Architecture Engineering and Building Technology B.Sc.
Program Specification

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August 2015

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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 by definition 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. Nahed Omran.

Program Coordinator

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Content

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Architectural Engineering & Building Technology B.Sc.Program Specifications

1. General

1.1. Basic Information

Program Title: Architectural Engineering and Building Technology B.SC.Program.
Program Type: Single
Department: Architectural Engineering Department.
Coordinator: Associate Prof. Dr. Nahed Omran.
Assistant Co-ordinators: Associate Prof .Mona El Basyouni
Associate Prof .Reham Momtaz
External Evaluators: Prof. Hania M. Hamdy, Professor, of Architectural Engineerind Department, Faculty of Engineering, Mataria, Helwan University.
Academic Standard: The program adopts the Academic Reference Standard for the Architectural Engineering and Building Technology B.SC.Program (ARS) approved by the the National Authority for Quality Assurance and Accreditation in Education, first edition, July 2015.
Program Started on: 2000-2001
Dates of program specifications approval: August 2015

1.2 Staff Members

The Architectural Engineering and Building Technology Program is taught by 75 highly qualified staff members, 32 of them are full time employedand 31 are part time staff members in the Architectural Engineering department, in addition to 15 full time employed staff members teaching the basic science courses.All of the staff members are qualified to teach the courses allocated to them.The staff members are assisted by 83 full time teaching assistants in addition to 3 engineers and 10 technicians.

1.3 External Evaluators:

The program was evaluated by an external evaluator. His evaluation showed that the program specification agrees with the Academic Reference Standards for the Architectural Engineering and Building Technology B.SC.Program (ARS) approved by the the National Authority for Quality Assurance and Accreditation in Education, first edition, July 2015.

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, 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 by definition interdisciplinary.

The current program fulfills the requirements of the academic reference 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, first edition, July 2015. The program includes distinguished building technology discretionary courses.

2.2. Program Mission and Aims

2.2.1. Program mission

The mission of the Bachelor of Science in Architectural Engineering and Building Technology program is to prepare innovative graduates able to interact with the challenges in diverse domains of his specialty, locally and regionally. He should satisfy the requirements of the society in governmental authorities and public and private sectors.

2.2.2. Program Aims

The Architectural Engineering and Building Technology Program aims at providing future engineers with appropriate theoretical knowledge and technical skills to respond to professional market demandsin the fields of Architectural Engineering and Building Technology.

2.2.3. The aimed graduate attributes

On successful completion of the program, the graduates of the Architectural Engineering and building technology engineering BSc program should be able to:

1. Apply knowledge of mathematics, science and engineering concepts to the solution of engineering problems.
2. Design a system; component and process to meet the required needs within realistic constraints.
3. Design and conduct experiments as well as analyze and interpret data.
4. Identify, formulate and solve fundamental engineering problems.
5. Use the techniques, skills, and appropriate engineering tools, necessary for engineering practice and project management.
6. Work effectively within multi-disciplinary teams.
7. Communicate effectively.
8. Consider the impacts of engineering solutions on society and environment.
9. Demonstrate knowledge of contemporary engineering issues.
10. Display professional and ethical responsibilities; and contextual understanding.
11. Engage in self- and life- long learning.
12. Design robust architectural projects with creativity and technical mastery.
13. Demonstrate investigative skills, attention to details, and visualize/ conceptualize skills.
14. Adopt a holistic problem solving approach for complex, ambiguous, and open-ended challenges and scenarios.
15. Demonstrate knowledge of cultural diversity, differences and the impact of a building on community character and identity.
16. Address urban issues, planning, and community needs through design work.
17. Recognize the new role of architectural engineer as the leader of design projects- who has the ability to understand, assemble, and coordinate all of the disciplines- to create a sustainable environment.
21. Adopt new technologies, processes and strategies for the design and construction of buildings
22. Apply new materials and advanced manufacturing techniques in the field of building construction.

2.2.4. 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.
The Architectural 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 Engineering and Building Technology.

2.3. Intended Learning Outcomes (ILO's)

2.3.1. Knowledge and Understanding:

On successful completion of the programme, the graduates of the Architectural Engineering and Building Technology Programshould be able to demonstrate knowledge and understanding of:

A1. Concepts and theories of mathematics and sciences, appropriate to the discipline.
A2. Basics of information and communication technology (ICT).
A3. Characteristics of engineering materials related to the discipline.
A4. Principles of design including elements design, process and/or a system related to specific disciplines.
A5. Methodologies of solving engineering problems, data collection and interpretation.
A6. Quality assurance systems, codes of practice and standards, health and safety requirements and environmental issues.
A7. Business and management principles relevant to engineering.
A8. Current engineering technologies as related to disciplines.
A9. Topics related to humanitarian interests and moral issues.
A10. Technical language and report writing.
A11. Professional ethics and impacts of engineering solutions on society and environment.
A12. Contemporary engineering topics.
A13. Principles of architectural design, and the preparation and presentations of design projects in a variety of contexts, scales, types and degree of complexity.
A14. Principles of building technologies, structure & construction methods, technical installations, properties of materials, and the way they may influence design decisions.
A15. Fundamentals of building acquisition, operational costs, and of preparing construction documents and specifications of materials, components, and systems appropriate to the building.
A16. Theories and legislations of urban and regional planning.
A17. The processes of spatial change in the built and natural environments; patterns and problems of cities; and positive & negative impacts of urbanization.
A18. The significance of urban spaces and the interaction between human behavior, built environment and natural environment.
A19. Theories and histories of architecture, planning, urban design, and other related disciplines.
A20. Physical modeling, multi-dimensional visualization, multimedia applications, and computer-aided design.
A21. The role of the architecture profession relative to the construction industry and the overlapping interests of organizations representing the built environment.
A22. Various dimensions of housing problem and the range of approaches, policies, and practices that could be carried out to solve this problem.
A23. Principles of sustainable design, climatic considerations, and energy consumption and efficiency in buildings and their impacts on the environment.
A24.The concepts, processes, techniques and materials that apply to building construction phases and technology.
A25. The concepts of standardization in the construction industry and quality management systems.

2.3.2. Intellectual Skills

On successful completion of the programme, the graduates of the Architectural Engineering and Building Technology Programshould be able to demonstrate knowledge and understanding of:

B1. Select appropriate mathematical and computer-based methods for modeling and analyzing problems.
B2. Select appropriate solutions for engineering problems based on analytical thinking.
B3. Think in a creative and innovative way in problem solving and design.
B4. Combine, exchange, and assess different ideas, views, and knowledge from a range of sources.
B5. Assess and evaluate the characteristics and performance of components, systems and processes.
B6. Investigate the failure of components, systems, and processes.
B7. Solve engineering problems, often on the basis of limited and possibly contradicting information.
B8. Select and appraise appropriate ICT tools to a variety of engineering problems.
B9. Judge engineering decisions considering balanced costs, benefits, safety, quality, reliability, and environmental impact.
B10. Incorporate economic, societal, environmental dimensions and risk management in design.
B11. Analyze results of numerical models and assess their limitations.
B12. Create systematic and methodic approaches when dealing with new and advancing technology.
B13. Integrate different forms of knowledge, ideas from other disciplines, and manage information retrieval to create new solutions.
B14. Think three-dimensionally and engage images of places & times with innovation and creativity in the exploration of design.
B15. Predict possible consequences, by- products and assess expected performance of design alternatives.
B16. Reconcile conflicting objectives and manage the broad constituency of interests to reach optimum solutions.
B17. Integrate relationship of structure, building materials, and construction elements into design process.
B18. Integrate community design parameters into design projects.
B19. Appraise the spatial, aesthetic, technical and social qualities of a design within the scope and scale of a wider environment
B20. Discuss, search and formulate informed opinions appropriate to specific context and circumstances affecting architecture profession & practice.
B21. Analyze the range of patterns and traditions that have shaped and sustained cultures and the way that they can inform design process.
B22. Identify different methods of building technologies and their impact on the built and social environment.
B23. Indicate appropriate project management techniques that are related to building technology.
B24. Select projects that comply with national and international building legislations, codes and by-laws.
B25. Prepare reports of materials and technological methods used in buildings.

2.3.3. Professional and Practical Skills:

On successful completion of the programme, the graduates of the Architectural Engineering and Building Technology Programshould be able to demonstrate knowledge and understanding of:

C1. Apply knowledge of mathematics, science, information technology, design, business context and engineering practice integrally to solve engineering problems.
C2. Professionally merge the engineering knowledge, understanding, and feedback to improve design, products and/or services.

C3. Create and/or re-design a process, component or system, and carry out specialized engineering designs.
C4. Practice the neatness and aesthetics in design and approach.
C5. Use computational facilities and techniques, measuring instruments, workshops and laboratory equipment to design experiments, collect, analyze and interpret results.
C6. Use a wide range of analytical tools, techniques, equipment, and software packages pertaining to the discipline and develop required computer programs.
C7. Apply numerical modeling methods to engineering problems.
C8. Apply safe systems at work and observe the appropriate steps to manage risks.
C9. Demonstrate basic organizational and project management skills.
C10. Apply quality assurance procedures and follow codes and standards.
C11. Exchange knowledge and skills with engineering community and industry.
C12. Prepare and present technical reports.
C13. Produce and present architectural, urban design, and planning projects using an appropriate range of media and design-based software.
C14. Produce professional workshop and technical drawings using traditional drawing and computer-aided drawings' techniques.
C15. Use appropriate construction techniques and materials to specify and implement different designs;
C16. Participate professionally in managing construction processes.
C17. Demonstrate professional competence in developing innovative and appropriate solutions of architectural and urban problems.
C18. Display imagination and creativity.
C19. Respect all alternative solutions; changes in original plan of the project, differences in style, culture, experience and treat others with respect.
C20. Provide leadership and education to the client particularly with reference to sustainable design principles.
C21. Respond effectively to the broad constituency of interests with consideration of social and ethical concerns.
C22. Contribute positively to the aesthetic, architecture and urban identity, and cultural life of the community.
C23. Apply recent advances in the fields of building materials, manufacturing and building technology to the construction of buildings.
C24. Prepare working drawings that integrate multidisciplinary standards and requirements of the construction process
C25. Demonstrate environmental studies that are applicable to building technology techniques and processes.

2.3.4. General and Transferable Skills:

On successful completion of the programme, the graduates of the Architectural Engineering and Building Technology Programshould be able to demonstrate knowledge and understanding of:

D1 Collaborate effectively within multidisciplinary team
D2 Work in stressful environment and within constraints
D3 Communicate effectively
D4 Demonstrate efficient IT capabilities
D5 Lead and motivate individuals
D6 Manage tasks and resources efficiently
D7 Search for information and adopt life-long self-learning
D8 Acquire entrepreneurial skills
D9 Refer to relevant literature effectively

2.4. Curriculum Structure and Contents

2.4.1. Program Content:

The following are the subjects taught during this program.

1st Year / 1st Semester

Code	Course Name	Teaching Hours					Marking				Subject Area						
		Lectures	Exercises	Practical	Total hours	Wr. Exam Dur.	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
B101	English Language I	2	0	0	2	2	15	0	35	50	2						
B111	Mathematics I	4	2	0	6	3	30	0	70	100		6					
B131	Physics I	4	0	2	6	3	20	20	60	100		6					
B141	Chemistry	2	0	2	4	3	20	20	60	100		4					
B121	Mechanics I	2	1	0	3	3	30	0	70	100		3					
E111	Introduction to Computers I	2	0	2	4	3	20	20	60	100		4					
M160	Production Engineering - Workshop I	2	0	2	4	3	30	10	60	100			2			2	
M150	Engineering Drawing & Projection I	0	4	0	4	3	40	0	60	100			4				
Total		**18**	**7**	**8**	**33**		**205**	**70**	**475**	**750**	**2**	**23**	**6**	**0**	**0**	**2**	**0**

1st Year/ 2nd Semester

Code	Course Name	Teaching Hours					Marking				Subject Area						
		Lectures	Exercises	Practical	Total hours	Wr. Exam Dur.	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
B102	English Language II	2	0	0	2	2	15	0	35	50	2						
B112	Mathematics II	4	2	0	6	3	30	0	70	100		6					
B122	Mechanics II	2	1	0	3	3	30	0	70	100		3					
B132	Physics II	2	2	2	6	3	20	20	60	100		6					
B142	Descriptive Geometry	2	2	0	4	3	30	0	70	100		4					
E112	Introduction to Computers II	2	0	2	4	3	20	20	60	100		4					
M151	Engineering Drawing & Projection II	2	4	0	6	3	40	0	60	100			6				
M161	Production Engineering - Workshop II	2	0	2	4	3	30	10	60	100			2			2	
Total		**18**	**11**	**6**	**35**		**215**	**50**	**485**	**750**	**2**	**23**	**8**	**0**	**4**	**2**	**0**

2nd Year/ 3rd Semester

Code	Course Name	Teaching Hours					Marking				Subject Area						
		Lectures	Exercises	Practical	Total hours	Wr. Exam Dur.	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
A 211	Architectural design(1-a)	6	-	-	6	-	-	-	-	-				4		2	
A221	History and Theory of Architecture (1-a)	4	-	-	4	3	30	-	70	100	4						
A231	Building construction(1-a)	2	2	-	4	-	-	-	-	-			4				
B252	Math (7)	2	1	-	3	3	30	-	70	100		3					
A251	Visual training (1)	-	3	-	3	3	60	-	40	100				2		1	
A261	Theory of structures (a)	2	1	-	3	2	20	-	55	75		1	2				
A242	Properties & Strength of material	2	1	-	3	3	30	-	70	100		1	2				
A281	Computer Applications (Cad)-a	4	-	-	4	-	-	-	-	-		1		1	2		
A291	Building technology-a	2	-	-	2	-	-	-	-	-							2
Totals		**24**	**8**	**-**	**32**					**475**	4	6	8	7	2	3	2

2nd Year/ 4th Semester

Code	Course Name	Teaching Hours					Marking				Subject Area						
		Lectures	Exercises	Practical	Total hours	Wr. Exam Dur.	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
A 212	Arch design(1-b)	6	-	-	6	8	150	-	100	250				4		2	
A222	History&Theory of Arch (1-b)	4	-	-	4	3	30	-	70	100	4						
A271	Surveying	2	-	2	4	2	20	20	60	100		1	2			1	
A232	Building construction(1-b)	2	2	-	4	4	90	-	60	150			4				
A241	Sciagraphy and perspective	3	2	-	5	5	90	-	60	150			5				
A262	Theory of structures (b)	2	1	-	3	2	20	-	55	75		1	2				
A282	Computer Applic. (Cad)-b	4	-	-	4	3	60	-	40	100		1			3		
A292	Building technology-b	2	-	-	2	3	30	-	70	100							2
Totals		**25**	**5**	**2**	**32**					**1025**	4	3	13	4	3	3	2

3rd Year/ 5th Semester

Code	Course Name	Teaching Hours					Marking				Subject Area						
		Lectures	Exercises	Practical	Total hours	Wr. Exam Dur.	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
A311	Architectural design(2)-a	6	-	-	6	-	-	-	-	-				4		2	
A321	Building Const. and Materials(2)- a	2	2	-	4	-	-	-	-	-			4				
A331	History& Theory of arch.(2-a)	4	-	-	4	3	30	-	70	100	4						
A341	Reinf. concrete & Steel Const.(1)	2	2	-	4	3	30	-	70	100		2	2				
A351	Environmental control	2	-	-	2	3	20	-	55	75				2			
A361	Design Methodology	2	-	-	2	3	15	-	35	50				2			
A371	History & Theory of planning	4	-	-	4	3	30	-	70	100	4						
A372	Computer Appl. (Comp. Graph)-a	3	-	-	3	-	-	-	-	-		1			2		
A382	Construction equipment-a	3	-	-	3	-	-	-	-	-							3
Total		**28**	**4**	**-**	**32**					**425**	8	3	6	8	2	2	3

3rd Year/ 6th Semester

Code	Course Name	Teaching Hours					Marking				Subject Area						
		Lectures	Exercises	Practical	Total hours	Wr. Exam Dur.	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
A312	Architectural design(2)-b	6	-	-	6	8	150	-	100	250				4		2	
A322	Building Const. and Materials(2)- b	4	2	-	6	4	120	-	80	200			6				
A332	History& Theory of arch.(2-b)	4	-	-	4	3	30	-	70	100	4						
A342	Reinf. concrete & Steel Const.(2)	2	2	-	4	3	30	-	70	100		2	2				
A352	visual training (2)	2	2	-	4	3	60	-	40	100				4			
A362	Human Architecture Studies	2	-	-	2	3	20	-	55	75	2						
A381	Computer Appl. (Comp. Graph)-b	3	-	-	3	3	75	-	50	125		1			2		
A391	Construction equipment-b	3	-	-	3	3	35	-	90	125							3
Total		**26**	**6**	**-**	**32**					**1075**	6	3	8	8	2	2	3

4th Year/ 7th Semester

Code	Course Name	Teaching Hours					Marking				Subject Area						
		Lectures	Exercises	Practical	Total hours	Wr. Exam Dur.	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
A 411	Architecture Design(3)-a	6	-	-	6	-	-	-	-	-				4		2	
A 421	History,Th. of Arts & Arch. (3) -a	3	-	-	3	3	20	-	55	75	3						
A 431	Working Dr.&Const.Methods (1)-a	4	2	-	6	-	-	-	-	-			4		2		
A 441	Technical&Sanitary Installations-a	2	2	-	4	3	30	-	70	100				4			
A 451	City Planning & Housing(1)-a	4	-	-	4	3	60	-	40	100				2	2		
A 461	Project Management	3	-	-	3	3	30	-	70	100			1				2
A 471	Elective Course-1	2	-	-	2	3	15	-	35	50							2
A 481	Modular Coordination-a	2	-	-	2	-	-	-	-	-			2				
A 491	Building Economics-a	2	-	-	2	-	-	-	-	-			2				
Total		**28**	**4**		**32**					**425**	3	0	9	10	4	2	4

