 2018

B - Basic Information

Title: Theories of Architecture and Arts **Code: ARCn325** Level Senior 1,Level3, 7thSemester
Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:**1 **Practical:** -
Pre-requisite ARCn227

C - Professional information

1 – Course Learning Objectives:

The course aims to examine the architectural trends in the eighteenth and nineteenth century and their governing philosophical and artistic concepts, in addition to their effect on the architectural product, as an introduction to contemporary architectural trends. This is achieved throughout studying many periods such as renaissance, baroque, rococo, and romantic period with its two schools; revivalism and eclecticism. It also illustrates the new art schools and logical architecture trend represented in steel and high-rise architectures, and the appearance of Chicago school in the united states in the 19th century in parallel to school of fine arts in Paris. The study is conducted by using a comparative analytical approach for every school and trend and the reciprocal effects between art and architecture to illustrate the pros and cons for the architectural product of every period

2 - Competencies

c1. Identify, formulate the relationship between the development of the ecological sittings (socio-culture, technological and physical factors in different societies) and development architecture (C1, C2)
c2. Identify, formulate the main features of Early Christianity reign, as well recognize the art schools and its pioneers in 19th and 20th century (C1, C2)
c3. Criticize objectively the architectural forms and styles and understanding the influences, which oriented guide them, studying how to produce 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. (C3, C11).
c4. 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 (C12).
c5. 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. (C3, C11).
c6. Identify the development process of architecture within its historical context. (C3).
c7. Utilize contemporary technologies, codes of practice and standards to expand and correct their artistic and design experiences. (C4)
c8. Development of architectural forms and styles. (C3).
c9. Improve evaluation skills of architectural forms and recognize the different forces which guide it. (C8)
c10. Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams (C7)
c11. Use creative, innovative tools to present work documentation in written and oral form. (C9)

This course contributes in the following program competencies: C1, C2, C3, C4, C7, C8, C9 , C11,C12

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	General introduction for the course	2	1	-
2	characteristics of barouque Era Characteristics and artistic features of the arts of the Baroque era	2	1	-
3	Architectural characteristics of the Baroque era Analyzing projects of Architects.	2	1	-
4	Architectural characteristics of The Age of Enlightenment	2	1	-
5	Architectural characteristics of The Age of Enlightenment	2	1	-
6	Social, technical and urban transformation in19th century The influences of the industrial revolution on art and architecture in 19thcentury	2	1	-
7	Midterm exam	2	1	-
8	Architectural trends and schools in 19thcentury	2	1	-
9	Architectural trends and schools in 19thcentury	2	1	-
10	Architectural trends and schools in 19thcentury	2	1	-
11	Architectural trends and schools in 20thcentury	2	1	-
12	Architectural trends and schools in 20thcentury	2	1	-
13	Architectural trends and schools in 20thcentury	2	1	-
14	Digital Presentation of the Final Researches: (Jury) : *Staff's Criticism / Evaluation for each Student*	2	1	-
15	General revision	2	1	-
	Total hours	**30**	**15**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies										
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11
General introduction for the course	1	1	1	1	1	1	1	1			
characteristics of barouque Era Characteristics and artistic features of the arts of the Baroque era	1	1	1	1	1	1	1	1			
Architectural characteristics of the Baroque era Analyzing projects of Architects.	1	1	1	1	1	1	1	1			
Architectural characteristics of The Age of Enlightenment	1	1	1	1	1	1	1	1			
Architectural characteristics of The Age of Enlightenment	1	1	1	1	1	1	1	1			
Social, technical and urban transformation in19th century The influences of the industrial revolution on art and architecture in 19th century	1	1	1	1	1	1	1	1			
Architectural trends and schools in 19thcentury	1	1	1	1	1	1	1	1			
Architectural trends and schools in 19thcentury	1	1	1	1	1	1	1	1			
Architectural trends and schools in 19thcentury	1	1	1	1	1	1	1	1			
Architectural trends and schools in 20thcentury							1	1	1	1	1
Architectural trends and schools in 20thcentury	1	1	1	1	1	1	1	1			
Architectural trends and schools in 20thcentury	1	1	1	1	1	1	1	1			
Digital Presentation of the Final Researches: (Jury) : Staff's Criticism / Evaluation for each Student									1	1	1
General reversion									1	1	1
Topics Covering Competences	11	11	11	11	11	11	12	12	3	3	3

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports & Assignments	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1				1	1		1			1		
c2	1	1	1				1	1		1			1		
c3	1	1	1	1			1	1		1	1		1		
c4	1	1	1	1			1	1		1	1		1		
c5	1	1	1	1			1	1		1	1		1		
c6	1	1	1	1			1	1		1	1		1		
c7	1	1	1	1			1	1		1	1		1		
c8	1	1	1	1			1	1		1	1		1		
c9	1	1	1				1							1	
c10	1	1	1				1	1						1	
c11	1	1	1				1	1						1	
∑	11	11	11	6	0	0	11	10	0	8	6	0	8	3	

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes (one each 3 weeks)	10
	Reports/Research	2 researchs per semester	10
	Tutorials	2 Assignments per semester	10
	Mini project	-	-
Final research& Presentation		Fifteenth week	10
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes pdf lect

7-2 Required books

- Ching, F. D., (2014), "Architecture: Form, Space and Order", John Wily & Sons, Inc., USA.
- عرفان سامي،" نظريات العمارة -مقرر السنة الاولى عمارة ، دار نافع للطباعة والنشر ، القاهرة، مصر."

7-3 Recommended books: None

- Progressive Architecture
- www.Greatbuilgings.com
- www.Archinform.com

7-4 Periodicals, Web sites, etc.

8- Facilities required for teaching and learning:

- Well equipped space for lectures and digital presentation.
- Site visits Lecture and Exercise rooms equipped wirh projection and sound systems.
- Data show High speed internet and communication facilities for distance learning.
- Gallery to present the best researches

Course coordinator: Faten salah soliman
Head of the Department: Associate Professor: Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
GENn351d: Technical English

A- Affiliation

Relevant program: Civil Engineering and Building Technology BSc program
Architecture Engineering and Building Technology BSc program

Department offering the program: Civil Engineering and Building Technology Department Architecture Engineering and Building Technology Department

Department offering the course: ***Basic Sciences Department***

Date of specifications approval: August 2020

B - Basic information

Title: English Language **Code:** GENn351d **Level:** 3th

Credit Hours: 2 **Lectures:**2 **Tutorial:** **Practical:**

Pre-requisite: - GENn042

C - Professional information

1 – Course Learning Objectives:

This course is designed to help students to concentrate on grammatical structures especially those used in scientific language. Students will be introduced to vocabulary of scientific English and develop their understanding and application of it. The exercises used aim at teaching and understanding concepts, using lexical and cohesive devices, deducing contextual meaning of lexical items, and skimming and/or scanning to locate specific information.

2 – Competencies

c1- Develop the vocabulary of students in their field of specialization and develop understanding and application of reading skills. (C5, C8)
c2- Enable students to practice the language functions commonly used in English. (C10)
c3- Develop students' mastery of such essential reading skills as using reference locating information, distinguishing major and minor points, and finding main theme of a text . (C10)
c4- Develop students' ability to communicate information with their peers. (C10)
c5-Employ tasks which encourage students to take an active role in learning and using new vocabulary. (C9)
c6- Understand terminology related to the engineering fields.(C8)
c 7- Enhance class interaction in terms of speaking, reading, and writing.(C8)
c 8- Describe technical functions and applications and work in a team and involve in group discussion . (C8)
c 9- Personalize the learning experience by offering students interesting topics relevant to their interests and experiences. (C8)
c10- Communicate effectively and present data and results orally and in written form. (C8, C10)
c11- Improve specialist language knowledge of engineers and search for information in references and in internet. (C10, C8)
c12- Employ tasks which encourage students to take an active role in learning new vocabulary, related to their field of specialization. (C10)

This course contributes in the following program competencies:C5, C8, C9, C10

3 – Contents

week	Topic	Lecture hours	Tutorial hours	Practical hours
1	**Technology in use**	2		
2	Describing technical functions	2		
3	**Describing technical applications**	2		
4	**Materials technology** Describing specific materials.	2		
5	**Components and assemblies** Describing component shapes and features explaining and assessing manufacturing techniques.	2		
6	**Engineering design** Working with drawings discussing dimensions and precision.	2		
6	**Breaking point** Describing types of technical problem.	2		
7	**Mid term**	2		
8	**Procedures and precautions.** Describing health and safety precautions.	2		
9	**Technical development** Discussing technical requirements suggesting ideas and solutions.	2		
10	**Monitoring and control** Describing automated systems.	2		
11	**Theory and practice** Explaining tests and experiments. Exchanging views on predictions and theories.	2		
12	**Pushing the boundaries** Discussing performance and suitability. Describing physical forces.	2		
13,14,15	Revision and sheets	2		
	Total hours	**30**		

4. Course content/Course Competencies mapping matrix

Topic	Knowledge			Skills				Attitude				
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12
Technology in use	1	1	1	1	1	1	1	1	1	1	1	1
Describing technical functions and applications	1	1	1	1	1	1		1	1	1	1	1
Materials technology Describing specific materials	1	1	1	1	1	1		1	1	1	1	1
Components and assemblies Describing component shapes and features explaining and assessing manufacturing techniques	1	1		1	1	1		1	1	1		1
Engineering design Working with drawings discussing dimensions and precision	1	1	1	1		1		1			1	
Breaking point Describing types of technical problem	1	1	1	1	1	1		1		1		
Revision 7th week Exam												
Technical development Discussing technical requirements suggesting ideas and solutions	1	1	1	1		1	1	1	1	1	1	
Procedures and precautions. Describing health and safety precautions	1	1		1	1	1	1	1			1	
Monitoring and control Describing automated systems	1	1		1	1		1	1	1	1	1	1
Theory and practice Explaining tests and experiments. Exchanging views on predictions and theories	1	1	1	1	1		1	1				
Pushing the boundaries Discussing performance and suitability. Describing physical forces	1	1	1	1		1		1	1	1	1	1
Revision and sheets	1	1	1	1	1		1	1	1	1	1	1
Topics Covering Competences	12	12	9	12	9	9	6	12	8	9	9	7

5- Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1		1				1			1			1		1
c2	1							1							
c3	1						1			1			1	1	1
c4	1		1					**1**							
c5	1							1						1	1
c6	1														
c7	1		1					1		1			1	1	1
c8	1						1							1	1
c9	1						1	1						1	
c10	1		1											1	1
c11	1		1				1	1							
c12	1						1	1						1	
∑	12		5				6	7		3			3	7	6

6- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Assignments and Reports	Bi-Weekly	20
Two Quizzes	5th and 10th	20
Mid-Term Exam	7-th Week	20
Written Exam	Sixteenth week	40
Total		100

7- List of references:

7-1 Course notes:

Technical English Book by Dr Neveen Samir , 2021

7-2 Required books

Shelton, James, Handbook for Technical English, NTC publishing Group, Illinois, USA, 1998.

Raymond MurPHY, (2012), "English Grammar in Use. Cambridge", Cambridge University Press.

7-3 Recommended books: Non

7-4 Periodicals, Web sites, etc.:

- http://www.bbc.co.uk/learningenglish
- http://www.rong-chang.com/
- http://legacy.australianetwork.com/studyenglish/

8- Facilities required for teaching and learning:

Library

High speed internet and communication facilities for distance learning

Course coordinator: Dr. Neveen Samir

Head of the Department: Prof. Dr. Ashraf Taha

August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
GENn352: Risk Management

A- Affiliation

Relevant program: Manufacturing Engineering and Production Technology BSc Program
Electronic Engineering and Communication Technology BSc Program
Computer Engineering and Information Technology BSc Program
Architecture Engineering and Building Technology BSc Program
Civil Engineering and Building Technology BSc program

Department offering the program: Manufacturing Engineering and Production Technology Department
Electronic Engineering and Communication Technology Department
Computer Engineering and Information Technology Department
Architecture Engineering and Building Technology Department
Civil Engineering and Building Technology BSc program

Department offering the course: Basic Science Department
Date of specifications approval: August 2020

B - Basic Information

Title: Risk Management **Code:** GENn352 **Level:** 3rd, Fall
Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:** - **Practical:** -
Pre-requisite: None

C - Professional information

1 – Course Learning Objectives:

On successful completion of the course, the student will be able to synthesize and respond to the complexity of legal issues within their risk management practice and demonstrate the ability to operate effectively in complex and unpredictable situations within professional contexts.

2 – Competencies

c1- Understanding the basic concepts of risk assessment. (C4, C8)
c2- Explain the basic concepts of hazards and risk factors. (C9, C10)
c3 - Explain principles of rating the extent of potential harm and evaluating the likelihood that harm will occur. (C4)
c4 - Classify and compare the principles of controlling the risks. (C10)
c5 - Deciding priorities for action. (C2, C3)
c6 - Analyze, strategies for managing the risks. (C2, C3)
c7 - Apply Principles of strategic approaches for dealing with risks. (C2, C3)
c8 - Relate general theory to specific contexts. (C9)
c9 - Compare and analyze different risk situations and risk environments. (C2, C4)
c10 - Select and use appropriate Strategies, methods and techniques for identifying, diagnosing and dealing with risks. (C3, C6, C7)
c11 - Develop problem solving approaches and controlling the risk. (C2, C6, C7, C9)
c12 - Enhance the ability to critically reflect on own and others' practice to improve own/others 'actions. (C2, C3, C7)
c13 - Search for information and engage in life-long self-learning discipline. (C5, C9)
c14 - Practice self-learning and communicate effectively orally and in written form. (C7, C8)

This course contributes in the following program competencies: C2, C3, C4, C5, C6, C7, C8, C9, C10

3 – Contents

week	Topic	Lecture hours	Tutorial hours	Practi hou
1	➢ Identify risk assessment, hazards, and risk factors	2	-	-
2,3	➢ Evaluating the hazards and risks.	4	-	-
4,5	➢ Rating the extent of potential harm, and the likelihood that harm will occur.	4	-	-
6	➢ Controlling the risks, Control measures.	4	-	-
7	➢ Mid term	2		
8	➢ Systems of control, Deciding priorities for action.	2	-	-
9,10	➢ Case study 1: health services, Case study 2: call centers.	4	-	-
11	➢ Case study 3: food production and processing, Case study 4: engineering and manufacture.	3	-	-
12	➢ Strategies for managing the risks, Planning, Range of strategic approaches for dealing with risks.	3	-	-
13,14,15	➢ Stakeholders and spreading the risks, and Policies.	2	-	-
		30		

4. Course content/Course Competencies mapping matrix

Topic	Knowledge							Skills					Attitude	
	c1	c2	c3	c4	c5	c6	c7	C8	C9	c10	c11	c12	c13	c14
Identify risk assessment, hazards, and risk factors	1	1	1	1				1		1			1	1
Evaluating the hazards and risks.	1	1	1	1	1	1	1	1	1	1	1		1	1
Rating the extent of potential harm, and the likelihood that harm will occur.	1	1	1	1	1	1	1	1	1	1	1		1	1
Controlling the risks, Control measures.	1	1	1	1	1	1	1	1	1	1	1		1	1
Systems of control, Deciding priorities for action.	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Case study 1: health services, Case study 2: call centers.	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Case study 3: food production and processing, Case study 4: engineering and manufacture.	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Strategies for managing the risks, Planning, Range of strategic approaches for dealing with risks.	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Stakeholders and spreading the risks, and Policies.	1	1	1	1	1	1	1	1	1	1	1		1	1
Topics Covering Competences	9	9	9	9	8	8	8	9	8	9	8	4	9	9

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods				Learning Methods	Assessment Method		
	Lecture	Discussions and seminars	Tutorials	Problem solving	Research and Reports	Written Exam	Quizzes	Assignments
c1	1	1			1	1	1	1
c2	1	1			1	1	1	1
c3	1	1			1	1	1	1
c4	1	1			1	1	1	1
c5	1	1			1	1	1	1
c6	1	1			1	1	1	1

Course Competences	Teaching Methods				Learning Methods	Assessment Method		
	Lecture	Discussions and seminars	Tutorials	Problem solving	Research and Reports	Written Exam	Quizzes	Assignments
c7	1	1			1	1	1	1
c8	1	1			1	1	1	1
c9	1	1			1	1	1	1
c10	1	1			1			
c11	1	1			1			
c12	1	1			1			
c13		1			1			
c14	1	1			1	1	1	1
∑	13	14			14	10	10	10

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	5th and 10th	20
	Assignments/ Reports	Bi- Weekly	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes:

Risk Management.

7-2 Required books:

J. Jeyras (2002), "Risk management principles", planta Tree, UK

7-3 Recommended books:

E. J. Vaughan, T. Vaugan (2007), 9th Edition, "Fundamentals of risk and insurance", John Wiley,

M. Keegan (2004): The orange book of risk management- Principles and concepts", HM treasury concepts, London, UK

E. Baranoff (2012)" Enterprise and individual risk management", Harvard Business Review US

7-4 Periodicals, Web sites, etc.

https://www.investopedia.com/terms/r/riskmanagement.asp

http://www.freebookcentre.net/

8- Facilities required for teaching and learning:

- **Lectures room equipped with OHP and data show facility.**
- **Library.**
- **Internet.**

Course coordinator: Dr. Nagat A. Elmahdy

Head of the Department: Associat Professor / Ashraf Taha EL-Sayed

Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
GENn353a Industrial Psychology

A- Affiliation

Relevant program:	Manufacturing Engineering and Production Technology BSc Program
Department offering the program:	Manufacturing Engineering and Production Technology Department
Department offering the course:	Manufacturing Engineering and Production Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Industrial Psychology **Code:** GENn353a **Level:** Seventh Semester (Level three)

Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:** 0 **Practical:** 0

Pre-requisite: None

C - Professional information

1 – Course Learning Objectives:

By the end of this course, the students should have gained the planned competences (knowledge, skills and attitudes) related to improve the performance of the whole work system as well to reduce the stress imposed on the working human being in industry.

2 - Competencies

c1. Identify the role of the role of industrial engineer (C4).
c2. Learn the structural system of human work (C4, C6).
c3. Learn the physical environmental impacts on human beings which can be assessed quantitatively (C4, C6)
c4. Use appropriate techniques on basics of ergonomics to instrument display, machine, control and lay out of workplace (C4, C5, C6)
c5. Consider effect of all environmental changes on equipment (C3)
c6. Diminishing the effects of physical environmental impacts on human beings (C3, C4)
c7. Utilize and make the best use of human abilities (C10)
c8. Acquire and apply new knowledge to new product design adapted to the customer. (C5, C6)
c9. Practice using ergonomic factors in domestic and industrial products (C4, C5, C6)
c10. Collaborate effectively within multidisciplinary team (C5, C7, C9).
c11. Practice self-learning and communicate effectively orally and in written form (C8, C10).

This course contributes in the following program competencies: C3, C4, C5, C7, C8, C9, C10

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
Industrial Design - Design concepts	2		
Ergonomics	2		
Application of ergonomics - Instruments - Controls - Work place.	2		
Aesthetic and ergonomics coordination	2		
Working condition and Environment	2		
Heating and Ventilation	2		
Assessment (Mid Term Exam)	2		
Local Ventilation - Industrial Ventilation	2		
Air condition systems - CFC'S - Ozone	2		
Depletion and Global Warning	2		
Noise - Exposure to noise - Noise control	2		
Technique - Vibration	2		
Lighting - Level of luminance - Factors	2		
Affecting the quality of lighting	2		
Human effectiveness	2		
Revision			
Total hours	**30**		

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies										
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11
Industrial Design - Design concepts	1								1		1
Ergonomics	1			1		1			1	1	1
Application of ergonomics - Instruments - Controls - Work place.	1	1		1		1			1		
Aesthetic and ergonomics coordination		1		1		1		1			
Working condition and Environment		1	1	1	1	1					1
Heating and Ventilation			1	1	1	1					
Local Ventilation - Industrial Ventilation			1	1		1		1			
Air condition systems - CFC'S - Ozone			1	1	1	1					
Depletion and Global Warning			1	1		1					
Noise - Exposure to noise - Noise control			1	1		1		1			
Technique - Vibration			1	1		1					
Lighting - Level of luminance - Factors			1	1		1					
Affecting the quality of lighting			1	1		1		1			
Human effectiveness		1	1			1	1			1	1
Topics Covering Competences	3	4	10	12	3	13	1	4	3	2	4

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method				
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports & Assignments	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations
c1	1	1	1							1			1	
c2	1	1	1							1			1	

Course Competences	Teaching Methods						Learning Methods			Assessment Method				
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports & Assignments	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations
c3	1		1							1			1	
c4	1	1								1			1	
c5	1									1			1	
c6	1									1			1	
c7	1									1			1	
c8	1									1			1	
c9	1									1			1	
c10			1					1						
c11			1					1						
∑	9	3	5					2		9			9	

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes per semester	10
	Reports	4 reports per semester	20
Mini-project case study research		Fifteenth week	10
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes:

Risk Management.

7-2 Required books:

J. Jeyras (2002), "Risk management principles", planta Tree, UK

7-3 Recommended books:

E. J. Vaughan, T. Vaugan (2007), 9th Edition, "Fundamentals of risk and insurance", John Wiley,

M. Keegan (2004): The orange book of risk management- Principles and concepts", HM treasury concepts, London, UK

E. Baranoff (2012)" Enterprise and individual risk management", Harvard Business Review US

7-4 Periodicals, Web sites, etc.

https://www.investopedia.com/terms/r/riskmanagement.asp

http://www.freebookcentre.net/

8- Facilities required for teaching and learning:

- **Lectures room equipped with OHP and data show facility.**
- **Library.**
- **Internet.**

Course coordinator: Dr. Nagat A. Elmahdy
Head of the Department: Dr Metwally Abdelgaffar
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn334: Elective 4 ADVANCED STUDIES IN INTERIOR DESIGN
(Humanitarian Elective Courses)

A- Affiliation
Relevant program: Architecture Engineering and Building Technology BSc Program
Department offering the program: Architecture Engineering and Building Technology Department
Department offering the course: Architecture Engineering and Building Technology Department
Date of specifications approval: August, 2020

B - Basic Information
Title: ADVANCED STUDIES IN INTERIOR DESIGN **Code:** ARCn334 **Level:** 3rd Fall
Credit Hours:2 **Lectures:** 1 **Tutorial/Exercise:** 3 **Practical:** -
Pre-requisite: ARCn123

C - Professional information
1 – Course Learning Objectives:
The aim of the course is to increase the talent of forming interior spaces of local private buildings and the detailed study of the components of the architectural spaces and the systems that affect its formation and support the presentation techniques of the architectural details &concepts.
The history of interior design – visual perception of spaces – space components: lights – material& tools – study of colors, its physiological effects – the aesthetics of private architectural spaces – public architecture Spaces – case studies & models – environmental control & its needs – the integration with the architectural frame – Research & applied studies – Presentation techniques &talents

2 – Competencies
c1. Apply The fundamental engineering sciences relevant to architectural practices, Recognizing professional standards of architectural practice (C1)
c2. Produce Three-dimensional visualization and representation in terms of shades, shadows and perspective using different computer applications (C7,C12,C15)
c3. Think in a creative and innovative way in problem solving and design. (C9)
c4. Combine, exchange, and assess different ideas, views, and knowledge from a range of sources. (C9)
c5. Take engineering decisions considering balanced costs, benefits, safety, quality, reliability, and environmental impact. (C3,C12)
c6. Integrate different forms of knowledge, ideas from other disciplines, and manage information retrieval to create new solutions. (C10)
c7. Apply safe systems at work and appropriate steps to manage risks. (C4)
c8. Demonstrate basic organizational and project management skills, Search for information and adopt life-long self-learning. (C1,C10)
c9. Apply quality assurance procedures and follow codes and standards. (C4)
c10. Produce professional workshop and technical drawings using traditional drawing and computer-aided drawings' techniques. (C7,C8)
c11. Use appropriate construction techniques and materials to specify and implement different designs; Realizing materials properties and uses in different building contexts (C9,C14)
c12. Display imagination and creativity(C9)
c13. Respect all alternative solutions; changes in original plan of the project, differences in style, culture, experience and treat others with respect. (C9)
c14. Provide leadership and education to the client particularly with reference to sustainable design principles. (C3)
c15. Respond effectively to the broad constituency of interests with consideration of social and ethical concerns. (C3,C12)
c16. Contribute positively to the aesthetic, architecture and urban identity, and cultural life of the community(C3,C11)
This course contributes in the following program competencies:C1, C3, C4, C7, C8, C9, C10, C11, C12 , C15

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction	1	3	-
2	Interior Design process	1	3	-
3	Elements of Interior Design	1	3	-
4	Principles of Interior Design	1	3	-
5	Colors in Interiors (Research)	1	3	-
6	Introduction to Finishing's	1	3	-
7	Assessment (Midterm)	-	-	-
8	Flooring Finishing's	1	3	-
9	Walls & Ceiling finishes	1	3	-
10	Finishing materials & (Project Introduction)	1	3	-
11	Styles of Furniture	1	3	-
12	Furniture Accessories (1) & Project Study	1	3	-
13	Furniture Accessories (2)	1	3	
14	Furniture Accessories (3) & (Proj. Semifinal)	1	3	-
15	Project Final.	1	3	-
	Total hours	**14**	**42**	

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies															
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15	c16
Interior Design process	1							1		1					1	1
Elements of Interior Design			1	1	1	1		1					1		1	
Principles of Interior Design	1		1	1				1	1	1				1	1	
Colors in Interiors (Research)	1		1	1							1	1			1	1
Introduction to Finishings						1		1						1	1	
Flooring Finishings			1		1				1	1			1	1	1	1
Walls & Ceiling finishes			1										1	1	1	1
Finishing materials	1	1	1	1			1	1	1			1	1	1	1	1
Styles of Furniture	1		1			1			1	1		1	1		1	1
Furniture Accessories	1		1			1						1			1	
Project		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Topics Covering Competences	6	2	9	5	3	5	2	6	5	5	2	5	6	6	11	7

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1		1			1			1	1		1	1	
c2	1	1		1			1			1	1		1	1	
c3	1	1		1			1	1		1	1		1	1	1
c4	1	1		1			1	1		1	1		1	1	1
c5	1	1		1			1			1	1		1	1	1
c6	1	1		1			1	1		1	1		1	1	1
c7	1	1		1			1			1	1		1	1	
c8	1	1		1			1	1		1	1		1	1	1
c9	1	1		1			1			1	1		1	1	1

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c10	1	1		1			1			1	1		1	1	1
c11	1	1		1			1	1		1	1		1	1	1
c12	1	1		1			1	1		1	1		1	1	1
c13	1	1		1			1	1		1	1		1	1	1
c14	1	1		1			1	1		1	1		1	1	1
c15	1	1		1			1	1		1	1		1	1	1
c16	1	1		1			1	1		1	1		1	1	1
∑	16	16	0	16	0	0	16	10	0	16	16	0	16	16	13

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Tutorials	Assignments Bi-Weekly	40
Practical Exam		-	-
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: Lecture notes

7-5 Required books

John patter, 2012, Interior designers protable, Mc-Graw hill, USA

Davied kent, 2010, Interior detailing, Wiely, USA

Ji-Hyon C , 2010, Detail+ interior + architecture, Archi world, korea

7-6 Recommended books:

- Nielson, K.L.& Taylor, D.A., 2002, Interiors: an introduction, NY: McGraw-Hill co
- O'Shea, L., & Grimley, C., (2013), "The Interior Design Reference & Specification Book: Everything Interior Designers Need to Know Every Day", Rockport Publishers, USA.
- Felder, N., (2005), "Felder's Comprehensive: The Annual Desk Reference and Product Thesaurus for", Princeton Architectural Press, USA.
- نمير قاسم خلف، 2006 ألف باء التصميم الداخلى، دار الكتب والوثائق، بغداد، العراق،

7-4 Periodicals, Web sites, etc.

https://en.wikipedia.org/wiki/Interior_design (Last accessed January 2021).

http://launchpadacademy.in/elements-of-interior-design-2/ (Last accessed January 2021).

http://launchpadacademy.in/principles-interior-design/ (Last accessed January 2021).