4th Year/ 8th Semester

Code	Course Name	Teaching Hours					Marking				Subject Area						
		Lectures	Exercises	Practical	Total hours	Wr. Exam Dur.	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
A 412	Architecture Design(3)-b	6	-	-	6	8	150	-	100	250				4		2	
A 422	History,Th. of Arts & Arch. (3) –b	3	-	-	3	3	20	-	55	75	3						
A 432	Working Dr.&Const.Methods (1)-b	4	2	-	6	7	120	-	80	200			4		2		
A 442	Technical&Sanitary Installations-b	2	2	-	4	3	30	-	70	100				4			
A 452	City Planning & Housing(1)-b	4	-	-	4	3	60	-	40	100				2	2		
A 462	Foundations	3	-	-	3	3	30	-	70	100			3				
A 472	Elective Course-2	2	-	-	2	3	15		35	50						2	
A 482	Modular Coordination-b	2	-	-	2	3	30	-	70	100			2				
A 492	Building Economics-b	2	-	-	2	3	30	-	70	100			2				
Total		**28**	**4**		**32**					**1075**	3	0	11	10	4	4	0

5th Year/ 9th Semester

Code	Course Name	Teaching Hours					Marking				Subject Area						
		Lectures	Exercises	Practical	Total hours	Wr. Exam Dur.	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
A 511	Architectural Design(4)-a	6	-	-	6	-	-	-	-	-				4	1	1	
A 521	Working Dr.&Const. Docum.(2)-a	6	-	-	6	-	-	-	-	-				2	2	2	
A 531	Urban Design(a)	3	-	-	3	3	60	-	40	100				2		1	
A 541	City Planning(2)-a	6	-	-	6	-	-	-	-	-				3	2	1	
A 551	History & Th.of Architecture (4)	4	-	-	4	3	30	-	70	100	4						
A 551	Elective Course (3)	2	-	-	2	3	15	-	35	50					2		
A 571	ModernSystemBuilding Materials	2	-	-	2	3	15	-	35	50							2
A 581	Quantities & Contracts -a	3	-	-	3	-	-	-	-	-		1					2
Total		**32**	**-**	**-**	**32**					**300**	4	1	0	11	7	5	4

5th Year/ 10th Semester

Code	Course Name	Teaching Hours					Marking				Subject Area						
		Lectures	Exercises	Practical	Total hours	Wr. Exam Dur.	Year work	Practical Exam	Written Exam	Total	Hum. & Soc. Sc.	Math. & B. Sc.	B. Eng. Sc.	App. Eng. & Des.	Comp. App. & ICT	Proj. & Practice	Discretionary
A512	Architectural Design(4)-b	6	-	-	6	8	150	-	100	250				4	1	1	
A522	Working Dr.&Const. Docum.(2)-b	6	-	-	6	8	120	-	80	200				2	2	2	
A532	Urban Design(b)	3	-	-	3	3	60	-	40	100				2		1	
A542	City Planning(2)-b	6	-	-	6	6	60	30	60	150				3	2	1	
A552	Elective Course (4)	2	-	-	2	3	15	-	35	50							**2**
A562	Final Graduation Project	6	-	-	6	-	180	120	-	300				2	2	2	
A572	Laws&regulations for engineering	2	-	-	2	3	15	-	35	50	2						
A582	Quantities & Contracts -b	3	-	-	2	3	30	-	70	100		1					2
Total		**34**		**-**	**34**			**-**	**-**	**1200**	2	1	0	13	7	7	4

Total teaching hours and subjects distribution over the subject areas

	Course teaching hours	Humanities & Social Sciences	Math & Basic Sciences	Basic Eng	Applied Eng & Design	Computer Appl & ICT*	Projects* & Practice	Discretionary
Total 1st year 1st Semester	33	2	23	6	0	0	2	0
Total 1st year 2nd Semester	35	2	23	8	0	0	2	0
Total 2nd year 3rd Semester	32	4	6	8	7	2	3	2
Total 2nd year 4th Semester	32	4	3	13	4	3	3	2
Total 3rd year 5th Semester	32	8	3	6	8	2	2	3
Total 3rd year6th Semester	32	6	3	8	8	2	2	3
Total 4th year 7th Semester	32	3	0	9	10	4	2	4
Total 4th year 8th Semester	32	3	0	11	10	4	4	0
Total 5th year 9th Semester	32	4	1	0	11	7	5	4
Total 5th year 10th Semester	34	2	1	0	13	7	7	4
Total of Five Years	326	38	63	69	71	31	32	22
% of Five Years	100%	11.5%	19.5%	21%	21.5%	9.5%	10%	7%
NARS Program Structure %	**100%**	**9-12%**	**20-26%**	**20-23%**	**20-22%**	**9-11%**	**8-10%**	**6-8%**

The previous table shows that the program structure agrees with the NARS engineering programs structure. Moreover it is approved by the Engineering sector committee of the supreme council of universities.

2.5. Curriculum Mapping

Appendix 1 is dedicated to the curriculum mapping. It aims at insuring that the program courses cover the program ILO's. The courses coordinators prepared a table indicating the program ILO's covered by their courses and the courses subject areas hours. These tables were used to develop the mapping matrix. Program courses/program ILO's.

The mapping matrix showed that the program courses present balanced contribution to the program ILO's which proves the correct adoption of the fulfills the requirements of the academic reference 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, first edition, July 2015.

Two additional tables were added to Appendix 1, summarizing the program ILO's contributed by the individual courses and the courses contributing to the individual ILO's.

2.6. Courses Specifications

The detailed program courses specifications are given in **Appendix 2.** These courses specifications were revised and approved on September 2015. The contribution of each course to the program ILO's 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 a preparatory year for all students before specialization in Architectural Engineering. Students' departmental allocation is in accordance with the Academy Council regulations.

4. Regulations for Progression and Program Completion

- Attendance of program is on full-time basis.
- A student may be transferred to a following academic year if she/he passes all attended courses but a maximum of two in accumulation – excluding humanity or cultural courses
- The humanity and cultural courses are not counted as non-passing courses, but have to be completed before graduation.
- The study follows the semester system with two semesters per year, 15 weeks each.
- The minimum time for the Bachelor degree is five academic years.
- A minimum of 75 % student attendance to lectures, tutorials and laboratory exercises per course is conditional for taking the final exams, in accordance with the Departmental Board recommendation approved by the Academy Council; otherwise students would be deprived from taking their final exam(s).
- The student is entitled to re-set failed exam(s) with fellow-students undertaking the course(s) in following term(s).
- Final-year students who fail no more than two courses plus any number of humanity cultural courses are re-examined in November.
- If they fail re-set(s), they are entitled to be re-examined with fellow-students undertaking the course(s) in following term(s).
- Except for those in final-year, students who provide evidence of successfully completing particular courses in parallel academic institutions, which are recognized by the Ministry of Higher Education, may be exempted from attending these courses. This may only take place after a decision from the Academy Chairman, following the Education & Student Affairs Council and the Faculty and Departmental Boards approval respectively; with no desecration of Article (36) of University Regulation Law.
- The course which is taught in one semester and has one examination mark and more than examination answer sheets, is treated as one-course as regards the course evaluation.
- 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 year.
- No mark is recorded for the student who fails to appear in the written examination.

Appendix 3 gives the details of program progression and grades evaluation.

5. Student Assessment (Methods and rules for student assessment)

Method (tool)	Assessed ILO's
1- Written exam	A, B & C
2- Quizzes and reports	A, B & C
3- Oral exams& Researshes	A, B & C
4- Practical	A &C
5- Project applied on a practical field problems	A, B, C & D
6- Other assessment methods	As stated in the courses specifications

Where: A includes the knowledge and understanding
B includes the intellectual skills
C includes the professional applied skills
D includes the general transferrable skills

6. Program Evaluation

Evaluator	Tool	Periodicity
1- Senior students	Questionnaires	Annual
2- Alumni	Questionnaires	Bi-annual
3- Stakeholders	Questionnaires	Annual
4- External Evaluator(s) (External Examiner (s))	Reports	Each 5 years
5- Other societal parties	Questionnaires	On request

Appendix 1

Correculum Mapping

Appendix A1 Curriculum Mapping

The curriculum mapping was carried out according to the following procedures:

1) Extract the program ILO's covered by each course from the courses specifications and arrange them in a convenient table.
2) Develop four matrices for the courses with each of the four categories of program ILO's.
3) Study the developed matrices and find the needed tuning of courses specifications to insure balanced covering of the courses to program ILO's.
4) Carryout the required tuning process and prepare the final program specifications including the final mapping matrix.
5) Present the program specifications to the academic council for approval.
6) Carry out the necessary courses specifications tuning and present the courses specifications to the concerned academic council for approval.

A1.1 Program ILO.s covered by the individual courses.

Code	Name	A	B	C	D
B101	English Language I	A9, A10	B4	C11, C12	D1, D2, D3, D4, D6, D7, D8
B111	Mathematics I	A1, A2, A5	B1, B2, B3, B7	C1, C12	D3, D7
B121	Mechanics I	A1, A3, A4	B1, B2, B3, B4, B11	C1, C2, C7	D1, D2, D3, D9
B131	Physics I	A1, A2, A3, A4, A13	B1, B2, B3, B7, B17, B20 , B13	C1, C6, C12, C16, C17	D1, D2, D3, D4, D5,D6,D7,D8,D9
B141	Chemistry	A1,A3,A4,A5, A6,A8,A11,A12	B1,B2,B3,B4,B6, B8,B10,B12	C1,C2,C3,C5, C8,C12	D1,D2,D3,D4,D5 ,D7
E111	Introduction to Computer I	A7,A12,A13,A1 4,A18,A4	B1,B2,B3,B6,B11 ,B12,B13	C5,C14,C16	D1,D3,D4,D7
M150	Engineering Drawing I	A1, A2, A4, A5	B2, B3, B4, B8	C1, C2, C3	D1, D3, D7
M160	Production Engineering I	A1, A2, A4	B2, B3, B8, B10	C1, C3, C7	D1, D3, D6
B102	English Language II	A9, A10	B4	C11, C12	D1, D2, D3, D4, D6, D7, D8
B112	Mathematics II	A1, A3, A5	B1, B2, B3, B4, B7, B11	C1, C12	D1, D3, D7
B122	Mechanics II	A1 A3, A4	B1, B2, B3, B4, B11,B13	C1, C2, C7	D1, D2, D8, D9
B132	Physics II	A1,A3, A5	B2, B4, B3, B5	C1, C5,C12	D5, D7
B142	Descriptive Geometry	A1 , A5	B3 , B4	C1 , C4	D3 , D4
E112	Introduction to Computer II	A2,A5,A7,A15, A17, A18	B1,B2,B11,B12	C14,C15,C16, C17	D1,D3,D4,D7
M151	Engineering Drawing II	A1, A2, A4	B3, B8, B9	C1, C3, C4	D3, D9
M161	Production Engineering II	A1, A2, A4	B2, B3, B10	C1, C3, C7	D1, D3, D7, D9
B252	Mathematics VII	A1, A2, A5,A10	B1, B2, B3, B4, B7, B11	C1, C2, C7 ,C13	D3, D7
A211	Architectural design(1-a)	A4,A13,A14, A22,A24	B2,B3,B13	C3,C4,C13, C17	D3,D7
A212	Architectural design(1-b)	A4,A13,A14, A22,A24	B2,B3,B13	C3,C4,C13, C17	D3,D7
A221	History & Th. of Arch .(1-a)	A1,A4,A11,A12 ,A14,A16,A18, A19,A23	B3,B9,B12,B20 ,	C1,C2,C13	D1,D2,D3,D7
A222	History&Th.of Arch. (1-b)	A17,A19	B4,B20,B21	C18,C21,C22	D1,D2,D3,D4
A231	Building construction(1-a)	A3, A4, A24	B2,B5, B11, B12, B14 , B22, B25	C2, C3, C12, C14, C23, C24, C25	D1, D2, D3, D6, D7, D8

A232	Building construction(1-b)	A3, A4, A24	B2,B5, B11, B12, B14 , B22, B25	C2, C3, C12, C14, C23, C24, C25	D1, D2, D3, D6, D7, D8
A241	Sciagraphy and perspective	A4, A13, A20	B4,B14	C13, C18	D3, D8
A242	Properties & Strenght of m.	A1,A3, A4 , A15	B3, B5, B6, B13,B17,B18	C2, C10, C15, C21, C22, C23	D1,D3,D5
A251	Visual traning (1)	A13, A20	B4,B13,B14	C13, C17 ,C18	D1,D3, D8
A261	Theory of structures (a)	A4,A5,A14	B2, B3,B5, B11,B13	C1,C2,C3,C7	D6,D7
A262	Theory of structures (b)	A4,A5,A14	B2, B3,B5, B11,B13,B4	C1, C2 C3	D6, D7
A271	Surveying	A1,A4,A5,A8,A 14	B2, B9, B18, B22,	C1, C6, C15,C16	D3, D5, D6
A281	Computer Appl.(Cad)-a	A13, A15, A20	B1, B3, B4, B13	C5, C12, C13, C14	D1, D3, D6, D7
A282	Computer Appl. (Cad)-b	A13, A15, A20	B1, B3, B4, B13	C5, C12, C13, C14	D1, D3, D6, D7
A291	Building technology-a	A1,A24	B4,B17 B23	C14,C18 C23,C25	D1, D3, D5, D6,D7
A292	Building technology-b	A1,A8,A14 A24	B13,B17 B23	C14,C17 C23,C25	D1,D3,D5,D6,D7
A311	architectural design(2)-a	A5, A13, A14,A17,A18, A21	B3, B4, B13, B14	C3, C6, C17	D3,D7
A312	architectural design(2)-b	A4,A5,,A12,A13 ,A14,A17,A18, A19,A21,A23	B3,B4,B13	C3,C6,C17	D2 ,D3,D5,D6,D7
A321	Building Const. &Mat.(2)-a	A14,A15, A20,A21, A23, A24,A25,	B13, B14, B15, B17 ,B22,B23	C14,C15,C18, C23,C25, C24	D1,D2,D3,D6,D7 ,D8
A322	Building Const.&Mat.(2)-b	A14,A15, A20, A21,A 23, A24,A25,	B13, B14, B15, B17 ,B22,B23	C14, C15,C18,C23, C24,C25	D1, D2,D3, D6, D7, D8
A331	History& Th. of arch.(2-a)	A16,A18,A19	B1,B2,B3,B4,B5, B6,B7,B8	C1,C2,C3,C22	D1,D2,D3,D4,D5 ,D6,D7,D8,D9
A332	History& Th. of arch.(2-b)	A12,A19	B7,B13,B14,B20, B21	C12,C13,18	D2,D3,D4,D5,D9
A341	Reinf. concrete & Steel.(1)	A4, A5,A6	B2, B3, B4, B11,B24	C1, C3, C7,C24	D6,D7
A342	Reinf. concrete & Steel (2)	A4, A5,A6	B2, B3, B4, B11,B24	C1, C3, C7,C24	D6,D7
A351	Environmental control	A1,A4,A5, A9, A12, A24,A23	B2, B3, B13, B15, B17	C1, C2, C11, C17, C19,C25	D1, D2,D3, D4,D5,D6, D7, D8
A352	visual training (2)	A1,A13,A19	B13,B14,B16	C13,C14	D1,D2,D3, D6,D7
A361	Design Methodolgy	A4, A5, A8, A9,A11	B4, B7, B20	C3, C4, C8, C9,C12,C15,C 18	D3, D5, D6, D7
A362	Human Architecture Studies	A4,A5,A24	B3,B4,B19	C6,C12,C17, C21.C22,C25	D1,D3,D5,D6
A371	History & Th. of planning	A15,A16,A17, A18,A19	B2,B3,B18,B20, B21	C13,C22	D1,D7,D8
A372	Computer Appl.- b	A1,A4, A13, A 20	B1, B4, B9, B13, B14, B15 ,B21	C14, C17,C21,C22	D1,D2, D3, D5,D6 D7, D8
A381	Computer Appl. -a	A1,A4, A13,A14,A20	B1, B4, B9, B13, B14, B15 ,B21	C14,C15, C17,C21,C22	D1,D2, D3, D5,D6 D7, D8
A382	Construction equipment-a	A15,A14	B2,B3,B4,B9,B20	C12,C11 ,C16,	D6,D7

A391	Construction equipment-b	A14,A15	B2,B3,B4,B9	C10,C11,C15	D6,D7
A411	Architecture Design(3)-a	A4,A11,A13, A23	B3,B4,B13,B14, B16,B17,B19,B20	C4,C13,C14, C16,C17,C18, C20,C21	D1,D3,D6,D7
A412	Architecture Design(3)-b	A4,A11,A13, A24	B3,B4,B13,B14, B16,B17,B19,B20	C4,C13,C14, C16,C17,C18, C20,C21	D1,D3,D6,D7
A421	History,Th.of Art& Arch(3-a)	A4,A13,A24,A19	B3,B12 ,B14,B21	C13,C17,C18, C19	D3,D4,D5,D9
A422	History,Th.of Art &Arch.(3-b)	A18,A 19	B4,B13,B 20,B21	C 20, C 21,C22	D1,D3,D4,D8
A431	Working Dr.&Const.Meth (1.a	A4, A8, A14, A21,A24	B3, B4, B17 ,B22,B24	C4, C10,C14,C15, C18,C23,C24	D2,D3,D6,D5
A432	Working Dr.&Const. Meth (1.b	A4, A8, A14, A21 ,A24,A25	B3,B4,B17, ,B22,B24 ,B25 ,B27	C4, C10, C14, C15,C18,C23, C24	D2,D3,D6,D7
A441	Technical&Sanitary Inst.-a	A1, A4, A5,A6 ,A11, A12,A24	B2, B4,B5, B7,B11, B24	C1 , C12, C15, C19, C14,C22,C25	D6
A442	Technical&Sanitary Inst.-b	A1, A4, A5,A6, A8, A11, A12, A24	B2, B4, B7, B5,B11,B24	C1 , C5, C7, C11, C12,C14, C15,C19,C22, C25	D 6
A451	City Planning & Hous.(1)-a	A16,A17,A19, A22	B10,B11,B12,B13	C5,C6,C21	D 2,D3,D5
A452	City Planning & Hous.(1)-b	A16,A17,A19, A22	B10,B11,B12,B13	C5,C6,C21	D 2,D3,D5
A461	Project Management	A6, A7,A25	B3, B16,B18	C2, C3,C9,C12	D9,D6
A462	Foundations	A4,A5,A9, A15	B2,B5,B6,B22	C1,C2,C13, C14	D6,D1
A471	Elective 1(housing of developing countries)	A9,A16,A22, A24	B2,B4,B12	C15,C16	D2,D6,D8,D9
A472	Elective 2 (urban renewall)	A7,A16	B10,B11,B20	C1,C8	D6,D7
A481	Modular Coordination-a	A1,A6,A8	B1,B2,B9	C1,C5,C10	D1,D7
A482	Modular Coordination-b.	A4,A6,A7,A9, A12,A25,	B2,B13,B22,B23	C9,C10,C21	D6
A491	Building Economics-a	A2,A5,A6,A14, A15	B2, B7, B10, B22	C2,C7, C15	D3,D8
A492	Building Economics-b	A2, A5,A6,A14,A15	B2,B7,B10,B22	C2, C15	D3,D8
A511	Architectural Design(4)-a	A12,A13,A14, A20, A23	B3, B4, B14, B16, B19, B20, B21	C4, C13, C18, C19,C22	D2,D3,D7,D9
A512	Architectural Design(4)-b	A12, A14, A20,A23	B3, B4, B14, B16, B19, B20, B21	C4, C13, C18, C19,C22	D2,D3,D7,D9
A521	Working Dr.&Const. Docum.(2)-a	A3, A5, A6, A11,A12, A15, A16, A20, A21, A23, A24,A25	B9, B12, B13, B14, B15, B16, B18, B20, B22,B23 ,B24,B25	C1, C10,C11, C12, C14, C15, C23,C24, C25	D1,D2,D3,D6,D7 ,D8
A522	Working Dr.&Const. Docum. (2)-b	A3, A5, A6, A11,A12, A15, A10, A20, A21, A23, A24,A25,A14	B9, B12, B13, B14, B15, B16, B17,B25, B20, B22,B23 ,B24	C1, C10,C11, C2,C13, C14, C15, C23,C24, C25	D1,D2,D3,D6,D7 ,D8
A531	Urban Design(a)	A9, A16,A19	B10, B20	C13,C18,C19, C22,	D1,D5
A532	Urban Design(b)	A11,A16	B13,B20	C8,C13,C17, C21,c22	D1,D5