8- Facilities required for teaching and learning:

- Free Hand Sketches – AutoCAD and 3Dmax program – Photoshop –Sketch up

Course coordinator: Dr. Marwa Elbasyoni
Head of the Department: Associate Professor: Asamer zakria
Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn335: Landscape Design

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Landscape Design **Code: ARCn335** **Level:** 3rd Fall
Credit Hours: 2 **Lectures:** 1 **Tutorial/Exercise:** 3 **Practical:** -
Pre-requisite: ARCn223

C - Professional information

1 – Course Learning Objectives:

The course aims to enhance the students' abilities in the field of landscape design throughout the practical application on projects with various scales, functions and standards. Students will be able to create their appropriate and functional landscape using different techniques and methods. In addition, they will study the fundamentals of landscape elements and types.

2 - Competencies

c1. Create a landscape design concept by linking different related subjects essential for the design such as: softscape, hardscape, environmental & topographic studies. (C13)
c2. Develop new ideas during the design process using the principles of landscape. (C11, C14).
c3. Collect & analyze site data that will make him / her develop a design for a landscape form. (C11).
c4. Collaborate effectively within multidisciplinary team. (C5, C7, C9).
c5. Consider the impact of designs on the environmental protection. (C3).
c6. Practice self-learning and communicate effectively orally and in written form. (C8, C10).

This course contributes in the following program competencies: C3, C5, C7, C8, C9, C10, C11, C13 & C14

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Landscape introduction, elements & introducing the project	1	3	-
2	Site analysis, Grading & setting out studies	1	3	-
3	Softscape studies	1	3	-
4	Hardscape studies (following up the project)	1	3	-
5	Furniture & Signange design (following up the project)	1	3	-
6	Lighting studies (following up the project)	1	3	-
7	Assessment (Mid Term exam)			-
8	Landscape coloring presentation (following up the project)	1	3	-
9	Evaluating the landscape presentation	1	3	-
10	Softscape construction drawings (following up the project)	1	3	-
11	Hardscape construction drawings (following up the project)	1	3	-
12	Landscape Details	1	3	-
13	Evaluating the project	1	3	-
14	Semi final presentation	1	3	-
15	Final Project	1	3	-
	Total hours	**14**	**42**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies								
	c1	c2	c3	C4	C5	C6			
Landscape introduction, elements & introducing the project	1	1							
Site analysis, Grading & setting out studies	1			1					
Softscape studies			1		1				
Hardscape studies (following up the project)			1						
Furniture & Signage design (following up the project)		1		1		1			
Lighting studies (following up the project)		1							
Landscape coloring presentation (following up the project)	1		1						
Evaluating the landscape presentation			1						
Softscape construction drawings (following up the project)			1		1				
Hardscape construction drawings (following up the project)		1	1						
Landscape Details			1			1			
Evaluating the project			1			1			
Semifinal presentation (Following up the project)			1			1			
Final Project	1	1	1	1	1	1			
Topics Covering Competences	4	5	10	3	3	5			

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1	1			1	1		1	1		1		
c2	1	1						1		1	1			1	1
c3	1	1		1			1			1	1		1		
C4		1		1											1
C5							1	1						1	
C6			1				1	1						1	
∑	3	4	2	3			4	4		3	3		2	3	2

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Assessment (Mid Term exam)		7th Week	20
Semester Work	Research	Two research per semester	10
	Mini project	Once per semester	10
Final Project		Fifteen weeks	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes:

7-2 Required books: None

- **Recommended books**

- Chris Young, (2017)," Encyclopedia of landscape Design: Planning, Building, and Planting your perfect outdoor space", DK Publishing.
- Norman K, (1991)," Residential Landscape Architecture: Design Process for the private Residence", Prentice Hall.
- Elizabeth Barlow, (2001)," Landscape Design: A Cultural and Architectural History", Elizabetyeth Barlow Rogers.

- **Periodicals, Web sites, etc**

- **www.worldlandscapearchitect.com**
- **www.googleearth.com**

8- Facilities required for teaching and learning

- Internet access
- Updated computers
- Educational Software License
- Data Show

Course coordinator: DR. Noha Amer
Head of the Department: Associate Professor: Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
Elective3 ARCn336: Simulation Programs & Architecture

A- Affiliation

Relevant program/s:	Architectural Engineering and Building technology BSc Program
Department offering the program:	Architectural Engineering and Building technology BSc Department
Department offering the course:	Architectural Engineering and Building technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Simulation Programs & Architecture **Code:** ARCn336 **Level:** 3

Credit Hours: 2 **Pre-requisite:** ARCn216+ARCn217

Contact Hours: **Lectures:**1 **Tutorial:** - **Practical:** 3 **Total:** 4

C - Professional Information

1 – Course Learning Objectives:

The course aims to enhance the students' skills by using the latest technological simulation programs to assess indoor or outdoor spaces. It studies the possibilities and methods of simulating the internal and external environments, in addition to the operating systems of the building such as Ventilation, Heat transfer, Day lighting, Artificial lighting, Acoustics, etc. This is to help the students to develop their designs and improve the building performance.

2 – Competencies

c1- Fundamental environmental engineering relevant to architectural practices (C1, C4)

c2- Recognizing professional standards of environmental architectural practice (C3)

c3- Realizing materials properties and uses in different building contexts (C4)

c4- Potential computer uses in environmental architectural applications(C5)

c5- Environmental modeling and representation in terms of shades, shadows, openings, HVAC and construction using different simulation tools applications(C6)

c6 - Analyze, interpret-, and manipulate data. (C10)

c7 - Integrate different scales of design, ranging from interior details to urban development and town planning schemes(C6)

c8 - Relate different branches of studied courses together in a holistic manner(C6,C7)

This course contributes in the following program competencies: C1, C2, C3, C5, C6 &C8

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1.	Introduction to **Simulation Programs & Architecture**	2	0	2
2.	Introduction to climate consultant simulation tool	2	0	2
3.	Climate consultant simulation tool result	2	0	2
4.	Introduction to Design Builder simulation tool-part 1	2	0	2
5.	Introduction to Design Builder simulation tool-part 2	2	0	2
6.	Introduction to Design Builder simulation tool-part 3	2	0	2
7.	Mid Term Exam	-		
8.	Design Builder Simulation Tool Results	2	0	2
9.	Introduction to ENVI-MET simulation tool	2	0	2
10.	ENVI-MET Analysis	2	0	2
11.	ENVI-MET Results	2	0	2
12.	Final project t(semifinal)	2	0	2
13.	Final project t(final)	2	0	2
14.	Practical questions	2	0	2
15.	Revision	2		2
	Total hours	**30**	**-**	**30**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies									
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10
Introduction to **Simulation Programs & Architecture**	1	1								
Introduction to climate consultant simulation tool	1						1	1		
Climate consultant simulation tool result			1	1		1		1		1
Introduction to Design Builder simulation tool-part 1			1	1	1	1		1	1	1
Introduction to Design Builder simulation tool-part 2		1			1			1	1	1
Introduction to Design Builder simulation tool-part 3		1						1	1	
Design Builder Simulation Tool Results										
Introduction to ENVI-MET simulation tool								1	1	
ENVI-MET Analysis						1		1	1	1
ENVI-MET Results						1		1	1	1
Final project t(final)						1		1	1	1
Mini project						1	1	1	1	
Topics Covering Competences	2	3	2	2	2	6	2	10	8	6

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1				1	1		1	1		1		
c2	1	1						1		1	1			1	1
c3	1	1								1	1		1	1	
c4	1	1	**1**							1	1				
c5	1	1	1					1		1	1		1	1	
c6	1	1	1		1		1	1		1	1		1	1	1
c7	1	1					1			1				1	1
Σ	7	7	4		1		3	4		7	6		4	4	3

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes (one each 4 weeks)	6
	Reports/Research	Two reports per semester	4
	Tutorials	5 Assignments per semester	6
	Mini project	Once per semester	4
Practical Exam		Fifteenth week	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

- Casakin, H., & Goldschmidt G., (1999), "Expertise and the use of visual analogy: Implications for design education", Design Studies.
- Nicol. D. &Pilling S., (2000) "Changing architectural education: Towards a new professionalism", London, UK.
- Richmond B., (2001), "An Introduction to Systems Thinking", High Performance Systems, Inc.
- Ayah Mohamed Ezzat," Adaptation of Double Skin Facades in Office Buildings in Hot Climates (A Methodology to Improve Buildings Energy Performance and Enhancing Thermal Comfort) ", Thesis for the degree of Doctor of Philosophy, Cairo university, (2018).

7-1 Required books

- Design Builder- manual book (AutoCAD LT User's Guide) -

- Envi-met manual - climate-consultant.

7-2 Periodicals, Web sites, etc.

- https://www.envi-met.com/
- file:///H:/PHD/tablet/DesignBuilder-Simulation-Training-Slides.pdf
- http://energy-design-tools.aud.ucla.edu/climate-consultant/request-climate-consultant.php

7-3 Facilities required for teaching and learning:

- Lap with networking

Course coordinator: Dr. Ayah Mohamed Ezzat
Head of the Department: Dr Asamer Zakrya
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn311: Technical Installations in Buildings (2)

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Technical Installations in Buildings (2)	**Code: ARCn311**	**Level:** 3rd Fall	
Credit Hours: 2	**Lectures:** 1	**Tutorial/Exercise:** 3	**Practical:** -
	Pre-requisite: ARCn 310		

C - Professional information

1 – Course Learning Objectives:

The course aims to introduce several definitions and essential basics related to Industrial Control and Technical Installation in Buildings in the fields of acoustics and plumbing works. The course aims to provides students with the required understanding of the basic calculations needed to achieve comfortable acoustic level in buildings. It also aims to gain the student knowledge about sanitary and sewage works installations and calculations. The course also aims to introduce the electrical and fire protection works to the student.

2 – Competencies

c1. Identify acoustic and sound control requirements in buildings. (C10, C11, C12)
c2. Design taking into consideration acoustic requirements. (C2, C12)
c3. Classify and compare between different types of plumbing networks in buildings. (C10, C12, C13)
c4. Calculate piping sizes for small buildings. (C1, C4, C12).
c5. Design wet areas plumbing networks. (C4, C12, C13).
c6. Identify different technical installation systems in buildings (electric and fire fighting systems). (C10, C11, C12).
c7. Practice self-learning and communicate effectively orally and in written form. (C3, C10, C12).
c8. Collaborate effectively within multidisciplinary team. (C7, C8, C12).

This course contributes in the following program competencies: C1, C2, C3, C4, C7, C8, C10, C11, C12 & C13

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to the Course – Nature and Characteristics of Sound.	1	3	-
2	Noise Control in Architectural Spaces.	1	3	-
3	Acoustic Materials (Types, Properties and Uses)	1	3	-
4	Applications of Acoustic Design in Buildings.	1	3	-
5	Introduction to Acoustic Levels Measurement tools, Calculations and Simulation.	1	3	-
6	Introduction to Sanitary Works in Buildings, Sanitary Equipment (Types, Usages and Consumption)	1	3	-
7	Water Supply Networks in Buildings (Cold Water)	1	3	-
8	Mid-Term Assessment.	1	3	-
9	Water Supply Networks in Buildings (Hot Water)	1	3	-
10	Water Supply Pipes Sizing calculation in Buildings.	1	3	-
11	Sewage Networks in Buildings.	1	3	-
12	Water Recycling in Buildings and Grey water.	1	3	-
13	Introduction to Electrical Installations in Buildings	1	3	-
14	Introduction to Fire Fighting Installations in Buildings.	1	3	-
15	Final Research Presentation.	1	3	
	Total hours	**15**	**45**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies							
	c1	c2	c3	c4	c5	c6	c7	c8
Nature and Characteristics of Sound.	1							
Noise Control in Architectural Spaces.	1	1						
Acoustic Materials (Types, Properties and Uses)		1					1	
Applications of Acoustic Design in Buildings.		1					1	
Introduction to Acoustic Levels Measurement tools, Calculations and Simulation.		1					1	1
Introduction to Sanitary Works in Buildings, Sanitary Equipment (Types, Usages and Consumption)			1				1	1
Water Supply Networks in Buildings (Cold Water)			1		1			
Water Supply Networks in Buildings (Hot Water)			1		1			
Water Supply Pipes Sizing calculation in Buildings.				1	1			1
Sewage Networks in Buildings.				1	1			
Water Recycling in Buildings and Grey water.					1		1	
Introduction to Electrical Installations in Buildings						1		
Introduction to Fire Fighting Installations in Buildings.						1		
Topics Covering Competences	2	4	3	2	6	2	5	3

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research and Reports	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Assignments	Research & Presentations	Mini Project Report
c1	1			1						1					
c2	1	1	1	1	1		1		1	1			1	1	
c3	1	1	1	1			1			1			1	1	
c4	1			1	1		1			1			1	1	

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research and Reports	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Assignments	Research & Presentations	Mini Project Report
c5	1	1	1	1			1			1			1	1	
c6	1	1	1							1					
c7							1	1					1	1	
c8							1	1						1	
∑	6	4	4	5	3	-	6	2	1	6	-	-	5	6	-

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Research	Two Research per Semester	20
	Assignment	Weekly	20
Written Exam		Sixteenth Week	40
Total			100

7- List of references:

7-7 **Course notes:** Pdf Lectures

7-8 Required books

- Mcmullan, R., (2016), "Environmental science in Building", 7th edition, Ashford Colour Press Ltd, Palgrave.
- Swaffield, A., (2014), "Water, Sanitary & Waste, Services for Buildings", 7th Edition, Routledge, London.
- حمودة, ي. (1975). هندسة الأعمال الصحية: المرافق الصحية وتجهيزاتها داخل المباني، مؤسسة المعارف للطباعة والنشر.

7-9 Recommended books : None

7-10 Periodicals, Web sites, etc : None

8- Facilities required for teaching and learning

- White board
- overhead projector / Data Show
- Audio Video facilities: Video, T.V, P.C
- High speed internet and communication facilities for distance learning.
- Sound Level Meter.

Course coordinator: Dr. Mohamed Mahmoud, Dr. Sayed Abdul-khalik

Head of the Department: Associate Professor: Asamer Zakaria

Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn313: Working Drawing & Construction Methods (2)

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Working Drawing & Construction Methods (2) **Code:** ARCn313 **Level:** 3rd Fall

Credit Hours: 3 **Lectures:** 2 **Tutorial/Exercise:**3 **Practical:** -

Pre-requisite: ARCn312

C - Professional information

1 – Course Learning Objectives:

The course aims to complete the needed drawings for transforming architectural design projects into detailed drawings. Students will be able to produce working drawings and details for special frequently implemented architectural elements such as claddings, curtain walls, suspended ceilings, raised floors, roof gardens….in addition to other shop drawings for specific areas like wet area and other technical work drawings.

2 – Competencies

c1. Use current engineering techniques in relation to various advanced engineering ideas and details (C1,C4).
c2. Develop effective solutions for various engineering problems while studying the economic cost of each. (C3,C4).
c3. Setting specification for various architectural details, and solutions for site implementation problems. (C4,C13).
c4. Explain the role of the architecture profession relative to the construction industry and the overlapping interests of organizations representing the built environment. (C12,C13).
c5. Practice thinking in a creative and innovative way in problem solving and design. (C7,C9).
c6. Use quality assurance procedures and follow codes and standards. (C4,C5).
c7. Use experimental facilities to produce professional workshop and technical drawings using traditional drawing and computer aided drawings' techniques. (C4,C8,C10).
c8. Explain some complementary drawings of the architectural drawings and their importance in the initial stages of project implementation.(C3,C13).
c9. Discuss researches and formulate informed opinions on the various related engineering topics about current issues. (C5, C9).
c10. Consider the impact of construction on protection of the environmental and people (C13).
c11. Collaborate effectively within multidisciplinary team (C7,C8,C9).
c12.Practice managing tasks and resources efficiently(C5,C9,C10).

This course contributes in the following program competencies: C1,C3, C4, C5,C7,C8,C9,C10,C12&C13

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to working drawing 2 and the difference between the previous course	2	3	-
2	Roof Garden application & details	2	3	-
3	Suspended ceilings (Gypsum boards and tiles, acoustic tiles, aluminum panels and grid systems…)- dry wall partitions	2	3	-
4	Flooring details (types- functions- advanced flooring systems)	2	3	-
5	Wet area ,plans, section-elevations & details	2	3	-
6	Drainage and feeding works for Bathroom space & roofs drainage	2	3	-
7	➢ Mid-Term Exam	2	3	-
8	Research or Shop drawing project……	2	3	-
9	**Cladding** (Precast concrete panels, GRC, GRP, GRG, Marble cladding fixation, Masonry veneer, Metal and Aluminum composite sheets cladding) **Curtain walls and systems** (ordinary curtain wall, structural glazing, spider system)	2	3	-
10	Electric works in building 1 (lighting and power supply)	2	3	-
11	Electric works in building 2 (Light Current Systems; Fire Alarm, CCTV, Telephone and data)			
12	Skylight details	2	3	-
13	Hi-Tech stairs details	2	3	-
14	Final Project discussion and submission	2	3	-
15	General revision	2	3	-
	Total hours	**30**	**45**	

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies											
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12
Introduction to working drawing 2 and the difference between the previous course	1											
Roof Garden application & details	1		1	1	1		1	1		1		
Suspended ceilings (Gypsum boards and tiles, acoustic tiles, aluminum panels and grid systems…)- dry wall partitions.	1		1	1	1		1	1				
Flooring details (types- functions- advanced flooring systems)	1	1	1	1	1		1	1	1			
Wet area ,plans, section-elevations & details	1	1	1	1	1	1	1	1	1	1		
Drainage and feeding works for Bathroom space & roofs drainage)	1	1	1	1	1	1		1	1	1		
Research or Shop drawing project	1	1			1	1	1		1	1	1	1
Cladding (Precast concrete panels, GRC, GRP, GRG, Marble cladding fixation, Masonry veneer, Metal and Aluminum composite sheets cladding) **Curtain walls and systems** (ordinary curtain wall, structural glazing, spider system)	1		1	1	1		1	1				
Electric works in building 1 (lighting and power supply)	1	1			1	1		1	1			
Electric works in building 2 (Light Current Systems; Fire Alarm, CCTV, Telephone and data	1	1			1	1		1	1			
Skylight details	1		1	1	1		1	1				
Hi-Tech stairs details	1		1		1		1	1				
Topics Covering Competences	12	6	8	7	11	5	8	10	6	4	1	1

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials Assignments	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1	1			1	1	1	1	1		1	1	1
c2	1		1	1			1	1	1	1	1		1	1	1
c3	1	1	1	1			1	1	1	1	1		1	1	1
c4	1		1	1			1	1			1			1	1
c5	1	1	1	1			1	1	1	1	1		1	1	1
c6	1		1	1			1	1		1	1		1	1	
c7	1	1		1				1	1						1
c8	1			1				1							
c9	1		1	1			1	1			1			1	
c10	1	1	1	1			1	1			1			1	
c11	1		1				1	1						1	1
c12	1		1				1	1		1				1	1
∑	12	5	10	10	-	-	10	12	5	6	8	-	5	10	8

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes	10
	Research	Week 13	10
	Tutorials	Weekly Assignments	10
	Final project	Once per semester	10
Practical Exam		-	-
Written Exam		After fifteenth week (according to exam schedul)	40
Total			100

7- List of references:

7-1 Course notes: Pdf. lectures

7-2 Required books

7-3 Recommended books: None

Madan Mehta, Walter Scarborough, Diane Armpriest., (2013) Building Construction principles,Materialsand Systems- 2nd ed., USA

Ching, F., (2001)Building Construction Illustrated, 3rd Ed. John Willy & Sons Publishing Inc., New York,

Alexander, Metal building system design & specification, Graw hill,2015.

Verginia mcleod,Detail in contemporary landscape architecture, Laurence King,2012.

7-4 Periodicals, Web sites, etc. None

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped wirh projection and sound systems.
- Computer, Data show.
- High speed internet and communication facilitits for distance learning.

Course coordinator: Dr Azza Gamal Haggag

Head of the Department: Professor Asamer Zakaria

Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn322: Architectural Design (6)

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Architectural Design (6) **Code: ARCn322** **Level:** 3rd Fall

Credit Hours: 3 **Lectures:** 1 **Tutorial/Exercise:** 6 **Practical:** -

Pre-requisite: ARCn321

C - Professional information

1 – Course Learning Objectives:

This course aims to continue with studying the design of complex public buildings while emphasizing on large span structure systems and modern construction systems and materials. It includes a study for the visual relations of different buildings for the same project and their relationship with the surrounding context, environment, and composition. The practical application will be on public projects which includes modeling and rendering of perspectives during the different project stages.

2 - Competencies

c1. Classify and compare Principles of architectural design, human dimensions as a prime determinant of the scale, proportions, and spatial arrangement of a building spaces. (C13)
c2. Use of various structural systems and its role in the design product. (C11,C14).
c3. Analyze Principles of environmental and contextual forces that influence how we might situate a building, layout, and orient its spaces, articulate its enclosure, and establish its relation to the landscape. (C11).
c4. Calculate and analyze of exchange and assess different ideas, views and knowledge from given architectural designs and projects. (C11, C15).
c5. Integrate relationship of appropriate structural solutions into the design process. (C11).
c6. Use appropriate construction and structural techniques to achieve creative designs. (C11).
c7. Collaborate effectively within multidisciplinary team. (C5,C7,C9).
c8. Consider the impact of designs on the environmental protection. (C3).
c9. Practice self-learning and communicate effectively orally and in written form. (C8,C10).

This course contributes in the following program competencies: C3, C5, C7, C8 , C9, C10, C11, C13, C14&C15

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to 3rd project (A Multi-story Residential and commercial Building)	1	6	-
2	Research: relevant architectural data and similar projects either International or local projects.	1	6	-
3	Sketch 1 (Schematic / conceptual design)	1	6	-
4	Sketch 2 (focuses on designing and formulating project plans)	1	6	-
5	Sketch 3 (Design development for plans)	1	6	-
6	Sketch 4 (focuses on designing and formulating project elevations and main sections)	1	6	-
7	Mid-Term Exam			
8	Sketch 5 - Semi final sketch (Design Development for Layout, plans, elevations, sections and 3d models)	1	6	-
9	Sketch 6 - Final sketch (Presenting Layout, plans, elevations, sections and 3d models for approval). Presentation and rendering sessions	1	6	-
10	Final Submission and Project Discussion	1	6	-
11	Introduction to 4th project (A type of a project with both function and structural implications)	1	6	-
12	Research: Data gathering, site analysis, climatic studies, zoning and analysis of similar projects	1	6	-
13	Sketch 1 (Schematic / conceptual design)	1	6	-
14	Sketch 2 (Design development for plans)	1	6	-
15	Final Project	1	6	
	Total hours	**14**	**84**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies								
	c1	c2	c3	c4	c5	c6	c7	c8	c9
Introduction to 3rd project (A Multi-story Residential and commercial Building)	1	1							
Research: relevant architectural data and similar projects either International or local projects.	1			1			1		
Sketch 1 (Schematic / conceptual design)			1		1	1		1	
Sketch 2 (focuses on designing and formulating project plans)			1			1			
Sketch 3 (Design development for plans)		1		1			1		1
Sketch 4 (focuses on designing and formulating project elevations and main sections)		1							
Mid-Term Exam									
Sketch 5 - Semi final sketch (Design Development for Layout, plans, elevations, sections and 3d models)	1		1			1			
Sketch 6 - Final sketch (Presenting Layout, plans, elevations, sections and 3d models for approval). Presentation and rendering sessions			1			1			
Final Submission and Project Discussion			1		1	1		1	
Introduction to 4th project (A type of a project with both function and structural implications)		1	1			1			
Research: Data gathering, site analysis, climatic studies, zoning and analysis of similar projects			1			1			1
Sketch 1 (Schematic / conceptual design)		1		1					
Sketch 2 (Design development for plans)			1			1			
Topics Covering Competences	3	4	8	2	2	8	2	2	2

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1	1				1		1	1		1		
c2	1	1						1		1	1			1	1
c3	1	1		1						1	1		1		
C4	1	1	1	1				1		1	1		1		
C5	1	1						1		1				1	1
C6		1		1						1	1				
C7		1		1											1
C8								1						1	
C9			1					1						1	
∑	5	7	3	5				6		6	5		3	4	3

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Research	Two research per semester	10
	Quizzes	2 Quizzes	10
Final Project		Fourteen weeks	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes

Handouts, Research papers and lectures will be given at appropriate time of the project progress depending on the studied project

7-2Required books

7-3 Recommended books

- Ching, F. D. K., (2014), "Building Structures Illustrated: Patterns, Systems and Design", John Wiley & Sons Ltd., UK.
- Jencks, C., (2000), "Architecture 2000 and Beyond", John Wiley & Sons Ltd, UK.

Edward, W., (1975), "A vocabulary of Architectural Forms", Architectural Media, USA

7-4 Periodicals, Web sites, etc

- Architectural record, Published monthly by the McGraw – Hill companies
- Al – Benaa Magazine, Published monthly by Medina Publishing Inc., Kingdom of Saudi Arabia.
- Electronic Pub. URL: www.greatbuildings.com

8- Facilities required for teaching and learning

- Appropriate teaching design studios including presentation board, data show, models, computer lab

Course coordinator: DR. Ahmed Nour
Head of the Department: Associate Professor: Asamer Zakaria
Date: August2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn324: Housing & City Planning (2)

A- Affiliation

Relevant program: Architecture Engineering and Building Technology BSc Program
Department offering the program: Architecture Engineering and Building Technology Department
Department offering the course: Architecture Engineering and Building Technology Department
Date of specifications approval: August, 2020

B - Basic Information

Title: Housing & City Planning (2) **Code: ARCn324** **Level:** 3rd Fall
Credit Hours: 2 **Lectures:** 1 **Tutorial/Exercise:** 3 **Practical:** -
Pre-requisite: ARCn323

C - Professional information

1 – Course Learning Objectives:

As an extension of the study of planning theories and the basis of dealing with neighborhoods, we deal in more detail with the study of degraded and slum areas in Egypt, especially in terms of economy, environment and urbanization, and this is through modern technology represented in the GIS program. The 'city' as a modular for planning, Land-use theories and fundamentals& Residential communities.

2 - Competencies

c1. Develop a design by linking different related subjects essential for the design such as: urban, financial, environmental & topographic studies. (C13)
c2. Develop new ideas during the design process using the principles of planning. (C11,C14).
c3. Collect & analyze data that will make him / her develop a design for a complete complex. (C11).
c4. Collaborate effectively within multidisciplinary team. (C5,C7,C9).
c5. Consider the impact of designs on the environmental protection. (C3).
c6. Practice self-learning and communicate effectively orally and in written form. (C8,C10).

This course contributes in the following program competencies: C3, C5, C7, C8 , C9, C10, C11, C13 & C14

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Planning elements & introducing the project	1	3	-
2	Site analysis studies (GIS Application)	1	3	-
3	Urban upgrading phase for buildings & roads	1	3	-
4	Reviewing the urban upgrading & information conclusion	1	3	-
5	Following up the site analysis studies & evaluation	1	3	-
6	Evaluating the site analysis studies	1	3	-
7	Assessment (Mid Term exam)			-
8	Following up the Analysis with P.C.P	1	3	-
9	S.W.O.T analysis defining & methods	1	3	-
10	How to make action plan	1	3	-
11	Solving strategies (following up the alternatives)	1	3	-
12	Evaluating alternatives for master plan	1	3	-
13	Evaluating alternatives for detailed	1	3	-
14	Semifinal presentation (Following up the project)	1	3	-
15	Final Project	1	3	-
	Total hours	**14**	**42**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies								
	c1	c2	c3	C4	C5	C6			
Planning elements & introducing the project	1	1							
Site analysis studies (GIS Application)	1			1					
Urban upgrading phase for buildings & roads			1		1				
Reviewing the urban upgrading & information conclusion			1						
Following up the site analysis studies & evaluation		1		1		1			
Evaluating the site analysis studies		1							
Following up the Analysis with P.C.P	1		1						
S.W.O.T analysis defining & methods			1						
How to make action plan			1		1				
Solving strategies (following up the alternatives)		1	1						
Evaluating alternatives for master plan			1			1			
Evaluating alternatives for detailed			1						
Semi final presentation (Following up the project)			1						
Final Project	1	1	1	1	1	1			
Topics Covering Competences	4	5	10	3	3	3			

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1	1			1	1		1	1	1	1		
c2	1	1						1		1	1			1	1
c3	1	1		1			1			1	1		1		
C4		1		1											1
C5							1	1						1	
C6			1				1	1						1	
∑	3	4	2	3			4	4		3	3	1	2	3	2

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Assessment (Mid Term exam)		7th Week	20
Semester Work	Research	Two research per semester	10
	Mini project	Once per semester	10
Final Project		Fifteen weeks	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

- احمد خالد علام ، (1995) ، "تخطيط المجاورة السكنية" ، مكتبة الانجلو المصرية، القاهرة، مصر.
- سعيد على خطاب على ، (1993) ، " المناطق الممتلئة عمرانياً وتطويرها الاسكان العشوائ" ، دار الكتب العلمية، القاهرة، مصر.
- وحيد حلمي حبيب ، (1990) ، "تخطيط المدن الجديدة" ، دار مكتبة المهندسين، القاهرة، مصر.

7-1 Course notes:

1. https://www.youtube.com/watch?v=1fIBMVz35u4&list=PLrQsv5YoPWYgbwfCrWGgn6A4_9N1aRiTE&index=44
2. https://www.youtube.com/watch?v=71rZ4E2ekwk&list=PLrQsv5YoPWYgbwfCrWGgn6A4_9N1aRiTE&index=43
3. https://www.youtube.com/watch?v=Dy0m6482Q_0&list=PLrQsv5YoPWYgbwfCrWGgn6A4_9N1aRiTE&index=42
4. https://www.youtube.com/watch?v=vwpUb5Jxe_M&list=PLrQsv5YoPWYgbwfCrWGgn6A4_9N1aRiTE&index=41
5. https://www.youtube.com/watch?v=B-2qWfIpiKQ&list=PLrQsv5YoPWYgbwfCrWGgn6A4_9N1aRiTE&index=40
6. https://www.youtube.com/watch?v=k0hQ7hPYNE8&list=PLrQsv5YoPWYgbwfCrWGgn6A4_9N1aRiTE&index=39
7. https://www.youtube.com/watch?v=dSOGDsyl6bA&list=PLrQsv5YoPWYgbwfCrWGgn6A4_9N1aRiTE&index=2

7-2 Required books: None

7-3 Recommended books

- The Residential neighborhood – M. HasanAllana

7-3 Periodicals, Web sites, etc

- **www.clac.com**
- **www.googleearth.com**

8- Facilities required for teaching and learning

- GPS
- Internet access
- Updated computers
- Educational Software License
- Data Show

Course coordinator: DR. Shahenaz Taie
Head of the Department: Associate Professor: Asamer Zakaria
Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ENGn213b: Advanced computer systems implementation

A- Affiliation

Relevant program:	Architectural Engineering and Building Technology BSc Program
Department offering the program:	Architectural Engineering and Building Technology Department
Department offering the course:	Architectural Engineering and Building Technology Department
Date of specifications approval:	August, 2020

B - Basic Information

Title: Advanced computer systems implementation
Code: ENGn213b
Level: 3rd Spring
Credit Hours: 3
Lectures: 2
Tutorial/Exercise: -
Practical: 2
Pre-requisite: CMPn010

C - Professional information

1 – Course Learning Objectives:

The course aims to teach the main principles of advanced computer systems, It focuses on using new terminology in the computer applications field for example the implementation of Building information modeling (BIM) in the field of building construction, Through studying one of the most common used BIM software such as REVIT or any equivalent software.

2 - Competencies

c1. Classify the new terminologies of advanced computer systems and building information modeling (BIM) implementation in the building construction field (C3,C7).
c2. Explain Potential computer uses in advanced computer systems (C1,C7,C11).
c3. Explain how to create BIM models using the REVIT program (C3,C7).
c4. Investigate the best and easiest way to create the required 3d models (C1).
c5. Produce and design projects of various scales and levels of complexity (C1).
c6. Analyze and render 3d realistic design models and prepare working drawings sheets besides creating a schedule of quantities (C1)
c7. Collaborate effectively within a multidisciplinary team (C5,C7,C9).
c8. Consider the impact of designs on environmental protection (C3).
c9. Practice self-learning and communicate effectively orally and in written form (C8,C10).

This course contributes in the following program competencies: C1, C3, C5, C7, C8, C9, C10, C11

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to Advanced computer systems, start-up a REVIT drawing file and using assisting Commands	2	-	2
2	Level and Grid command, Sketch mode, Walls types (How to Create Basic walls).	2	-	2
3	Wall types (How to Create Stacked and curtain walls) Create floors, Selection methods, and Modifying commands.	2	-	2
4	Model revision, Modeling commands (doors, windows) and adding components, and create a camera.	2	-	2
5	Project phase 1 submission.	2	-	2
6	Modeling commands (Ceiling, Columns, Roof, Stairs).	2	-	2
7	Assessment (Mid Term)	-	-	-
8	Modeling commands (Railing, Ramp).	2	-	2
9	in-place family (create cornice using sweep command) and Massing	2	-	2
10	Project phase 2 submission.	2	-	2
11	Plotting (sheet preparation), annotation commands (Dimension, details, text), and schedule of quantities.	2	-	2
12	Practical Exam	-	-	-
13	Project submission	2	-	2
14	Final revision, Exam preparation & Makeup Class	2	-	2
15	Final revision, Exam preparation & Makeup Class	2		2
	Final Exam	**24**	**-**	**24**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies																		
	c1	c2	c3	c4	c5	c6	c7	c8	c9										
Introduction to Advanced computer systems, start-up a REVIT drawing file	1	1	1																
Level and Grid command, Sketch mode, Walls types			1	1	1	1	1	1	1										
Wall types Create floors, Selection methods, and Modifying commands.			1	1	1	1	1	1	1										
Model revision, Modeling commands, and create a camera.			1	1	1	1	1	1	1										
Project phase 1 submission.			1	1	1	1													
Modeling commands (Ceiling, Columns, Roof, Stairs).				1	1	1													
Mid Term Exam				1	1	1			1										
Modeling commands (Railing, Ramp).			1	1	1	1													
in-place family and Massing			1	1	1	1													
Project phase 2 submission.			1	1	1	1													
Plotting, annotation commands, and schedule of quantities			1	1	1	1													
Practical Exam				1	1	1			1										
Project submission				1	1	1													

Topic	Course Competencies																		
	c1	c2	c3	c4	c5	c6	c7	c8	c9										
Final revision, Exam preparation & Makeup Class				1	1	1													
Final revision, Exam preparation & Makeup Class				1	1	1													
Topics Covering Competences	1	1	9	13	13	13	3	3	5										

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researches, Reports &	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1	1	1			1	1		1				
c2	1		1	1	1			1	1		1	1			
c3	1	1	1	1	1			1	1	1	1	1			
c4	1			1	1			1	1	1	1	1			
c5	1				1			1	1	1	1	1			
c6	1				1			1	1	1	1	1			
c7				1	1			1	1		1				
c8	1	1	1	1				1							
c9	1	1	1					1		1					
∑	8	4	5	6	7			9	7	5	7	5			

6- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work Assignments & Project	2 Exercises	20
Mid-Term Exam	8th Week	20
Practical Exam	12th week	20
Written Exam	15th week	40
Total		100

7- List of references:

7-1 Course notes: Lecture notes

7-2 Required books

- Mastering Autodesk Revit Architecture 2016, Published by James Vandezande.

7-3 Recommended books:

- Revit Architecture 2016 Basics, Published by Elise Moss.
- The Egyptian Code for Building Information Modeling (BIM) Published by Housing & Building National Research Center (HBRC).

7-4 Periodicals, Web sites, etc.

- Electronic Pub. URL: https://www.autodesk.com/products/revit/overview?term=1-YEAR
- Electronic Pub. URL: https://www.engineeringbookspdf.com/mastering-autodesk-revit-architecture-2016-james-vandezande/
- Electronic Pub. URL: https://static.sdcpublications.com/pdfsample/978-1-58503-982-1-2.pdf

8- Facilities required for teaching and learning:

- Laboratories with net meetings and Data show.
- Computer Laboratories, REVIT program.

Course coordinator: Dr. Sherif Salah el din
Head of the Department: Assoc prof. Asamer Zakaria
Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn340: History of Architecture 3

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: History of Architecture 3 **Code:** ARCn340 **Level:** 3rd- 8th Semester Spring
Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:**1 **Practical:** 3
Pre-requisite: ARCn241

C - Professional information

1 – Course Learning Objectives:

The course aims to increase the student's historical background throughout explaining the formation and evolvement of buildings and architectural and artistic elements in the Islamic world. The course discusses different periods starting with Early Islamic, passing by Umayyad, Abbasid, Seljuk and Ottoman periods, in addition to illustrating its effect in Egypt and the world. Students also study selected examples of religious, civic, and residential buildings in chronological order while continue with developing their criticizing and analyzing skills by making sketches for some buildings and their distinguished elements.

2 - Competencies

c1. Identify, formulate the relationship between the development of the ecological sittings (socio-culture, technological and physical factors in different societies) and development architecture (C1, C2)
c2. Identify, formulate the main features of Early Islamic reign, as well recognize the art schools and its pioneers in 19th and 20th century (C1, C2)
c3. Criticize objectively the architectural forms and styles and understanding the influences, which oriented guide them, studying how to produce 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. (C3, C11).
c4. 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 (C12).
c5. 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. (C3, C11).
c6. Identify the development process of architecture within its historical context. (C3).
c7. Utilize contemporary technologies, codes of practice and standards to expand and correct their artistic and design experiences. (C4)
c8. Development of architectural forms and styles. (C3).
c9. Improve evaluation skills of architectural forms and recognize the different forces which guide it. (C8)
c10. Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams (C7)
c11. Use creative, innovative tools to present work documentation in written and oral form. (C9)

This course contributes in the following program competencies: C1, C2, C3, C4, C7, C8, C9 , C11,C12

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	1. Urban traditions in the Islamic world+ Early Islamic	2	1	-
2	2. Mosques in Umayyad, Abbasid Periods	2	1	-
3	3. Mosques in Tulane's, Fatimid periods	2	1	-
4	4. Residential Buildings in Islamic Arch.	2	1	-
5	5. Mosques & Schools in Ayyubids period.	2	1	-
6	6. Religious Buildings in Islamic Arch.	2	1	-
7	7. Mid-Term Exam	2	1	-
8	8. Religious Buildings in Islamic Arch	2	1	-
9	9. Mosques & Schools in Mamluks (Bahri and Circassian) period.	2	1	-
10	10. Mosques & Schools in Seljuk and Ottoman periods	2	1	-
11	11. Site Visit	2	1	-
12	12. Napolic Invasion (Mohamed Ali) period.	2	1	-
13	13. Civic Buildings in Islamic Arch	2	1	-
14	14. Research	2	1	-
15	15. Individual presentation.	2	1	-
	Total hours	**30**	**15**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies										
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11
Urban traditions in the Islamic world+ Early Islamic	1	1	1	1	1	1	1	1			
Mosques in Umayyad, Abbasid Periods	1	1	1	1	1	1	1	1			
Mosques in Tulane's, Fatimid periods	1	1	1	1	1	1	1	1			
Residential Buildings in Islamic Arch.	1	1	1	1	1	1	1	1			
Mosques & Schools in Ayyubids period.	1	1	1	1	1	1	1	1			
Religious Buildings in Islamic Arch.	1	1	1	1	1	1	1	1			
Religious Buildings in Islamic Arch	1	1	1	1	1	1	1	1			
Mosques & Schools in Mamluks (Bahri and Circassian) period.	1	1	1	1	1	1	1	1			
Mosques & Schools in Seljuk and Ottoman periods	1	1	1	1	1	1	1	1			
Site Visit							1	1	1	1	1
Napolic Invasion (Mohamed Ali) period.	1	1	1	1	1	1	1	1			
Civic Buildings in Islamic Arch	1	1	1	1	1	1	1	1			
Research									1	1	1
Individual presentation.									1	1	1
Topics Covering Competences	11	11	11	11	11	11	12	12	3	3	3

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1				1	1		1			1		
c2	1	1	1				1	1		1			1		
c3	1	1	1	1			1	1		1	1		1		

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c4	1	1	1	1			1	1		1	1		1		
c5	1	1	1	1			1	1		1	1		1		
c6	1	1	1	1			1	1		1	1		1		
c7	1	1	1	1			1	1		1	1		1		
c8	1	1	1	1			1	1		1	1		1		
c9	1	1	1				1							1	
c10	1	1	1				1	1						1	
c11	1	1	1				1	1						1	
∑	11	11	11	6	0	0	11	10	0	8	6	0	8	3	

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes (one each 3 weeks)	10
	Reports/Research	2 research's per semester	10
	Tutorials	2 Assignments per semester	10
	Mini project	-	-
Final research& Presentation		Fifteenth week	10
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes:

Course notes, The mosque, Mona Elbasyoni, Faten Salah, 2018.

7-2 Required books

- Flood, F. B., & Necipoglu, G., (2017), "A Companion to Islamic Art and Architecture", 2 Volume Set, Wiley, USA.
- Arnold, T., (2005), "The Islamic Art & Architecture", Oxford, Laurence, USA
- توفيق أحمد عبد الجواد، تاريخ العمارة والفنون الإسلامية، المطبعة الفنية الحديثة، القاهرة، مصر،1970
- العمارة الاسلامية فكر وحضارة، توفيق عبد الجواد، مكتبة الأنجلو-القاهرة 1987

7-4 Recommended books: None

- Robert Hillenbrand, 1994, Islamic Architecture, Newen, U.K.
- K.Frampton " Modern Architecture, a critical history "
- N.Pevsner " An Outline of European Architecture "
- N.Pevsner " The Sources of Modern Architecture and Design "
- اسس التصميم المعمارى والتخطيط الحضرى فى العصور الاسلامية المختلفة بالعاصمة القاهرة، مركز الدراسات التخطيطية والمعمارية, منظمة العواصم والمدن الاسلامية 1411هج- 1990 م .

7-4 Periodicals, Web sites, etc.

http://www.islamic-council.org. (Last accessed February 20, 2019).

8- Facilities required for teaching and learning:

- Well-equipped space for lectures and digital presentation.
- Site visits Lecture and Exercise rooms equipped wirh projection and sound systems.
- Data show High speed internet and communication facilities for distance learning.

Course coordinator: Professor Mona El Basyouni
Head of the Department: Associate Professor: Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn331: Sustainable Architecture

A- Affiliation

Relevant program: Architectural Engineering and Building technology BSc Program
Department offering the program: Architectural Engineering and Building technology BSc Department
Department offering the course: Architectural Engineering and Building technology Department
Date of specifications approval: August 2020

B - Basic Information

Title: Sustainable Architecture **Code:** ARCn331 **Level:** level three 8th Semester (Spring)
Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:** - **Practical:** -
Pre-requisite: ARCn216

C - Professional information

1 – Course Learning Objectives:

The course aims at providing students with various concepts and principles of sustainable architecture and its strategies in regard to design, planning and construction and also analyzing its different technology. The students will be able to design healthy buildings with clean and smart systems that can also reserve the natural environment and its resources.

2 - Competencies

c1. Identify and understand the types and principles of sustainable design, climatic considerations, and energy conservation in buildings and their impacts on the environment. (C3, C10, C12)
c2. Think in a creative and innovative way in problem solving and design and solve engineering problems, often based on limited and possibly contradicting information. (C1,)
c3. Integrate different forms of knowledge and ideas from the student's field in addition to other disciplines, and manage information related to the design process, in relation to structure, building materials, construction elements, etc. (C2, C4, C6, C13)
c4. Judge engineering decisions while considering balanced costs, benefits, safety, quality, reliability, and environmental impact. (C3)
c5. Incorporate economic, societal, environmental dimensions and risk management in design. (C3, C4, C6)
c6. Appraise the spatial, aesthetic, technical and social qualities of a design within the scope and scale of wider environmental principles. (C3, C11, C17)
c7. Identify different tools for sustainable building technologies and their use an impact on the built and social environment. (C4, C11, C13)
c8. Professionally merge the engineering knowledge, understanding, and feedback to improve and enhance the design and develop innovative and appropriate solutions of architectural and urban problems in relation to sustainability. (C4,C5, C8, C9, C11)
c9. Work within constraints and search for information and adopt life-long self-learning (C10)
c10. Work within a team and gaining the ability to correctly refer of the relevant literature. (C7, C9)

This course contributes in the following program competencies: C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13 & C17.

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Course outline and introduction & Research Introduction.	2	-	-
2	Importance, steps, principles, and types of environmental architecture.	2	-	-
3	Vernacular architecture: definition, principles, and examples.	2	-	-
4	Climatic and bioclimatic architecture: definition, principles, and examples.	2	-	-
5	Green architecture: definition, principles, and examples.	2	-	-
6	Sustainable architecture: definition, principles, and examples.	2	-	-
7	Mid Term Exam		-	-
8	Echo-tech architecture: definition, principles, and examples. & Smart Technology & techniques available (Building design, systems, equipment, programs, materials, structure, etc.).	2	-	-
9	Passive & active solar energy systems (Heating & Cooling), (water conservation, waste systems, protecting natural environment, resources and materials, etc.)	2	-	-
10	Environmental hazard, designing healthy buildings, clean and low to zero energy, Building metabolism. Research & Project Introduction	2	-	-
11	Research & Project follow up	2	-	-
12	Research & Project follow up	2	-	-
13	Research & Project follow up	2	-	-
14	Research & Project submission	2	-	-
15	Revision	2	-	-
	Total hours	**28**	**-**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies																		
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15	c16	c17	c18	c19
Course outline and introduction.			1				1												
Importance, steps, principles, and types of environmental architecture.		1	1		1		1												
Vernacular architecture: definition, principles, and examples.	1		1	1		1		1	1										
Climatic and bioclimatic architecture: definition, principles, and examples.	1		1	1		1		1	1										
Green architecture: definition, principles, and examples.	1		1	1		1		1	1										
Sustainable architecture: definition, principles, and examples.	1		1	1		1		1	1										
Echo-tech architecture: definition, principles, and examples. & Smart Technology & techniques available (Building design, systems, equipment, programs, materials, structure, etc.).	1		1	1	1	1	1	1	1										
Passive & active solar energy systems (Heating & Cooling), (water conservation, waste	1		1	1		1		1	1										

Topic	Course Competencies																		
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15	c16	c17	c18	c19
systems, protecting natural environment, resources and materials, etc.)																			
Environmental hazard, designing healthy buildings, clean and low to zero energy, Building metabolism.	1		1	1	1			1	1										
Research & Project	1	1	1	1	1	1	1	1	1	1									
Exams & Quizees	1	1	1	1	1	1	1	1		1									
Topics Covering Competences	9	3	11	9	5	7	5	9	8	2									

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project
c1	1	1	1				1	1		1					1
c2	1	1			1		1			1			1	1	1
c3	1	1	1		1		1	1						1	1
c4	1	1	1				1	1		1					1
c5	1	1	1				1	1		1					1
c6	1	1	1		1		1	1		1				1	1
c7	1	1	1				1	1		1					1
c8	1	1	1		1		1	1							1
c9	1		1				1	1						1	1
c10			1				1							1	1
∑	9	8	9		4		10	8		6			1	5	10

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
	Mid-Term Exam	7th Week	20
Semester Work	Class work	Assignments, Research & Project	40
	Practical Exam	Fifteenth week	-
	Written Exam	Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: None

7-2 Required books:

- Michael Bauer, (2010), "Green Building – Guidebook for Sustainable Architecture", Springer, Germany.
- Nalanie Mithraratne, (2007), "Sustainable living: the Role of Whole life Cost and Values", Elsevier.
- Daniel E., (2007), "Sustainable Design – Ecology, Architecture and Planning", John Wiley &Sons, Inc.

7-3 Recommended books: None

7-4 Periodicals, Web sites, etc.

8- Facilities required for teaching and learning:

- Data show

Course coordinator: Associate Prof. Reham Mostafa
Head of the Department: Associate Prof. Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn332: Design, Environmental planning, and power

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August, 2020

B - Basic Information

Title: Design, Environmental planning and power	**Code: ARCn332**	**Level:** 3rd Fall	
Credit Hours: 2	**Lectures:** 2	**Tutorial/Exercise:** -	**Practical:** -
	Pre-requisite: ARCn216		

C - Professional information

1 – Course Learning Objectives:

The course introduces students to the basic principles of environmental performance in the built envelope. Environmental fields and its level – climatic zone in Egypt Integrated Environmental design – definition of saving Energy comfort degrees and human needs – Ecological system saving from natural condition: sand movement – Beaches

2 – Competencies

c1. Solve environmental problems of buildings and analyze their elements, details, materials. (C13)
c2. Develop architectural designs that are functionally sound, environmentally appropriate aesthetically plausible, users' friendly and technologically up-to-date. (C11,C14).
c3. Analyze, understand and make use of environmental circumstances and contexts. (C11).
C4. Collaborate effectively within multidisciplinary team. (C5,C7,C9).
C5. Consider the impact of designs on the environmental protection. (C3).
C6. Practice self-learning and communicate effectively orally and in written form. (C8,C10).

This course contributes in the following program competencies: C3, C5, C7, C8 , C9, C10, C11, C13 & C14

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Environmental fields and its level	2	-	-
2	Environmental fields and its level	2	-	-
3	climatic zone in Egypt Integrated Environmental design	2	-	-
4	climatic zone in Egypt Integrated Environmental design	2	-	-
5	definition of saving Energy comfort degrees and human needs	2	-	-
6	definition of saving Energy comfort degrees and human needs	2	-	-
7	Assessment (Mid-Term Exam)			-
8	Ecological system saving from natural condition: sand movement – Beaches/ Ecological system saving from natural condition: sand movement – Beaches	2	-	-
9	Ecological system saving from natural condition: sand movement – Beaches/ Ecological system saving from natural condition: sand movement – Beaches	2	-	-
10	Floods – facing Air earth pollution	2	-	-
11	Environmental effects , forms and site Design	2	-	-
12	Daylight needs – Aerodynamics Architecture	2	-	-
13	ventilation Design and protection from wind	2	-	-
14	renewed energy – solar energy and its efficiency	2	-	-
15	renewed energy – solar energy and its efficiency.	2	-	-
	Total hours	**28**	**-**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies								
	c1	c2	c3	C4	C5	C6			
Environmental fields and its level	1	1							
Environmental fields and its level	1			1					
climatic zone in Egypt Integrated Environmental design			1		1				
climatic zone in Egypt Integrated Environmental design			1						
definition of saving Energy comfort degrees and human needs		1		1		1			
definition of saving Energy comfort degrees and human needs		1							
Ecological system saving from natural condition: sand movement – Beaches/ Ecological system saving from natural condition: sand movement – Beaches	1		1						
Floods – facing Air earth pollution			1						
Floods – facing Air earth pollution			1		1				
Environmental effects , forms and site Design		1	1						
Daylight needs – Aerodynamics Architecture			1			1			
ventilation Design and protection from wind									
renewed energy – solar energy and its efficiency			1						
renewed energy – solar energy and its efficiency.	1	1	1	1	1	1			
Topics Covering Competences	4	5	9	3	3	3			

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1	1			1	1		1	1	1	1		
c2	1	1						1		1	1			1	1
c3	1	1		1			1			1	1		1		

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
C4		1		1											1
C5							1	1						1	
C6			1					1						1	
∑	3	4	2	3			3	4		3	3	1	2	3	2

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Assessment (Mid-Term Exam)		7th Week	20
Semester Work	Research	Two research per semester	10
	Mini project	Once per semester	10
Final Project		Fourteen weeks	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

- أ.د. على رأفت، فبراير (1996) ، ثلاثية الإبداع المعمارى (البيئة والفراغ) ، مركز أبحاث أنتركونسلت، مطابع الشروق.
- محمد احمد السيد ، (2009) ، مصادر الطاقة والبيئة ، دار الكتب العلمية ، القاهرة ، مصر
- محي الدين سلقيني ، (2004) ، العمارة البيئية ، دار قباس ، بيروت ، لبنان
- Mary Guzowski, (2010), Towards Zero Energy Architecture, I K, China
- David Tborpe, (2010), Sustinable Home Refuribshmant the Earthscom Expert, Earthscon, UK
- Kolley Luckett, (2009), Green Roof Ionstyuction & Maintenanee, Mc-Graw hill, USA

7-1Course notes:

1. https://youtu.be/ynQctiJ_9MY
2. https://youtu.be/76OKi398jNs
3. https://youtu.be/zH7e2JNuRJI
4. https://youtu.be/el1z73kfpYk
5. https://youtu.be/RqZiBE4c8FM
6.

7-2 Required books

- Okba, Ehab mahmoud.2007. Environmental Control (Arabic). Cairo, Egypt
- Koesinger, “Environmental Control Handbook”, 2000

7-5 Recommended books

- Anne R. Beer, Catherine Higgins, Environmental Planning for Site Development; A Manual for Sustainable Local, Published by Taylor & Francis, 2000.
- أ.د. شفق الوكيل، محمد عبد الله سراج، "المناخ وعمارة المناطق الحارة"، شركة الطوبجى للطباعة ،الطبعة الثانية، القاهرة، 1985.
- MED – ENEC, (2013), “Energy Efficiency Urban Planning Guidelines for Middle East and North Africa (MENA) Region”, The European Union, Egypt.

Beer, A. R., & Higgins, C., (2000), “Environmental Planning for Site Development; A Manual for Sustainable Local”, Taylor & Francis, London, UK.

7-4 Periodicals, Web sites, etc

- www.clac.com
- www.googleearth.com

8- Facilities required for teaching and learning

- Laptop,
- Data show and Computer programs
- CAD

Course coordinator: DR. Shahenaz Taie
Head of the Department: Associate Professor: Asamer Zakaria
Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn333 : Building Technology and Structure Systems

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Building Technology and Structure Systems **Code:** ARCn333 **Level:** 3rd Fall Semester

Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:** 0 **Total :** 2

Pre-requisite: ARCn210

C - Professional information

1 – Course Learning Objectives:

The main aims of this course is to continue with enhancing the students' knowledge of advanced construction technology and their applications throughout big prefabrication gate. It discusses the techniques and methods of new fabrication and manufacturing, in addition to mass production and its section calculations. This course covering new technologies such as movable, smart, responding, virtual reality, digital and many other architectural trends, while analyzing and evaluating their performance from building technology and structural systems scoop. Finally the studenties will be able to design any prefab unit using wave coordinates.