A541	City Planning(2)-a	A11, A16, A17, A19	B10, B11,B19	C6,C20	D1,D2, D3, D5
A542	City Planning(2)-b	A11,A16,A17, A19	B10,B11,B19	C6,C20	D1,D2,D3,D5
A551	History & Th.of Arch.(4)	A1, A3, A4, A7, A8, A9, A11,A14, A17	B14,B5, ,B16,B17,B19	C1, C2, C12, C13	D1, D2, D3, D4, D5, D7
A552	Elective Course (4)- (Aesthetics of the composition)	A13,A14,A16, A19	B1,B2,B4,B5,B18	C3,C9,C13,	D1,D2,D3,D7, D8
A561	Elective Course (3)(urban& environmental conservation)	A1, A11, A16, A17,A18,A19, A21	B18,B19, B21,	C17, C21,C22	D1,D7,D5
A562	Final Graduation Project	A4, A5, A8, A10, A11,A12, A13,A16, A17	B2,B3, B4, B13, B15, B17	C1, C2, C3, C4, C13,C22	D2,D3,D6,D7,D4 ,D8
A571	Modern System Build.Mat.	A2, A6, A13, , A24 , A25	B2, B9, B16 B22, B23,B25	C2, C15	D3, D8,
A572	Laws&regulations for eng.	A7,A25	B11,B20	C1,C8	D6,D7
A581	Quantities & Contracts -a	A3, A5, A6, A8, A14,,A24,A25	B9,B17,B19,B22, B23,B25	C3, C6, C8, C11, C15,C23,	D1,D2,D7
A582	Quantities & Contracts -b	A3, A5, A6, A8, A14,,A24,A25	B9,B17,B19,B22, B23,B25	C3, C6, C8, C11, C15,C23,	D1,D2,D7

A1.2 Curriculum Mapping Matrices

Table A1-2 Program Mapping Matrix; Courses/Knowledge and Understanding (A's)

Code	Name	Program Intended Learning Outcomes (A)																							
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
B101	English Language I									1	1															
B111	Mathematics I	1	1			1																				
B121	Mechanics I	1		1	1																					
B131	Physics I	1	1	1	1									1												
B141	Chemistry	1		1	1	1	1		1			1	1													
E111	Introduction to Computer I				1			1					1	1	1				1							
M150	Engineering Drawing I	1	1		1	1																				
M160	Production Engineering I	1	1		1																					
B102	English Language II									1	1															
B112	Mathematics II	1		1		1																				
B122	Mechanics II	1		1	1																					
B132	Physics II	1		1		1																				
B142	Descriptive Geometry	1				1																				
E112	Introduction to Computer II		1			1		1								1		1	1							
M151	Engineering Drawing II	1	1		1																					
M161	Production Engineering II	1	1		1																					
B252	Mathematics VII	1	1			1					1															
A211	Architectural design(1-a)				1									1	1								1		1	
A212	Architectural design(1-b)				1									1	1								1		1	
A221	History & Th. of Arch .(1-a)	1			1							1	1		1		1		1	1				1		
A222	History&Th.of Arch. (1-b)																	1		1						
A231	Building construction(1-a)			1	1																				1	
A232	Building construction(1-b)			1	1																				1	
A241	Sciagraphy and perspective				1									1							1					
A242	Properties & Strenght of m.	1		1	1											1										
A251	Visual traning (1)													1							1					
A261	Theory of structures (a)				1	1									1											

A262	Theory of structures (b)	1			1			1						1										
A271	Surveying				1				1					1							1			
A281	Computer Appl.(Cad)-a												1		1				1					
A282	Computer Appl. (Cad)-b												1		1				1					
A291	Building technology-a	1																				1		
A292	Building technology-b	1							1					1								1		
A311	architectural design(2)-a					1							1	1			1	1			1			
A312	architectural design(2)-b				1	1						1	1	1			1	1	1		1		1		
A321	Building Const. &Mat.(2)- a													1	1					1	1		1	1	1
A322	Building Const.&Mat.(2)- b													1	1					1	1		1	1	1
A331	History& Th. of arch.(2-a)															1		1	1						
A332	History& Th. of arch.(2-b)											1							1						
A341	Reinf. concrete & Steel.(1)				1	1	1																		
A342	Reinf. concrete & Steel (2)				1	1	1																		
A351	Environmental control	1			1	1				1			1									1	1	
A352	visual training (2)	1											1						1					
A361	Design Methodolgy				1	1			1	1		1												
A362	Human Architecture Studies				1	1																1		
A371	History & Th. of planning														1	1	1	1	1					
A372	Computer Appl.- b	1			1								1							1				
A381	Computer Appl. -a	1			1								1	1						1				
A382	Construction equipment-b													1	1									
A391	Construction equipment-a													1	1									
A411	Architecture Design(3)-a				1						1		1									1		
A412	Architecture Design(3)-b				1						1		1								1			
A421	History,Th.of Art & Arch(3-a)				1								1						1		1			
A422	History,Th.of Art &Arch.(3-b)																	1	1					
A431	Working Dr.& Const. Meth (1).a				1				1					1						1		1		
A432	Working Dr.&Const. Meth (1).b				1				1					1						1		1	1	
A441	Technical&Sanitary Inst.-a	1			1	1	1					1	1									1		
A442	Technical&Sanitary Inst.-b	1			1	1	1		1			1	1									1		
A451	City Planning & Hous.(1)-a															1	1		1			1		
A452	City Planning & Hous.(1)-b															1	1		1			1		
A461	Project Management						1	1																1
A462	Foundations				1	1				1					1									
A471	Elective 1(housing of developing countries)									1						1					1		1	
A472	Elective 2 (urban renewall)							1								1								
A481	Modular Coordination-a	1					1		1															
A482	Modular Coordination-b.				1		1	1		1			1											1
A491	Building Economics-a		1			1	1							1	1									
A492	Building Economics-b		1			1	1							1	1									
A511	Architectural Design(4)-a											1	1	1					1			1		
A512	Architectural Design(4)-b											1		1					1			1		
A521	Working Dr.&Const. Docum.(2)-a			1		1	1				1	1			1	1			1	1		1	1	1
A522	Working Dr.&Const. Docum. (2)-b			1		1	1				1	1	1	1	1				1	1		1	1	1
A531	Urban Design(a)									1						1			1					
A532	Urban Design(b)											1				1								
A541	City Planning(2)-a											1				1	1		1					
A542	City Planning(2)-b											1				1	1		1					
A551	History & Th.of Arch.(4)	1		1	1			1	1	1		1			1			1						
A552	Elective Course (4)- (Aesthetics of the composition)													1	1		1			1				
A561	Elective Course (3) (urban& enviro. conservation)	1										1				1	1	1	1		1			
A562	Final Graduation Project				1	1			1		1	1	1	1			1	1						
A571	Modern System Build.Mat.		1				1							1									1	1
A572	Laws&regulations for eng.							1																1
A581	Quantities & Contracts -a			1		1	1		1					1									1	1
A582	Quantities & Contracts -b			1		1	1		1					1									1	1

Table A1-3 Program Mapping Matrix; Courses/Intellectual Skills (B's)

Code	Name	Program Intended Learning Outcomes (B)																							
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
B101	English Language I				1																					
B111	Mathematics I	1	1	1				1																		
B121	Mechanics I	1	1	1	1							1														
B131	Physics I	1	1	1				1						1				1			1					
B141	Chemistry	1	1	1	1		1		1		1		1													
E111	Introduction to Computer I	1	1	1			1		1	1		1	1	1												
M150	Engineering Drawing I		1	1	1				1																	
M160	Production Engineering I		1	1					1		1															
B102	English Language II				1																					
B112	Mathematics II	1	1	1	1			1				1														
B122	Mechanics II	1	1	1	1							1		1												
B132	Physics II		1	1	1	1																				
B142	Descriptive Geometry			1	1																					
E112	Introduction to Computer II	1	1									1	1													
M151	Engineering Drawing II			1					1	1																
M161	Production Engineering II		1	1							1															
B252	Mathematics VII	1	1	1	1			1				1														
A211	Architectural design(1-a)		1	1										1												
A212	Architectural design(1-b)		1	1										1												
A221	History & Th. of Arch .(1-a)			1						1			1								1					
A222	History&Th.of Arch. (1-b)				1																1	1				
A231	Building construction(1-a)		1			1						1	1		1								1			1
A232	Building construction(1-b)		1			1						1	1		1								1			1
A241	Sciagraphy and perspective				1										1											
A242	Properties & Strenght of m.			1		1	1							1				1	1							
A251	Visual traning (1)				1									1	1											
A261	Theory of structures (a)		1	1		1						1		1												
A262	Theory of structures (b)		1	1		1						1		1												
A271	Surveying		1							1									1				1			
A281	Computer Appl.(Cad)-a	1		1	1									1												
A282	Computer Appl. (Cad)-b	1		1	1									1												
A291	Building technology-a				1													1						1		
A292	Building technology-b													1				1						1		
A311	architectural design(2)-a			1	1									1	1											
A312	architectural design(2)-b			1	1									1												
A321	Building Const. &Mat.(2)-a													1	1	1		1					1	1		
A322	Building Const.&Mat.(2)- b													1	1	1		1					1	1		
A331	History& Th. of arch.(2-a)	1	1	1	1	1	1	1	1																	
A332	History& Th. of arch.(2-b)							1						1	1						1	1				
A341	Reinf. concrete & Steel.(1)		1	1	1							1													1	
A342	Reinf. concrete & Steel (2)		1	1	1							1													1	
A351	Environmental control		1	1										1		1		1								
A352	visual training (2)													1	1		1									
A361	Design Methodolgy				1			1													1					
A362	Human Architecture Studies			1	1															1						
A371	History & Th. of planning		1	1															1		1	1				
A372	Computer Appl.- b	1			1					1				1	1	1						1				
A381	Computer Appl. -a	1			1					1				1	1	1						1				
A382	Construction equipment-b		1	1	1					1											1					
A391	Construction equipment-a		1	1	1					1																
A411	Architecture Design(3)-a			1	1									1	1		1	1		1	1					
A412	Architecture Design(3)-b			1	1									1	1		1	1		1	1					
A421	History,Th.of Art & Arch(3-a)			1									1		1							1				
A422	History,Th.of Art &Arch.(3-				1									1							1	1				

	b)																							
A431	Working Dr.& Const. Meth (1).a			1	1												1					1		1	
A432	Working Dr.&Const. Meth (1).b			1	1												1					1		1	
A441	Technical&Sanitary Inst.-a		1		1	1		1				1												1	
A442	Technical&Sanitary Inst.-b		1		1	1		1				1												1	
A451	City Planning & Hous.(1)-a										1	1	1	1											
A452	City Planning & Hous.(1)-b										1	1	1	1											
A461	Project Management		1	1													1		1						
A462	Foundations		1			1	1															1			
A471	Elective 1(housing of developing countries)		1		1								1												
A472	Elective 2 (urban renewall)										1	1									1				
A481	Modular Coordination-a	1	1							1															
A482	Modular Coordination-b.		1											1								1	1		
A491	Building Economics-a		1					1			1											1			
A492	Building Economics-b		1					1			1											1			
A511	Architectural Design(4)-a			1	1										1		1			1	1	1			
A512	Architectural Design(4)-b			1	1										1		1			1	1	1			
A521	Working Dr.&Const. Docum.(2)-a									1			1	1	1	1	1		1		1		1	1	1
A522	Working Dr.&Const. Docum. (2)-b									1			1	1	1	1	1	1			1		1	1	1	1
A531	Urban Design(a)										1										1				
A532	Urban Design(b)													1							1				
A541	City Planning(2)-a										1	1								1					
A542	City Planning(2)-b										1	1								1					
A551	History & Th.of Arch.(4)					1									1		1	1		1					
A552	Elective Course (4)- (Aesthetics of the composition)	1	1		1	1													1						
A561	Elective Course (3) (urban& enviro. cons)																		1	1		1			
A562	Final Graduation Project		1	1	1									1		1		1							
A571	Modern System Build.Mat.		1							1							1					1	1		1
A572	Laws&regulations for eng.											1									1				
A581	Quantities & Contracts -a									1							1		1			1	1		1
A582	Quantities & Contracts -b									1							1		1			1	1		1

Table A1-4 Program Mapping Matrix; Courses/ Professional and practical skills (C's)

Code	Name	Program Intended Learning Outcomes (C)																								
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
B101	English Language I											1	1													
B111	Mathematics I	1											1													
B121	Mechanics I	1	1					1																		
B131	Physics I	1					1						1				1	1								
B141	Chemistry	1	1	1		1			1				1													
E111	Introduction to Computer I					1									1		1									
M150	Engineering Drawing I	1	1	1																						
M160	Production Engineering I	1		1				1																		
B102	English Language II											1	1													
B112	Mathematics II	1											1													
B122	Mechanics II	1	1					1																		
B132	Physics II	1				1							1													
B142	Descriptive Geometry	1			1																					
E112	Introduction to Computer II														1	1	1	1								
M151	Engineering Drawing II	1		1	1																					
M161	Production Engineering II	1		1				1																		
B252	Mathematics VII	1	1					1						1												
A211	Architectural design(1-a)			1	1									1				1								
A212	Architectural design(1-b)			1	1									1				1								
A221	History & Th. of Arch .(1-a)	1	1											1												
A222	History&Th.of Arch. (1-b)																		1			1	1			
A231	Building construction(1-a)		1	1									1		1									1	1	1
A232	Building construction(1-b)		1	1									1		1									1	1	1
A241	Sciagraphy and perspective													1					1							
A242	Properties & Strenght of m.		1								1					1						1	1	1		
A251	Visual traning (1)													1				1	1							
A261	Theory of structures (a)	1	1	1				1																		
A262	Theory of structures (b)	1	1	1																						
A271	Surveying	1					1									1	1									
A281	Computer Appl.(Cad)-a					1							1	1	1											
A282	Computer Appl. (Cad)-b					1							1	1	1											
A291	Building technology-a														1				1					1		1
A292	Building technology-b														1			1						1		1
A311	architectural design(2)-a			1			1											1								
A312	architectural design(2)-b			1			1											1								
A321	Building Const. &Mat.(2)- a														1	1			1					1	1	1
A322	Building Const.&Mat.(2)- b														1	1			1					1	1	1
A331	History& Th. of arch.(2-a)	1	1	1																			1			
A332	History& Th. of arch.(2-b)												1	1					1							
A341	Reinf. concrete & Steel.(1)	1		1				1																	1	
A342	Reinf. concrete & Steel (2)	1		1				1																	1	
A351	Environmental control	1	1									1						1		1						1
A352	visual training (2)													1	1											
A361	Design Methodolgy			1	1				1	1			1			1			1							
A362	Human Architecture Studies						1						1					1				1	1			1
A371	History & Th. of planning													1									1			
A372	Computer Appl.- b														1			1				1	1			
A381	Computer Appl. -a														1	1		1				1	1			
A382	Construction equipment-b											1	1				1									
A391	Construction equipment-a										1	1				1										
A411	Architecture Design(3)-a				1									1	1		1	1	1		1	1				

A412	Architecture Design(3)-b				1								1	1		1	1	1		1	1				
A421	History,Th.of Art & Arch(3-a)												1				1	1	1						
A422	History,Th.of Art &Arch.(3-b)																			1	1	1			
A431	Working Dr.& Const. Meth (1).a				1						1			1	1			1					1	1	
A432	Working Dr.&Const. Meth (1).b				1						1			1	1			1					1	1	
A441	Technical&Sanitary Inst.-a	1										1		1	1				1			1			1
A442	Technical&Sanitary Inst.-b	1				1		1				1	1		1	1				1			1			1
A451	City Planning & Hous.(1)-a					1	1														1				
A452	City Planning & Hous.(1)-b					1	1														1				
A461	Project Management		1	1						1			1												
A462	Foundations	1	1											1	1										
A471	Elective 1(housing of developing countries)															1	1								
A472	Elective 2 (urban renewall)	1							1																
A481	Modular Coordination-a	1				1					1														
A482	Modular Coordination-b.									1	1										1				
A491	Building Economics-a		1					1							1										
A492	Building Economics-b		1												1										
A511	Architectural Design(4)-a				1								1					1	1			1			
A512	Architectural Design(4)-b				1								1					1	1			1			
A521	Working Dr.&Const. Docum.(2)-a	1									1	1	1		1	1							1	1	1
A522	Working Dr.&Const. Docum. (2)-b	1	1								1	1		1	1	1							1	1	1
A531	Urban Design(a)												1					1	1			1			
A532	Urban Design(b)								1				1				1				1	1			
A541	City Planning(2)-a						1													1					
A542	City Planning(2)-b						1													1					
A551	History & Th.of Arch.(4)	1	1										1	1											
A552	Elective Course (4)- (Aesthetics of the composition)			1						1				1											
A561	Elective Course (3) (urban& enviro. conservation)																1				1	1			
A562	Final Graduation Project	1	1	1	1									1								1			
A571	Modern System Build.Mat.		1												1										
A572	Laws&regulations for eng.	1							1																
A581	Quantities & Contracts -a			1			1		1			1			1								1		
A582	Quantities & Contracts -b			1			1		1			1			1								1		