2 – Competencies

c1. Identify the advanced construction materials& systems (C1, C10).
c2. Classify and compare the properties and application of module and modular. (C1, , C4).
c3. Create newt ypes of modular coordination. (C2, C4,C8, C11)
c4. Acquire and apply the new types and systems of prefabricated building (C9, C10)
c5. Utilize contemporary technologies of new images of coordinate systems combined with time. C4, C5)
c6. Use creative, innovative, and flexible thinking to design liberated prefab unites (C3, C5,C11)
c7. Transform design concepts into buildings through the future ways like smart and kinetic architecture (C14, C15)
c8. Apply the concepts of virtual realty and digital systems in building (C5, C7,C8, C15)
c9. Develop the building quality during building process and while occupancy (C5, C7, C12)
c10. Practice of continuous self-learning (C1, C2, C3, C4, C5, C8, C9,C10)

This course contributes in the following program competencies:C1,C2,C3,C4,C5,C7,C8,C9,C10,C11,C12,C14 &C15

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to building Technology	2	-	-
2	Advanced materials & systems - Smart materials - Smart systems (using integrations) - Advanced structure systems (meshes – trusses – shell -cables-space structures)	2	-	-
3	Module and modular - modular coordination& Modules - Le Corbosier Module - Modular coordination & mass production	2	-	-
4	Prefabricated concrete unites (slabs – columns – beams – connections – special units)	2	-	-
5	Prefabricated steel units (slabs – walls – special units – connections)	2	-	-
6	Prefabricated timber building (slabs – walls - pitched roofs – connections)	2	-	-
7	➢ Mid-term Exam	2	-	-
8	contemporary building technologies (the techniques and methods of fabrication and manufacturing)	2	-	-
9	Advanced prefabricated building (the effects of time vector)	2	-	-
10	Smart Architecture	2	-	-
11	Kinetic Architecture	2	-	
12	Virtual reality	2	-	-
13	Digital Architecture	2	-	-
14	Final research discussion and submission	2	-	-
15	Revision	2	-	-
	Total hours	**30**		

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies									
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10
Introduction to building Technology	1	1	1	1	1	1	1			1
Advanced materials & systems - Smart materials - Smart systems (using integrations) Advanced structure systems (meshes – trusses – shell -cables-space structures)	1	1	1	1		1	1	1	1	1
Module and modular - modular coordination& Modules - Le Corbosier Module - Modular coordination & mass production	1	1	1	1	1		1	1		1
Prefabricated concrete unites (slabs – columns – beams – connections – special units)	1	1		1					1	
Prefabricated steel units (slabs – walls – special units – connections)	1	1		1					1	
Prefabricated timber building (slabs – walls - pitched roofs – connections)	1	1		1					1	
contemporary building technologies (the techniques and methods of fabrication and manufacturing)	1	1	1	1	1	1	1		1	1
Advanced prefabricated building (the effects of time vector)	1	1	1	1	1	1	1	1	1	1
Smart Architecture	1		1		1	1	1		1	1
Kinetic Architecture	1		1		1	1	1		1	1
Virtual reality	1		1		1	1	1	1	1	1
Digital Architecture	1		1			1	1	1	1	1
Topics Covering Competences	12	8	9	8	8	8	9	5	10	9

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method		
	Lectures	Presentations & Movies	Discussions & seminars	maquette	Problem solving	Modeling using waves protractor	Researche, Reports & Assignments	Self Learning	Modeling and Simulation	Written Exam	Quizzes	Research & Presentations
c1	1	1	1				1	1	1	1		1
c2	1	1	1	1		1	1	1	1	1	1	1
c3	1	1	1	1	1	1	1	1	1	1		1
c4	1	1		1	1	1	1	1	1	1		1
c5	1	1	1	1	1	1	1	1	1	1	1	1
c6	1	1	1	1	1	1	1	1	1	1	1	1
c7	1	1		1		1			1	1		1
c8		1	1	1	1	1	1	1	1	1		1
c9	1						1	1		1		1
c10		1	1	1	1	1			1	1		1
∑	8	9	7	8	6	8	8	8	9	10	3	10

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	3 Quizzes (one each 3 weeks)	5
	Research	6 th Week	10
	Assignments	1st & 4th & 5th & 6th Week	15
	Research	10 th Week	10
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: none

7-2 Required books

1- Lee P., Roh H., "Design document series 37 – make the imagination real Nudl As Team Of Junglim Architecture/korea" ,first edition, publisher: DAMD 2011

2- Richard D., " XYZ", publisher : LURANCY KING PUBLISHING , 2001.

. Recommended books:

1- Gowers T., Barrow J., and Imre L.," The Princeton Companion to Mathematics", 2008. 2 – Sami Hassid, Architectural Construction Details.

2- Jane B., & Mark B., "The New Mathematics of Architecture", 2010.

3- Chudley, R., & Greeno, R., (2016), “Building Construction Handbook”, Routledge, UK.

4- Hayder, F. A., (1988), “Building Construction”, Sixth Edition, Monshaet Elmaaref, Alexandria, Egypt.

5- Hawass, Z., (1985), “The Art of contemporary Building (Arabic)”, Alam El Kottob, Cairo, Egypt.

7-4 Periodicals, Web sites, etc.

https://www.dezeen.com/tag/prefabricated-buildings/

https://www.smart-arch.com/

8- Facilities required for teaching and learning:

- Lecture room , overhead projector and Data show.
- Resources available in the library.
- Computer lab with CAM software .
- Modeling lab (maquette lab) .

Course coordinator: Dr. Eslam A. Hamdy

Head of the Department: Dr. Asamer Zakaria Ahmed

Date: August 2020

Modern Academy for Engineering and Technology
Course Specification

ARCn360: Architecture Training (2)

A- AFFILIATION

RELEVANT PROGRAM:	***Architecture Engineering and Building Technology BSc Program***
Department offering the program:	Architecture Engineering and Building Technology
Department offering the course:	Architecture Engineering and Building Technology
Date of specification approval;	August 2021

B - BASIC INFORMATION LEVEL : SENIOR 1,LEVEL 3

Title: Architecture Training **Code:** ARCn 360 **level:** third : summer Semester

Credit Hours:0 **Lectures: --** **Tutorial/Exercise: -** **Practical:- 0**

Pre-requisite :ARCn 260 – ARCn 312 **+ 99 credit hours**

C - PROFESSIONAL INFORMATION

1 – COURSE LEARNING OBJECTIVES:

- The objective of the course is to develop students' practical capabilities by practicing. in one of the national construction companies. and learning computer skills such as3DMax ,Revit,Lumen, Primavera Program Level (2).
- The training plan is scheduled and approved by the committee of the architecture dept.

2- COMPETENCIES

c1- Identify Technical language and report writing. (C1))
c2- Apply engineering design processes in site (C3)

C3 - Prepare and present technical reports (C15)
C4 - Analyze experimental results and determine their accuracy and validity. (C14)

This course contributes in the following program competencies **C1,C3,C14,C15**

3 – CONTENTS

	Topic	Lecture hours	Tutorial hours	Practical hours
1	Computer Lab	-	-	24
2	Primavera, project Management	-	-	15
3	Site Visit	-	-	15
	Total hours	**-**	**-**	**60**

4 - TEACHING AND LEARNING AND ASSESSMENT METHODS:

Course Output		Teaching Methods										Learning Methods				Assessment Method					
		Lectures	Presentations and Movies	Discussions	Tutorials/Sketches	Practical and Laboratory experiments	Problem solving	Brain storming	Projects	3-D Modeling	Playing	Researches and Reports	Modeling and Simulation	Site Visits	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments	Researches and Reports
	c1	1		1				1				1		1		1		1			1
	c2	1		1										1				1			1
	c3	1		1				1				1	1			1				1	
	c4	1		1				1				1						1			1

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (%)	Grade (Degrees)
Semester Work: assignments ,Research	Bi-Weekly	60%	60
Final Report	Fourth week	20%	20
Oral Exam	Fourth week	20%	20
Total pass/ Fail		100%	100 pass/ Fail

6- FACILITIES REQUIRED FOR TEACHING AND LEARNING:

White boards and markers.
Well equipped space for lectures and digital presentation.
Site visits

7- References:

- Anderson and Sweeney, (2008), " An introduction to management science, Quantitative approach", Thomson South-Western.

Course coordinator: Dr. Nahed Omran

Head of the Department: Associate Professor: Asamer Zakria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn421: Architectural Design (7)

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August, 2020

B - Basic Information

Title: Architectural Design (7) **Code: ARCn421** **Level: Ninth Semester (Level Four)**

Credit Hours: 3 **Lectures:** 1 **Tutorial/Exercise:** 6 **Practical:** -

Pre-requisite: ARCn322

C - Professional information

1 – Course Learning Objectives:

The course aims to enhance the students' architectural perception throughout dealing with different design approaches in light of building regulations and constrains. It includes an analytical study for the alternatives of designing a complex public, service and residential projects, in aim of reaching the optimum architectural and urban design form, using the best assessment methodology that achieves the functional, constructional, visual and environmental aspects of architectural spaces. The practical application will be on a multi-buildings project with complex solutions that have an urban depth, while connected to geographical and environmental reality. Students will also practice different methods of presenting the architectural drawings and conducting 3D models

2 - Competencies

c1. Classify and compare Principles of architectural design, human dimensions as a prime determinant of the scale, proportions, and spatial arrangement of a building spaces. (C13)
c2. Use of various structural systems and its role in the design product. (C11,C14).
c3. Analyze Principles of environmental and contextual forces that influence how we might situate a building, layout, and orient its spaces, articulate its enclosure, and establish its relation to the landscape. (C11).
c4. Calculate and analyze of exchange and assess different ideas, views and knowledge from given architectural designs and projects. (C11, C15).
c5. Integrate relationship of appropriate structural solutions into the design process. (C11).
c6. Use appropriate construction and structural techniques to achieve creative designs. (C11).
c7. Collaborate effectively within multidisciplinary team. (C5,C7,C9).
c8. Consider the impact of designs on the environmental protection. (C3).
c9. Practice self-learning and communicate effectively orally and in written form. (C8,C10).

This course contributes in the following program competencies: C3, C5, C7, C8 , C9, C10, C11, C13, C14&C15

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction : Multipurpose hall project	1	6	-
2	Site analysis and research	1	6	-
3	Final research submission	1	6	-
4	Layout proposal Design concept	1	6	-
5	Master plan (zoning – organization)	1	6	-
6	Floor plans	1	6	-
7	Mid-Term Exam			
8	Level Study (sections) Floor plans design development	1	6	-
9	Elevations design Floor plans (final)	1	6	-
10	3D Perspective or isometric / mass study	1	6	-
11	interiors - details and presentation	1	6	-
12	sections & Elevations	1	6	-
13	Development and final Plans sections & Elevations	1	6	-
14	Sections- Elevations Final sketch submission	1	6	-
15	Final Project	1	6	-
	Total hours	**14**	**84**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies								
	c1	c2	c3	C4	C5	C6	C7	C8	C9
Introduction : Multipurpose hall project	1	1							
Site analysis and research	1			1			1		
Final research submission			1		1	1		1	
Layout proposal Design concept			1			1			
Master plan (zoning – organization)		1		1			1		1
Floor plans		1							
Mid-Term Exam									
Level Study (sections) Floor plans design development	1		1			1			
Elevations design Floor plans (final)			1			1			
3D Perspective or isometric / mass study			1		1	1		1	
interiors - details and presentation		1	1			1			
sections & Elevations			1			1			1
Development and final Plans sections & Elevations									
Sections- Elevations Final sketch submission			1			1			
Final Project			1			1			
Topics Covering Competences	3	4	9	2	2	9	2	2	2

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports &	Self Learning	Modeling and Simulation	Written Exam	Assignments	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1					1		1	1		1		
c2	1	1						1		1	1			1	1
c3	1	1								1	1		1		
C4	1	1	1					1		1	1		1		
C5	1	1						1		1				1	1
C6		1								1	1				
C7		1													1

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports &	Self Learning	Modeling and Simulation	Written Exam	Assignments	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
C8								1						1	
C9			1					1						1	
∑	5	6	3					6		7	6		3	4	3

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Research	Weekly assignments	15
	Quizzes	1Quizze	5
Final Project		Fourteen weeks	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes

7-11 Required books

7-12 Recommended books

8 Ching, F. D. K., (2014), "Building Structures Illustrated: Patterns, Systems and Design", John Wiley & Sons Ltd., UK.

9 Jencks, C., (2000), "Architecture 2000 and Beyond", John Wiley & Sons Ltd, UK.

Edward, W., (1975), "A vocabulary of Architectural Forms", Architectural Media, USA

9-4 Periodicals, Web sites, etc

10 Architectural record, Published monthly by the McGraw – Hill companies

11 Al – Benaa Magazine, Published monthly by Medina Publishing Inc., Kingdom of Saudi Arabia.

12 Electronic Pub. URL: www.greatbuildings.com

8- Facilities required for teaching and learning

- Appropriate teaching design studios including presentation board, data show, models, computer lab

Course coordinator: Dr. Mohamed Thabat

Head of the Department: Associate Professor: Asamer Zakaria

Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn422: City Planning

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August, 2020

B - Basic Information

Title: City Planning **Code: ARCn422** **Level:** 4rd Fall
Credit Hours: 3 **Lectures:** 1 **Tutorial/Exercise:** 5 **Practical:** -
Pre-requisite: ARCn324

C - Professional information

1 – Course Learning Objectives:

The course aims to discuss many concepts connected to planning throughout studying the types, problems and stages of regional planning in developing countries, in addition to the types and theories of development. This is in order to develop a methodology considering all the determinants and possibilities available in the areas to be developed. Reaching the planning alternatives for developing sectors throughout creating database using geographical information technology systems for the functions and their design determinants, while developing a criteria for assessment to compare between the alternatives.

2 - Competencies

c1. Design The processes of spatial change in the built and natural environments; patterns and problems of cities; and positive & negative impacts of regions. (C13)
c2. Explain Theories and legislations of urban and regional planning. (C11,C14).
c3. Analyze results of numerical models and assess their limitations by GIS. (C11).
c4. Design of Think three-dimensionally and engage images of places & times with innovation and creativity in the exploration. (C12).
c5. Use a wide range of analytical tools, techniques, equipment, and software packages pertaining to the discipline and develop required computer programs. (GIS) (C11,C13)
c6. Investigate Collaborate effectively within multidisciplinary team. (C11,C12,C13)
c7. Collaborate effectively within multidisciplinary team. (C5,C7,C9).
c8. Consider the impact of designs on the environmental protection. (C3).
c9. Practice self-learning and communicate effectively orally and in written form. (C8,C10).

This course contributes in the following program competencies: C3, C5, C7, C8, C10, C11, C12, C13 & C14

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to regional palnning	1	5	-
2	What is regional planning and development	1	5	-
3	Development and steps for preparing the regional plan	1	5	-
4	Division of planning regions	1	5	-
5	Regional Data Gathering	1	5	-
6	Sustainable development	1	5	-
7	Assessment (Mid Term exam)			-
8	Modern methods & technic of regional sustainable planning	1	5	-
9	Regional competitiveness	1	5	-
10	Regional Data analysis	1	5	-
11	SWOT+PCP	1	5	-
12	Development alternatives for master plan	1	5	-
13	Development alternatives for detailed	1	5	-
14	Semi Final Project	1	5	-
15	Final Project	1	5	-
	Total hours	**14**	**70**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies								
	c1	c2	c3	c4	c5	c6	c7	c8	c9
Introduction to regional planning	1	1							
What is regional planning and development	1						1		
Development and steps for preparing the regional plan			1	1		1		1	
Division of planning regions			1	1	1	1			
Regional Data Gathering		1			1		1		1
Sustainable development		1		1					
Modern methods & technic of regional sustainable planning	1					1			
Regional competitiveness				1		1			
Regional Data analysis						1		1	
SWOT+PCP		1				1			
Development alternatives for master plan					1	1			1
Development alternatives for detailed			1						
Semi Final Project						1			
Final Project	1	1	1	1	1	1	1	1	1
Topics Covering Competences	4	5	4	5	4	9	3	3	3

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1	1				1		1	1	1	1		
c2	1	1						1		1	1			1	1
c3	1	1		1						1	1		1		
c4	1	1		1						1	1				

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c5	1	1		1				1		1	1		1		
c6	1	1		1						1	1		1		
c7		1		1											1
c8								1						1	
c9			1					1						1	
∑	6	7	2	6				5		6	6	1	4	3	2

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Assessment (Mid Term exam)		7th Week	20
Semester Work	Research	Two research per semester	10
	Mini project	Once per semester	10
Final Project		Fifteen weeks	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes:

1. https://www.youtube.com/watch?v=guAjD9tXG0A&list=PLrQsv5YoPWYgwepbMOoGOo6KE9Fs7G1gY&index=26
2. https://www.youtube.com/watch?v=3GL8KdeMYpY&list=PLrQsv5YoPWYgwepbMOoGOo6KE9Fs7G1gY&index=27
3. https://www.youtube.com/watch?v=d_z2v3JrLLA&list=PLrQsv5YoPWYgwepbMOoGOo6KE9Fs7G1gY&index=68
4. https://www.youtube.com/watch?v=Py9yw0HL7JQ&list=PLrQsv5YoPWYgwepbMOoGOo6KE9Fs7G1gY&index=67
5. https://www.youtube.com/watch?v=hxWqXyylGyU&list=PLrQsv5YoPWYgwepbMOoGOo6KE9Fs7G1gY&index=28
6. https://www.youtube.com/watch?v=7YOdhxHemJ8&list=PLrQsv5YoPWYgwepbMOoGOo6KE9Fs7G1gY&index=29
7. https://www.youtube.com/watch?v=oAnAnlYDVjA&list=PLrQsv5YoPWYgwepbMOoGOo6KE9Fs7G1gY&index=70
8. https://www.youtube.com/watch?v=TjZlsPSvc60&list=PLrQsv5YoPWYgwepbMOoGOo6KE9Fs7G1gY&index=69
9.

7-2 Required books: None

7-6 Recommended books:

- احمد خالد علام ، (1998)،" تخطيط المدن"، مكتبة الانجلو المصرية، القاهرة، مصر.
- احمد خالد علام ، (1995)، "التخطيط الاقليمي" ، مكتبة الانجلو المصرية، القاهرة، مصر.
- شفق العوض الوكيل ، (2006) ، "التخطيط العمراني" ، الجزء الاول، دار المعارف، القاهرة، مصر.
- **Schwartz, P., 2012. The art of the long view: planning for the future in an uncertain world. Currency.**

7-4 Periodicals, Web sites, etc: None

8- Facilities required for teaching and learning:

- Data show
- GIS
- Updated laptops
- Educational Software License.

Course coordinator: DR. Shahenaz Taie

Head of the Department: Associate Professor: Asamer Zakaria

Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn423: Urban Design

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August, 2020

B - Basic Information

Title: Urban Design **Code: ARCn422** **Level:** 4rd Fall
Credit Hours: 3 **Lectures:** 1 **Tutorial/Exercise:** 5 **Practical:** -
Pre-requisite: ARCn324

C - Professional information

1 – Course Learning Objectives:

The course aims to introduce students to urban design to the natural and built environments, and enhancing the students' ability to apply different approaches of urban design in the Egyptian environmental context. The course discusses the urban design definition, its relationship to planning and architectural design theories in addition to the other approaches and concept of urban design regarding the culture and natural environment as the basis of the urban design principles. It discusses the special morphology in cities throughout illustrating their character, elements, perception, and its natural and cultural composition determinacy while understanding the urban design and context, its framework for the city, which includes the composition elements and the basics of urban design as a tool for urban development. Students will also be able to conduct site analysis which includes studying natural, visual and cultural dimensions in addition to the variables, elements and effects of the site. It also includes a study for influence of nature in the design from functional and visual points of view, in addition to illustrating the landscape and its uses for achieving the ecological balance students will gain the knowledge of the vocabulary, design elements, and the natural and built sites formation and conducting a practical urban design project

2 - Competencies

c1. Analyzing an Urban space to the basic elements. (C13)
c2. Solve Problems and constrains of site. (C11, C14).
c3. Design urban spaces in large scale sites. (C11).
c4. Solve problems and constrains in a matrix. (C12).
c5. Classify and compare Urban Spaces elements (C11, C13)
c6. Investigate participation with urban design team. (C11, C12, C13)
c7. Collaborate effectively within multidisciplinary team. (C5, C7, C9).
c8. Consider the impact of designs on the environmental protection. (C3).
c9. Practice self-learning and communicate effectively orally and in written form. (C8,C10).

his course contributes in the following program competencies: C3, C5, C7, C8,C9, C10, C11, C12, C13 & C14

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to Urban design	1	5	-
2	Introduction to project, Site analysis	1	5	-
3	Site analysis, zoning, introduction to research	1	5	-
4	Research presentation, conceptual designs, Site analysis	1	5	-
5	Layout alternatives	1	5	-
6	Layout alternatives	1	5	-
7	Mid Term Exam			-
8	Layout, elevation	1	5	-
9	Layout, elevation	1	5	-
10	Layout, elevation, section	1	5	-
11	Layout, elevation, section, details	1	5	-
12	Layout, elevation, section, details, Maquette	1	5	-
13	Layout, elevation, section, details, Maquette	1	5	-
14	Semi-final	1	5	-
15	Revision, Exam Preparation & Makeup Class	1	5	-
	Total hours	**14**	**70**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies								
	c1	c2	c3	c4	c5	c6	c7	c8	c9
Introduction to Urban design	1	1							
Introduction to project, Site analysis	1						1		
Site analysis, zoning, introduction to research			1	1		1		1	
Research presentation, conceptual designs, Site analysis			1	1	1	1			
Layout alternatives		1			1		1		1
Layout alternatives		1			1		1		1
Layout, elevation		1		1					
Layout, elevation	1					1			
Layout, elevation, section				1		1			
Layout, elevation, section, details						1		1	
Layout, elevation, section, details, Maquette		1				1			
Layout, elevation, section, details, Maquette					1	1			1
Semi-final			1						
Revision, Exam Preparation & Makeup Class						1			
Topics Covering Competences	3	5	3	4	4	8	3	2	3

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1	1				1		1	1	1	1		
c2	1	1						1		1	1			1	1
c3	1	1		1						1	1		1		
c4	1	1		1						1	1				
c5	1	1		1				1		1	1		1		
c6	1	1		1						1	1		1		
c7		1		1											1

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c8								1						1	
c9			1					1						1	
∑	6	7	2	6				5		6	6	1	4	3	2

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Research	Two research per semester	10
	Assignments	Every Week	10
Final Project		Fourteen weeks	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

-1 Course notes:

https://youtu.be/wjOk_6uz46o
https://youtu.be/k70QMT6uN74
https://youtu.be/WwRbbPnjwpw
https://youtu.be/83LKIk9VA-w
https://youtu.be/_aUO0EZfXW4
https://youtu.be/a78zDelB2LI
https://youtu.be/0OPwt7-WKKs
https://youtu.be/tt8EPCeNGWs

a. Required books

Course Booklets

a. Recommended books

- **احمد خالد علام ، (1997)،" أحياء المدن "، مكتبة الانجلو المصرية، القاهرة، مصر.**
- **Iorrine farrelly (2011), Drawing for Urban Design, Ik, China.**
- **Hustpes (2010), The Landscape Design of Public Space, hustpes, korea.**
- **Jtart (2013), Urban and Ecological Landscape,Media, China.**
- **Donald waston(2011), Urban design, System, CSA.**

7-4 Periodicals, Web sites, etc

- **Indjy M. Shawket, "New strategy of upgrading slum areas in developing countries using vernacular trends to achieve a sustainable housing development", 2011**

8- Facilities required for teaching and learning:

- Data show
- Drawing halls.

Course coordinator: Associate Prof. Indjy M.Shawket
Head of the Department: Associate Professor: Asamer Zakaria
Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn460: Graduation Project (A)

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August, 2020

B - Basic Information

Title: Graduation Project (A)	**Code: ARCn460**	**Level: Ninth Semester (Level Four)**	
Credit Hours: 1	**Lectures:** 1	**Tutorial/Exercise:** 1	**Practical:** -
	Pre-requisite: ARCn322 +132 Credit Hours		

C - Professional information

1 – Course Learning Objectives:

This course aims to use the accumulation of all previously acquired skills and taught courses; architectural, technological, and urban, throughout the four-years of study. Students will conduct a research and an analytical study to reach a comprehensive program for their project. In addition, they will study the various alternatives for their design to reach the most suitable one.

2 - Competencies

c1. Define the project Principles parameters that include form, space, and human behavior. (C13)
c2. Prepare and Use appropriate the comprehensive project program that include user needs, an inventory of space and equipment requirements, an analysis of project site, and a definition of site selection and design assessment criteria. (C11,C14).
c3. Analyze an existing precedent through specific design research process. (C11).
c4. Collaborate and develop the students' ability to do research, analyze data and write the report. (C11, C15).
c5. Provide a comprehensive architecture project program that should be suitable to start the design of the project in the final semester project. (C11).
c6. Practice self-learning and Able to understand the various design parameters of the final semester project. (C11).

This course contributes in the following program competencies:C11, C13, C14&C15

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction: What is research	1	1	-
2	The tools of research	1	1	-
3	Research planning and design	1	1	-
4	Methodologies of research design	1	1	-
5	Presenting the result of research	1	1	-
6	Introduction to architectural research-research strategies	1	1	-
7	Mid-Term Exam			
8	Interpretive historical research	1	1	-
9	Qualitative research	1	1	-
10	Correlational research, statistics	1	1	-
11	Experimental & quasi-experimental research, Simulation & modeling research	1	1	-
12	Logical argument, case studies & combined strategies	1	1	-
13	Logical argument, case studies & combined strategies.	1	1	-
14	Review and presentation	1	1	-
15	Final Research	1	6	-
	Total hours	**14**	**14**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies								
	c1	c2	c3	C4	C5	C6			
Introduction: What is research	1	1							
The tools of research	1			1					
Research planning and design			1		1	1			
Methodologies of research design			1			1			
Presenting the result of research		1		1					
Introduction to architectural research-research strategies		1							
Mid-Term Exam									
Interpretive historical research	1		1			1			
Qualitative research			1			1			
Correlational research, statistics			1		1	1			
Experimental & quasi-experimental research, Simulation & modeling research		1	1			1			
Logical argument, case studies & combined strategies			1			1			
Logical argument, case studies & combined strategies.									
Review and presentation			1			1			
Final Research			1			1			
Topics Covering Competences	3	4	9	2	2	9			

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Project Report
c1	1	1	1					1		1	1		1		
c2	1	1						1		1	1			1	1
c3	1	1								1	1		1		
C4	1	1	1					1		1	1		1		
C5	1	1						1		1				1	1

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Project Report
C6		1								1	1				
∑	5	6	3					6		7	6		3	4	3

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Research	Two research per semester	10
	Quizzes	2 Quizzes	10
Final Project		Fourteen weeks	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes

7-2 Required books

7-3 Recommended books

- Adjaye, D., (2015), "Form Heft Material", Yale University Press. USA.
- Clark, R.H., (2005), "Precedents in Architecture", New Jersey.
- Edward, W., (1975), "A vocabulary of Architectural Forms", Architectural Media, USA

7-3 Periodicals, Web sites, etc

- Architectural record, Published monthly by the McGraw – Hill companies
- Al – Benaa Magazine, Published monthly by Medina Publishing Inc., Kingdom of Saudi Arabia.
- Electronic Pub. URL: www.greatbuildings.com

8- Facilities required for teaching and learning

- Appropriate teaching design studios including presentation board, data show, models, computer lab

Course coordinator: Dr. Mohamed Thabat

Head of the Department: Associate Professor: Asamer Zakaria

Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ENGn311: Engineering Economics

A- Affiliation

Relevant program: Architectural Engineering and Building technology BSc Program
Department offering the program: Architectural Engineering and Building technology BSc Department
Department offering the course: Architectural Engineering and Building technology Department
Date of specifications approval: August 2020

B - Basic Information

Title: Advanced Building Economics **Code:** ENGn311 **Level:** Senior 3, Level 3
Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:** - **Practical: -**
Pre-requisite: -

C - Professial information

1 – Course Learning Objectives:

The engineering economics is concerned the systematic evaluation of the benefits and costs of projects involving engineering design and analysis. Engineering economics quantifies the benefits and costs associating with engineering projects to determine if they save enough money to warrant their capital investments. Engineering economics quantifies the benefits and costs associating with engineering projects to determine if they save enough money to warrant their capital investments. Engineering economics requires the application of engineering design and analysis principles to provide goods and services that satisfy the consumer at an affordable cost. Engineering economics is also relevant to the design engineer who considers material selection.