Table A1-5 Curriculum Mapping Matrix Courses/General Transferrable skills (D's)

Code	Name	Program Intended Learning Outcomes (D)								
		01	02	03	04	05	06	07	08	09
B101	English Language I	1	1	1	1		1	1	1	
B111	Mathematics I			1				1		
B121	Mechanics I	1	1	1						1
B131	Physics I	1	1	1	1	1	1	1	1	1
B141	Chemistry	1	1	1	1	1		1		
E111	Introduction to Computer I	1		1	1			1		
M150	Engineering Drawing I	1		1				1		
M160	Production Engineering I	1		1			1			
B102	English Language II	1	1	1	1		1	1	1	
B112	Mathematics II	1		1				1		
B122	Mechanics II	1	1						1	1
B132	Physics II					1		1		
B142	Descriptive Geometry			1	1					
E112	Introduction to Computer II	1		1	1			1		
M151	Engineering Drawing II			1						1
M161	Production Engineering II	1		1				1		1
B252	Mathematics VII			1				1		
A211	Architectural design(1-a)			1				1		
A212	Architectural design(1-b)			1				1		
A221	History & Th. of Arch .(1-a)	1	1	1				1		
A222	History&Th.of Arch. (1-b)	1	1	1	1					
A231	Building construction(1-a)	1	1	1			1	1	1	
A232	Building construction(1-b)	1	1	1			1	1	1	
A241	Sciagraphy and perspective			1					1	
A242	Properties & Strenght of m.	1		1		1				
A251	Visual traning (1)	1		1					1	
A261	Theory of structures (a)						1	1		
A262	Theory of structures (b)						1	1		
A271	Surveying			1		1	1			
A281	Computer Appl.(Cad)-a	1		1			1	1		
A282	Computer Appl. (Cad)-b	1		1			1	1		
A291	Building technology-a	1		1		1	1	1		
A292	Building technology-b	1		1		1	1	1		
A311	architectural design(2)-a			1				1		
A312	architectural design(2)-b		1	1		1	1	1		
A321	Building Const. &Mat.(2)- a	1	1	1			1	1	1	
A322	Building Const.&Mat.(2)- b	1	1	1			1	1	1	
A331	History& Th. of arch.(2-a)	1	1	1	1	1	1	1	1	1
A332	History& Th. of arch.(2-b)		1	1	1	1				1
A341	Reinf. concrete & Steel.(1)						1	1		
A342	Reinf. concrete & Steel (2)						1	1		
A351	Environmental control	1	1	1	1	1	1	1	1	
A352	visual training (2)	1	1	1			1	1		
A361	Design Methodolgy			1		1	1	1		
A362	Human Architecture Studies	1		1		1	1			
A371	History & Th. of planning	1						1	1	
A372	Computer Appl.- b	1	1	1		1	1	1	1	
A381	Computer Appl. -a	1	1	1		1	1	1	1	
A382	Construction equipment-b						1	1		
A391	Construction equipment-a						1	1		
A411	Architecture Design(3)-a	1		1			1	1		

A412	Architecture Design(3)-b	1		1			1	1		
A421	History,Th.of Art & Arch(3-a)			1	1	1				1
A422	History,Th.of Art &Arch.(3-b)	1		1	1				1	
A431	Working Dr.& Const. Meth (1).a		1	1		1	1			
A432	Working Dr.&Const. Meth (1).b		1	1		1	1			
A441	Technical&Sanitary Inst.-a						1			
A442	Technical&Sanitary Inst.-b						1			
A451	City Planning & Hous.(1)-a		1	1		1				
A452	City Planning & Hous.(1)-b		1	1		1				
A461	Project Management						1			1
A462	Foundations	1					1			
A471	Elective 1(housing of developing countries)		1				1		1	1
A472	Elective 2 (urban renewall)						1	1		
A481	Modular Coordination-a	1						1		
A482	Modular Coordination-b.						1			
A491	Building Economics-a			1					1	
A492	Building Economics-b			1					1	
A511	Architectural Design(4)-a		1	1				1		1
A512	Architectural Design(4)-b		1	1				1		1
A521	Working Dr.&Const. Docum.(2)-a	1	1	1			1	1	1	
A522	Working Dr.&Const. Docum. (2)-b	1	1	1			1	1	1	
A531	Urban Design(a)	1				1				
A532	Urban Design(b)	1				1				
A541	City Planning(2)-a	1	1	1		1				
A542	City Planning(2)-b	1	1	1		1				
A551	History & Th.of Arch.(4)	1	1	1	1	1		1		
A552	Elective Course (4)- (Aesthetics of the composition)	1	1	1				1	1	
A561	Elective Course (3) (urban& enviro. conservation)	1				1		1		
A562	Final Graduation Project		1	1	1		1	1	1	
A571	Modern System Build.Mat.			1					1	
A572	Laws&regulations for eng.						1	1		
A581	Quantities & Contracts -a	1	1					1		
A582	Quantities & Contracts -b	1	1					1		

Appendix 2

Courses Specifications

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Table A3-1 Architecture Engineering and Building Technology-2011
Courses

	Code	Name
1	B101	English Language I
2	B111	Mathematics I
3	B121	Mechanics I
4	B131	Physics I
5	B141	Chemistry
6	E111	Introduction to Computer I
7	M150	Engineering Drawing & Projection I
8	M160	Production Engineering I
9	B102	English Language II
10	B112	Mathematics II
11	B122	Mechanics II
12	B132	Physics II
13	B142	Descriptive Geometry
14	E112	Introduction to Computer II
15	M151	Engineering Drawing & Projection II
16	M161	Production Engineering II
17	B252	Mathematics VII
18	A211	Architectural design(1-a)
19	A212	Architectural design(1-b)
20	A221	History and Theory of Arch. (1-a)
21	A222	History&Theory of Arch. (1-b)
22	A231	Building construction(1-a)
23	A232	Building construction(1-b)
24	A241	Sciagraphy and perspective
25	A242	Properties & Strenght of material
26	A251	Visual traning (1)
27	A261	Theory of structures (a)
28	A262	Theory of structures (b)
29	A271	Surveying
30	A281	Computer Applications (Cad)-a
31	A282	Computer Applications (Cad)-b
32	A291	Building technology-a
33	A292	Building technology-b
34	A311	architectural design(2)-a
35	A312	architectural design(2)-b
36	A321	Building Const. and Materials(2)- a
37	A322	Building Const. and Materials(2)- b
38	A331	History& Theory of arch.(2-a)
39	A332	History& Theory of arch.(2-b)
40	A341	Reinf. concrete & Steel Const.(1)
41	A342	Reinf. concrete & Steel Const.(2)
42	A351	Environmental control
43	A352	visual training (2)
44	A361	Design Methodolgy
45	A362	Human Architecture Studies
46	A371	History & Theory of planning

47	A372	Computer Appl. (Comp.Graph)-b
48	A381	Computer Appl. (Comp.Graph)-a
49	A382	Construction equipment-b
50	A391	Construction equipment-a
51	A411	Architecture Design(3)-a
52	A412	Architecture Design(3)-b
53	A421	History,Th. of Arts & Arch. (3) -a
54	A422	History,Th. of Arts & Arch. (3) -b
55	A431	Working Dr.&Const.Methods (1)-a
56	A432	Working Dr.&Const. Methods (1)-b
57	A441	Technical&Sanitary Installations-a
58	A442	Technical&Sanitary Installations-b
59	A451	City Planning & Housing(1)-a
60	A452	City Planning & Housing(1)-b
61	A461	Project Management
62	A462	Foundations
63	A471	Elective Course-1(housing of developing countries)
64	A472	Elective Course2 (Urban renewell)
65	A481	Modular Coordination-a
66	A482	Modular Coordination-b.
67	A491	Building Economics-a
68	A492	Building Economics-b
69	A511	Architectural Design(4)-a
70	A512	Architectural Design(4)-b
71	A521	Working Dr.&Const. Docum.(2)-a
72	A522	Working Dr.&Const. Docum. (2)-b
73	A531	Urban Design(a)
74	A532	Urban Design(b)
75	A541	City Planning(2)-a
76	A542	City Planning(2)-b
77	A551	History & Th.of Architecture (4)
78	A552	Elective Course (4)-(Aesthetics of the composition)
79	A561	Elective Course(3)(urban renewal)
80	A562	Final Graduation Project
81	A571	Modern System Building Materials
82	A572	Laws&regulations for engineering
83	A581	Quantities & Contracts -a
84	A582	Quantities & Contracts -b

Course Specifications
Basic Sciences Department

Code	Name
B101	English Language I
B111	Mathematics I
B121	Mechanics I
B131	Physics I
B141	Chemistry
E111	Introduction to Computer I
M150	Engineering Drawing I
M160	Production Engineering I
B102	English Language II
B112	Mathematics II
B122	Mechanics II
B132	Physics II
B142	Descriptive Geometry
E112	Introduction to Computer II
M151	Engineering Drawing II
M161	Production Engineering II

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Modern Academy for Engineering & Technology

Basic Sciences Department

Course Specification

B 101: English Language I

A- Affiliation

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

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

Department offering the course: Basic Sciences Department
Date of specifications approval: September, 2015

B - Basic information

Title: English Language I **Code:** B 101 **Level:** 1ST. Year **Semester:** First
Hours: Total: 2 **Lectures:** 2 **Tutorial:** **Practical:**

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 everyday life. The course offers realistic and informative original situations introducing students to key concepts of different topics.

2 - Intended Learning Outcomes (ILOS)

a - Knowledge and understanding:

On successful completion of the course, the student should demonstrate knowledge and understanding of:
a1) identifying the most frequent words, phrases and grammar rules in everyday conversation. (A9), (A10)
a2) communicating effectively in written and oral forms, even at the very beginning levels. (A9), (A10)
a3) differentiating between tenses. (A9)

b - Intellectual skills:

On successful completion of the course, the student should be able to.
b1) enhance class interaction in terms of speaking, reading, listening and writing. (B4)
b2) personalize the learning experience by offering students interesting topics relevant to their interests and experiences. (B4)
b3) employ tasks which encourage students to take an active role in learning and using new vocabulary. (B4)
b4) use different tenses in conversation. (B4)

c - Professional and practical skills:

On successful completion of the course, the student should be able to:
c 1)write paragraphs and peer edit them using error detection. (C12)
c 2)communicate with each other and with the professor. (C11)
c 3)use different tenses in conversation. (C11)
c 4)brainstorm ideas for homework writing. (C12)

d - General and transferable skills:

On successful completion of the course, the student should be able to:

d1- work in a team and involve in group discussion. (D1), (D2), (D3)
d2- present data and results orally. (D1, D2, D3, D6)
d3- communicate effectively in written forms.(D3), (D7)
d4- search for information in references and in internet. (D4), (D7)
d5- practice self-learning. (D4), (D7), (D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A9, A10
B	Intellectual skills	B4
C	Professional and practical skills	C11, C12
D	General and transferable skills	D1, D2, D3, D4, D6, D7, D8

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
Engineering, what's it all about?	6		
Alfred Nobel.	6		
Use of Prepositions.	2		
Adjectives: synonyms and anatomies.	2		
Infinitive and Gerund.	2		
Subject verb agreement Count & non –count nouns	4		
General exercises.	4		
Revision	4		
Total hours	**30**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods										Learning Methods				Assessment Method							
		Lecture	Warming up	Discussions	Tutorials	Problem solving						Researches and Reports	Modeling and Simulation			Written Exam	Class work	Quizzes	Class participation	Assignments			
Understa & e	a1	1	1	1								1				1	1	1	1	1			
	a2	1	1	1								1				1	1	1	1	1			
	a3	1	1	1								1				1	1	1	1	1			
Intellectual Skills	b1	1	1	1								1				1	1	1	1	1			
	b2	1	1	1								1				1	1	1	1	1			
	b3	1	1	1								1				1	1		1	1			
	b4	1	1	1								1				1	1	1	1	1			
Applied Professional Skills	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			
al Tran.	d1	1	1	1								1				1			1				
	d2		1	1								1							1				

	d3	1	1	1							1							1	1			
	d4	1	1	1							1											
	d5		1								1							1				

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: quizzes, assignments and class participation	Bi-Weekly	10
Mid-Term Exam	7-th Week	5
Practical Exam	-	
Written Exam	Sixteenth week	35
Total		50

6- List of references:

6-1 Course notes:

El. Khoreiby A. H., Learn, Apply and Excel, lecture notes, Modern Academy Press , 2010.

6-2 Required books

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

6-3 Recommended books:

Shelton, James**, English for Engineering,** NTC publishing Group, Illinois, USA,2008.

6-4 Periodicals, Web sites, etc.:

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

7- Facilities required for teaching and learning:

- Library
- Internet

Course coordinator: Dr. Neveen Samir
Head of the Department: Prof. Dr Layla Solaiman
Date: Sept. 2015

Modern Academy for Engineering & Technology

Basic Sciences Department

Course Specification

B 111: Mathematics 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

Departments 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

Department offering the course: Basic Sciences Department

Date of specifications approval: September, 2015

B - Basic Information

Title: Mathematics I	**Code:** B111	**Level:** First year	Semester: First
Total hours: 6 hrs	Lectures: 4 hrs	Tutorial: 2 hrs	Practical: --

C - Professional Information

1 – Course Learning Objectives

The main objective of this course is to introduce the main concepts of Differential calculus and modern algebra and their applications.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding

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

a1- Rules of limits and continuity of functions of one variable. (A1)
a2- Differentiation concepts. (A1)
a3- Rules of Applications of differential calculus used engineering. (A1, A5)
a4- Basic concepts of mathematical logic and apply it to applications. (A1, A5)
a5- Relations and mappings. (A1)
a6- Properties of Algebraic structure and its applications. (A1)

B - Intellectual skills

By the end of the course the student should be able to:

b1- Solve problems on limits, continuity and differentiate all continuous function. (B1, B2)
b2- Use differential calculus to solve applied Engineering Models. (B1, B2, B7)
b3- Use mathematical logic solve applied Engineering Models. (B1, B2, B7)
b4- Solve problems on relations and mapping used in different applications. (B1, B3)
b5- Use Algebraic structure used in different applications. (B1, B3)

C - Professional and practical skills

By the end of the course the student should be able to:

c1- Apply differential calculus in mechanics and electronics. (C1, C12)

D - General and transferable skills

By the end of the course the student should be able to:

d1- Write technical reports. (D3)

d2- Communicate effectively in written form. (D3)

d3- Search for information's in references and in internet. (D7)

Course Contribution in the Program ILO's

ILO's		**Program ILO's**
A	Knowledge and understanding	A1, A2, A5
B	Intellectual skills	B1, B2, B3, B7
C	Professional and practical skills	C1, C12
D	General and transferable skills	D3, D7

3 – Contents

Topic	**Lecture hours**	**Tutorial hours**
Calculus		
Function limit continuity	4	2
Derivatives	4	4
Inverse function and trigonometric function	4	2
Exponential and Logarithmic function	4	2
Hyperbolic and inverse hyperbolic functions	4	2
Application of differential calculus	10	3
Modern Algebra		
Sets	4	2
Mathematical logic with applications	4	2
Relation	6	3
Mapping	6	3
Algebraic structure	6	3
Final Revision	4	2
Total hours	**60**	**30**

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods						Learning Methods				Assessment Method				
		Lecture	Discussions and seminars	Tutorials	Problem solving			Researches and Reports	Modeling and Simulation			Written Exam	Quizzes	Assignments		
Knowledge & Understanding	a1	1	1	1	1			1				1	1	1		
	a2	1		1	1			1				1	1	1		
	a3	1		1	1			1				1	1	1		
	a4	1		1	1			1				1	1	1		
	a5	1		1	1			1				1	1	1		
	a6	1		1	1			1				1	1	1		
Intellectual Skills	b1	1		1	1							1	1	1		
	b2	1						1	1			1				
	b3	1		1	1			1	1			1	1	1		
	b4	1		1	1			1				1	1	1		
	b5	1		1	1			1				1	1	1		
Applied Professional Skills	c1	1	1						1			1				
General Tran. Skills	d1		1		1			1						1		
	d2		1	1	1			1						1		
	d3	1						1						1		

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Quizzes, assignments, term paper	Weekly	15
Mid-Term Exam	7-th Week	15
Written Exam	Sixteenth week	70
Total		100

6- List of References

6-1 Course Notes:

Osama El-Gayar, Differential calculus, Lecture Notes, Modern Academy, 2011

Mohammad Khalifa, Modern Algebra, Lecture Notes, Modern Academy, 2011

6-2 Required books

B. S. Votsa, "Modern Algebra", 2-nd Edition, New Age International Limited Publisher, New Delhi, 2010.

6-3 Recommended books

E. W. Swokoski, "Calculus", 6-th Edition, PWS Publishing Company, Boston, 1994.

6-4 Periodicals, Web sites, etc.

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

7- Facilities Required for Teaching and Learning

- Library
- Internet

Course coordinator:	**Dr. Sabry Abd El-Aziz**
Head of the Department:	**Prof. Dr. Lila Soliman**
Date:	**September, 2015**

Modern Academy for Engineering & Technology

Basic Sciences Department

Course Specification

B 121: 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

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

Department offering the course: Basic Science Department

Date of specifications approval: September, 2015

B - Basic information

Title: Mechanics-1 **Code:** B121 **Level:** First year **Semester**: 1st

Hours Total 4 hrs. **Lectures** 2 hrs. **Tutorial** 2 hrs. **Practical:** -

C - Professional information

1 – Course Learning Objectives:

After the study of this course the student should be able to use and apply the basic concepts of statics in both plane and space in real engineering problems.