2 – Competencies

c1 -The nature of economic problem and need. (C2,C5)
c2 - Resources, utilities, demand and supply related to building & construction. (C9)
c3 - Definition of construction systems; markets types, and factors of production (C6)
c4 - how to deal with costs and revenues of construction projects. (C5)
c5. Classify and compare economic building types (C3,C7)
c6. Explain the construction, operation and specification of the basic components of economic building system (C3,C6).
c5. Investigate the effect of hydraulic fluid properties on the function of hydraulic power systems (C1)
c10. Calculate and analyze the steady state performance of hydraulic power systems and their components (C1,C9)
c11. Classify and compare the different ways of recycle ways in the building (C4).
c12. Design and assemble energy type through the buildings (C2,C12)
c19. Practice self-learning and communicate effectively orally and in written and drawing form (C8,C9).

This course contributes in the following program competencies: C1, C2, C3, C5, C6, C7, C8, C9, C10, C11 & C1

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to engineering Economics in the building	2	2	-
2	Economic problems in the construction sector	2	2	-
3	Economics Building design standards.	2	2	-
4	Economic Science Definition	2	2	-
5	Building Cost System	2	2	-
6	Building Cost Elements	2	2	-
7	Mid Term	2	2	-
8	Cost Elements of Buildings (1)	2	2	-
9	Cost Elements of Buildings (2)	2	2	-
10	Calculate Compact cost element in the building	2	2	-
11	Retrofit building process	2	2	-
12	Building engineering Strategies	2	2	-
13	Economy engineering Strategies	2	2	-
14	Adaptation of cost element in the building	2	2	-
15	Mini project	2	2	-
	Total hours	**30**	**30**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies											
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12
Introduction to engineering Economics in the building	1	1			1							
Economic problems in the construction sector	1						1	1	1		1	
Economics Building design standards.			1	1		1		1		1		
Economic Science Definition			1	1	1	1		1	1	1		1
Building Cost System		1			1			1	1	1		1
Building Cost Elements		1						1	1			1
Cost Elements of Buildings (1)												
Cost Elements of Buildings (2)								1	1		1	1
Calculate Compact cost element in the building						1		1	1	1		1
Calculate Compact energy in the building-2						1		1	1	1		1
Retrofit building process						1		1	1	1		1
Building engineering Strategies						1		1		1		
Economy engineering Strategies								1		1		1
Economy engineering Strategies						1		1	1	1	1	1
Adaptation of cost element in the building		1						1		1		
Mini project						1	1	1	1		1	1
Topics Covering Competences	2	3	2	2	3	8	2	14	10	10	4	10

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Brain storming	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1	1		1		1		1	1	1	1		
c2	1	1				1		1		1	1			1	1
c3	1	1		1						1	1		1		
c4	1	1		1						1	1				
c5	1	1		1				1		1	1		1		
c6	1	1		1	1					1	1		1		
c7	1	1		1		1				1	1		1		
c8	1	1		1		1	1			1	1		1	1	1
c9	1	1		1			1	1	1	1	1		1	1	1
c10	1	1		1	1					1	1		1		
c11	1	1				1		1		1	1		1		
c12	1					1	1	1							1
	13	13	3	10	3	8	6	10	2	11	11	3	9	8	6

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes (one each 4 weeks)	6
	Reports/Research	Two reports per semester	4
	Tutorials	5 Assignments per semester	6
	Mini project	Once per semester	4
Practical Exam		Fifteenth week	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

- Ruegg, R., & Marshall, H., (2013), "Building Economics: Theory and Practice", Springer Science & Business Media, USA.
- Wysocki, Beck, and Crane, " Effective Project Management: Traditional, Agile, Extreme", (2014).
- V. LOGANATHAN, "Economic Theory", College Chennai, Government of Tamilnadu, (2007).
- Stanford University Team, "Guideline for Life Cycle Cost Analysis", (2005).
- Robert P. Charette, Harold E. Marshall, " UNIFORMAT 2 Elemental Classification for Building Specification, Cost Estimating and Cost Analysis" (1999).
- Lyons. A ,"Materials for Architects & Builders " , Fourth Edition , (2010).
- Gijs Graafland, "Energy Economics", Planck Foundation, Amsterdam Holland, (2010).
- Debraj Ray, "Development Economics", New York University, (2007)
- Cannon Design, "Material Life: Embodied Energy of Building Materials" (2013)
- Berge. B ,"The Ecology of Buildings Materials" , Second Edition , (2009)
- Amr Soliman AlGoohary," Analytical Study to Assess the Economic Impact Resulting from Energy Consumption of the Entire Life Cycle of Buildings", Thesis for the degree of Doctor of Philosophy, Cairo university, (2015).
- Ayah Mohamed Ezzat," Adaptation of Double Skin Facades in Office Buildings in Hot Climates (A Methodology to Improve Buildings Energy Performance and Enhancing Thermal Comfort) ", Thesis for the degree of Doctor of Philosophy, Cairo university, (2018).

7-1 Course notes:

7-2 Required books

- Rabie, M. adssadaG. (2009) Fluid Power Engineering, NY: McGraw-Hill Proffesional.
- عبد اللطيف أبو العطا، (1994)، "الموسوعة الهندسية لأنشاء المباني والمرافق العامة"، مطابع الوفاء، القاهرة، مصر.
- Jerry., (2009), "green building through intergated design", francis, USA.
- kolley l., (2009), green roof ionstyuction & maintenanee, Mc-Graw hill, USA.

7-3 Recommended books:

- Recommended books: **الموسوعه الهندسية لأنشاء المباني و المرافق العامة, عبد اللطيف أبو العطا, مطابع الوفاء, 1994**
- Shutt, R., (1995), "Economics for the construction industry", Longman, London, UK.

7-4 Periodicals, Web sites, etc.

Review of Productivity and Sustainable Development in the ESCWA Region, First Issue. Green Economy in the Context of Sustainable Development and Poverty Eradication: Principles, Opportunities and Challenges in the Arab Region (unescwa.org) /, (Last accessed January 2020)
45490311.pdf, (Last accessed January 2021)
http://www.eaton.com/Eaton/index.htm/, (Last accessed January 2020)

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped wirh projection and sound systems.
- Computer, Data show
- High speed internet and communication facilitits for distance learning.

Course coordinator: Lecturer Ayah Mohamed Ezzat
Head of the Department: Dr Asamer Zakrya
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
GENn451: Environmental Effects of Electromagnetic Waves

A- Affiliation

Relevant program: Electronic Engineering and Communication Technology BSc Program
Computer Engineering and Information Technology BSc Program
Manufacturing Engineering and Production Technology BSc Program
Architecture Engineering and Building Technology BSc Program
Civil Engineering and Building Technology BSc Program

Department offering the program: Manufacturing Engineering and Production Technology Department
Electronic Engineering and Communication Technology Department
Computer Engineering and Information Technology Department
Architecture Engineering and Building Technology Department
Civil Engineering and Building Technology Department

Department offering the course: Basic Scienc Department

Date of specifications approval: August 2020

B - Basic Information

Title: Environmental Effects of Electromagnetic Waves **Code:** GENn451 **Level:** 3rd

Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:** - **Practical:** -
Pre-requisite: None

C - Professional information

1 – Course Learning Objectives:

The Environmental Studies of electromagnetic Waves major prepares students for understanding and addressing complex environmental issues of EMW from a problem-oriented, interdisciplinary perspective.

2 – Competencies

c1- Understanding the main concepts and methods from physical sciences and their application in environmental problem solving. (C4, C8)
c2- Explain the basic information about electromagnetic waves and use appropriate Strategies, methods and techniques for identifying, diagnosing and dealing with environmental effects. (C3, C6, C7,C9)
c3 - Understanding the concepts and terminology for electromagnetic waves applications and uses. (C4)
c4 - Classify the EMW environmental problems and ways of addressing them, including interactions across local to global scales. (C10)
c5 - Demonstrate the critical reflection about their roles and identities as citizens, consumers and environmental actors in a complex, interconnected world. (C2, C3)
c6 - Analyze, different types of environmental effects of electromagnetic fields. (C2, C3)
c7 - Develop deep understanding and analysis of EMW environmental effects design. (C2, C3)
c8 - Relate general theory to specific contexts and develop problem solving approaches and controlling the environmental effects. (C2, C6, C7, C9)

c9 - Critically analyze EMW environmental effect issues in communication as well as provide innovative solutions. (C2, C4)
c10 - Enhance the ability to critically reflect on own and others' practice to improve own/others 'actions. (C2, C3, C7)
c11 - Search for information and engage in life-long self-learning discipline. (C5, C9)
c12 - Practice self-learning and communicate effectively orally and in written form. (C7, C8)

This course contributes in the following program competencies: C2, C3, C4, C5, C6, C7, C8, C9, C10

3 – Contents

week	Topic	Lecture hours	Tutorial hours	Practical hours
1	➢ Maxwell's equations	1	-	-
1	➢ Optical properties of electromagnetic waves	1	-	-
2	➢ Physical properties of electromagnetic waves	1	-	-
3	➢ Electromagnetic radiation	1	-	-
4	➢ Electromagnetic waves spectrum	2	-	-
5	➢ Antenna and transmission lines	2	-	-
6	Ground waves, sky waves, and space waves	2	-	-
7	➢ Mid tearm	2	-	-
8	➢ Radio waves and fading of electromagnetic waves	2	-	-
9	➢ Applications of electromagnetic waves	1	-	-
9	➢ Absorption of electromagnetic waves	1	-	-
10	➢ Health and environmental effects of electromagnetic waves	2	-	-
10	➢ Health and environmental effects of non-ionizing radiation	2	-	-
11	➢ Radio frequency radiation	2	-	-
12	➢ Microwave oven	1	-	-
12	➢ Radar and human health	1	-	-
13	➢ Infrared radiation health effect	2	-	-
14	➢ Visible light health effect	1	-	-
14	➢ Ultraviolet radiation health effect	1	-	-
15	➢ International recommendations for radiation exposure	2	-	-
	➢	**030**		

4. Course content/Course Competencies mapping matrix

Topic	Knowledge					Skills				Attitude		
	c1	c2	c3	c4	c5	c6	c7	C8	C9	c10	c11	c12
Maxwell's equations	1	1	1				1	1			1	1
Optical properties of electromagnetic waves	1	1	1				1	1	1		1	1
Physical properties of electromagnetic waves	1	1	1				1	1	1		1	1
Electromagnetic radiation	1	1	1	1	1	1	1	1	1		1	1
Electromagnetic waves spectrum	1	1	1	1	1	1	1	1	1		1	1
Antenna and transmission lines	1	1	1	1	1	1	1	1	1		1	1
Ground waves, sky waves, and space waves	1	1	1	1	1	1	1	1	1		1	1
Radio waves	1	1	1	1	1	1	1	1	1		1	1
Fading of electromagnetic waves	1	1	1	1	1	1	1	1	1		1	1
Applications of electromagnetic waves	1	1	1	1	1	1	1	1	1	1	1	1
Absorption of electromagnetic waves	1	1	1	1	1	1	1	1	1		1	1
Health and environmental effects of electromagnetic waves	1	1	1	1	1	1	1	1	1	1	1	1
Health and environmental effects of non-ionizing radiation	1	1	1	1	1	1	1	1	1	1	1	1
Radio frequency radiation	1	1	1	1	1	1	1	1	1	1	1	1
Microwave oven	1	1	1	1	1	1	1	1	1	1	1	1
Radar and human health	1	1	1	1	1	1	1	1	1	1	1	1
Infrared radiation health effect	1	1	1	1	1	1	1	1	1	1	1	1
Visible light health effect	1	1	1	1	1	1	1	1	1	1	1	1
Ultraviolet radiation health effect	1	1	1	1	1	1	1	1	1	1	1	1
International recommendations for radiation exposure	1	1	1	1	1	1	1	1	1		1	1
Topics Covering Competences	20	20	20	17	17	17	20	20	19	9	20	20

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods				Learning Methods	Assessment Method		
	Lecture	Discussions and seminars	Tutorials	Problem solving	Research and Reports	Written Exam	Quizes	Assignments
c1	1	1			1	1	1	1
c2	1	1			1	1	1	1
c3	1	1			1	1	1	1
c4	1	1			1	1	1	1
c5	1	1			1	1	1	1
c6	1	1			1	1	1	1
c7	1	1			1	1	1	1
c8	1	1			1	1	1	1
c9	1	1			1	1	1	1
c10	1	1			1			
c11		1			1			
c12	1	1			1	1	1	1
∑	11	12			12	8	8	8

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	5th and 10th	20
	Assignments/ Reports	Bi- Weekly	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

17-2 Course notes:

Environmental Effects of Electromagnetic Waves.

7-3 Required books:

Physics for Scientists and Engineers, Raymond A. Serway, Thomson Brooks, 2004; 6th Edition. Introduction to RF Propagation, John S. Seybold, by John Wiley& Sons, Inc: 2005.

7-4 Recommended books:

Halliday, David, Robert Resnick, Jearl Walker.

7-4 Periodicals, Web sites, etc.

http://www.slideshare.net/bleonacoba/history-of-electromagnetic-waves-discovery

http://www.infocellar.com/networks/wireless/spectrum.htm

Serway, RAYMOND Physics for scientists and engineers 6th Ed. San Francisco: (2003).

Health Effects of Electromagnetic Fields– Department of Communications, Marine and Natural Resources. Expert Group on Health Effects of Electromagnetic Fields. 29–31 Adelaide Road, Dublin 2, Ireland. www.dcmnr.gov.ie

8- Facilities required for teaching and learning:

- **Library.**
- **Computer, Internet, and Data Show.**
- High speed internet and communication facilities for distance learning

Course coordinator: Dr. Marwa Shoeib

Head of the Department: Associate Professor / Ashraf Taha EL-Sayed

Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
GENn452: Civilization and Heritage

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department Civil Engineering and Building Technology BSc program
Department offering the course:	Architecture Engineering and Building Technology BSc Program
Date of specifications approval:	August, 2020

B - Basic Information

Title: Civilization and Heritage	**Code: GENn452**	**Level** :4th., **Tenth Semester (Level Four)**	
Credit Hours: 2	**Lectures:** 2	**Tutorial/Exercise:** -	**Practical:** -
	Pre-requisite: None		

C - Professional information

1 – Course Learning Objectives:

By the end of this is course the student should have background in the field of social, cultural and humanitarian studies throughout identifying the cultural environment; and must be able to analyses the meaning, features, characteristics, and social interaction, in addition to its impact on the human's needs in the field of specialization. In addition, The student must be able to generate ecologically responsible, environmental conservation and rehabilitation heritage. And analyzing its elements and the alternative of dealing with it. Additionally, study some case from old and modern traditional societies in the field of study.

2 - Competencies

c1. Classify and compare between Heritage buildings and Architecture (C1)
c2. Explain, analyse, and adapt innovative approaches in urban and architectural design considering the cultural backgrounds and realities of the local community. (C3, C5)
c3. Explain the theoretical background needed and Generate and develop selective interventions that cope with the significance of Architectural Heritage (C1, C7,C13).
c4. Investigate and evaluate and criticize the outcomes of urban and Architectural projects in relation to cultural and heritage considerations (C12, C14)
c5. Practice self-learning and communicate effectively orally and in written form (C8, C10).
c6. Search for information required to develop successful approaches in design. (C15).
c7. Evaluate environmental conservation and rehabilitation designs. (C13)

This course contributes in the following program competencies: C1, C3, C5, C7, C8, C9, C10,C13 C14 & C15

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	General definitions, terms, and characteristics of culture and Architecture)	2		
2	Definitions, Classification of Heritage, World Heritage sites.	2		
3	The Interrelation between culture and traditional and heritage	2		
4	The Interrelation between culture and Civilization (General theories, concepts and examples)	2		
5	Architecture as cultural and Civilization expression - Features and characteristics (A detailed discussion of the multi-components of culture and its impacts in urban sites.	2		
6	Social interaction and urban environment – perception, environment image and behavior patterns.	2		
7	Midterm Exam- Assignment	2		
8	The role of participation and community involvement in Architectural and Urban Design (Local Case studies)	2		
9	A brief discussion of the Anthropology as a tool of understanding local and indigenous cultures and its application to Architecture	2		
10	Regionalism of architecture and architectural expression	2		
11	Urban Heritage (A review of Values)	2		
12	Urban and Architectural Conservation (A review of interventions)	2		
13	Local case studies of urban and Architectural projects corresponding to the cultural dimension of the societies.	2		
14	international case studies of urban and Architectural projects corresponding to the cultural dimension of the societies.	2		
15	Research project presentation and discussion	2		
	Total hours	**30**		

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies																		
	c1	c2	c3	c4	c5	c6	c7												
General definitions, terms, and characteristics of culture and Architecture)	1		1																
Definitions, Classification of Heritage, World Heritage sites.	1	1	1	1	1	1	1												
The Interrelation between culture and traditional and heritage		1	1		1	1													
The Interrelation between culture and Civilization (General theories, concepts, and examples)	1	1		1	1		1												
expression - Features and characteristics (A detailed discussion of the multi-components of culture in urban sites.	1	1	1	1	1	1													
Social interaction and urban environment – perception, environment image and behavior patterns.		1	1	1	1														

Topic	Course Competencies																		
	c1	c2	c3	c4	c5	c6	c7												
General definitions, terms, and characteristics of culture and Architecture)	1	1		1	1	1													
Definitions, Classification of Heritage, World Heritage sites.	1	1	1	1	1	1	1												
The Interrelation between culture and traditional and heritage		1	1	1		1													
The role of participation and community involvement in Architectural and Urban Design (Local Case studies)	1	1		1	1	1	1	1											
A brief discussion of the Anthropology as a tool of understanding local and indigenous cultures and its application to Architecture	1	1	1	1	1	1													
Regionalism of architecture and architectural expression	1	1		1	1		1	1											
Urban Heritage (A review of Values)			1	1	1		1												
Urban and Architectural Conservation (A review of interventions)	1	1	1		1		1	1											
Topics Covering Competences	10	12	11	11	11	10	6	6											

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1				1	1		1	1		1		
c2	1	1						1		1	1			1	1
c3	1	1								1	1		1	1	
c4	1	1	**1**		1					1	1				
c5	1	1	1					1		1	1		1	1	
c6	1	1	1		1		1	1		1	1		1	1	1
c7	1	1					1			1				1	1
Σ	7	7	4		2		3	4		7	6		4	4	3

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
	Mid-Term Exam	7th Week	20
Semester Work	Quizzes	2 Quizzes (one each 4 weeks)	20
	Reports/Research	Two reports per semester	20
	Written Exam	Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: None

- 7-2 Required books Fraser, D. (1968) "Village Planning in the Primitive World", Studio Vista, London
- Oliver, P. (1969) "Shelter and Society", Barrie & Rockliff, The Cresset Press, London
- Oliver, P. (1997) "Encyclopaedia of vernacular architecture of the world", Cambridge University Press, New York
- Rapoport, A. (1969) "House, Form and Culture", Englewood Cliffs, N.J
- Silverman, H., & Waterton, E., & Watson, S., (2017), "Heritage in Action: Making the Past in the Present", Springer International Publishing, Switzerland.
- Born, G., (2006), "Architecture, Preserving Paradise: The Architectural Heritage and History of the Florida Keys", The History Press, USA.

Recommended books: None

- أشرف كامل بطرس (1998) "الثقافة والنتاج البنائي - منهج لرصد وتحليل واستقراء الأبعاد الثقافية وتوظيفها في عملية البناء"رسالة دكتوراه غير منشورة، كلية الهندسة، جامعة القاهرة.
- حسن المويلحى (2005) "العمارة بين الثقافة والتنمية نحو فهم ثقافة مجتمع المستخدمين لخدمةعملية التنمية من خلال البرمجة المعمارية"رسالة ماجستير غير منشورة، كلية الهندسة، جامعة القاهرة.
- Silverman, H., & Waterton, E., & Watson, S., (2017), "Heritage in Action: Making the Past in the Present", Springer International Publishing, Switzerland.
- Born, G., (2006), "Architecture, Preserving Paradise: The Architectural Heritage and History of the Florida Keys",

7-4 Periodicals, Web sites, etc.

1- https://www.ierek.com/news/index.php/2017/06/03/architectural-cultural-heritage
http://www.cultureindevelopment.nl/Cultural_Heritage/What_is_Cultural_Heritage
https://en.unesco.org/themes/biodiversity/culture-values

2- **Course Links:**

Lecture No.	URL (Youtube Links)		
1	**https://youtu.be/dAw_vMIuxrs**	5	**https://youtu.be/PrOGtofq_Xc**
2	**https://youtu.be/Q2anXY8suNc**	6	**https://youtu.be/CzwMD8Bo7sU**
3	**https://youtu.be/BAz72vtzU2I**	7	**https://youtu.be/XyJfLLChZdc**
4	**https://youtu.be/umirdwrXzeQ**	8	**https://youtu.be/LyaCGQEDERM**
9	**https://youtu.be/yT7WS6TGXQw**		

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped with projection and sound systems.
- Computer, Data show
- High speed internet and communication facilities for distance learning.

Course coordinator: Professor Nahed Omran
Head of the Department: Dr. Asamer Zakaria
Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
GENn453: Marketing

A- Affiliation

Relevant program:	Manufacturing Engineering and Production Technology BSc Program Electronic Engineering and Communication Technology BSc Program Computer Engineering and Information Technology BSc Program Architecture Engineering and Building Technology BSc Program Civil Engineering and Building Technology BSc program
Department offering the program:	Manufacturing Engineering and Production Technology Department Electronic Engineering and Communication Technology Department Computer Engineering and Information Technology Department Architecture Engineering and Building Technology Department Civil Engineering and Building Technology Department
Department offering the course:	Basic Scienc Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Marketing	**Code:** GENn453	**Level:** 3th	
Credit Hours: 2	**Lectures:** 2	**Tutorial/Exercise:**	**Practical:**
	Pre-requisite: non		

C - Professional information

1 – Course Learning Objectives:

مع نهاية تدريس هذا المقرر يكون الطالب قد اكتسب المهارات التى تمكنه من فهم مجال المبيعات, إدارة قوة المبيعات الاستراتيجية .عملية البيع الشخصية وتنظيم قوى المبيعات, تنميط وتوظيف البائعين, اختيار وتوظيف المتقدمين, تطوير برنامج المبيعات, تحفيز قوى المبيعات, تعويض قوة المبيعات والمصروفات والنقل, قيادة قوة المبيعات، التنبؤ بالمبيعات وتطوير الميزانيات و مناطق المبيعات الأقاليم, تحليل حجم المبيعات, تحليل تكلفة التسويق والربح،ومعرفة سياسة التوزيع و استراتيجية الترويج.

2 – Competencies

c1- يستطيع الطالب كيفية ادارة المبيعات وتطوير برنامج المبيعات (C9, C1)
c2- تحليل حجم المبيعات, تحليل تكلفة التسويق والربح، تقييم الأداء (C8)
c3- تنميط وتوظيف البائعين, اختيار وتوظيف المتقدمين (C9)
c4– يكتسب الطالب مهارات فى مجال اساسيات ادارة المبيعات (C1, C2)
c5- يدرك الطالب كيفية اختيار وتوظيف المتقدمين وافضل الطرق لتحفيز فريق المبيعات (C1, C2)
c6- يستطيع الطالب تحليل تكلفة التسويق حسب مناطق التوزيع و الربح (C1, C2)
c7- تدريب الطالب على كيفية البحث عن المعلومات فى المراجع وفى الانترنت (C7)
c8- يكتسب الطالب كيفية العمل فى فريق واشراكهم فى مناقشات جماعية (C1,C9)
c9- تعليم الطالب على كيفية ايجاد الطرق الازمة لابتكار كل ما هو جديد (C7, C8)
c10- يكتسب الطالب الخبرة فى ايجاد حلول عملية تخدم برامج خارج تخصصه (C7,C10).

This course contributes in the following program competencies: C1, C2, C7, C8, C9, C10

3 – Contents

week	Topic	Lecture hours	Tutorial hours	Practical hours
1	مفهوم التسويق ومراحل تطور الفكر التسويقي	2	-	-
2	ادارة وتخطيط وتنظيم قوة المبيعات	2		
3	التنبؤ بالمبيعات واساليب التنبؤ	2		
4	اختيار القوى العاملة	2		
5	وتوظيف المتقدمين	2	-	-
6	الرقابة التسويقية	2	-	-
7	امتحان منتصف الفصل	2		
8	تكاليف التسويق	2	-	
9	تحليل التكاليف التسويقية	2		
10	تعظيم الارباح	2	-	-
11	رقابة وخفض التكلفة	2		
12	استراتيجية الترويج	2		-
13	سياسة التوزيع	2	-	-
14	مفهوم واشكال قنوات التوزيع	2		
15	مراجعة عامة	2	-	-
	Total hours	**30**	**-**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Knowledge			Skills				Attitude		
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10
مفهوم التسويق ومراحل تطور الفكر التسويقي	1						1	1	1	1
ادارة وتخطيط وتنظيم قوة المبيعات	1	1	1				1	1	1	1
التنبؤ بالمبيعات واساليب التنبؤ	1	1					1	1	1	1
اختيار القوى العاملة			1	1	1		1	1	1	1
توظيف المتقدمين			1	1	1		1	1	1	1
الرقابة التسويقية				1		1	1	1	1	1
تكاليف التسويق						1	1	1	1	1
تحليل التكاليف التسويقية						1	1	1	1	1
تعظيم الارباح						1	1	1	1	1
رقابة وخفض التكلفة						1	1	1	1	1
استراتيجية الترويج							1	1	1	1
سياسة التوزيع							1	1	1	1
مفهوم واشكال قنوات التوزيع							1	1	1	1
Topics Covering Competences	3	2	3	3	2	5	13	13	13	13

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1					1			1			1	1	
c2	1	1						1		1			1	1	
c3	1	1	1				1			1				1	

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c4	1	1	1				1	1		1			1	1	
c5	1	1					1	1					1	1	
c6	1	1	1				1			1			1		
c7	1	1	1					1					1	1	
c8	1	1					1								
c9	1	1					1	1		1					
c10	1									1					
∑	10	9	4	-	-	-	7	5	-	7	-		6	6	

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes (one each 4 weeks)	10
	Assignments	3 assignments per semester	15
	report	One report per semester	15
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: Marketing

7-2 Required books

MARKETING PRINCIPLES AND PERSPECTIVES
WILLIAM O. BEARDEN New York : McGraw-Hill/Irwin, ©2004

7-3 Recommended books: None

7-4 Periodicals, Web sites, etc.

1- http://goo.gl/cH9x4G
2- http://goo.gl/8mNZU1
3- http://goo.gl/8txKD9

8- Facilities required for teaching and learning:

- Computer, Data show.
- Computer programs.
- High speed internet and communication facilitits for distance learning

Course coordinator: Dr. Shaymaa Sherif
Head of the Department: Prof. Dr. Ashraf Taha
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn430; Elective5 Aesthetics and Formations

A- Affiliation

Relevant program:	Architecture Engineering and Production Technology BSc Program
Department offering the program:	Architecture Engineering and Production Technology Department
Department offering the course:	Architecture Engineering and Production Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Aesthetics and Formations **Code: ARCn430** **Level:** 4rd Fall
Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:** - **Practical:** -
Pre-requisite: ARCn340

C - Professional information

1 – Course Learning Objectives:

The course aims to deepen the theoretical concepts and different trends to address the aesthetics of architecture and configurations and spaces and the link between these concepts and the resulting architectural historic and contemporary with local experiences and to make sure a reciprocal relationship between aesthetics and trends of intellectual and philosophical types and formats spaces in architecture - Models - selected Islamic architecture - Case studies from the areas and periods historic mixed - the transition from the concepts of spaces - opportunistic trends and concepts of space in architecture.