2 - Intended Learning Outcomes (ILOS)

a - Knowledge and understanding:

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

a1- Knowledge of the basic of statics in plane and space(A1,A3).
a2- Knowledge the difference between the moment of force in plane and space(A3,A4).
a3- Classification the support reaction in plane and in space(A1,A3).
a4- Understanding the structural analysis in plane(A3,A4).

b - Intellectual skills:

On successful completion of the course, the student should be able to.

b1- Analyze and classify between equilibrium in plane and equilibrium in space(B1, B2, B11).
b2- Classify and compare the different between equilibrium of a single rigid body and all forces involved were external to the rigid body(B1,B3) .

c - Professional and practical skills:

On successful completion of the course, the student should be able to:

c1- Solve the equations of equilibrium to get three unknowns(C1,C2).
c2- Solve the trusses to get the value of the forces in the structural by joints and by section methods(C1,C7).

d - General and transferable skills:

On successful completion of the course, the student should be able to:

d1- Work in a team to solve problem as a search(D1, D3).

d2- Search for information in references and in internet(D2, D9)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1, A3, A4
B	Intellectual skills	B1, B2, B3, B4, B11
C	Professional and practical skills	C1, C2, C7
D	General and transferable skills	D1, D2, D3,D9

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical
Basic Concepts of statics.	2	1	
Resultant of concurrent forces in plane	2	2	
Resultant of concurrent forces in space	2	2	
Equilibrium of a particle (in plane and in space)	4	2	
Different types of support in plane	2	3	
Distributed loads	2	3	
Equilibrium of rigid body in plane	2	2	
Different types of supports in space	2	2	
Equilibrium of rigid body in space	4	2	
Special cases of two, three and four force members	2	2	
Analysis of Trusses by the method of joints	2	3	
Analysis of Trusses by the method of section	2	2	
Final revision	2	4	
Total hours	**30**	**30**	**-**

Course ILO's		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			
Knowledge	a1	1			1	1						1				1		1	1	1			
	a2	1			1	1										1		1	1	1			
	a3	1			1	1						1				1		1	1	1			
	a4	1			1	1						1				1		1	1	1			
Intellectual	b1	**1**			**1**											1		1		**1**			
	b2	**1**			**1**	**1**										1		1	**1**	**1**			
Applied	c1	1			1	1										1		1	1	1			
	c2	1			1											1		1	1	1			
General	d1					1						1							1				
	d2	1										1							1				

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Written Exam	sixteen week	70
Total		100

6- List of references:

6-1 Course notes:

Hassan Awad, Mechanics I, Modern Academy Press, 2011.

6-2 Required books :

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

6-2 Recommended books

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

6-4 Periodicals, Web sites, etc.

www.mathwprlds.com

www.exchange.com

Course coordinator: Dr Moamen Wafaee
Head of the Department: Prof. Dr. Laila Soliman
Date: September 2015

Modern Academy for Engineering & Technology

Basic Sciences Department

Course Specification

B131:Physics 1- Properties of Matter

A- Affiliation

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

Departments offering the programs:
Manufacturing Engineering and Production Technology Department
Architecture Engineering and Building Technology Department
Electronic Engineering and Communications Technology Department
Computer Engineering and Information Technology Department

Department offering the course: Basic Sciences Department

Date of specifications approval: September 2015

B - Basic Information

Title: Physics1 **Code: B 131** **Level:** First year. **Semester:** First.
Teaching Hours: 5 **Lectures:** 2 **Tutorial:** 1 **Practical:** 2

C - Professional Information

1 – Course Learning Objectives:

The student should be able to use and apply basic concepts, principles and fundamental topics of classical physics concerning properties of matter, heat and waves in both engineering and real life.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding

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

a1- the basic principles of rotational motion, application of rotational motion. (A1,A2,A3)
a2- laws of planetary motion derived from the law of gravity and driving a general expression for gravitational potential energy. (A1,A2,A3)
a3- how objects deform under load condition and defining of several elastic constants for different types of deformation. (A1,A2,A3)
a4- fluid in motion and its description by using a model with certain simplifying assumptions. (A1,A2,A4)
a5- Bernoulli's equation and its Application. (A1,A2)
a6- description of thermal phenomena through important terms; temperature, heat & internal energy.(A1 ,A2)
a7- the concept of internal energy and the process by which energy is transferred. (A1 ,A2,A13)
a8- the first law of thermodynamic and some important applications of this law. (A1,A2,A3)
a9- the kinetic theory of gas, entropy and engine efficiency. (A1,A2,A3)
a10- fundamental of wave motion and sound wave. (A1,A2)

B - Intellectual skills

On successful completion of the course, the student should be able to.

b1- 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. (B1,B2,B3)

b2- predict the different laws that governing the motion of the body (Newton's laws, gravity law, and kepler's law). (B1,B2 ,B7)

b3- analyze the characteristics of elastic materials. (B17)

b4-deduce models for fluid flow and analyze some practical situation. (B7,B13)

b5- differentiate and compare the different types of heat transfer in different walls. (B7,B13)

b6- identify the heat system's internal energy changes by an energy transfer or by work done. (B1,B2,B7)

b7- differentiate and compare the different types of waves. (B1,B2,B20).

C - Professional and practical skills

On successful completion of the course, the student should be able to:

c1- analyze physical phenomena and solve problems depending on the gained background and concepts. (C1)

c2- validate the concepts of some of the studied physical phenomena.(C1,C12,C16)

c3- determine different dimensions using vernier calipers, micrometer and spherometer.(C16,C17)

c4- use experimental facilities to measure the acceleration due to gravity and the force constant. (C6,C12,C16,C17)

c5- perform experiments on heat to get practically the specific heat of different materials, the expansion coefficient of a solid, and the viscosity of a viscous liquid.(C1,C16,C17)

c6- determine the velocity of sound in air using resonance tube. (C1,C16,C17)

c7- use experimental facilities to verify the inverse square law of radiation. (C1,C16,C17)

D - General and transferable skills

On successful completion of the course, the student should be able to:

d1. communicate and interact effectively with other people and in a small group.(D1,D3,D5)

d2. use computing and information technology, and synthesize information.(D4,D7,D8)

d3. develop reasoned and scientific arguments.(D2,D6)

d4. manage resources and time, and work within a deadline.(D2,D6)

d5- search for information's in references and in internet. .(D7,D8,D9)

d6- practice self-learning.(D5,D6,D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1, A2, A3, A4, A13
B	Intellectual skills	B1, B2, B3, B7,B13, B17, B20
C	Professional and practical skills	C1, C6, C12, C16, C17
D	General and transferable skills	D1, D2, D3, D4, D5,D6,D7,D8,D9

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
Rotational motion, angular displacement, velocity, acceleration.	2		
Relation between linear and angular quantities.	1	2	4
Applications on rotational motion.	2	1	
Universal gravitational law.	1	1	2
Kepler's laws.	2	1	
Gravitational energy.	1		

Escape speed and orbital energy.	1	1	
Elasticity: Linear, and shear deformation.	1		2
Bulk deformation, and energy stored in a wire.	2	2	4
Characteristics of fluids and stream lines.	1	1	2
Fundamental laws of fluid	2	1	
Applications on Bernoulli's equation.	2	1	2
Viscosity and Poiseulli's law.	1	1	2
Heat transfer by convection.	1		
Heat transfer by conduction.	2	1	2
Work and heat in thermodynamic system.	1		
First law of thermodynamic.	1		
Isothermal expansion of gases and Molar specific heat.	2	1	4
Mathematical representation of waves and speed of transverse waves.	2		2
The principle of superposition.	1		
Standing waves and Sound waves.	2	1	4
Total hours	**30**	**15**	**30**

4 - Teaching and Learning and Assessment methods:

Course ILO's		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	Quizes	Term papers	Assignments				
Knowledge	a1	1		1	1	1	1					1				1	1	1	1	1				
	a2	1		1	1	1	1					1				1	1	1	1	1				
	a3	1		1	1	1	1					1				1	1	1	1	1				
	a4	1		1	1	1	1					1				1	1	1	1	1				
	a5	1		1	1	1	1					1				1	1	1	1	1				
	a6	1		1	1	1	1					1				1	1	1	1	1				
	a7	1		1	1	1	1					1				1	1	1	1	1				
	a8	1		1	1	1	1					1				1	1	1	1	1				
	a9	1		1	1	1	1					1				1	1	1	1	1				
	a10	1		1	1	1	1					1				1	1	1	1	1				
Intellectual	b1	1		1	1	1	1					1				1	1	1	1	1				
	b2	1		1	1	1	1					1				1	1	1	1	1				
	b3	1		1	1	1	1					1				1	1	1	1	1				
	b4	1		1	1	1	1					1				1	1	1	1	1				
	b5	1		1	1	1	1					1				1	1	1	1	1				
	b6	1		1	1	1	1					1				1	1	1	1	1				
	b7	1		1	1	1	1					1				1	1	1	1	1				
Applied	c1			1	1	1	1					1				1	1	1	1	1				
	c2						1										1			1				
	c3						1										1							
	c4						1										1							
	c5						1										1							
	c6						1										1							

	c7						1										1						
General	d1	1	1	1			1					1											
	d2		1	1		1						1								1			
	d3	1		1		1	1					1							1	1			
	d4					1										1	1	1		1			
	d5			1		1						1							1				
	d6					1						1				1	1	1	1	1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
SemesterWork: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	7-th Week	10
Practical Exam	Fifteenth week	20
Written Exam	Sixteenth week	60
Total		100

6- List of references:

6-1 Course notes:

- M. El- Tawab Kamal , Abo- Elyzeed B. Abo- Elyzeed,Marwa Yahia Shoeib and Nagat A. Salam Elmahdy,Physics 1- Properties of Matter Lecture Notes, Modern Academy, 2010.
- M. El- Tawab Kamal , Abo- Elyzeed B. Abo- Elyzeed, Marwa Yahia Shoeib and Nagat A. Salam Elmahdy,Physics Lab, Modern Academy, 2010.

6-2 Required books

Raymond A. Serway, Physics for Scientists and Engineers, Thomson Brooks, 2004; 6th Edition.

6-3 Recommended books:

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

6-4 Periodicals, Web sites, etc.

http.www.saunderscollege.cpm/physics
http://en.wikipedia.org/wiki/Bernoul/principle
http://www.physicsclassroom.com/calcpad/circgrav/
http://physicsworld.com/
http://www.britannica.com/science/wave-motion
http://physics.info/

7- Facilities required for teaching and learning:

- Library
- Computer, Internet, and Data Show
- Laboratories(Lab 1, Lab 2).

Course coordinator: Dr. Nagat A. Elmahdy
Head of the Department: Prof. Dr. Laila Soliman
Date: September, 2015

Modern Academy for Engineering & Technology

Basic Sciences Department

Course Specification

B141: 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

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

Department offering the course: Basic Science Department

Date of specifications approval: September, 2015

B - Basic information

Title: Chemistry **Code:** B141 **Level:** First year. **Semester**: First
Hours Total 4 hrs. **Lectures** 2 hrs. **Tutorial** - **Practical** 2 hrs.

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 - Intended Learning Outcomes (ILOS)

a - Knowledge and understanding:

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

a1- Key facts, concepts, principles and techniques of Gas and Liquid states of Matter. (A1,A3)
a2- Theories relevant to Electrochemistry, solutions and thermo chemistry.(A1,A3,A5,A4,A8,A11,A12)
a3- Some chemical industries in different fields such as eng. practices and regulatory farm works in chem.. Eng. Industry. (A3,A4,A5,A6, A11,A12)
a4- Technology Supporting water treatments and Desalination Techniques.(A4,A6,A11)
a5- Scientific principles of petroleum extraction and refining(A1,A3.A4.A7).
a6- Basic principles for fuel classification and knowing its optimum characteristics, also identify advantage and disadvantage of them (A1,A5,A6,A11,A12).

b - Intellectual skills:

On successful completion of the course, the student should be able to.

b1- Apply chem. Principles and analytical thinking to problems of Gases, Liquids and electrochemistry and determine its effective solutions.(B1,B2,B8,B12)
b2- Select and develop appropriate Some petrochemical Technologies.(B6)
b3- Exercise professional judgment with respect to commercial and technical risks.(B1)
b4- Overlap different scientific subjects to reach a new scientific systems with a better quality.(B1,B3.B4,B12,B10)
b5-Think in a creative new scientific ideas which are not exist in present time to be used in the fee ten line the field of development of energy recourses, pollution problem, new industrial products.(B3, B12)
b6- Select appropriate solutions for corrosion problems based on analytical thinking.(B1,B2,B6,B8)
b7- Consider the applicability, economy and risk management.(B4)

b8-Maintain a systematic and methodic approach in dealing with new advanced industrial products.(B1)

c - Professional and practical skills:

On successful completion of the course, the student should be able to:

c1-Apply knowledge of scientific equipment and instrumentation competently to determine known concentration and solve its problem.(C1,C5)

c2- 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,C5)

c3- Improve plan and execute project work including the preparation of descriptive and interpretative technical reports.(C2,C3,C5,C8)

c4- Create and design for a certain system using the subject information given during.(C2,C3,C8)

c5- Improve the designed system to be compatible with Eng. Conditions.(C2,C3,C8)

c6- Apply experimental facilities to investigate the system performance.(pH and water hardness degree).(C2,C3,C5,C8)

c7- Prepare and present technical materials.(Soaps, detergents, and some polymeric samples).(C2)

c8- Observe, record and analyze data in lab. As well as in Field.(Lab Fresh water and undergrawnd water).(C5)

c9- Use appropriate tools to measure system performance.(C5)

c10- Present work both in written and oral form.(C12)

d - General and transferable skills:

On successful completion of the course, the student should be able to:

d1- Improving own learning and performance, personal skills, working with others.(D1,D2,D3)

d2- Search for information from references, journals and internet.(D3)

d3- Write technical reports and prepare convenient presentations.(D5)

d4- Use the E-mail for communication.(D3,D4,D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1,A3,A4,A5,A6,A8,A11,A12
B	Intellectual skills	B1,B2,B3,B4,B6,B8,B10,B12
C	Professional and practical skills	C1,C2,C3,C5,C8,C12
D	General and transferable skills	D1,D2,D3,D4,D5,D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
Gas law and gas liquefaction.	4	-	-
Liquid state, Refrigeration & heat pump.	4	-	-
Electrochemistry &Metallic corrosion.	4	-	-
Solution & Antifreezes	2	-	-
Thermo chemistry & solar heat, Rocket.	2	-	-
Pollution	2	-	-
Water treatment and destitution	2	-	10
Polymer and Industry	2	-	-
Fuels and combustion	2	-	-
Chemistry and tech. of petroleum new trends in energy resource	2	-	-
Industrial detergents chemistry such cement , lubricants , soap	2	-	4
Acid - base titration	-	-	10
Revision and sheets	2	-	6
Total hours	**30**	**-**	**30**

4 – Teaching, Learning and Assessment methods:

Course IL O's		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
Knowledge	a1	1	1	1	1		1	1		1		1	1	
	a2	1			1					1		1	1	1
	a3	1			1				1	1		1	1	1
	a4	1	1	1	1	1	1	1		1		1	1	1
	a5	1				1	1			1	1	1	1	1
	a6	1						1					1	1
Intellectual	b1	**1**			**1**					1		1		**1**
	b2	**1**			**1**	**1**				1		1	**1**	**1**
	b3	**1**	**1**	**1**	**1**		**1**	**1**		1	1		**1**	
	b4	**1**	**1**	**1**	**1**			**1**		1	1			
	b5	**1**											**1**	**1**
	b6	**1**				**1**				1			**1**	
	b7	**1**		**1**				**1**		1				**1**
	b8	**1**	**1**			**1**								
Applied	c1	1	1		1	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
	c5	1	1				1			1	1			
	c6	1		1			1				1	1		
	c7	1			1	1								1
	c8	1	1	1	1		1							
	c9	1				1								1
	c10	1					1				1			
General	d1			1		1		1					1	
	d2		1	1			1	1	1				1	
	d3	1	1		1	1		1					1	1
	d4	1	1	1				1						

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes' assignments and reports	Bi-Weekly	10
Mid-Term Exam	7th Week	10
Practical Exam	Fifteenth week	20
Written Exam	Sixteenth week	60
Total		100

6- List of references:

6-1 Course notes

Goda,S. Chemistry for engineering & applied sciences, Lecture note, MAM Press, 2014.

6-2 Required books:

W. Steedman, R. B. Snadden, Iain Howe Anderson, Chemistry for the engineering and applied sciences, Pergamon Press, 1980.

6-3 Recommended books: Non

6-4 Periodicals, Web sites, etc.

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

7- Facilities required for teaching and learning:

- Chemistry lab.
- Computer, Data show.
- Computer programs.