2 - Competencies

c1-Realize Fundamental Channels of architectural Aesthetics, (C2)
c2--Accept Different theories and philosophy of Aesthetics of the composition (C7) (C9)
c3- Twig the relationships between Art and Architectural, built form different elements of Evaluation of architectural projects. (C10) (C11)
c 4- Think systematically along the design process, propose alternative solutions(C2) (C9).
c 5- Integrate theoretical studies o Aesthetic thought with practical architectural reality(C12)
c 6- select the best Compliance creative thought in architectural projects(C13)
c 7- Develop Relations and structural design and visual art and architecture(C9)
c 8-communicating ideas verbally and visually in a clear coherent manner and collaborate effectively within multidisciplinary(C7) (C8)
c 9- Search for information and adopt life –long self-learning and acquire entrepreneurial skills. (C10)

This course contributes in the following program competencies: C2, C7, C8, C9, C10, C11, C12 & C13

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Exploring Architecture as an art Form The philosophy of aesthetics	2	-	-
2	Aesthetic Qualities	2	-	-
3	Metaphysics	2	-	-
4	Architectural Language and Notation	2		
5	Architectural Experience, Knowledge, and Appreciation	2	-	-
6	Architectural Ethics	2	-	-
7	Mid term	-	-	-
8	Architecture and Social and Political Philosophy	2	-	-
9	➢ Further Issues in Philosophy of Architecture	2	-	-
10	➢ Adaptable Morphology in Architectural Design.	2	-	-
11	➢ Adaptable architectural design	2	-	-
12	➢ Reinterpreting the Principles of Nature	2	-	-
13	Organic Architecture	2	-	-
14	Famous Examples of Organic Architecture	2	-	-
15	Modernist Approaches to Organic Design	2	-	-
	Total hours	**28**	**-**	**-**

4. Course content/Course Competencies mapping matrix

Topic	C2	C7	C8	C9	C10	C11	C12	C13
Exploring Architecture as an Art Form	1	1						
The philosophy of aesthetics	1						1	1
Aesthetic Qualities			1	1		1		1
Metaphysics			1	1	1	1		1
Architectural Language and Notation		1			1			1
Architectural Experience, Knowledge, and Appreciation		1						
Architectural Ethics								
Architecture and Social and Political Philosophy				1	1			1
Further Issues in Philosophy of Architecture						1		1
Adaptable Morphology in Architectural Design.		1				1		
Reinterpreting the Principles of Nature						1		1
Organic Architecture						1		1
Famous Examples of Organic Architecture				1	1		1	
Modernist Approaches to Organic Design						1		1
Topics Covering Competences	2	4	2	4	4	7	2	9

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1		1					1		1	1		1		
c2	1							1		1	1			1	1
c3	1									1	1		1		
c4	1									1	1				
c5	1							1		1	1		1		
c6	1		1		1					1	1				
c7	1									1	1				
c8	1		1				1			1	1			1	1
c9	1						1	1		1	1		1	1	1
∑	13		3		1		2	4		9	9		4	3	3

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes (one each 4 weeks)	20
	Reports/Research	Two reports per semester	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: None

7-2 Required books

. Dr. Amira Mostafa, Aesthetics and Formations, Modern Academy Handbook ,2018

12-4 Recommended books:

1-على رأفت -ثلاثيه الابداع المعمارى-انتر كونسلت – القاهره- 2003

2-محمد شهاب احمد – العماره قواعد واساليب – دار قابس- 1990

3-john wilsey-The Architecture of Ecology-italy-1997.

4- Michal Hays- Architecture Theory-U S A- 1998.

7-4 Periodicals, Web sites, etc. None

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped wirh projection.
- Computer, Data show
- High speed internet and communication facilitits for distance learning, Books, & Magazine

Course coordinator: Dr.Amira Mostafa
Head of the Department: Professor Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn436: Design Methodology

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architectural Engineering and Building Technology
Department offering the course:	Architectural Engineering and Building Technology
Date of specifications approval:	August 2020

B - Basic Information

Title: Design Methodology **Code: ARCn 436** **Level** :2th., **second Semester**

Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:** - **Practical:** -

Pre-requisite: ARCn122

C - Professional information

1 – Course Learning Objectives:

The course aims to ameliorate the proficiency of students in organizing the loosing operation through the recognition of traditional and new methods and different tools. Design process: program preparation according to needs and constricts. Analysis of project components (parts, relationships and variables). Determination of beeches. Development of basic concepts of project, alternatives comparison; tools and ways of design – Applications. Introduction for the use of computers in the support of design process concepts & methodologies with its different stages and steps, and practical exercise.

2 - Competencies

c1. Think systematically along the design process, analyze architectural propose alternative solutions, and select the best solutions, the evolution of its theories and applications over the years (C11)
c2. Select and use design situations and solve design problems concentrating on analyzing specific groups of needs and producing new solutions and designs at various levels of the system of design process of architectural, urban and planning projects under information flow of the general design system (C11)
c3. Analyze, understand and make use of environmental and Scio-culture circumstances and contexts. (C11)
c4. Analyze architectural projects of various scales and levels of complexity (C2, C10)
c5. Design and compare analyze and interpret the results (C5)
c6. Produce innovative design ideas and concepts (C9)
c7. Adopt life-long self-learning (C5)
c8. Search for information's from references, journals and internet (C2)
c9. Produce new architectural forms and design solutions of real societal problem (C9)
c10. Lead and motivate individuals. (C12)

This course contributes in the following program competencies: C2, C5, C9, C10,C11, C12

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Traditional methods of thinking	2		
2	Architectural problem & objectives	2		
3	Main Goals ,Secondary Goals	2		
4	Pyramid of Goals	2		
5	Architectural Invention process	2		
6	Phases of design process Tools of Architectural invention	2		
7	Mid Term Exam	2		
8	Methods of Architectural process Methods of Data Collection	2		
9	Discussion of Research	2		
10	Architectural Design Process phases	2		
11	Different components form, shapes, in Architecture	2		
12	Different Architectural, icons Ideas	2		
13	Explain Different Architectural examples, concept, idea	2		
14	Research Presentation, revision	2		
15	Traditional methods of thinking	2		
	Total hours	**30**		

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies																	
	C2	C5	C9	C10	C11	C12												
Traditional methods of thinking	1		1															
Architectural problem & objectives	1	1	1	1	1	1												
Main Goals, Secondary Goals		1	1		1	1												
Pyramid of Goals	1	1		1	1													
Architectural Invention process	1	1	1	1	1	1												
Phases of design process Tools of Architectural invention		1	1	1	1													
Methods of Architectural process Methods of Data Collection	1	1		1	1	1												
Architectural Design Process phases	1	1	1	1	1	1												
Different components forms, shapes, in Architecture		1	1	1		1												
Different Architectural, icons Ideas	1	1		1	1	1												
Explain Different Architectural examples ,concept ,idea	1	1	1	1	1	1												
Researches Presentation, revision	1	1		1	1													
Traditional methods of thinking			1	1	1													
Topics Covering Competences	10	12	11	11	11	10												

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
C2	1	1	1				1	1		1	1		1		
C5	1	1						1		1	1			1	1
C9	1	1								1	1		1	1	
C10	1	1	**1**							1	1				
C11	1	1	1					1		1	1		1	1	
C12	1	1	1		1		1	1		1	1		1	1	1
Σ	7	7	4		1		3	4		7	6		4	4	3

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
	Mid-Term Exam	7th Week	20
Semester Work	Quizzes	2 Quizzes (one each 4 weeks)	20
	Reports/Research	Two reports per semester	20
	Written Exam	Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: None

- Salama, A., 1995. *New trends in architectural education: Designing the design studio*. Arti-arch.
- Lawson, B.R., 1979. Cognitive strategies in architectural design. *Ergonomics*, *22*(1), pp.59-68.

7-2 Recommended books: None

- Ching, F.D., 2014. *Architecture: Form, space, and order*. John Wiley & Sons.
- Zimmerman, C., 2014. *Photographic architecture in the twentieth century*. U of Minnesota Press.
- Watson, D., 2000. *Time-saver standards for building materials & systems: design criteria and selection data*. McGraw-Hill.

7-3 Periodicals, Web sites, etc.

- www.greatbuildings.com

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped with projection.
- Computer, Data show
- High speed internet and communication facilities for distance learning, Books, & Magazine.

Course coordinator: Lecturer Fatma Magdy Mohamed
Head of the Department: Dr. Asamer Zakrya
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn437: Architecture & Human Studies

A- Affiliation
Relevant program: Architecture Engineering and Building Technology BSc Program
Department offering the program: Architectural Engineering and Building Technology Dpt.
Department offering the course: Architectural Engineering and Building Technology Dpt.
Date of specifications approval: August 2020

B - Basic Information

Title: Architecture & Human Studies **Code: ARCn437** **Level: Ninth Semester (Level Four)**

Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:** None **Practical:** None
Pre-requisite: ARCn122

C - Professional information

1 – Course Learning Objectives:

The main objective of this course is to introduce the basic concepts and theories of human studies in architectural design and urban design

2 - Competencies

c1 - Use a wide range of analytical tools (C2).
c2 - Present architectural projects, models for local, regional culture(C5,C3).
c3 - Recognize different types and finishing materials and select appropriate material for each human needs, culture, and purpose (C10,C9).
c4 - Analyze and make use of environmental circumstances and contexts (C4).
c5 - Design and compare analyze and interpret the results of societal and culture needs (C5,C7).
c6 - Produce new architectural forms and design solutions of real societal problems (C2,C5).
c7- Contribute positively to the aesthetic, architecture and urban identity, and cultural life of the community. (C9,C8.)

This course contributes in the following program competencies:C2, C3, C5,C7,C8,C9,C10

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	human needs	2		
2	Perception, feeling, and compatibility	2		
3	Security and safety in architectural design	2		
4	Human Behavior and Design - Principal Spaces and Spaces	2		
5	Colors and textures as an essential element in architectural design	2		
6	design idea	2		
7	Mid Term Exam	2		
8	Open Discussion	2		
9	Colors and textures as an essential element in architectural design	2		
10	Examples of using color and texture as a key element in the architectural design of a group of resorts	2		
11	Discussion of the first research	2		
12	Urban design and children	2		
13	The child and urban spaces	2		
14	Discussion of the second research	2		
15	Open Discussion	2		
	Total hours	**30**		

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies						
	c1	c2	c3	c4	c5	c6	c7
human needs					1		1
Perception, feeling, and compatibility			1		1	1	1
Security and safety in architectural design		1			1	1	1
Human Behavior and Design - Principal Spaces and Spaces		1			1	1	1
Colors and textures as an essential element in architectural design			1	1	1	1	
design idea	1			1		1	
Colors and textures as an essential element in architectural design	1	1	1	1	1	1	1
Examples of using color and texture as a key element in the architectural design of a group of resorts	1	1	1	1	1	1	1
Discussion of the first research	1	1	1	1	1	1	1
Urban design and children	1	1	1	1	1	1	1
The child and urban spaces	1	1	1	1	1	1	1
Discussion of the second research	1	1	1	1	1	1	1
Topics Covering Competences	7	8	8	8	11	11	10

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1				1			1			1	1	
c2	1	1	1				1	1		1			1	1	
c3	1	1	1				1			1			1	1	
c4	1	1	1				1			1			1	1	
c5	1	1	1				1			1			1	1	

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c6	1	1	1				1			1			1	1	
c7	1	1	1				1	1		1			1	1	
∑	7	7	7				7	2		7			7	7	

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	10
Semester Work	Research/Presentations	9th, 12th week	20
Written Exam		Sixteenth week	70
Total			100

7- List of references:

7-1 Course notes: Human Architecture Studies lecture notes

7-2 Required books

Mohamed thabat ismaeel :Human Architecture Studies (text book)

Mehad sayed emara : Architectural humanities lectures

- **Recommended books:**

- محمد شفيق، السلوك الإنساني كمدخل إلى علم النفس الاجتماعي، القاهرة، ٢٠٠٨.-٥
- محمد علي علي مسعود، ترويض الشكل وسلطة المعنى، دكتواره، قسم الهندسة -٦ المعمارية، الجامعة التكنولوجية، بغداد، 2005.
- Hiller Bill, the social logic of space, Cambridge University Press, New York, 1988.
- Coates, Grary, J., Alternative learning environments, Community development Services, Dow Den, Hutchin, Son & Poss, Inc. Canada, 1998.
- D.H.Mc Burnery, Experimental Psychology, Wadsworth publishing company, 1990.
- John Farmer, Changing Attitude in Architecture to the Natural World, Architecture Press, Oxford, 1999.
- Jones. G.C. Design Methods, John Willey and Sons, 1992.
- Ruskin John, The seven lamps of architecture, Doover Publication, New York, 1989.
- Newman Oscar, Creating Defensible Space, Institute for community design analysis, USA, 199
- Deasy, C. M., & Lasswell, T. E., (1990), "Designing Places for People: A Handbook on Human Behavior for Architects, Designers, and Facility Managers", Whitney Library of Design, USA.
- عمران الحياة والأنسان" ،(2013)، "يحي عبد الله، القاهرة، مصر. ، مكتبة الأنجلو
- الفنون والأنسان" ،(2003)، "محسن محمد عطية، القاهرة، مصر. ، دار الفكر العربي

7-3 Periodicals, Web sites, etc.

- Architectural Periodicals
- www.worldarchitecture.org
- www.humanarchitecture.org

8- Facilities required for teaching and learning:

- White board
- Data show
- Internet

Course coordinator: DR./ Mehad sayed emara
Head of the Department: Assoc. Prof./ Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn411 : Working Drawing & Construction Documents

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August 2020

B - Basic Information

Title: Working Drawing & Construction Documents
Code: ARCn411
Level: 4th & 5th, Fall & Winter Semesters
Credit Hours: 3
Lectures: 1
Tutorial/Exercise: 6
Practical :1
Total : 8
Pre-requisite: ARCn313

C - Professional information

1 – Course Learning Objectives:

The course aims, in general, to prepare the student for practical life by completing training on the executive drawings with a focus on the drawings of the general site and its elements, as well as addressing the new smart materials in architecture, with training on preparing bid documents for projects and how to calculate the initial cost for them, after getting to know the works Inventory of various construction works. The course also introduces the student to how to deal with the various building codes by application on given projects.

2 – Competencies

c1. Recognize characteristics of architectural materials. (C1,C5).
c2. Practice the concepts and methodologies of solving construction problems. (C1,C3).
c3. Use principles of building technologies, structure & construction methods, technical installations, properties of materials, and the way they may influence design decisions. (C4,C9).
c4. Deal with various dimensions of complex building problem and the range of approaches, policies, and practices that could be carried out to solve this problem. (C8,C9).
c5. Practice principles of sustainable design, climatic considerations, and energy consumption and efficiency in buildings and their impacts on the environment. (C6).
c6. Develop a systematic and methodic approach in dealing with new and advancing technology. (C4).
c7. Think three-dimensionally and engage images of places & times with innovation and creativity in the exploration of design. (C8,C9,C14).
c8. Discuss research and formulate informed opinions appropriate to specific context and circumstances affecting architecture profession & practice. (C5,C9).
c9. Apply knowledge of architectural practice on integrative base to solve engineering problems. (C1,C2).
c10. Produce professional workshop and technical drawings using traditional drawing and computer-aided drawings' techniques. (C7,C10).
c11. Use appropriate construction techniques and materials to specify and implement different designs. (C4).
c12. Participate professionally in managing construction processes. (C5,C7,C15).
c13. Merge professionally the architectural knowledge, understanding, and feedback to improve design, construction and/or services. (C13).
c14. Collaborate effectively within multidisciplinary team. (C5,C7,C9).
c15. Acquire entrepreneurial skills. (C5,C9,C10).

This course contributes in the following program competencies: C1,C2,C3,C4,C5,C6,C7,C8, C9,C10,C13 ,C14 &C15

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to course (Importance of tender documents, components of tender documents)	2	6	-
2	Applications of Advanced structure and Smart Materials	2	6	-
3	Architectural drawing package in tender documents (1)	2	6	-
4	Architectural drawing package in tender documents (2)	2	6	-
5	Layout Working Drawing studies (**Landscape):-** **-Hardscape** (roods – pedestrians paths – bridges – gates– fences- Pools -lakes - pergolas - shaded areas -Lighting – signs-.accessories .....etc.) - **Softscape** (green areas – trees – shrubs ….etc.)	2	6	-
6	Creating drawing packages compatible with regulations and building codes (1) **(Under ground building code)**	2	6	-
7	➢ Mid-term Exam	2	6	-
8	Creating drawing packages compatible with regulations and building codes (2) **(Fire code)** and application of fire fighting system in large scale projects	2	6	-
9	Application of HVAC Systems in large scale project	2	6	-
10	Creating and Determining the project's set of specifications	2	6	-
11	Quantity Surveying in large Scale projects; items and Techniques (including computerized systems)	2	6	
12	Bill of Quantities and tender cost estimation	2	6	-
13	Creating Time schedules for large scale projects. (procedures, tools, technique and examples)	2	6	-
14	Finalizing tender packages (drawing sheet presentation techniques, creating letter of invitation to tender)	2	6	-
15	Final Project discussion and submission	2	6	-
	Total hours	**30**	**90**	

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies														
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15
Introduction to course (Importance of tender documents, components of tender documents))				1		1			1			1	1		
Applications of Advanced structure and Smart Materials	1			1		1			1	1	1	1	1		
Architectural drawing package in tender documents (1).				1		1			1			1	1		
Architectural drawing package in tender documents (2)				1		1			1			1	1		
Layout Working Drawing studies **Landscape :-** **-Hardscape** (roods – pedestrians paths – bridges – gates– fences- Pools -lakes - pergolas - shaded areas -Lighting – signs-.accessories .....etc.) - **Softscape** (green areas – trees – shrubs ….etc.)	1		1	1	1		1		1						
Creating drawing packages compatible with regulations and building codes (1) **(Under ground building code)**				1		1		1	1			1	1		1
Creating drawing packages compatible with regulations and building codes (2) **(Fire code)**				1		1		1	1			1	1		1

Topic	Course Competencies														
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15
and application of fire fighting system in large scale projects															
Application of HVAC Systems in large scale project				1		1		1	1			1	1		1
Creating and Determining the project's set of specifications				1		1			1			1	1		1
Quantity Surveying in large Scale projects; items and Techniques (including computerized systems)		1		1		1			1			1	1		1
Bill of Quantities and tender cost estimation		1		1		1			1			1	1		1
Creating Time schedules for large scale projects. (procedures, tools, technique and examples)		1		1		1			1			1	1		1
Finalizing tender packages (drawing sheet presentation techniques, creating letter of invitation to tender)		1		1		1			1			1	1	1	1
Topics Covering Competences	2	4	1	13	1	12	1	3	131	1	1	12	12	1	8

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lectures	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	3-D Modeling	Researche, Reports & Assignments	Self Learning	Modeling and Simulation	Written Exam	Assignment	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1														
c2	1				1										
c3	1														
c4	**1**		**1**		**1**					1					
c5	1														
c6	1														
c7	1	1		1	1	1					1			1	
c8	1						1	1							
c9	1		1												
c10	1			1							1				
c11	1									1					
c12	1														
c13	1			1		1				1	1				1
c14	1	1					1	1						1	
c15	1	1	1				1	1		1				1	1
∑	15	3	3	3	3	2	3	3	-	4	3	-	-	3	2

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Assignments	Weekly class and home exercises.	15
	Research	2 nd Week	5
	Final project	Final Working Drawings Project	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: Working Drawing & Construction Documents Lectures

7-2 Required books

1 - Ching, F., "Building Construction Illustrated ", 3rd Ed. John Willy & Sons Publishing Inc., New York, 2001.

7-3 Recommended books:

1 – Mohamed Abd Allah , Building Construction &Building Technology, Anglo Library, Cairo 2002.

2 – Sami Hassid, Architectural Construction Details.

3 – Farouk Abas Heidar " Building Construction " 4th edition

4- W.B -McKay, W.B., "Building Construction", 5th Ed. Longmans, 1971

5- All Building Construction and Details Books

6- Osama, A. Wakita, , "The Professional Practice of Architectural Working Drawing ", Jhon Willey 3rd edition, 2002.

7- Ralph W. Lieding, "Architectural Drawings", 4th edition, Jhon Willey & sons, 1999

7-4 Periodicals, Web sites, etc.

https://sweets.construction.com/

http://www.understandconstruction.com

https://www.arcat.com/

All architectural and Building Construction Sites

8- Facilities required for teaching and learning:

- Design studio equipped with drawing boards, overhead projector and Data show.
- Resources available in the library.
- Computer lab with CAD software and Internet connection.
- Field and Construction sites visits and up-to-date materials researches.

Course coordinator: Dr. Magdy Tammam
Head of the Department: Dr. Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn462: Graduation Project (B)

A- Affiliation

Relevant program: Architecture Engineering and Building Technology BSc Program
Department offering the program: Architecture Engineering and Building Technology Department
Department offering the course: Architecture Engineering and Building Technology Department
Date of specifications approval: August, 2020

B - Basic Information

Title: Graduation Project (B) **Code: ARCn462** **Level: Tenth Semester (Level Four)**

Credit Hours: 4 **Lectures:** 2 **Tutorial/Exercise:** 6 **Practical:** -
Pre-requisite: ARCn421-ARCn460

C - Professional information

1 – Course Learning Objectives:

The final design project aims to be an accumulation of all previously acquired skills and taught courses; architectural, technological, and urban, throughout the four-years of study and in line with the country's development goals whether it was economic, cultural, touristic, and urban. Students will reach an integrated design solutions with architectural and urban dimensions, to reflect the contemporary trends and methods of design. They will conduct an analytical study for the design determinants and analyze various public buildings' projects and functions, reaching a comprehensive program for the project. In addition, an analytical study of the various alternatives for the design will be conducted to design the most suitable architectural and urban spaces, linking the design determinants with functional, environmental, constructional, humanitarian, and cultural aspects.

2 - Competencies

c1. Classify and compare Principles of architectural design, human dimensions as a prime determinant of the scale, proportions, and spatial arrangement of a building spaces. (C13)
c2. Use of various structural systems and its role in the design product. (C11,C14).
c3. Analyze Principles of environmental and contextual forces that influence how we might situate a building, layout, and orient its spaces, articulate its enclosure, and establish its relation to the landscape. (C11).
c4. Calculate and analyze of exchange and assess different ideas, views and knowledge from given architectural designs and projects. (C11, C15).
c5. Integrate relationship of appropriate structural solutions into the design process. (C11).
c6. Use appropriate construction and structural techniques to achieve creative designs. (C11).
c7. Collaborate effectively within multidisciplinary team. (C5,C7,C9).
c8. Consider the impact of designs on the environmental protection. (C3).
c9. Practice self-learning and communicate effectively orally and in written form. (C8,C10).

This course contributes in the following program competencies: C3, C5, C7, C8 , C9, C10, C11, C13, C14&C15

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	**Stage of Concept)** ➢ **In Lecture:** Presenting Design Ideas & Concepts to thrill students' minds **In Design-Studio:** Receiving research from students, Correcting them wisely and feedback students with degrees and instructions for each one of them, Each student becomes settled in setting a certain detailed program and zoning diagram, and mind storming to snap an intellectual concept to be the design guideline.	2	6	-
2	**(Stage of Layout-Sketches)** ➢ **In Lecture:** Presenting a lecture in how concept can be transferred into sketch using process of abstraction. **In Design-Studio:** Following up the Programs, Zoning Diagrams, and Concepts with students, transferring the concepts into layout sketches.	2	6	-
3	**(Stage of Layout)** ➢ **In Lecture:** Discussing the concepts and layout sketches with students and making a show selecting samples of failed sketches and successful sketches to be presented on front of all students. ➢ **In Design-Studio:** Improving layout-sketches and drawing them into scale 1/400 or 1/500	2	6	-
4	**(Stage of Plans)** ➢ **In Lecture:** Presenting plans of real projects as models to figure out the way of combination, matching, and how to make a complex of design. **In Design-Studio:** Transferring from the To-Scale-Layout sketches into Plans, directing the students to experience the similar plans to be examples may be useful in achieving functions and aesthetics	2	6	-
5	**Stage of Plans)** ➢ **In Lecture:** Following the architectural plans with students, directing them into improvement and re-reading their plans from many perspectives. **In Design-Studio:** Supervising the students in leading them towards successful plans, functionally and aesthetically.	2	6	-
6	**(Stage of Plans)** ➢ **In Lecture:** Because designing plans takes time, once again the lecturers follow them up with students individually, directing them to improve the final product of plans. **In Design-Studio:** Teaching assistants make efforts with students to improve their plans and to avoid their errors, and to direct them into the stage may be applicable to be extruded into a 3d model. Some students start their sketches with 3d which is very good in the issue of imagination. Teaching assistants try to direct those students to let them set a plan functionally became in order.	2	6	-
7	Full Day Esquisse (Mid-Term)	2		
8	**(Stage of Evaluating Plans)** ➢ **In Lecture:** Making Jury to evaluate students' plans **In Design-Studio:** Teaching assistants make discussions with students of how they can improve their plans and what exactly they have to do to reach higher degrees.	2	6	-
9	**(Stage of 3d & Sections)** ➢ **In Lecture:** Presenting a visual material for architectural sections to be samples of the different types of construction systems **In Design-Studio:** Students sketch 3d and sections trying to set certain construction systems over the wide-span forms.	2	6	-
10	**(Stage of 3d & Elevations)** ➢ **In Lecture:** Presenting a visual material for architectural elevations to be samples of the different types of styles **In Design-Studio:** Students sketch 3d and elevations trying to set the outline aesthetics of his/her design through using certain materials, surfaces, colors, elements, and so on.	2	6	-
11	**Stage of Final Improvements)** **In Design Studio:** Announcing the esquisses' degrees and submitting the projects to the students highlighting the errors and indicating suggestions for improvement.	2	6	-

12	. **Stage of Final Improvements)** **In Design Studio:** Announcing the esquisses' degrees and submitting the projects to the students highlighting the errors and indicating suggestions for improvement.	2	6	-
13	**(Stage of Presentation Techniques)** **In Design Studio: Discussion between staff and students about the techniques of final presentation of the Graduation Project, ad announcing the degress of Year work and determining a day of hanging the projects in separated halls distributed over the building**	2	6	-
14	**(The Final Stage: The Jury)** ➢ **In Separated Committees: (The Jury is often being after second term exams)** It is divided into two days; 1st is held by the internal full-time staff, and the 2nd is held by the external part-time staff invited to judge the students' graduation projects. And in these two days, students must come in formal costumes. Each student is asked few questions about his/her idea, concept, structure, functions,… ext.	2	6	-
15	**(The Final Stage: The Jury)** ➢ **In Separated Committees: (The Jury is often being after second term exams)** It is divided into two days; 1st is held by the internal full-time staff, and the 2nd is held by the external part-time staff invited to judge the students' graduation projects. And in these two days, students must come in formal costumes. Each student is asked few questions about his/her idea, concept, structure, functions,… ext.	2	6	-
	Total hours	**28**	**84**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies								
	c1	c2	c3	C4	C5	C6	C7	C8	C9
Introduction : Multipurpose hall project	1	1							
Site analysis and research	1			1			1		
Final research submission			1		1	1		1	
Layout proposal Design concept			1			1			
Master plan (zoning – organization)		1		1			1		1
Floor plans		1							
Mid-Term Exam									
Level Study (sections) Floor plans design development	1		1			1			
Elevations design Floor plans (final)			1			1			
3D Perspective or isometric / mass study			1		1	1		1	
interiors - details and presentation		1	1			1			
sections & Elevations			1			1			1
Development and final Plans sections & Elevations									
Sections- Elevations Final sketch submission			1			1			
Final Project			1			1			
Topics Covering Competences	3	4	9	2	2	9	2	2	2

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1					1		1	1		1		
c2	1	1						1		1	1			1	1
c3	1	1								1	1		1		
C4	1	1	1					1		1	1		1		
C5	1	1						1		1				1	1
C6		1								1	1				

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
C7		1													1
C8								1						1	
C9			1					1						1	
∑	5	6	3					6		7	6		3	4	3

6- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Full Day Esquisse	7th Week	20
Semester Work:	Weekly	40
Final Project Jury	Usually held after exams of the final semester	40
Total		100

7- List of references:

7-1 Course notes

7-2 Required books The course of Graduation Project doesn't depend on a certain required book, but it depends on gathering information from various references, magazines, internet, and so on.