Course coordinator: Dr Shimaa Nabih Esmail
Head of the Department: Professor Dr. Laila Soliman
Date: September 2015

Modern Academy for Engineering & Technology

Electrical Engineering Department

Course Specification

E111: Introduction to Computers I

A- Affiliation

Relevant programs:	Computer Engineering and Information Technology BSc Programe Electronic Engineering and communication Technology BSc Programe Manufacturing Engineering and Production Technology BSc Programe Architectural Engineering and Building Technology BSc Programe
Departments offering the program:	Electronic Engineering Department
Department offering the course:	Electronic Engineering Department
Date of specifications approval:	September 2015

B- Basic information

Title: Introduction To Computers (I) **Code:** E111 **Year/level:** 1st year- 1st semester
Teaching Hours: **Lectures:** 2 **Tutorials:** -
Practical:2 **Total: 4**

C - Professional information

1. Course Learning Objectives:

A study of this course will enable the student to:

- Appreciate the importance of computer and inf. technology in modern life
- Be familiar with computer applications and their categories
- Distinguish between various categories of computer software
- Identify various computer components
- Gain confidence in using computers to edit and format texts
- Change the defaults settings in computer display and file and folder management

2. Intended Learning Outcomes (ILOS):

A – Knowledge and understanding

By the end of this course the student should acquire the following knowledge and understanding:
a1- Identification of different computer components and different computer, types(A14)
a2- different operating systems.(A13)
a3- advantages and disadvantages of computers.(A12, A14)
a4- Identification of different types of text editors (A7)
a5- procedures of running and closing programs (A18)
a6- input and output devices (A13)
a7- numbering systems (A4)

B – Intellectual skills

By the end of the course the student should be able to:
b1- Analyze and decide the reasons behind simple computer problems (B2,B3)
b2- Troubleshoot simple problems encountered during running application programs (B6)

b3- Differentiate between operating system features (B13)
b4- Transfer from a numbering system to another (B1 ,B2)
b5- Add, Subtract, and Multiplying binary numbers (B1 ,B2)
b6- Transfer fractions from binary to decimal and vice versa.(B11 ,B12)

C – Professional and practical skills
By the end of the course the student should be able to:
c1- Carry out full tasks using computer programs(C5)
c2- Navigate from program to another.(C14 , C16)
c3- Handle open windows in multi-window operating environment.(C14)

D – General and transferable skills
By the end of the course the student should be able to:
d1- Communicate effectively in written form(D1 ,D3)
d2- Demonstrate efficient IT capabilities.(D4)
d3- Search for information and adopt life-long self-learning(D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4, A7 , A12 , A13 , A14 , A18
B	Professional and practical skills	B1 , B2 ,B3 , B6, B11, B12, B13
C	Intellectual skills	C5 , C14 , C16
D	General and transferable skills	D1 , D3 ,D4 ,D7

3- Course Contents:

Topics	Lecture hours	Tutorial hours	Practical hours
• Historical overview	2	-	
• Types of computers	2	-	4
• Indices of computer performance	6	-	
• Computer components	4	-	4
• Storage media	4	-	
• Numbering systems	2	-	
• Binary arithmetic	4	-	
• DOS operating system and commands	4	-	4
• Windows Operating System	2		8
• Text Editing			10
Total hours	**30**	**-**	**30**

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods						Learning Methods			Assessment Method			
		Lecture	Presentations & Movies	Discussions & Seminars	Tutorials	Problem solving	Laboratory & Experiments	Researches and Reports	Modeling and Simulation	Site Visits	Quizzes & Presentations	Assignments	Written Exam	Practical Exam
Knowledge	a1	1	1										1	
	a2	1										1	1	
	a3	1	1										1	
	a4	1											1	
	a5	1					1						1	
	a6	1												
	a7	1		1		1		1				1	1	
Intellectual	b1	1		1									1	
	b2	1		1									1	
	b3	1											1	
	b4	1										1	1	
	b5	1										1	1	
	b6	1										1	1	
Applied	c1		1				1				1			1
	c2		1				1							1
	c3		1				1							1
General Tran.	d1		1					1			1			
	d2		1					1						
	d3		1					1						

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes

- Lecture and lab notes

6-2 Essential books (text books)

Gale E., Introduction to Micro-computing, Newell,1991.
Peter Norton's. Introduction to computers, Fifth edition , Student Edition, 2002
David Reed . A Balanced Introduction to computer Science, Prentice hall , 2004

6-3 Recommended books

Non

6-4 Periodicals, Web sites, etc.: Non

7- Facilities required for teaching and learning:

Computer Lab

Data show

Course coordinator: Prof. Dr. Said A. Gawish

Head of the Department: Prof. Dr. Said A. Gawish

Date: September 2015

Modern Academy for Engineering & Technology

Mechanical Engineering Department

M150: Engineering Drawing &Projection I
Course Specifications

A- Affiliation

Relevant programs: Computer Engineering & Information Technology BSc. Program
Electronic Engineering & communication Tech. BSc Program
Manufacturing Engineering & Production Tech. BSc Program
Architectural Engineering & Building Technology BSc Program

Departments offering the programs: Electrical Engineering Dept.
Mechanical Engineering Dept.
Architectural Engineering Dept.

Department offering the course: Mechanical Engineering Dept.

Date of specifications approval: September 2015

B - Basic Information

Title: Engineering Graphics I **Code:** M150 **Year/level:** 1-st year / 1-st Term

Teaching Hours: **Lectures: --** **Tutorial: 4**
Practical: -- **Total: 4**

C - Professional information

1 – Course Learning Objectives

A study of this course will enable the student to visualize and communicate three dimensional objects.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding

By the end of the course the student should gain the following knowledge.

a1-The principles of geometrical construction in engineering graphics. (A4)
a2-The basic information and theories in engineering graphics. (A1, A2)
a3- Methodology of solving problems in orthographic views. (A5)
a4- Methodology of solving problems in successive views. (A5)
a5-The basic and theories of developments and intersections. (A1, A5)

B - Intellectual skills

By the end of the course the student should be able to:

b1- Solve and communicate problems in orthographic views. (B3, B2)
b2- Solve and communicate problems in isometric and oblique drawings. (B2, B3)
b3- Consider the benefits of solving problems of developments and intersections. (B8, B4)

C - Professional and practical skills

By the end of the course the student should be able to:

c1- Produce orthographic views from 3D models. (C3)
c2- Read and understand orthographic drawing. (C3, C2)
c3- Prepare and interpret engineering drawing. (C1)

D - General and transferable skills

By the end of the course the student should be able to:

d1- Communicate effectively with other discipline using the graphical language. (D1, D3)
d2- Expand their creative talents and to communicate their ideas in a meaningful manner. (D3)
d3- Search for information and engage in life –long sell learning discipline. (D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1, A2, A4, A5
B	Professional and practical skills	B2, B3, B4, B8
C	Intellectual skills	C1, C2, C3
D	General and transferable skills	D1, D3, D7

3 – Contents

Topic	Lecture hours	Tutorial hours
Drawing instruments , Draw sheets ; Scales; Folding		4
Lettering Alphabet of lines		4
Geometric Construction		8
Theory of orthographic projection		4
Projection of point ; line and plane ; true shape		4
Projection of geometric solids		8
Multi view drawing		12
Pictorial drawing (isometric)		8
Pictorial drawing (oblique)		4
Revision		4
Total hours		**60**

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods							Learning Methods				Assessment Method				
		Lecture	Presentations & Movies	Discussions &seminars	Tutorials	Problem solving	Laboratory & Experiments	Projects	Researches and Reports	Modeling and Simulation	Site Visits	Discovering	Written Exam	Practical Exam	Quizzes	Term papers	Assignments
Knowledge	a1	1	1		1								1				1
	a2	1	1		1	1				1			1		1		1
	a3	1	1		1	1				1			1				1
	a4	1			1	1							1		1		1
	a5	1			1	1				1			1		1		1
Intellectual	b1	1	1		1								1				1
	b2	1			1	1							1				1
	b3	1			1	1				1			1		1		1
Applied	c1	1			1	1				1			1				1
	c2	1			1	1				1			1				1
	c3	1			1												1
General Tran.	d1	1			1												1
	d2	1			1	1											1
	d3	1			1												1

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	20
Practical Exam	-	-
Written Exam	Sixteenth week	60
Total		100

6- List of References

6-1 Course notes

Engineering Drawing (1) by : Prof. Mamdouh Saber

6-2 Required books

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

6-3 Recommended books Non

6-4 Periodicals, Web sites etc .

http://graphicalcommunication.skola.edu.mt/syllabus/engineering-drawing/
www.geniusnepal.com/downloads/**drawing**tutorial
http://drawsketch.about.com/od/technicaldrawing/

7- Facilities Required for Teaching and Learning

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

Course Coordinator: Prof. Mamdouh Saber
Head of the Department: Dr. Abdelmagid A. Abdalla
Date: September 2015

Modern Academy for Engineering & Technology

Mechanical Engineering Department

M160: Production Engineering -Workshop I
Course Specifications

A- Affiliation

Relevant programs: Computer Engineering & Information Technology BSc. Program
Electronic Engineering & communication Tech. BSc. Program
Manufacturing Engineering & Production Tech. BSc Program
Architectural Engineering & Building Technology BSc. Program

Departments offering the programs: Electrical Engineering Dept.
Mechanical Engineering Dept.
Architectural Engineering Dept.

Department offering the course: Mechanical Engineering Dept.

Date of specifications approval: September 2015

B - Basic Information

Title: Production Engineering I **Code:** M160 **Year/level:** 1-st year / 1-st Term

Teaching Hours: **Lectures: 2** **Tutorial: --**
Practical: 2 **Total: 4**

C - Professional Information

1 – Course Learning Objectives

A study of this course will enable the student to:

- Be familiar with the basic production engineering, basics of casting, metal forming & welding
- Understand the essentials of Material properties, selection and testing principle.
- Incorporate his/her concurrent Knowledge related to production engineering in his /her future job.
- Illustrate the potential applications of die casting, rolling, drawing and special welding Processes as MIG , TIG and Co_2 welding in a variety of production engineering applications.
- Participate effectively in communities activities related to production engineering.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding

By the end of the course the student should gain the following knowledge.

a1- The basic production methods related to casting , metal forming processes and welding . (A1)
a2- The pattern design , allowances in casting & solidification . (A4)
a3- The basics of centrifugal casting process. (A2)

B - Intellectual skills

By the end of the course the student should be able to:

b1- Select the proper manufacturing process for a specific product. (B2)
b2- Design the pattern for sand casting, design of weld. (B3)
b3- Choose the suitable welding method. (B8)
b4- Use the principle of production engineering in producing good quality cheap product. (B10, B2)

C - Professional and practical skills

By the end of the course the student should be able to:

c1- Solve some simple production problems related to material and process selection. (C3)
c2- Use the studied manufacturing methods in producing prototypes during tutorials. (C7)
c3- Collect , record and submitting data about production engineering. (C1)

D - General and transferable skills

By the end of the course the student should be able to:

d1-Collaborate effectively within multidisciplinary team. (D1, D3)

d2-Communicate effectively. (D3)

d3- Effectively manage tasks, time, and resources. (D6)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1, A2, A4
B	Professional and practical skills	B2, B3, B8, B10
C	Intellectual skills	C1, C3, C7
D	General and transferable skills	D1, D3, D6

3 – Contents

Topic	Lecture hours		Tutorial hours
Role of prod eng., production system objective	2		
Types of industries Engineering materials	2		
Properties of materials , material testing principles	2		
Tensile test , hardness test , standardization	2		6
Impact test , fatigue test , creep test	3		4
Sand casting, melting of metals & furnaces	3		4
Solidification, pattern design	2		2
Pattern allowances, sand molding & gating system .	2		2
Die casting, centrifugal & investment casting	2		2
Hot & cold forming , forging , rolling	2		2
Extrusion , sheet &wire drawing	2		
Types of welding , design of welding	2		2
Oxy- acetylene welding , Electric-arc welding	2		4
Submerged arc welding , MIG ,TIG, resistance welding	2		2
Total hours	**30**		**30**

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods							Learning Methods				Assessment Method				
		Lecture	Presentations & Movies	Discussions &seminars	Tutorials	Problem solving	Laboratory & Experiments	Projects	Researches and Reports	Modeling and Simulation	Site Visits	Discovering	Written Exam	Practical Exam	Quizzes	Term papers	Assignments
Knowledge	a1	1	1	1									1	1	1	1	1
	a2	1	1	1						1			1	1	1	1	1
	a3	1	1	1						1			1	1	1	1	1
Intellectual	b1	1	1	1									1	1	1	1	1
	b2	1	1	1						1			1	1	1	1	1
	b3	1	1	1									1	1	1	1	1
	b4	1	1	1									1		1		1

Applied	c1	1		1									1	1		1	1
	c2	1	1														
	c3	1	1														
General Tran.	d1		1	1													
	d2			1											1		
	d3													1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	6-th Week	10
Practical Exam	13th Week	20
Written Exam	Sixteenth week	60
Total		100

6- List of References

6-1 Course notes Lecture notes & workshop training notes

6-2 Required books

6-3 Recommended books

Kazanas , H.c. and Baker , G. E., Basic Manufacturing processes, McGraw – Hill, 1981

6-4 Periodicals, Web sites etc . Non

http://www.indiabix.com/mechanical-engineering/production-engineering/

http://www3.nd.edu/~manufact/MET_Powerpoint.html

7- Facilities Required for Teaching and Learning

- Lecture room , laboratory and workshops

Course Coordinator: Prof. Ahmad Kohail
Head of the Department: Dr. Abdelmagid A. Abdalla
Date: September 2015

Modern Academy for Engineering & Technology

Basic Sciences Department

Course Specification

B 102:English Language II

A- Affiliation

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

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

Department offering the course: Basic Sciences Department
Date of specifications approval: September, 2015

B - Basic information

Title: English Language I **Code:** B 102 **Level:** 1ST. Year **Semester:** Second
Teaching hours: 2 **Lectures:**2 **Tutorial:** **Practical:**

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 everyday life. The course offers realistic and informative original situations introducing students to key concepts of different topics.

2 - Intended Learning Outcomes (ILOS)

a - Knowledge and understanding:

On successful completion of the course, the student should demonstrate knowledge and understanding of:
a1) identifying the most frequent words, phrases and grammar rules in everyday conversation. (A9), (A10)
a2) communicating effectively in written and oral forms, even at the very beginning levels. (A9), (A10)
a3) differentiating between tenses. (A9)

b - Intellectual skills:

On successful completion of the course, the student should be able to.
b1) enhance class interaction in terms of speaking, reading, listening and writing. (B4)
b2) personalize the learning experience by offering students interesting topics relevant to their interests and experiences. (B4)
b3) employ tasks which encourage students to take an active role in learning and using new vocabulary. (B4)
b4) use different tenses in conversation. (B4)

c - Professional and practical skills:

On successful completion of the course, the student should be able to:
c 1)write paragraphs and peer edit them using error detection. (C12)
c 2)communicate with each other and with the professor. (C11)
c 3)use different tenses in conversation. (C11)
c 4)brainstorm ideas for homework writing. (C12)

d - General and transferable skills:

On successful completion of the course, the student should be able to:

d1- work in a team and involve in group discussion. (D1), (D2), (D3)
d2- present data and results orally. (D1, D2, D3, D6)
d3- communicate effectively in written forms.(D3), (D7)
d4- search for information in references and in internet. (D4), (D7)
d5- practice self-learning. (D4), (D7), (D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A9, A10
B	Intellectual skills	B4
C	Professional and practical skills	C11, C12
D	General and transferable skills	D1, D2, D3, D4, D6, D7, D8

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
A Symphony in Concrete	8		
The electricity	10		
Subject, verb, object	4		
Verb to be	4		
Revision	4		
Total hours	**30**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods										Learning Methods				Assessment Method							
		Lecture	Warming up	Discussions	Tutorials	Problem solving						Researches and Reports	Modeling and Simulation			Written Exam	Class work	Quizzes	Class participation	Assignments			
e & Understa	a1	1	1	1								1				1	1	1	1	1			
	a2	1	1	1								1				1	1	1	1	1			
	a3	1	1	1								1				1	1	1	1	1			
Intellectual Skills	b1	1	1	1								1				1	1	1	1	1			
	b2	1	1	1								1				1	1	1	1	1			
	b3	1	1	1								1				1	1		1	1			
	b4	1	1	1								1				1	1	1	1	1			
Applied Professional Skills	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			
General Tran. Skills	d1	1	1	1								1				1			1				
	d2		1	1								1							1				
	d3	1	1	1								1							1	1			
	d4	1	1	1								1											
	d5		1									1							1				

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: quizzes, assignments and class participation	Bi-Weekly	10
Mid-Term Exam	7-th Week	5
Practical Exam	-	
Written Exam	Sixteenth week	35
Total		50

6- List of references:

6-1 Course notes:

El. KhoreibyA. H., Learn, Apply and Excel, lecture notes, Modern Academy Press, 2010.

6-2 Required books

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

6-3 Recommended books:

Shelton, James, **English for Engineering,** NTC publishing Group, Illinois, USA,2008.

6-4 Periodicals, Web sites, etc.:

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

7- Facilities required for teaching and learning:

- Library
- Internet

Course coordinator: Dr. Neveen Samir
Head of the Department: Prof. Dr Layla Soliman
Date: Sept. 2015

Modern Academy for Engineering & Technology

Basic Sciences Department

Course Specification

B 112: Mathematics-2(Integral Calculus and Linear Algebra)

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

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

Department offering the course: Basic Science Department
Date of specifications approval: September, 2015

B - Basic information

Title: Mathematics - 2 **Code:** B 112 **Level:** First **Semester:** Second
Teaching Hours: Total: 6 **Lectures:** 4 **Tutorial:** 2 **Practical:** --

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 the concepts of integral calculus and theory of linear algebra with their applications.

2 - Intended Learning Outcomes (ILOS)

a. Knowledge and understanding:

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

a1. Definition of anti-derivative, indefinite integral, definite integrals.(A1, A5)
a2. Methods of integration (integration by parts, substitution). (A1, A5)
a3. Integration rules of trigonometric functions, integration of rational functions, improper integrals. (A1, A5)
a4. Basic concepts of convergence of infinite sequences and series. (A1, A3)
a5. Solutions of linear systems using different methods. (A1, A3)
a6. Basic concepts of vectors, vector spaces and vector algebra. (A1, A3)
a7. Basics of Analytic geometry and basics of complex numbers. (A1, A3)
a8. Fundamentals of conic sections. (A1, A3)

b. Intellectual skills:

On successful completion of the course, the student should be able to.

b1. Investigate the geometric interpretation of the integration. (B1, B2, B3)
b2. Develop techniques for using basic integration formulas to obtain indefinite integrals of complicated functions.(B1, B2, B3, B7)
b3. 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. (B1, B2, B3, B4, B7)
b4. Develop several tests to determine whether a series is convergent or divergent without explicitly finding its sum. (B1, B2, B3, B4, B7)

b5. Estimate of the sum of the convergent series and the error using various methods. (B1, B11)
b6. Derive the equation and main geometric properties of lines, planes and conic sections. (B2, B3, B4)
b7. Solve linear systems using different methods of linear algebra. (B2, B3, B4)
b8. Solve problems on vectors, vector spaces and vector algebra. (B2, B3, B4)

c - Professional and practical skills:
On successful completion of the course, the student should be able to:
c1. apply methods of integration and to engineering problems.(C1,C12)

d - General and transferable skills:
On successful completion of the course, the student should be able to:

d1. Work in a team and involve in group discussion and seminars (D1, D3).
d2. Communicate effectively and present data and results orally and in written form (D3).
d3. Search for information's in references and in internet (D7).

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1, A3, A5
B	Intellectual skills	B1, B2, B3, B4, B7, B11
C	Professional and practical skills	C1, C12
D	General and transferable skills	D1, D3, D7

Course Content

	Topic	Lecture hours	Tutorial hours
1	Anti-derivative, indefinite integral	3	2
2	Definite integrals and the fundamental thearem of calculus	3	1
3	Methods of integration (integration by parts, substitution)	4	2
4	Integration of trigonometric functions	3	2
5	Trignometric Substitutions	3	1
6	Integration of rational functions	4	2
7	Miscellaneous Substitutions, improper integrals	4	2
8	Application of definite integral(area, volume, arc length, surface area)	4	2
9	Sequences, series	4	2
10	Equations of lines, planes and circles	4	2
11	Conic sections (parabola, ellipse, hyperbola)	4	2
12	Complex numbers and polar coordinates	4	2
13	Matricies with applications	8	4
14	Vectors and vector spaces	8	4
	Total hours	**60**	**30**

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods										Learning Methods				Assessment Method							
		Lecture	Presentations and Movies	Discussions and seminars	Tutorials	Problem solving						Researches and Reports	Modeling and Simulation			Written Exam	Practical Exam	Quizzes	Term papers	Assignments			
Knowledge & Understanding	a1	1		1	1							1				1		1		1			
	a2	1	1		1	1										1		1		1			
	a3	1			1	1										1		1	1	1			
	a4	1		1	1	1						1				1		1	1	1			
	a5	1	1		1	1						1				1		1	1	1			
	a6	1		1	1	1						1				1		1	1	1			
	a7	1	1		1	1						1				1		1		1			
	a8	1			1	1						1				1		1		1			
Intellectual Skills	b1	1			1	1										1		1		1			
	b2	1			1	1										1		1	1	1			
	b3	1	1	1	1	1						1				1		1	1	1			
	b4	1			1	1										1		1		1			
	b5	1			1	1										1		1	1	1			
	b6	1		1	1	1						1				1			1	1			
	b7	1	1		1	1						1				1			1	1			
	b8	1		1	1	1						1				1			1	1			
Applied Professional Skills	c1	1		1	1	1						1				1				1			
General Tran. Skills	d1			1		1						1							1				
	d2		1	1								1							1				
	d3		1	1								1							1				

5- Assessment Timing and Grading:

Asesement Method	Timing	Grade (Degrees)
Quizes, assignments, term papers	Weekly	20
Mid-Term Exam	7-th Week	10
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes:

M. Khalefa, Integration and Analytic Geometry, Lecture Notes, 2013

M. Khalefa, Linear Algebra, Lecture Notes, 2013

6-2 Required books

R. E. Larson and B. H. Edwards, "Elementary Linear Algebra", 2-nd Edition, DG Heath and Company, Toronto, 1991.

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

P. H. Selby, Analytic Geomatry, Books for Professional, Inc., 1986.

6-3 Recommended books:

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

6-4 Periodicals, Web sites, etc.

www.sosmath.com www.mathworlds.com.

7- Facilities required for teaching and learning:

- Library, Required references
- Computer, Internet
- Data show

Course coordinator:	Dr. Sameh Shenawy
Head of the Department:	Prof. Dr. Laila Soliman
Date:	September, 2015

Modern Academy for Engineering & Technology

Basic Sciences Department

Course Specification

B132:Physics 2- Electricity, Magnetisms and Optics

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

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

Department offering the course: Basic Science Department
Date of specifications approval: September, 2015

B - Basic information

Title: Physics 2 **Code:** B 132 **Level:** First. **Semester**: Second.
Total Hours 5 hrs. **Lectures** 2 hrs. **Tutorial** 1 hrs. **Practical** 2 hrs.

C - Professional information

1 – Course Learning Objectives:

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

2 - Intended Learning Outcomes (ILOS)

a - Knowledge and understanding:

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

a1- fundamental and basic law of applications in electricity, magnetism and electromagnetism (A1, A3) .
a2- Gausses law in electricity for different type of charged bodies (A1 , A3).
a3- laws of electric capacitors and effect of dielectric (A5).
a4- direct current, resistance and solution of simple electric circuits and kerchief's laws (A5)
a5- analogy between magnetic field and electric field., and application of Ampere's law, Gausse's law in magnetism (A3) .
a6- magnetic properties of matter (A3, A5).
a7- fundamental theories of Electro-magnetic waves and main physical phenomena of physical optics (interference, diffraction and polarization) (A5) .

b - Intellectual skills:

On successful completion of the course, the student should be able to.

b1- investigate electric force and electric field (using Gauss's law) and select the proper manner to solve problem (B2, B3, B4).
b2- study of capacitors' and dielectric effect, uses of capacitors, and use Kirchoff's laws to solve simple electric circuits (B3,B4).
b3- investigate and compere 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 (B3, B4,B5).

c - Professional and practical skills:

On successful completion of the course, the student should be able to:

c1- identify ohms law practically, and comparison between two nearly equal resistance by carey-foster bridge (C1, C5,C12).

c2- determine time constant for (Rc) circuits (C1, C5,C12).

c3- determine power, focal length for lenses and mirrors (convex and concave) (C1, C5,C12).

c4- perform a physical experiment (Absorption co-efficient, polarization and Newton's rings) (C1,C5, C12).

d - General and transferable skills:

On successful completion of the course, the student should be able to:

d1- write technical reports(D5)

d2- use libraries information's in subjects (D7)

d3- search for information's in references and in internet(D7).

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1,A3, A5
B	Intellectual skills	B2, B3, B4, B5
C	Professional and practical skills	C1, C5,C12
D	General and transferable skills	D5, D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
Charge and Matter, The Electric Field, Gauss' law	2	1	2
Gauss's law, Electric Potential	2	1	2
Gauss's law applications	2	1	2
Capacitors and Dielectric	2	1	2
Current and Resistance, Electromotive force and Circuits	2	1	2
The Magnetic Field, Ampere's Law	2	1	2
Ampere's law, Inductance	2	1	2
Magnetic Properties of matter	2	1	2
Magnetic Properties of matter, Electromagnetic Waves	2	1	2
Electromagnetic Waves	2	1	2
Electromagnetic Waves, Physical Optics, Polarization of light	2	1	2
Polarization of light	2	1	2
Interference of light	2	1	2
Interference of light, Diffraction of light	2	1	2
Diffraction of light, Some applications	2	1	2
Total hours	**30**	**15**	**30**

4 – Teaching, Learning and Assessementmethods:

Course IL O's		Teaching Methods						Learning Methods		Assessement Method				
		Lecture	Presentations and Movies	Discussions and seminars	Tutorials	Problem solving	Laboratory & Experiments	Researches and Reports	Modeling and Simulation	Written Exam	Practical Exam	Quizes	Term papers	Assignments
Knowledge	a1	1		1	1	1	1	1		1	1	1	1	1
	a2	1			1	1				1		1	1	1
	a3	1			1	1	1			1	1	1	1	1
	a4	1			1	1	1			1	1	1	1	1
	a5	1		1	1	1		1		1			1	1
	a6	1		1	1	1		1		1			1	1
	a7	1		1	1	1	1	1		1	1		1	1
Intellectual	b1	**1**			**1**	**1**				1		1	1	**1**
	b2	**1**			**1**	**1**				1		1	1	**1**
	b3	**1**		**1**	**1**			**1**					1	**1**
Applied	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
General	d1	1		1		1		1					1	1
	d2			1				1					1	1
	d3			1				1					1	1

5- Assessment Timing and Grading:

Asessement Method	Timing	Grade (Degrees)
Semister Work: seminars, quizes assignments and reports	Bi-Weekly	10
Mid-Term Exam	7-th Week	10
Practical Exam	Fifteenth week	20
Written Exam	Sixteenth week	60
Total		100

6- List of references:

6-1 Course notes

M. El- Tawab Kamal , Abo- Elyzeed B. Abo- Elyzeed, Marwa Yahia Shoeib and Nagat A. Salam Elmahdy,Electricity, Magnetisms and Optics, Lecture notes, Modern Academy, 2012.

6-2 Required books:

Halliday, D., Resnick, R., Wallker, J.(1993) Fundamentals of Physics .John Wiley, New York.

6-3 Recommended books

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

6-4 Periodicals, Web sites, etc.

www.bookstore.org
http://2020ok.com/14545.htm
http://booksgoogle.com/

7- Facilities required for teaching and learning:

- Physics Lab.
- Computer, and Data show
- Liberary
- Internet

Course coordinator: Dr. Marwa Shoeib
Head of the Department: Professor Dr. Laila Soliman
Date: September 2015

Modern Academy for Engineering & Technology

Basic SciencesDepartment

Course Specification

B 122: 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

Department offering the program: Mechanical Engineering Department
Electrical Engineering Department
Architectural Engineering Department

Department offering the course: Basic SciencDepartment

Date of specifications approval: September, 2015

B - Basic information

Title: Mechanics-2 **Code:** B122 **Level:** First/Second. Semester: First / Second

Hours Credit/Total 3 hrs Lectures 2 hrs Tutorial 2 hrs

C - Professional information

1 – Course Learning Objectives:

By the end of this course the students should demonstrate the knowledge and understanding 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 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

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

a1- basic of dynamics like velocity, acceleration, total distance, average velocity and average speed(A1, A3).

a2- defention of differentiation and integration (A1)

a3- classification the particle's motion in straight line and in curved path and it's applications (A3,A4)

a4- understanding the dynamics system and the effect of forces on the system in different coordinates (A4).

a5- classification of two methods of kinetics, namely,the method of work and energy and method of impulse and momentum. (A4)

B - Intellectual skills:

On successful completion of the course, the student should be able to.

b1- 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 (B1, B2,B11)

b2- classify and compare the different between the average velocity and average speed (B4,B5, B13).

C - Professional and practical skills:

On successful completion of the course, the student should be able to:

c1- solve the equation of motion to get velocity,acceleration and total distance traveled at any time. (C1,C2)

c2- calculate the time of flight of projectile to get a target. (C1, C7).

c3- solve the equation of motion graphically.(C2)

D- General and transferable skills:

On successful completion of the course, the student should be able to:

d1- work in a team to solve problem as a search.(D1,D2, D9)

d2- search for information in references and in internet (D2, D8).

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1 A3, A4
B	Professional and practical skills	B1, B2, B3, B4, B11,B13
C	Intellectual skills	C1, C2, C7
D	General and transferable skills	D1, D2, D8, D9

3 – Contents

Topic	Lecture hours	Tutorial hours
➢ Rectilinear Motion of particles.	1	4
➢ Determination of the motion of a particle.	1	4
➢ Graphical Solution of Rectilinear Motion.	1	4
➢ Curvilinear Motion of particle, Free Flight Motion.	2	4
➢ Curvilinear Motion of particle:		
➢ Normal and Tangention.	1	4
➢ Plane Curvilinear Motion.	1	4
➢ Polar Coordinates.	1	4
➢ Kinetics of Particles, Force and acceleration.	2	4
➢ Kinetics of Particles Energy and Momentum Methods	2	4
➢ Motion under a conservative centeral force.	1	4
➢ Principle of Impulse and Momentum for particle.	2	5
Total hours	**15**	**45**

4 – Teaching, Learning and Assessementmethods:

Course ILO's		Teaching Methods										Learning Methods				Assessement Method							
		Lecture	Presentations and Movies	Discussions and seminars	Tutorials	Problem solving	Laboratory & Experiments					Researches and Reports	Modeling and Simulation			Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge	a1	1			1	1						1				1		1	1	1			
	a2	1			1	1										1		1	1	1			
	a3	1			1	1						1				1		1	1	2			
	a4	1			1	1						1				1		1	1	1			
	a5	1			1											1		1	1	1			
Intellectual	b1	**1**			**1**											1		1		**1**			
	b2	**1**			**1**	**1**										1		1	**1**	**1**			
Applied	c1	1			1	1										1		1	1	1			
	c2	1			1											1		1	1	1			
	c3	1			1	1													1	1			
General	d1					1						1							1				
	d2											1							1				

5- Assessment Timing and Grading:

Asessement Method	Timing	Grade (Degrees)
Semister Work: seminars, quizes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes: found

6-2 Required books:

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

R.C. Hibbeler Engineering mechanics, Dynamics.

6-3 Recommended books: Non

6-4 Periodicals, Web sites, etc.

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

Course coordinator: Professor Dr Hassan Awad

Head of the Department: Dr Laila Soliman

Date: September 2015

Modern Academy for Engineering & Technology
Course Specification
B142 Descriptive Geometry

A- Affiliation

Relevant programs: Computer Engineering & Information Technology BSc. Program
Electronic Engineering & communication Tech. BSc Program
Manufacturing Engineering & Production Tech. BSc Program
Architectural Engineering & Building Technology BSc Program

Departments offering the programs: Electrical Engineering Dept.
Mechanical Engineering Dept.
Architectural Engineering Dept.

Department offering the course: Architectural Engineering Dept
Date of specifications approval: September, 2015

B - Basic Information

Title: Descriptive Geometry **Code:** B142 **Year/level:** 1-st year / 2-nd Term
Teaching Hours: **Lectures:** 2 **Tutorial:** 2
Practical: -- **Total:** 4

C - Professional Information

1 – Course Learning Objectives

The course basically aims at introducing students to kinds of projections - plane geometry - mong's projection - Representation of points - straight lines - plane - Auxiliary projection planes - position problems - Metric problems - Polyhedral - Development - Circle - Sphere - Cone - Cylinder - Plane sections - Helix and helical curves- Helical surfaces.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding

By the end of the course the student should gain the following knowledge

a1. Concepts and theories of mathematics and sciences, appropriate to the discipline. (A1)

a2- Principles of design including elements design, process and/or a system related to specific disciplines.(A5)

B - Intellectual skills

By the end of the course the student should be able to:

b1- Think in a creative and innovative way in problem solving and design. (B3)

b2- Combine, exchange, and assess different ideas, views, and knowledge from a range of sources.(B4)

C - Professional and practical skills

By the end of the course the student should be able to:

c1- Apply knowledge of mathematics, science, information technology, design, business context and engineering practice integrally to solve engineering problems. (C1)

c2- Practice the neatness and aesthetics in design and approach (C4)

D - General and transferable skills

By the end of the course the student should be able to:

d1- Work in stressful environment and within constraints (D4)

d2- Communicate effectively (D3)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1 , A5
B	Professional and practical skills	B3 , B4
C	Intellectual skills	C1 , C4
D	General and transferable skills	D3 , D4

3 – Contents

Topic	Lecture hours	Tutorial hours
• Kinds of projections	2	2
• Plane geometry.	2	2
• Representation of points.	2	2
• straight lines	4	4
• Plane.	4	4
• Auxiliary projection planes.	4	4
• position problems	2	2
• Metric problems	2	2
• Plane sections	4	4
• Circle.	2	2
• Revision	2	2
Total hours	**30**	**30**

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods										Learning Methods				Assessment Method				
		Lecture	Warming up	Discussions	Tutorials	Problem solving						Researches and Reports	Modeling and Simulation			Written Exam	Class work	Quizzes	Class participation	Assignments
Knowledge	a1	1	1	1									1			1	1	1	1	1
	a2	1	1	1									1			1	1	1	1	1
Intellectual	b1	1			1	1							1			1	1	1	1	1
	b2	1			1	1							1			1	1	1	1	1
Applied	c1			1	1	1							1			1	1	1	1	1
	c2			1	1	1							1			1	1	1	1	1
General Tran.	d1			1		1						1	1					1	1	
	d2			1		1						1	1					1	1	

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of References

6-1 Course notes

6-2 Required books

- R.R. Dhawan, " A First Year Engineering Drawing", Text Book, Ratsor Publishing Hous

6-3 Recommended books

- R.R. Dhawan, " A First Year Engineering Drawing", Text Book, Ratsor Publishing House

James H.Earle, "Graphics for Engineers", Text Book.

6-4 Periodicals, Web sites, etc.

7- Facilities Required for Teaching and Learning

- Library
- Data show

Course coordinator: Associate Prof . Mona Elbasyouni
Head of the Department: Associate Prof .Nahed Omran
Date: Sept. 2015

Modern Academy for Engineering & Technology

Mechanical Engineering Department

M151: Engineering Drawing & Projection II
Course Specifications

A- Affiliation

Relevant programs: Computer Engineering & Information Technology
Electronic Engineering & communication Technology
Manufacturing Engineering & Production Technology
Architectural Engineering & Building Technology

Departments offering the programs: Electrical Engineering Dept.
Mechanical Engineering Dept.
Architectural Engineering Dept.

Department offering the course: Mechanical Engineering Dept.

Date of specifications approval: September 2015

B - Basic Information

Title: Engineering Graphics II **Code:** M151 **Year/level:** 1-st year / 2-nd Term

Teaching Hours: **Lectures: 2** **Tutorial: 4**
Practical: -- **Total: 6**

C - Professional Information

1 – Course Learning Objectives

A study of this course will enable the student to:

A study of this course will enable the student to:

- Originate section, know ways of drawing and location of cross section.
- Use the principles of drawing different types of sections for showing internal features.
- Apply the conventional way in sections and dimensions for presentation of figures.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding

By the end of the course the student should gain the following knowledge.

a1- Section views. (A1, A2, A4)
a2- Presentation of components in sectional views. (A1, A2)
a3- Conventional way in sectional views. (A1, A2)
a4-The correct rules for dimensioning.(A1, A4)

B - Intellectual skills

By the end of the course the student should be able to:

b1- Draw different problems in sectional views. (B3, B9)
b2- Select the proper section for each component. (B3, B8)
b3- Draw dimensions for components from production point of view. (B3, B9)

C – Professional and practical skills

By the end of the course the student should be able to:

c1- Read orthographic drawing with sectional views. (C1, C3, C4)
c2- Make necessary views using sections and dimensioning. (C1, C3, C4)
c3- Communicate by graphic language. (C3, C4)

D – General and transferable skills

By the end of the course the student should be able to:

d1- Communicate graphically effectively. (D3)
d2- Refer to relevant literature. (D9)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1, A2, A4
B	Professional and practical skills	B3, B8, B9
C	Intellectual skills	C1, C3, C4
D	General and transferable skills	D3, D9

3 – Contents

Topic	Lecture hours	Tutorial hours
• Importance of drawing sections	2	4
• Basic types of sections	2	4
• Full sections : longitudinal ,cross – section	2	4
• Off set ; aligned sections	2	4
• Half-section ;Partial S.; Revolved	2	4
• & Auxiliary sections .	2	4
• Dimensioning – Arrangements of	2	4
• dimensions – Rules for dimensions	2	4
• of circles ; radii ; angles ; plain holes	2	4
• Conventional practice in ED	2	4
• Drawing of steel sections	2	4
• Steel constructions	6	12
• Revision	2	4
Total hours	**30**	**60**

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods							Learning Methods				Assessment Method				
		Lecture	Presentations & Movies	Discussions &seminars	Tutorials	Problem solving	Laboratory & Experiments	Projects	Researches and Reports	Modeling and Simulation	Site Visits	Discovering	Written Exam	Practical Exam	Quizzes	Term papers	Assignments
Knowledge	a1	1	1		1								1				1
	a2	1	1		1					1			1				1
	a3	1	1		1					1			1		1		1
	a4	1			1								1				1
Intellectual	b1	1	1		1	1				1			1				1
	b2	1	1		1	1				1			1				1
	b3	1	1		1	1				1			1				1
Applied	c1	1			1	1				1			1				1
	c2	1	1		1	1				1			1				1
	c3	1	1		1	1				1			1				1
General Tran.	d1	1	1		1	1				1			1				1
	d2	1	1		1	1				1			1				1

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	20
Practical Exam	-	-
Written Exam	Sixteenth week	60
Total		100

6- List of References

6-1 Course notes

Engineering Drawing (2) by : Prof. Mamdouh Saber

6-2 Required books

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

6-3 Recommended books

Non

6-4 Periodicals, Web sites etc .