7-3 Recommended books

- Adjaye, D., (2015), "Form Heft Material", Yale University Press. USA.
- Clark, R.H., (2005), "Precedents in Architecture", New Jersey.
- Edward, W., (1975), "A vocabulary of Architectural Forms", Architectural Media, USA

7-4Periodicals, Web sites, etc

8 Architectural record, Published monthly by the McGraw – Hill companies
9 Al – Benaa Magazine, Published monthly by Medina Publishing Inc., Kingdom of Saudi Arabia.
10 Architecture Competition Annual, Published every 6 months by Archiworld Co., Ltd., Korea.
11 Medina Magazine, Tasmeem Magazin &البناء العربى
12 http://www.greatbuildings.com
13 http://www.archpedia.com
14 http://www.archnet.org
15 http://www.vitruvio.ch

8- Facilities required for teaching and learning

- Appropriate teaching design studios including presentation board, data show, models, computer lab

Course coordinator: Dr. Mohamed Thabat
Head of the Department: Associate Professor: Asamer Zakaria
Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification

ENGn312**: Engineering Laws and Professional Ethics**

A- Affiliation

Relevant program:	Architectural Engineering and Building Technology BSc Program
Department offering the program:	Architectural Engineering and Building Technology
Department offering the course:	Architectural Engineering and Building Technology
Date of specifications approval:	August 2020

B - Basic Information

Title: Engineering Laws and Professional Ethics **Code:** ENGn312 **Level:** 3rd Spring (Seventh semester)

Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:** - **Practical:** -

Pre-requisite: None

C - Professional information

1 – Course Learning Objectives:

The course aims to study many legal terminologies and concepts to introducing the Egyptian legislations and laws in the field of construction. This is achieved throughout studying the Egyptian building Law, codes, legislation, and engineering regulation. Additionally, the course provides the student with the main knowledge about the following:

- Responsibilities, rights, and duties of the engineer while practicing the profession.
- The different relationships with clients, other consultants, and contractors
- Preparing a projects plan of work.
- The importance of achieving the profession ethics and principles

2 – Competencies

c1. Classify and providing construction knowledge (C3,C7)
c2. Explain the The architects and the contractor's legal responsibilities (C3,C7).
c3. Study and Explain the theoretical background of the Building codes and land legislation (C1,C7,C11).
c4 Manage tasks and resources efficiently (C1).
c5. Investigate the Legislations, rules, regulations for urban planning and building construction (C1)
c6. Analyze the building elements to Make consultations decisions on different levels (C1)
c7. Read and Identify the Redistribution scheme rebuilding scheme, re-housing scheme, street scheme, street widening scheme building scheme. (C3).
c8. Prepare and interpret the Contracts between owners and architect and between owner and contractor (C2,C8,C12,C13)
c9. Study the overall responsibility for design, construction and relation with owner and contractor (C1,C11)
c10. Analyze the contractor and consultants in their own enterprise. (C1,C11)
c11. Solve limited operational regulation problems related to the building elements (C3).
c12. Use experimental facilities to regulate the relation between architect, owner and contractor. (C2).
c13. Collaborate effectively within multidisciplinary team and Listen and critically respond to the views of others. (C5,C7,C9).
c14. Consider the impact of construction on the environmental protection (C3).
c15. Practice self-learning and communicate effectively orally and in written form (C8,C10).

This course contributes in the following program competencies: C1, C2, C3, C5, C7, C8, C9, C10, C11, C12 & C13

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Background to Building Regulations and Law (Problems - Codes – Rating Systems)	2		
2	General Building regulation Terminologies -Penalties	2		
3	Organization of construction work (Heights - Projection – Courts)	2		
4	Organization of construction work (Ventilation – Lighting – Stairs)	2		
5	Organization of construction work (License obligations – Local authorities - insurance)	2		
6	Maintaining real estate wealth	2		
7	Mid Term Exam	2		
8	Organization of construction work (License Model)	2		
9	Introduction to Urban Planning of cities and villages	2		
10	Urban Planning City Strategic Plan	2		
11	Urban Planning City Detailed Plan	2		
12	Urban Planning Land division	2		
13	Urban Planning Land division	2		
14	Final submission	2		
15	General Review	2		
	Total hours	**30**		

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies																		
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15				
Background to Building Regulations and Law (Problems - Codes – Rating Systems)	1	1																	
General Building regulation Terminologies - Penalties	1						1	1											
Organization of construction work (Heights - Projection – Courts)			1	1		1		1		1	1	1		1					
Organization of construction work (Ventilation – Lighting – Stairs)			1	1	1	1		1	1	1		1							
Organization of construction work (License obligations – Local authorities - insurance)		1			1			1	1	1		1	1		1				
Maintaining real estate wealth		1						1	1			1							
Mid Term Exam																			
Organization of construction work (License Model)								1	1		1								
Introduction to Urban Planning of cities and villages						1		1	1	1									
Urban Planning City Strategic Plan						1		1	1	1									

Topic	Course Competencies																		
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15				
Urban Planning City Detailed Plan						1		1	1	1									
Urban Planning Land division						1		1		1									
Urban Planning Land division								1		1									
Final submission						1		1	1	1									
Topics Covering Competences	2	3	2	2	2	8	2	13	9	9	3	4	2	2	2				

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1	1		1		1		1	1	1	1		
c2	1	1				1		1		1	1			1	1
c3	1	1		1						1	1		1		
c4	1	1		1						1	1				
c5	1	1		1				1		1	1		1		
c6	1	1		1	1					1	1		1		
c7	1	1		1		1				1	1		1		
c8	1	1		1		1	1			1	1		1	1	1
c9	1	1		1			1	1	1	1	1		1	1	1
c10	1	1		1	1					1	1		1		
c11	1					1	1	1							1
c12	1	1	1				1		1					1	1
c13					1		1	1						1	
c14						1		1				1		1	
c15								1						1	
∑	12	11	2	9	3	6	5	8	2	10	10	2	8	7	5

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Submissions	Assignment per week	20
	Reports/Research	Two reports per semester	10
	Portfolio	Once per semester	10
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: ok

7-2 Required books None

7-4 Recommended books: None

Spector, T., (2012), "The Ethical Architect: The Dilemma of Contemporary Practice", Unabridged Edition, Chronicle Books, USA.

محجوب على محجوب (2001). قواعد اخلاقيات المهنة: مفهومها، اساس الزامها ونطاقه: دراسة مقارنة. القاهرة: دار النهضة العربية.

بشأن توجيه وتنظيم أعمال البناء2008 لسنه 119قانون البناء المصري رقم .

7-5 Periodicals, Web sites, etc. None

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped wirh projection and sound systems.
- Computer, Data show and Computer programs.
- High speed internet and communication facilitits for distance learning.

Course coordinator: Dr -Amr AlGohary
Head of the Department: Dr Asamer Zakaria
Date: August 20210

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn431: Advanced Building Economics

A- Affiliation

Relevant program: Architectural Engineering and Building technology BSc Program
Department offering the program: Architectural Engineering and Building technology BSc Department
Department offering the course: Architectural Engineering and Building technology Department
Date of specifications approval: August 2020

B - Basic Information

Title: Advanced Building Economics **Code:** ARCn431 **Level:** Senior 3, Level 3
Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:** - **Practical: -**
Pre-requisite: ARCn313

C - Profession information

1 – Course Learning Objectives:

The main aim of this course is studding the economic aspects, scope of work and costs in relation to different types of buildings in all phases. This is achieved through techniques and methodologies such as feasibility studies, value engineer, life cycle cost analysis and benefit / cost analysis. In addition to using computer applications and applying case studies.

2 – Competencies

c1 - Identify and reformulate cost issues . (C1,C4)
c2 - use creative thinking to determine and solve economic problems (C9, C10)
c3 - The ability to use value engineering at different stages of the building (C4, C10)
c4- The ability to solve economic problems throughout the life of the building with LCCA (C3, C8, C13)
c5- Utilize the rules of benefits and cost on all building items (C4, C14)
c6- Prepare and design feasibility studies for buildings in all its stages (C14, C15)
c7- Preparing technical and financial envelopes, studying tenders (C5, C6, C7, C8, C15)

This course contributes in the following program competencies: C1,C4,C5,C6,C7,C8,C9,C10,C13,C14 &C15

\

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to Building Economics	2		
2	Value Engineer	2		
3	Examples on value engineer (in different building process)	2		
4	Life cycle cost analysis LCCA (in building phases)	2		
5	Benefit / cost analysis (in different building Items)	2		
6	Feasibility study & tendering processes	2		
7	Mid term	2		
8	Feasibility study (background)	2		
9	Feasibility study (market study)	2		
10	Feasibility study (engineering study)	2		
11	Feasibility study (technical study)	2		
12	Feasibility study (economic evaluation)	2		
13	Submit the researches as a closed envelopes for tenders & discussion	2		
14	Researches Discussion	2		
15	Mini project	2		
	Total hours	**30**		

4. Course content/Course Competencies mapping matrix

Topic	c1	c2	c3	c4	c5	c6	c7
Introduction to Building Economics	1		1	1	1	1	1
Value Engineer	1	1	1			1	
Examples on value engineer (in different building process)	1	1	1			1	
Life cycle cost analysis (in building phases)	1	1		1		1	
Benefit / cost analysis (in different building Items)	1	1			1	1	
Feasibility study & tendering processes	1	1				1	
Feasibility study (background)	1	1				1	
Feasibility study (market study)	1	1				1	
Feasibility study (engineering study)	1	1				1	
Feasibility study (technical study)	1	1				1	
Feasibility study (economic evaluation)	1	1	1	1	1	1	1
Submit the researches as a closed envelopes for tenders & discussion	1		1	1	1	1	1
Researches Discussion	1	1	1	1	1	1	1
Mini project	1	1	1	1	1	1	1
Topics Covering Competences	14	12	7	6	6	14	5

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods					Learning Methods			Assessment Method			
	Lecture	Presentations & Movies	Discussions & seminars	Tendering simulation	Problem solving	Researches, Reports & Assignments	Self-Learning	Tendering simulation	Written Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1	1	1	1	1	1	1	1	1	1
c2	1	1	1	1	1	1	1	1	1	1		1
c3	1		1	1	1	1		1	1		1	1
c4	1		1	1	1	1			1	1		1
c5	1	1		1	1	1	1	1	1		1	1
c6	1	1	1	1	1	1	1	1	1	1	1	1

Course Competences	Teaching Methods					Learning Methods			Assessment Method			
	Lecture	Presentations & Movies	Discussions & seminars	Tendering simulation	Problem solving	Researches, Reports & Assignments	Self-Learning	Tendering simulation	Written Exam	Quizzes	Research & Presentations	Mini Project Report
c7	1		1	1		1	1	1	1	1	1	1
	7	4	6	7	6	7	5	6	7	5	5	7

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes (one each 4 weeks)	10
	Reports/Research	Two reports per semester	5
	Assignments	2 Assignments per semester	5
	Mini project	Once per semester	10
closed envelopes for tenders & discussion		Thirteenth week	10
Written Exam		Sixteenth week	40
Total			100

7- List of references:
7-1 Course notes: none

7-2 Required books

- Rabie, M. adssadaG. (2009) Fluid Power Engineering, NY: McGraw-Hill Proffesional.
- عبد اللطيف أبو العطا، (1994)، "الموسوعة الهندسية لأنشاء المباني والمرافق العامة"، مطابع الوفاء، القاهرة، مصر.
- Jerry., (2009), "green building through intergated design", francis, USA.
- kolley l., (2009), green roof ionstyuction & maintenanee, Mc-Graw hill, USA.

15-2 Recommended books:

- Shutt, R., (1995), "Economics for the construction industry", Longman, London, UK.

7-4 Periodicals, Web sites, etc.

Review of Productivity and Sustainable Development in the ESCWA Region, First Issue. Green Economy in the Context of Sustainable Development and Poverty Eradication: Principles, Opportunities and Challenges in the Arab Region (unescwa.org) /, (Last accessed January 2021)
45490311.pdf, (Last accessed January 2021)
http://www.eaton.com/Eaton/index.htm/, (Last accessed January 2021)

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped with projection and sound systems.
- Computer, Data show
- High speed internet and communication facilities for distance learning.

Course coordinator: Lecturer Ayah Mohamed Ezzat
Head of the Department: Dr Asamer Zakrya
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCN432: Architecture Criticism

A- Affiliation

Relevant program: Architecture Engineering and Building Technology BSc Program
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: August 2020

B - Basic Information

Title: Architecture Criticism **Code:** ARCN432 **Level:** Senior 2 ,Level 4,Ninth Semester
Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:** **Practical:**
Pre-requisite: ARCN340

C - Professional information

1 – Course Learning Objectives:

The course aims to illustrate the different architectural criticism concepts, tools and ways throughout illustrating samples of the trends, schools, and products. It also introduces the history, principles and thinkers in order to support the students' positive evaluating skills and expression throughout the visual analysis and writing. It also discusses the concepts and criteria of assessment and correction, in addition to the nature of architectural criticism. It illustrates other concepts such as data, description, documentations, positive recording, explanation, analyzation, assumptions, and recognizing the differences and changes between the design processes and their outcome. Students will be able to study some criticism articles for famous architects, in addition to the most distinguished grand projects, internationally, using applications and case studies.

2 - Competencies

c1. Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.
c2. 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.
c3. 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.
c4. Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles.
c5. Practice research techniques and methods of investigation as an inherent part of learning.
c6. Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements.
c7. Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams.
c8. Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools.
c9. Use creative, innovative, and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations.
c10. Acquire and apply new knowledge, and practice self, lifelong and other learning strategies.
c11. 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.
c12. 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.
c13. Generate ecologically responsible, environmental conservation and rehabilitation designs; through understanding of: structural design, construction, technology and engineering problems associated with building designs.

c14. 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.

c15. 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.

c16. Apply and preform technological standardization concepts in building construction field and different Quality management systems.

c17. Investigate, evaluate, and analyze problems relative to building technology environment and develop solutions that meet the economic, social, technical, engineering, and aesthetic needs of both client and society.

c18. Assist and Complete work in compliance with the rights and conditions of contractual obligations, relevant law, legislation, codes, building technology standards, regulations, and bylaws

c19. Implement new technologies to transfer and interpret specific architectural elements into working drawings that could be implemented considering the common standards and requirements needed to communicate with other disciplines in the construction process.

This course contributes in the following program competencies: C2, C5, C7, C9, C10, C11& C12.

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Architectural criticism concepts and the role of critic	2		
2	Modes of classical schools and trends of Architectural criticism and its products	2		
3	Modes of contemporary schools and trends of Architectural criticism and its products	2		
4	Important thinkers and support positive evaluated skills and description by writing and visual analysis (19 century)	2		
5	schools and trends of criticism Architectural criticism, operation Description and Documentations and positive record (19 century)	2		
6	Important thinkers and support positive evaluated skills and description by writing and visual analysis (20 century)	2		
7	Mid-term Exam	2		
8	schools and trends of criticism Architectural criticism, operation Description and Documentations and positive record (20 century)	2		
9	Description and analysis :The main problems in Architecture criticism	2		
10	Theories and concepts of perception	2		
11	Theories and concepts of Aesthetics	2		
12	Assumptions, criteria and contemporary principles of evaluations	2		
13	Research and discussions: Models and applications –case study.	2		
14	Revision	2		
	Total hours	**28**		

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies																		
	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	c14	c15	c16	c17	c18	c19
Architectural criticism concepts and the role of critic					1					1									
Modes of classical schools and trends of Architectural criticism and its products		1			1					1	1								
Modes of contemporary schools and trends of Architectural criticism and its products		1			1				1	1	1	1							
Important thinkers and support positive evaluated skills and description by writing and visual analysis (19 century)					1		1		1	1									
schools and trends of criticism Architectural criticism, operation Description and Documentations and positive record (19 century)		1			1		1		1	1	1	1							
Important thinkers and support positive evaluated skills and description by writing and visual analysis (20 century)					1		1		1		1								
schools and trends of criticism Architectural criticism, operation Description and Documentations and positive record (20 century)		1			1		1		1	1	1	1							
Description and analysis :The main problems in Architecture criticism		1			1		1			1									
Theories and concepts of perception		1							1	1	1	1							
Theories and concepts of Aesthetics		1							1	1	1	1							
Assumptions, criteria and contemporary principles of evaluations		1			1		1		1	1	1	1							
Research and discussions: Models and applications – case study		1			1		1		1	1									
Revision																			
Topics Covering Competences		9			10		7		9	11	8	6							

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, papers	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1															
c2	1	1					1	1		1			1	1	
c3															
c4															
c5	1	1	1				1	1		1				1	
c6															
c7	1	1	1				1	1		1			1	1	
c8															
c9	1	1	1							1			1		
c10	1	1	1				1	1		1				1	
c11	1	1					1	1		1			1	1	
c12	1	1					1	1		1			1	1	
c13															
c14															
c15															
c16															
c17															
c18															
c19															
∑	7	7	4				6	6	7	7			5	6	

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	One Quize	10
	Papers/Research	Three papers/ One research per semester	30
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: None

7-2 Required books

- Preiser, W. F. E., et al., (2015), "Architecture Beyond Criticism: Expert Judgment and Performance Evaluation", Routledge, USA.
- Oliver, P., (1997), "Encyclopedia of vernacular architecture of the world", Cambridge University Press, New York. USA.
- Maxwell, R., (1993), "Sweet Disorder and the Carefully Careless: Theory and Criticism in Architecture", Princeton Architectural Press, New Jersey, USA.

7-6 **Recommended books:** None

7-4 Periodicals, Web sites, etc.: None

8- Facilities required for teaching and learning:

- Lecture and Exercise rooms equipped wirh projection and sound systems.
- Data show.
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr. Omnia Hesham

Head of the Department: Dr. Asamer Zakareia

Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn435: Urban & Environmental Conservation

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August, 2020

B - Basic Information

Title: Urban & Environmental Conservation **Code:** ARCn435 **Level:** 4TH

Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise:** - **Practical:** -

Pre-requisite: ARCn324

C - Professional information

1 – Course Learning Objectives:

The course aims to provide students with the means and methods of conserving, maintaining and supervising urban and environmental areas with special features putting in consideration the limited resources, in order to protect and preserve them from degradation. In addition, it increases the students' descriptive and analytical skills and discusses the methodologies used in dealing with the architectural and planning problems in urban areas with specific values.

2 - Competencies

c1. Utilize contemporary technologies, standards and quality guidelines to understand and solve Patterns and problems characterize sites of historic and cultural significance. (C4,C10)

c2. Develop, analyze and evaluate findings to Integrate community concerns to conservation projects. (C2, C12).

c3. Practice research techniques and methods of investigation to generate and develop selective interventions that cope with the significance of urban and architectural historic sites. (C5, C13).

c4. Identify, formulate, and solve complex historical buildings problems by understanding The Cultural Heritage and Local Economic Development of his country. (C1, C7, C10).

c5. Use creative, innovative, and flexible thinking to anticipate and respond to new situations concerning historical buildings and areas. (C9, C10)

c6. Generate rehabilitation designs; through understanding problems associated with historical buildings` designs. (C2,C5,C12,C13)

c7. Communicate effectively as a member in the conservation team, reaching the optimum decisions. (C9, C12).

c8. Create Rehabilitation Designs that satisfy both aesthetic and technical requirements, using adequate knowledge of: history and conservation Rues. (C11).

This course contributes in the following program competencies: C1, C2, C4, C5, C7, C9, C10, C11, C12 & C13

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	16. Introduction to the field of urban and environmental conservation. (General definitions, terms, fundamentals and theories)	2		
2	17. Urban Conservation of Heritage sites.	2		
3	18. Issues and problems facing heritage sites	2		
4	19. Concept of value in heritage conservation	2		
5	5. The role of international institutions in conservation of Historic Buildings	2		
6	6. A critical review of international restoration & conservation charters	2		
7	Mid-Term Exam			
8	7. Cultural Heritage and Local Economic Development	2		
9	8. Urban Revitalization of Historic Areas	2		
10	9. Rehabilitation of historic buildings	2		
11	10. Conservation economics and the debate between cultural and economic values.	2		
12	11. The significance of public intervention in heritage	2		
13	12. Local and international case studies of urban conservation	2		
14	13. Research project presentatio	2		
15	14.Final Revision	2		
	Total hours	**28**		

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies							
	c1	c2	c3	c4	c5	c6	c7	c8
Introduction to the field of urban and environmental conservation. (General definitions, terms, fundamentals and theories)	1			1				
Urban Conservation of Heritage sites.	1	1	1					1
Issues and problems facing heritage sites	1	1	1	1				1
Concept of value in heritage conservation	1	1		1	1			
The role of international institutions in conservation of Historic Buildings	1	1			1		1	
A critical review of international restoration & conservation charters			1	1	1	1	1	
Cultural Heritage and Local Economic Development		1	1	1	1			1
Urban Revitalization of Historic Areas	1	1	1	1		1		1
Rehabilitation of historic buildings	1		1	1			1	
Conservation economics and the debate between cultural and economic values.		1			1			1
The significance of public intervention in heritage	1	1	1		1			
The significance of public intervention in heritage	1		1			1		1
Research project presentation								1
Topics Covering Competences	9	8	8	7	6	3	3	7

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports & Assignments	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1				1			1			1		
c2	1	1	1				1			1			1		
c3	1		1				1			1			1	1	
c4	1		1							1			1	1	
c5	1		1		1		1			1			1	1	
c6	1	1	1					1		1			1	1	
c7	1	1	1		1		1	1		1			1	1	
c8	1		1		1		1			1			1	1	
∑	8	4	8	0	3	0	6	2	0	8	0	0	8	8	0

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes (one each 6 weeks)	5
	Reports/Research	One Research	20
	Assignments	Once Every Week	15
Practical Exam		---	
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: None

7-2 Required books

7-7 Recommended books: None

- سعيد علي خطاب، (2008)، "ترميم وصيانة المباني الأثرية والمعمارية"، دار الكتب المصرية.
- Earl, J., (2015), "Building Conservation Philosophy", 3rd Edition, Routledge, London, UK.
- Larkham, P. J., (1996), "Conservation and the City", Routledge, London, UK

7-4 Periodicals, Web sites, etc.

https://youtu.be/qoafRaTnM08 , (Last accessed July, 2021)
http://whc.unesco.org/ (World Heritage),(Last accessed March, 2021)
http://www.icomos.org/ (International Council on Monuments and Sites) (Last accessed March, 2021)
http://www.iccrom.org/, (International Center for the Study of the Preservation and Restoration of Cultural Property) (Last accessed March 2021)

8- Facilities required for teaching and learning:

- Computer
- Data Show.
- White Board.

Course coordinator: Professor. Samer Zakaria
Head of the Department: Professor. Samer Zakaria
Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn433: Modern Building Systems and Materials

A- Affiliation

Relevant program: *Architecture Engineering and Building Technology BSc Program*
Department offering the program: *Architecture Engineering and Building Technology Department*
Department offering the course: *Architecture Engineering and Building Technology Department*
Date of specifications approval: August, 2020

B - Basic Information

Title: *Modern Building Systems and Materials* ***Code:*** *ARCn433* ***Level:*** *4th Fall, Tenth Semester*
Credit Hours: 2 ***Lectures:*** *2* ***Tutorial/Exercise:*** *-* ***Practical:*** *-*
Pre-requisite: *ARCn313*

C - Professional information

1 – Course Learning Objectives:

By the end of this course, the students should understand different construction systems categories and combined technique, to emphasize the architecture design concept. Build students (knowledge, skills, and attitudes) related to the construction of the basic methods for assembling various materials, elements, and components necessary during both the design and the construction stages of the building.

2 - Competencies

c1. Define and identify the role of structure in architecture (C1,C4,C15).

c2 Classify and compare different structure systems (C3,C7,C13).

c2. Explain and Defining the concept of the traditional methods of construction systems (C3,C7,C12).

c3. Demonstrate and understanding background needed for choosing the structural support which should be provided for a building in order that it can maintain its shape (C1,C7,C11).

c4. Classify and compare the different Construction methods and materials (C1,C15).

c5. Collaborate effectively within multidisciplinary team (C5,C7,C9).

c6. Discussing examples of how to take construction decisions (C9, C15).

c7 Consider the impact of Construction on the environmental protection (C3,C13).

c8. Practice self-learning and communicate effectively orally and in written form (C8,C10).

This course contributes in the following program competencies:C1, C3, C4, C5,C7,C8, C9, C10, C11,C12,C13 & C15

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction and course goals	2		
2	General review of different Building Systems and materials	2		
3	General review of different Building Systems and materials	2		
4	The role of structure in architecture	2		
5	The architecture design concept related to modern systems	2		
6	Construction Materials, Methods and Techniques	2		
7	Assessment (Mid-Term)			
8	Applying Modern systems on a chosen project	2		
9	Discussions and presentations	2		
10	Discussions and presentations	2		
11	Discussions and presentations	2		
12	Discussions and presentations	2		
13	Discussions and presentations	2		
14	Semi Final project	2		
15	Final project	2		
	Total hours	**28**		

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies																		
	c1	c2	c3	c4	c5	c6	c7	c8											
Introduction and course goals	1	1	1				1												
General review of different Building Systems and materials	1		1				1												
General review of different Building Systems and materials		1		1				1											
The role of structure in architecture		1		1				1											
The architecture design concept related to modern systems		1		1				1											
Construction Materials, Methods and Techniques		1						1											
Applying Modern systems on a chosen project					1	1	1	1											
Discussions and presentations					1	1	1	1											
Discussions and presentations					1	1	1	1											
Discussions and presentations					1	1	1	1											
Discussions and presentations					1	1	1	1											
Discussions and presentations					1	1	1	1											
Semi Final project					1	1	1	1											
Final project					1	1	1	1											
Topics Covering Competences	2	4	2	3	8	8	10	12											

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self-Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Final Project Report
c1	1	1						1		1	1		1		
c2	1	1					1	1		1				1	1
c3	1	1					1			1			1		
c4	1	1					1			1					
c5	1	1					1	1		1			1	1	1
c6	1	1	1				1	1		1			1	1	1
c7							1	1						1	1
c8			1				1	1						1	1
∑	6	6	2				7	6		6			4	5	5

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes	20
	Reports/Research	3 Assignments per semester	10
	Tutorials		----
	Final project	Once per semester	10
Practical Exam		Fifteenth week	-----
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes

https://youtu.be/EaAixkb2mlY
https://youtu.be/CHulrSiOHvQ
https://youtu.be/eN9fbKoJLbI
https://youtu.be/pbF6lsVe07o
https://youtu.be/IjnxQdoH6gw
https://youtu.be/yV8dOzIm9JM
https://youtu.be/DQjhf-7ze2Q
https://youtu.be/1bCAG7U6dwc

7-3 Required books: None

7-4 3Recommended books

- Hudson, J., 2012. *Architecture from commission to construction*. Hachette UK.
- Binder, G., 2006. *101 of the World's Tallest Buildings*. Images Publishing.
- Sandaker, B.N., Eggen, A.P. and Cruvellier, M.R., 2019. *The structural basis of architecture*. Routledge.

7-5 Additional References:

- Spence, W. P., & Kultermann, E., (2016), "Construction Materials, Methods and Techniques", 4th Edition, Cengage Learning, USA.
- Rapson, R., (1977), "Structure Systems", Deutshe Verlage, Germany.

- على رأفت، (1997)، "الابداع الإنشائي في العمارة"، مركز أبحاث انتركونسلت، مطابع الاهرام، القاهرة، مصر
- Deplazes, A. ed., 2005. *Constructing architecture: materials, processes, structures*. Springer Science & Business Media.

7-5 Periodicals, Web sites, etc.

- http://www.ptsystems.eu/, (Last accessed January 2021)
- https://www.re-thinkingthefuture.com/architectural-styles/a2471-10-examples-of-dynamic-architecture//, (Last accessed January 2021)
- https://www.fosterandpartners.com/projects/reichstag-new-german-parliament/(Last accessed January 2021)

8- Facilities required for teaching and learning:

- Lecture rooms equipped with Computers and Data show.
- High speed internet and communication facilities for distance learning.

Course coordinator: Dr. Nevine Gado
Head of the Department: Dr Asamer Zakaria
Date: August 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn434: Urban Renewal

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August, 2020

B - Basic Information

Title: Urban Renewal **Code: ARCn434** **Level:** 4rd spring
Credit Hours: 2 **Lectures:** 2 **Tutorial/Exercise: -** **Practical:** -
Pre-requisite: ARCn323

C - Professional information

1 – Course Learning Objectives:

The course aims to introduce students to urban renewal to the natural and built environments and enhancing the students' ability to apply different approaches of urban design in the Egyptian environmental context. The course discusses the urban renewal definition, its relationship to planning and architectural design theories in addition to the other approaches and concept of urban design regarding the culture and natural environment as the basis of the urban design principles. It discusses the special morphology in cities throughout illustrating their character, elements, perception, and its natural and cultural composition determinacy while understanding the urban design and context, its framework for the city, which includes the composition elements and the basics of urban design as a tool for urban development. Students will also be able to conduct site analysis which includes studying natural, visual and cultural dimensions in addition to the variables, elements and effects of the site. It also includes a study for influence of nature in the design from functional and visual points of view, in addition to illustrating the landscape and its uses for achieving the ecological balance students will gain the knowledge of the vocabulary, design elements, and the natural and built sites formation and conducting a practical urban design project

2 - Competencies

c1. Analyzing an urban space to the basic elements. (C13)
c2. Solve Problems and constrains of site. (C11, C14).
c3. Redesign and upgrade urban spaces in large scale. (C11).
c4. Solve problems and constrains in a matrix. (C12).
c5. Classify and compare Urban Spaces elements (C11, C13)
c6. Investigate participation with urban design team. (C11, C12, C13)
c7. Collaborate effectively within multidisciplinary team. (C5, C7, C9).
c8. Consider the impact of designs on the environmental protection. (C3).
c9. Practice self-learning and communicate effectively orally and in written form. (C8,C10).

This course contributes in the following program competencies: C3, C5, C7, C8,C9, C10, C11, C12, C13 & C14

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to Urban Renewal	2	-	-
2	Introduction to How to design layout?	2	-	-
3	Sustainability approach + project intro.	2	-	-
4	Choose area + Design of the questionnaire	2		
5	Questionnaire results + researcher observation	2	-	-
6	Layout alternatives Discussion	2	-	-
7	Assessment (Mid Term Exam			
8	Layout, elevation Discussion	2	-	-
9	Layout alternatives Discussion	2	-	-
10	Alternative Layout + Elevation	2	-	-
11	Elevation + Details	2	-	-
12	Layout, elevation, section, details	2	-	-
13	Simi Final (All project)	2	-	-
14	Final Submission	2	-	-
15	Revision, Exam Preparation	2	-	-
	Total hours	**28**	**-**	**-**

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies									
	c1	c2	c3	c4	c5	c6	c7	c8	c9	
Introduction to Urban Renewal	1	1								
Introduction to How to design layout?	1									
Sustainability approach + project intro.				1				1		
Choose area + Design of the questionnaire					1		1			
Questionnaire results + researcher observation								1	1	
Layout alternatives (Discussion)		1			1		1		1	
Alternative Layout + Elevation	1					1				
Elevation + Details				1		1				
Layout, elevation, section, details						1		1		
Simi Final (All project)		1				1				
Final Submission					1	1			1	
Revision, Exam Preparation			1							
Final Submission					1	1			1	
Revision, Exam Preparation			1							
Topics Covering Competences	3	3	2	2	4	6	2	3	4	

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1				1	1		1			1		
c2	1	1					1	1		1				1	1
c3	1	1					1						1		
c4	1	1					1			1					
c5	1	1					1	1		1			1		
c6	1	1					1			1			1		
c7		1					1								1

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Researche, Reports &	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c8							1	1						1	
c9			1				1	1						1	
∑	6	7	2				9	5		5			4	3	2

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Assessment Mid-Term Exam		7th Week	20
Semester Work	Research	Two research per semester	10
	Assignments	Every Week	10
Final Project		Fourteen weeks	20
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-6 Course notes:

1- https://youtu.be/k70QMT6uN74
2- https://youtu.be/WwRbbPnjwpw

7-7 Required books

8 Course Booklets

8-2 Recommended books

- **احمد خالد علام ، (1997)،" أحياء المدن "، مكتبة الانجلو المصرية، القاهرة، مصر.**
- **Iorrine farrelly (2011), Drawing for Urban Design, Ik, China.**
- **Hustpes (2010), The Landscape Design of Public Space, hustpes, korea.**
- **Jtart (2013), Urban and Ecological Landscape,Media, China.**
- **Donald waston(2011), Urban design, System, CSA.**

7-4 Periodicals, Web sites, etc

8- Facilities required for teaching and learning:

- Microsoft teams (online lectures)

Course coordinator: Dr. Marwa Mohamed Ahmed
Head of the Department: Associate Professor: Asamer Zakaria
Date: August, 2020

Modern Academy
for Engineering and Technology in Maadi

Course Specification
ARCn438: Housing in Developing Countries

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology BSc Program
Department offering the program:	Architecture Engineering and Building Technology Department
Department offering the course:	Architecture Engineering and Building Technology Department
Date of specifications approval:	August, 2020

B - Basic Information

Title: Housing in Developing Countries **Code:** ARCn438 **Level:**4TH

Credit Hours: 2 **Lectures:**2 **Tutorial/Exercise:**- **Practical:** -

Pre-requisite: ARCn226

C - Professional information

1 – Course Learning Objectives:

The course aims to introduce housing and residential areas problems in developing countries, in order to provide different approaches to the policies and solutions. It explains the distribution of housing categories and the general considerations in the planning of residential sites. Reaching the basis of the design of residential models and standards of housing units' design that satisfies the social, cultural and economic aspects for targeted users, while focusing on the role of participants in the success of residential projects.

2 – Competencies

c1. Solving Housing problems according to the surrounding and users needs. (C1,C2,C3,C4)

c2. Analyze Various dimensions of housing problem and the range of approaches, policies and practices that could be carried out to solve this problem. (C2, C14).

c3.Practice research techniques and methods of investigation to solve the housing problem in Egypt.(C5, C6, C7)

c4. Compare between Traditional and non-Traditional ideas to help Low Income People to solve Their Housing Problem. (C7, C9)

c5. Identify the Institutions that Help in getting Housing Funds and Facilities. (C1,C3,C12)

c6. Produce Housing Types that meet building users' requirements through understanding the relationship between people and buildings, and between buildings and their environment. (C12)

c7. Use creative, innovative, and flexible thinking to evaluate the contemporary Housing situation and respond to new situations. (C9).

This course contributes in the following program competencies: C1, C2, C3, C4, C5, C6, C7, C8, C9, C12, C14.

3 – Contents

Week	Topic	Lecture hours	Tutorial hours	Practical hours
1	- Introduction & Getting Started, The aim and importance of the Subject/ Brief about the Housing Problem.	2		
2	- Housing definitions and Concepts., Housing Concepts in the point of view of Architects, Housing Concepts in the point of view of different specialists.	2		
3	- Human needs in houses and Conditions that must be fulfilled in the house	2		
4	- Housing Categories in Egypt and characteristics of each category	2		
5	- Types of Housing units including Contemporary Types	2		
6	- Factors affecting HousingProjects -The Conditions of Successful Housing Projects.	2		
7	Mid-Term Exam			
8	- Housing Projects` Design and Formation Rules	2		
9	- Traditional Developing Countries` policies to provide Housing	2		
10	- Non-Traditional Developing Countries` policies to provide Housing	2		
11	- Applications of Traditional Policies in Egypt.	2		
12	- Applications of Non-Traditional Policies in Egypt.	2		
13	- Contemporary Housing Projects to support Low income Residents and solve the Housing Problem.	2		
14	- Institutions Help in getting Housing Funds and Facilities.in Egypt	2		
15	- Research presentation and Final Revision	2		
	Total hours	**28**		

4. Course content/Course Competencies mapping matrix

Topic	Course Competencies						
	c1	c2	c3	c4	c5	c6	c7
- Introduction & The aim and importance of the Subject	1						
Housing definitions and Concepts	1						
- Human needs in houses and Conditions that must be fulfilled in the house	1	1					
- Housing Categories in Egypt and characteristics of each category	1	1	1				1
-Types of Housing units including Contemporary Types		1	1				
-Factor affecting HousingProjects -The Conditions of Successful Housing Projects.	1		1			1	1
- Housing Projects` Design and Formation Rules	1		1				
-Traditional Developing Countries` policies to provide Housing	1			1	1		1
-Non-Traditional Developing Countries` policies to provide Housing	1			1	1	1	
- Applications of Traditional and Non-Traditional Policies in Egypt.	1	1		1	1	1	
- Contemporary Housing Projects to support Low income Residents and solve the Housing Problem.		1	1	1		1	1
- Institutions Help in getting Housing Funds and Facilities							1
Research presentation and Final Revision		1					
Topics Covering Competences	9	6	5	4	3	4	5

5 - Teaching and Learning and Assessment methods:

Course Competences	Teaching Methods						Learning Methods			Assessment Method					
	Lecture	Presentations & Movies	Discussions & seminars	Tutorials	Problem solving	Laboratory & Experiments	Research, Reports & Assignments	Self Learning	Modeling and Simulation	Written Exam	Tutorials	Practical Exam	Quizzes	Research & Presentations	Mini Project Report
c1	1	1	1				1			1			1	1	
c2	1	1	1				1						1	1	
c3	1		1				1			1			1	1	
c4	1	1											1	1	
c5	1		1		1		1			1			1	1	
c6	1	1						1		1			1	1	
c7	1	1	1		1		1	1		1			1	1	
∑	7	5	5	0	2	0	5	2	0	5	0	0	7	7	0

6- Assessment Timing and Grading:

Assessment Method		Timing	Grade (Degrees)
Mid-Term Exam		7th Week	20
Semester Work	Quizzes	2 Quizzes (one each 6 weeks)	5
	Reports/Research	One Research	20
	Assignments	Once Every Week	15
Practical Exam		---	
Written Exam		Sixteenth week	40
Total			100

7- List of references:

7-1 Course notes: None

7-2 Required books

8-3 Recommended books: None

- **مكرم بعيني، (2002)، "المجمعات السكنية الحديثة والمعاصرة"، دار قابس، بيروت.**
- **احمد خالد علام، (1995)، تخطيط المجارة السكنية، الانجلو المصرية ، مصر.**
- Karakusevic, P., &Batchelor, A., (2017), "Social Housing: Definitions and Design Exemplars", RIBA Publishing.
- Levitt, D., (2009), "The Housing Design Handbook: A Guide to Good Practices", Routledge, 1st Edition, London.

7-4 Periodicals, Web sites, etc.

https://www.youtube.com/watch?v=Y27uNvHYiyU ,(Last accessed July, 2021)

https://www.youtube.com/watch?v=I-jc45oGMBM (Last accessed July, 2021)

8- Facilities required for teaching and learning:

- Computer
- Data Show.
- White Board.

Course coordinator: Dr. Doaa Abd El Latif Mohammed

Head of the Department: Professor. Asamer Zakaria

Appendix 2

شروط النجاح والتخرج وقواعد حساب التقدير

Page Intentionally Left Blank

الآتى بعد مستخرج من الشق القانونى للائحة الأكاديمية الحديثة للهندسة والتكنولوجيا بالمعادى للدراسة بالساعات المعتمدة (لائحة 2020)

مـادة [3]
تسري أحكام هذه اللائحة على الطلاب الجدد الذين يلتحقون بالأكاديمية بعد تاريخ التصديق عليها (مايو 2020)

مـادة [5]
مدة الدراسة لنيل درجة البكالوريوس خمس سنوات موزعة على 10 فصول دراسية رئيسية ويمكن للطالب إنهاء متطلبات الحصول على درجة البكالوريوس المذكورة في المادة (29) قبل ذلك بفصل دراسي واحد على الأكثر.

مـادة [6]: مشروع التخرج
يكون المشروع مقسماً على فصلين دراسيين متتاليين ليس منهما الفصل الصيفي لجميع البرامج عدا برنامج هندسة العمارة فيتم تسجيل المشروع في الفصل الدراسي الاخير قبل التخرج.

مـادة [18]
إذا انقطع الطالب عن الدراسة لمدة أقصاها ثلاثة فصول دراسية رئيسية بعذر مسبق يقبله مجلس إدارة الاكاديمية فيمكن له ان يواصل دراسته على ان تحسب له المقررات السابق له النجاح فيها ويخضع تخرجه لأية متطلبات جديدة في الفصل الذي اعيد قيده فيه.

مـادة [26]: مواعيد الدراسة والقيد
يقسم العام الدراسي بالأكاديمية إلى ثلاثة فصول دراسية على النحو التالي:

أ) الفصل الدراسي الرئيسي الأول (الخريف): يبدأ في بداية العام الدراسي في شهر سبتمبر ولمدة لا تقل عن 14 أسبوع.
ب) الفصل الدراسي الرئيسي الثاني (الربيع): يبدأ عقب إجازة منتصف العام في شهر فبراير ولمدة لا تقل عن 14 أسبوع.
ج) الفصـل الصيفـي: يبدأ أواخر شهر يونيو بعد انتهاء الفصل الدراسي الثاني ولمدة لا تقل عن 7 أسابيع.

مـادة [27]
شروط التسجيل للدراسة بنظام الساعات المعتمدة:

أ) حتى 18 ساعة معتمدة في الفصل الدراسي الرئيسي للطالب الحاصل على معدل تراكمي ≤2.
ب) حتى 14 ساعة معتمدة في الفصل الدراسي الرئيسي للطالب الحاصل على معدل تراكمي < 2.
ج) حتى 21 ساعة معتمدة في الفصل الدراسي الرئيسي للطالب الحاصل على معدل تراكمي ≤ 3.
د) حتى 6 ساعات معتمدة لأي طالب في الفصل الصيفي ويمكن التسجيل حتى 9 ساعات بموافقة المرشد الأكاديمي إذا استدعت متطلبات التخرج ذلك.

ويتم إعداد خريطة للمقررات مع تقسيم المقررات على المستويات الدراسية التصاعدية المحددة بالمادة [28]. ويتم التسجيل طبقا لخريطة المقررات مع الالتزام بتسجيل مقررات المستويات الأدنى واستكمال التسجيل من المستويات الأعلى.
كما يتم تحصـيل رسـوم الخدمة التعليمية كل فصـل دراسـي ويكون حسـابها طبقاً لعدد السـاعات المعتمدة التي يسـجل فيها الطالب في كل فصـل دراسـي، وبحد أدنى ما يقابل رسـوم خدمة تعليمية لعدد 12 سـاعة معتمدة، إلا إذا كان عدد السـاعات المعتمدة المتبقية للطالب للحصـول على درجة البكالوريوس أقل من ذلك فتتم محاسبته على السـاعات المعتمدة المتبقية فقط للدراسة. وتكون رسوم الخدمة التعليمية للفصل الصيفي طبقاً لعدد الساعات المعتمدة التي يسجل فيها الطالب.

مـادة [28]: مستويات الدراسة
يوضح الجدول التالي موقع الطالب ومستويات الدراسة معتمداً على عدد الساعات المعتمدة التي ينتهي الطالب من دراستها.

المستوى الدراسي	تعريف موقع الطالب بنظام الدراسة	نسبة عدد الساعات المعتمدة التي اجتازها الطالب
صفر	Freshman	من0% حتى 20%
الأول	Sophomore	أكثر من20% حتى 40%
الثاني	Junior	أكثر من40% حتى 60%
الثالث	Senior 1	أكثر من60% حتى 80%
الرابع	Senior 2	أكثر من80% حتى 100%

مـادة [29]

متطلبات الحصول على درجة البكالوريوس:

أ) الاجتياز بنجاح لمقررات مكافئة لعدد (165) ساعة معتمدة وبمعدل تراكمي لا يقل عن (2).

ب) النجاح في مشروع التخرج.

ج) اجتياز المقررات التي يكون التقييم فيها ناجح / راسب (Pass/Fail) ولا تحتسب ضمن المعدل التراكمي مثل مقررات التدريب الصيفي للمستوي صفر والمستوي الأول ، ومقررات التدريب الصناعي للمستوى الثاني والثالث.

مـادة [31]

شروط التعديل والإلغاء والانسحاب وإيقاف القيد:

أ) يحق للطالب تغيير مقررات سجل فيها، بأخرى خلال أسبوعين من بدء الدراسة، ويحق له سحب المقرر خلال أسبوعين من بدء الدراسة مع استرداد الرسوم ولا يسري ذلك على الفصل الصيفي.

ب) يحق للطالب الانسحاب من المقرر خلال ثمانية أسابيع على الأكثر من بداية الدراسة بالفصلين الأول والثاني وثلاثة أسابيع على الأكثر في الفصل الصيفي وفي هذه الحالة لا ترد له الرسوم.

ج) الطالب الذي يرغب في الانسحاب من فصل دراسي، لظروف المرض أو بعذر تقبله الأكاديمية، عليه التقدم بطلب لشئون الطلاب، ويحصل على موافقة مجلس الأكاديمية على الانسحاب، دون استرداد ما سبق سداده من رسوم، ويكون هذا الانسحاب قبل انعقاد الامتحان النهائي لهذا الفصل. ويقوم بإعادة المقررات التي سجل فيها، في فصل دراسي لاحق دراسة وامتحاناً بعد سداد رسوم الخدمة التعليمية المقررة، ولا تحتسب عليه مرة رسوب.

مـادة [32]

تقديـرات المقـررات الدراسيـة:

أ) تقدر نقاط كل مقرر على النحو الموضح بالجدول رقم (2):

جدول رقم (2)

التقدير	عدد النقاط	النسبة المئوية المناظرة		
A+	4.0		وأعلى	%97
A	4.0	%97	حتى أقل من	%93
A-	3.7	%93	حتى أقل من	%89
B+	3.3	%89	حتى أقل من	%84
B	3.0	%84	حتى أقل من	%80
B-	2.7	%80	حتى أقل من	%76
C+	2.3	%76	حتى أقل من	%73
C	2.0	%73	حتى أقل من	%70
C-	1.7	%70	حتى أقل من	%67
D+	1.3	%67	حتى أقل من	%64
D	1.0	%64	حتى أقل من	%60
F	صفر	%60	أقل من	

مـادة [33]

حساب متوسط النقاط: (GPA)

أ) عند إعادة الطالب دراسة مقرر سبق أن حصل فيه على تقدير (F)يحتسب له التقدير الذي حصل عليه في الإعادة بحد أقصـى (+B)وعند حسـاب المعدل التراكمي يحتسـب له التقدير الأخير فقط على أن يذكر كلا التقديرين في سجل الطالب الأكاديمي.

ب) تحسب النقاط التي حصل عليها الطالب في كل مقرر على إنها عدد الساعات المعتمدة للمقرر مضروبة في النقاط التي حصل عليها الطالب حسب جدول التقديرات المذكور بالمادة رقم **[32].**

ت) يحسب متوسط نقاط أي فصل دراسي (Semester GPA)، على أنه ناتج قسمة مجموع النقاط التي حصل عليها الطالب في هذا الفصل، مقسوماً على مجموع الساعات المعتمدة لهذه المقررات.

ث) يحسـب متوسـط النقاط التراكمي (Cumulative GPA) عند نهاية كل فصـل دراسـي على أنه ناتج قسـمة مجموع كل نقاط المقررات التي درسها الطالب على مجموع الساعات المعتمدة لهذه المقررات.

ج) متوسط النقاط التراكمي (Cumulative GPA) عند نهاية الفصل الدراسي الأخير للطالب هو الأساس في تحديد تقدير التخرج والنسبة المئوية.

مادة [34]

مراتب الشرف ومنح التفوق:

أ) تمنح مرتبة الشرف للطالب الذي لا يقل المعدل التراكمي عن 3.3 مع تحقيق مثل هذا المعدل على الأقل خلال جميع فصول الدراسة ببرامج الساعات المعتمدة أو عند التحاقه بالدراسة من البرامج ذات الفصلين الدراسيين وذلك بعد عمل مقاصة ويشترط لمنح مرتبة الشرف ألا يكون الطالب قد حصل على تقدير (F) في أي مقرر خلال دراسته الجامعية.

مادة [35]

الإنذار الأكاديمي - الفصل من الدراسة - آليات رفع المعدل التراكمي:

أ) إذا انخفض المعدل التراكمي للطالب إلى أقل من (2) في أي فصل دراسي يوجه له إنذار أكاديمي يقضي بضرورة رفع الطالب لمعدله التراكمي إلى (2) على الأقل.

ب) يُفصل الطالب المنذر أكاديمياً من الدراسة ببرامج الساعات المعتمدة إذا تكرر انخفاض معدله التراكمي عن (2) **لمدة** ستة فصول دراسية رئيسية متتابعة.

ت) إذا لم يحقق الطالب شروط التخرج خلال الحد الأقصى للدراسة وهو عشر سنوات يتم فصله.

ث) يجوز لمجلس الأكاديمية أن ينظر في إمكانية منح الطالب المعرض للفصل نتيجة عدم تمكنه من رفع معدله التراكمي إلى (2) على الأقل فرصة واحده وأخيره مدتها فصلين دراسيين رئيسيين لرفع معدله التراكمي إلى (2) وتحقيق متطلبات التخرج إذا كان قد أتم بنجاح دراسة 80% من الساعات المعتمدة المطلوبة للتخرج على الأقل.

ج) يجوز للطالب إعادة دراسة المقررات التي سبق نجاحه فيها بغرض تحسين المعدل التراكمي وتكون الإعادة دراسة وامتحانا ويُحتسب له التقدير الأعلى وذلك بحد أقصى 5 مقررات إلا إذا كان التحسين لغرض رفع الإنذار الأكاديمي أو تحقيق متطلبات التخرج وفي جميع الأحوال يُذكر كلا التقديرين في سجله الأكاديمي.

مادة [37]

أسلوب تقييم الطالب:

أ) يعقد لكل مقرر امتحان تحريري في منتصف الفصل الدراسي لا تقل درجته عن 20% من مجموع درجات المقرر.

ب) يعقد لكل مقرر امتحان تحريري في نهاية الفصل الدراسي لا تقل درجته عن 40% من درجات المقرر، مع وضع القواعد والشروط المنظمة والتي تؤكد على وجوب حصول الطلاب على نسبة لا تقل عن 40% في الامتحان التحريري من إجمالي درجته، لكي يعد ناجحا حتى لو كان مجموع درجاته في المقرر أعلي من الحد الأدني للنجاح. وفي حالة رسوب الطالب لهذا السبب يسجل (FF) أي راسب لرسوبه في الامتحان التحريري.

ت) يضع مجلس الأكاديمية القواعد المنظمة لتوزيع درجات أي مقرر طبقا لطبيعته على النحو التالي: الامتحانات الدورية السريعة (عددها ودرجة كل منها)، الأعمال الإضافية التي يقوم بها الطالب، التقارير المقدمة عن أبحاث قام بإعدادها، الاختبارات العملية، الامتحان النهائي للمقرر.

ث) مدة الامتحان التحريري النهائي لاتقل عن ساعتين ويحدد مجلس الأكاديمية مدة الامتحان لكل مقرر حسب طبيعته.

ج) يعد الطالب راسباً إذا كان مجموع درجاته في المقرر أقل من 60% أو لم يحضر الامتحان التحريري في نهاية الفصل الدراسي لحرمانه من الدخول لتجاوز نسبة الغياب أو بقرار تأديبي. وفي حالة عدم أداء الطالب للامتحان النهائي للفصل الدراسي بعذر تقبله الأكاديمية يسمح للطالب إعادة تسجيل المقرر دراسة وامتحانا مع احتساب التقدير الذي يحصل عليه كاملا.

ح) تقيم بعض المقررات مثل التدريب العملي للمستوي صفر والمستوى الأول ، والتدريب الصناعي للمستوى الثاني والثالث على أساس ناجح / راسب (Pass/Fail) ولا تدخل في حساب المعدل التراكمي.

خ) يتم توثيق قرارات مجلس الأكاديمية المفسرة لهذه المادة في لائحة تنفيذية ملزمة ومعلنة.

مادة [38]

نسبة الحضور والحرمان من الامتحان والأعذار:

أ) الحد الأدنى لنسبة الحضور للمقرر لا تقل عن 75% ليسمح للطالب بدخول الامتحان النهائي للمقرر .وفي حالة حرمانه من الامتحان يعتبر راسباً (يعطى درجة صفر في درجة الامتحان النهائي للمقرر).

ب) يحق لمجلس الأكاديمية حرمان الطالب من التقدم للامتحان كله أو في بعض المقررات إذا رأى أن انتظامه غير مرضـي طبقاً لأحكام اللائحة الداخلية .وفي هذه الحالة يعتبر الطالب راسـبا في المقررات التي حرم من التقدم للامتحان فيها.

جدول رقم (4)

مفتـــــــــاح الكـــــــــود $L_1 L_2 L_3$ $N_1 N_2 N_3$	
1- $L_1 L_2 L_3$ ثلاثة حروف ترمز إلى القسم والتخصص المسئول عن تدريس المقرر	
ARC	قسم العمارة
CMP	قسم الحاسبات
ELC	قسم الاتصالات
MTH	تخصص الرياضيات قسم العلوم الأساسية
PHY	تخصص الفيزياء قسم العلوم الأساسية
MEC	تخصص الميكانيكا قسم العلوم الأساسية
CHE	تخصص الكيمياء قسم العلوم الأساسية
MNF	قسم هندسة التصنيع
GEN	تخصص المواد الإنسانية وتتبع وكيل الأكاديمية إشرافيا
2- N_1 رقم يرمز إلى المستوى التي تدرس به المادة	
المستوى الأول	$N_1 = 1$
المستوى الثاني	$N_1 = 2$
المستوى الثالث	$N_1 = 3$
المستوى الرابع	$N_1 = 4$
المستوى الخامس	$N_1 = 5$
3- N_2 رقم يرمز إلى نوعية المادة التي ينتمي إليها المقرر	
مادة أساسية أو مادة تحضيرية	$N_2 = 0$
مادة هندسية أساسية	$N_2 = 1$
مادة هندسية تخصصية إجبارية	$N_2 = 2$
مادة هندسية تخصصية اختيارية	$N_2 = 3$
مادة إنسانية إجبارية	$N_2 = 4$
مادة إنسانية اختيارية	$N_2 = 5$
المشروع والندوات والتدريب الصناعي	$N_2 = 6$
4- N_3 رقم يرمز إلى مسلسل المقرر داخل التخصص	