Non

http://graphicalcommunication.skola.edu.mt/syllabus/engineering-drawing/

www.geniusnepal.com/downloads/**drawing**tutorial

http://drawsketch.about.com/od/technicaldrawing/

7- Facilities Required for Teaching and Learning

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

Course Coordinator: Prof. Mamdouh Saber

Head of the Department: Dr. Abdelmagid A. Abdalla

Date: September 2015

Modern Academy for Engineering & Technology

Mechanical Engineering Department

M161: Production Engineering - Workshop II
Course Specifications

A- Affiliation

Relevant programs: Computer Engineering & Information Technology
Electronic Engineering & communication Technology
Manufacturing Engineering & Production Technology
Architectural Engineering & Building Technology

Departments offering the programs: Electrical Engineering Dept.
Mechanical Engineering Dept.
Architectural Engineering Dept.

Department offering the course: Mechanical Engineering Dept.
Date of specifications approval: September 2015

B - Basic Information

Title: Production Engineering II **Code:** M161 **Year/level:** 1-st year / 2-nd Term
Teaching Hours: **Lectures: 2** **Tutorial: --**
Practical: 2 **Total: 4**

C - Professional Information

1 – Course Learning Objectives

A study of this course will enable the student to:

- Be familiar with the basics of machining methods, turning, drilling, milling, shaping & grinding
- understand the essential requirements for tool materials and tool geometry
- Incorporate his/her concurrent knowledge related to machining processes in his/her future job
- Apply his / her knowledge to estimate manufacturing cost & select production method
- Illustrate the potential application of different machining methods in production
- Participate effectively in communities activities related to parts manufacturing

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding

By the end of the course the student should gain the following knowledge.

a1- Identification of the basic conventional machining methods, tools, machine tools & function of its parts.(A1)
a2- The effect of the selection of operation & working conditions on the accuracy.(A4)
a3- The basic elements of manufacturing cost machining & production time. (A2)
a4- Definition of the types, properties and use of different kinds of tool materials. (A1)

B - Intellectual skills

By the end of the course the student should be able to:

b1-Choose the suitable machining method to reach prescribed accuracy. (B2)
b2- Elaborate the proper technological procedure.(B3)
b3- Select the machine tool (tools & working conditions). (B2)
b4-Analyze the elements of cost which enables him/her to choose the proper level of machine automation. (B10, B2)

C - Professional and practical skills

By the end of the course the student should be able to:

c1- Use the studied machining methods producing prototypes during practice. (C3)
c2- Solve simple machining problems related to time study and production costing. (C7)
c3- Collect and submit data about workshop activities. (C1)

D - General and transferable skills

By the end of the course the student should be able to:

d1- Effectively manage tasks, time, and resources. (D1, D3)
d2-Collaborate effectively within multidisciplinary team. (D3, D9)
d3- Search for information and engage in life-long self-learning discipline. (D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1, A2, A4
B	Professional and practical skills	B2, B3, B10
C	Intellectual skills	C1, C3, C7
D	General and transferable skills	D1, D3, D7, D9

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
Basic machining methods , types of production	2		2
Principle of chip formation in orthogonal cutting	2		2
Mechanical & thermal stresses on tool, favorite properties	2		2
For tool materials , hot hardness			
Common types of tool materials , properties & application	2		2
Geometry of single point tool , angles , types	2		
Turning	4		6
Drilling	2		2
Milling	2		4
Time of machining & time study	2		
Principle of shaping , planning , slotting & broaching	2		4
Grinding operations , grinding which selection & accuracy	2		2
Technological procedure , selection of cutting conditions	2		4
Costing of machined parts , elements of cost	4		
Total hours	**30**		**30**

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods							Learning Methods				Assessment Method				
		Lecture	Presentations & Movies	Discussions &seminars	Tutorials	Problem solving	Laboratory & Experiments	Projects	Researches and Reports	Modeling and Simulation	Site Visits	Discovering	Written Exam	Practical Exam	Quizzes	Term papers	Assignments
Knowledge	a1	1	1	1									1	1	1	1	1
	a2	1	1	1						1			1	1	1	1	1
	a3	1	1	1						1			1	1	1	1	1
	a4	1	1	1									1	1	1	1	1
Intellectual	b1	1	1	1									1	1	1	1	1
	b2	1	1	1									1		1		1
	b3	1		1									1	1		1	1
	b4	1			1	1		1	1				1	1	1	1	1
Applied	c1	1	1														
	c2		1	1													
	c3			1											1		
General Tran.	d1	1	1	1									1	1	1	1	1
	d2	1	1	1						1			1	1	1	1	1
	d3	1	1	1						1			1	1	1	1	1

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	7-th Week	10
Practical Exam	13th Week	20
Written Exam	Sixteenth week	60
Total		100

6- List of References

6-1 Course notes Lecture notes & workshop training notes

6-2 Required books

6-3 Recommended books

Kazanas HC and Baker GE, Basic Manufacturing processes, McGraw-Hil 1981.

6-4 Periodicals, Web sites etc.: Non

http://www.indiabix.com/mechanical-engineering/production-engineering/

http://www3.nd.edu/~manufact/MET_Powerpoint.html

7- Facilities Required for Teaching and Learning

- Lecture room , laboratory and workshops

Course Coordinator: Prof. Ahmad Kohail

Head of the Department: Dr. Abdelmagid A. Abdalla

Date: September 2015

Modern Acadmy for Engineering & Technology

Electrical Engineering Department

Course Specification

E112: Introduction to Computers II

A- Affiliation

Relevant programs: Computer Engineering & Information Technology
Electronic Engineering & communication Technology
Manufacturing Engineering & Production Technology
Architectural Engineering & Building Technology
Computer Engineering & Information Technology

Departments offering the program: Electrical Engineering Departement

Department offering the course: Electrical Engineering Departement
Date of specifications approval: September 2015

B- Basic information

Title: Introduction To Computers (II) **Code:** E112 **Year/level:** 1st year- 2nd semester
Teaching Hours: **Lectures:** 2 **Tutorials:** -
Practical: 2 **Total: 4**

C - Professional information

1. Course Learning Objectives:

A study of this course will enable the student to understand the concepts of information system, files and databases and to understand the concepts of programming and to use spread sheet programs to produce tables and graphs.

2. Intended Learning Outcomes (ILOS):

A – Knowledge and understanding

By the end of this course the student should acquire the following knowledge and understanding:

a1- the differentiate between application and system software (A15)
a2- the concepts of information technology (A2)
a3- the different communications channels (A2 , A17)
a4- how to build a good database (A5)
a5- the different methods and languages to develop a program (A18)
a6- how to Use Word processors to edit, format and print texts (A7)
a7- how to Use spread sheets in the form of tables with intensive formula cells (A7)
a8- Know how to Use simple databases using common Data Base Management System (A5)

B – Intellectual skills

By the end of the course the student should be able to:

b1- Design format specifications for texts.(B12)
b2- Construct and implement formulas from given requirements (B11)
b3- Allocate data tables and relationships between them (B1)
b4- Design simple program specifications (B1,B2)
b5- Develop computer programs.

C – Professional and practical skills

By the end of the course the student should be able to:

c1- Create and run simple database programs (C17)
c2- Create spread sheets with heavy calculation tasks (C14)
c3- Write and print formatted texts (C14 , C16)
c4- Write and execute computer programs.(C15)

D – General and transferable skills

By the end of the course the student should be able to:
d1- Communicate effectively in written form (D1 ,D3)
d2- Demonstrate efficient IT capabilities.(D4)
d3- Search for information and adopt life-long self-learning(D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A2, A5, A7, A15, A17, A18
B	Professional and practical skills	B1, B2 ,B11 ,B12
C	Intellectual skills	C14 ,C15 ,C16 ,C17
D	General and transferable skills	D1,D3 ,D4 ,D7

3- Course Contents:

Topic	Lecture hours	Tutorial hours	Practical hours
• Information technology	2		
• Communications	2		
• Files and databases	2		
• Computer languages (HLL, LLL)	6	-	
• Compilers	2	-	
• Operating systems (types and functions)	4	-	
• Application software (Word Processing)	2	-	2
• Application software (Spread Sheets)	2	-	10
• Application software (Files and Databases)	2	-	6
• Introduction to programming	6		12
Total hours	**30**	**-**	**30**

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods						Learning Methods			Assessment Method			
		Lecture	Presentations & Movies	Discussions & Seminars	Tutorials	Problem solving	Laboratory & Experiments	Researches and Reports	Modeling and Simulation	Site Visits	Quizzes & Presentations	Assignments	Written Exam	Practical Exam
Knowledge	a1	1		1									1	
	a2	1		1									1	
	a3	1											1	
	a4	1											1	
	a5	1											1	
	a6	1											1	
	a7	1											1	
	a8	1											1	
Intellect	b1										1	1	1	

	b2											1	1	
	b3										1	1	1	
	b4					1						1	1	
	b5					1							1	
Applied	c1		1			1								1
	c2		1											1
	c3		1											1
	c4		1											1
General Tran.	d1			1				1			1			
	d2			1				1						
	d3			1				1			1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes

S. A. Gawish, Introduction to computers (2), Cairo,2008
A. A. Khedr Introduction to computers (2),practical part, Cairo,2008

6-2 Essential books (text books)

Gale E., Introduction to Micro-computing, Newell,1991.
Peter Norton's. Introduction to computers, Fifth edition , Student Edition, 2002
David Reed . A Balanced Introduction to computer Science, Prentice hall , 2004

6-3 Recommended books

Non

6-4 Periodicals, Web sites, etc.: Non

7- Facilities required for teaching and learning:

Computer Labs.
Data show and Computer programs; Microsoft office

Course coordinator: Prof. Dr. Said A. Gawish
Head of the Department: Prof. Dr. Said A. Gawish
Date: September 2015

Course Specifications

Architectural Engineering and Building Technology Department

Second Year

Code	Name
B 252	Mathematics-7 (Statistical Math. for Architectural Engineering)
A211	Architectural design(1-a)
A212	Architectural design(1-b)
A221	History and Theory of Arch. (1-a)
A222	History&Theory of Arch. (1-b)
A231	Building construction(1-a)
A232	Building construction(1-b)
A241	Sciagraphy and perspective
A242	Properties & Strenght of material
A251	Visual traning (1)
A261	Theory of structures (a)
A262	Theory of structures (b)
A271	Surveying
A281	Computer Applications (Cad)-a
A282	Computer Applications (Cad)-b
A291	Building technology-a
A292	Building technology-b

Modern Academy for Engineering & Technology

Basic Sciences Department

Course Specification

B 252: Mathematics-7 (Statistical Mathematics for Architectural Engineering)

A- Affiliation

Relevant program: Architecture Engineering and Building Technology BSc Program

Department offering the program: Architecture Engineering and Building Technology Department

Department Date offering the course: Basic Sciences Department

of specifications approval: September, 2015

B - Basic information

Title: Mathematics-7(Statistical Mathematics) **Code:** B 252 **Level:** 2nd year **semester**: 2nd
Total Hours: 4 **Lectures:** 2 **Tutorial:** 2 **Practical:** -

C - Professional information

1 - Course Learning Objectives:

The main objective of this course is to enable the student 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 - Intended Learning Outcomes (ILOS)

a - Knowledge and understanding:

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

a1- main rules and notions of functions and set theory.(A1, A2, A10)
a2- basics and different rules of probability theory.(A1, A2, A10)
a3- discrete and continuous probability distributions and rules of their expectation and their standard deviation(A1, A2, A10).
a4- notions of descriptive statistics, probability concepts, binomial and normal distributions, as well as the notions of conditional probability and counting techniques. (A1, A5, A10)
a5- principles of sampling and the central limit theorem, estimation, hypothesis testing, regression and correlation and Chi-square analysis. (A1, A2, A5, A10)
a6- basic concepts of statistics, measures of location and measures dispersion.(A1, A2)

b - Intellectual skills:

On successful completion of the course, the student should be able to.

b1-describe discrete data graphically and compute measures of centrality and dispersion. (B1, B2)
b2- compute probabilities by applying different probability rules and theorems of probability.(B1, B2, B4, B7)
b3- construct the probability distribution of a random variable, based on a real-world situation, and use it to compute expectation and variance.(B1, B2, B7)
b4- apply basic concepts of probability functions, Mathematical expectation, variables, discrete distribution, binomial distribution, continuous distribution, and normal distribution to

applications. (B1, B2)

b5- evaluate and analyze basic concepts of statistics, sampling, the central limit theorem, estimation, hypothesis testing, regression, Chi-square analysis of variance. (B1, B2, B3, B11)

c - Professional and practical skills:

On successful completion of the course, the student should be able to:

c1- apply probability and statistics methods to engineering problems(C1, C2, C7, C13)

d - General and transferable skills:

On successful completion of the course, the student should be able to:

d1- Write technical reports.(D3)

d2- Communicate effectively in written form.(D3).

d3-Search for information's in references and in internet (D7).

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1, A2, A5, A10
B	Intellectual skills	B1, B2, B3, B4, B7,B11
C	Professional and practical skills	C1, C2, C7, C13
D	General and transferable skills	D3, D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
Functions, curve equation relationship.	4	4	
Set theory, Random events, and probability functions.	4	4	
Mathematical expectation, conditional probability.	4	4	
Binomial distribution, normal distribution.	4	4	
Sampling and the central limit theorem.	4	4	
Estimation, hypothesis testing.	4	4	
Regression and correlation.	2	2	
Chi-square analysis and analysis of variance.	4	4	
Total hours	**30**	**30**	**-**

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods						Learning Methods				Assessment Method			
		Lecture	Discussions and seminars	Tutorials	Problem solving			Researches and Reports	Modeling and Simulation			Written Exam	Quizzes	Assignments	
Knowledge & Understanding	a1	1	1	1	1			1				1	1	1	
	a2	1		1	1			1				1	1	1	
	a3	1		1	1			1				1	1	1	
	a4	1	1	1	1			1	1			1	1	1	
	a5	1	1	1	1			1	1			1	1	1	
	a6	1	1	1	1			1	1			1	1	1	
Intellectual Skills	b1	1		1	1							1	1	1	
	b2	1						1	1						
	b3	1	1		1			1							
	b4	1		1	1			1				1	1	1	
	b5	1		1				1				1			
Applied Professional Skills	c1	1	1						1			1			
General Tran. Skills	d1		1		1			1						1	
	d2	1	1	1	1			1						1	
	d3	1						1						1	

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: quizzes and assignments	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes:

Osama El-Gayar, Statistical Mathematics for Architectural Engineering, Lecture Notes, Modern Academy, Egypt, 2013.

6-2 Required books

- E. Kreyszig, Advanced Engineering Mathematics, 8ed, John Willey & Sons, Inc., 1999
- R.E. Walpole, R.H. *Myers* and S.L. *Meyers*, *Probability and Statistics* for Engineers and Scientists, sixth edition. *Prentice-Hall 1998*.

6-3 Recommended books:

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

6-4 Periodicals, Web sites, etc.

www.mathworlds.com.
www.sosmath.com

7- Facilities required for teaching and learning:

- Library
- Internet

Course coordinator: Dr. Ghada Salem
Head of the Department: Prof. Dr. Lila Soliman
Date: September 2015

Modern Academy for Engineering and Technology

Course Specification

A211: Architectural Design – (1-a)

A- Affiliation

Relevant program: Architectural Engineering and Building Technology
Department offering the program: Architectural Engineering and Building Technology Dpt.
Department offering the course: Architectural Engineering and Building Technology Dpt.

Date of specifications approval: September,2015

B - Basic information

Title: Architectural Design (1-A) **Code: A211** **Year/level:** Second year 1st semester

Teaching Hours: **Lectures:** 6 **Tutorial:**
Practical: **Total:** 6

C - Professional information

1 – Course Learning Objectives:

The main objective of this course is to acquire the basics of Design process and . Develop design skills.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.

a1 - Seeking, defining and articulating architectural problems. (A4,A14)
a2 -The concepts, methods and techniques of Architectural Design(A13,A24)
a3 - The Principles of design process(A13)
a4 - The Concepts of Residential Buildings (A18,A22)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 -Think systematically along the design process(B3)
b2 -Analyze the different elements of program as well as the site constrains (B3)
b3 - Identify the main design problems of the project (orientation cross – circulation...). (B2)
b4 - Produce innovative design ideas, forms. (B3,B13)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - Produce manual and technical production of2D Drawings and 3D models of architectural projects.(especially residential buildings & commercial centers) (C3)
c2 - Produce new architectural forms and design solutions of the societal problems(C17)
c3 - Draw effectively sketches(C4)
c4 - Present architectural project(C13)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Ability to search for information from references and internet. (D 7)

d2 - Work in stressful environment within constraints. (D3)

d3 - Acquire Manual skills (D7)

d4 - Communicate effectively (D3)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4,A13,A14,A22,A24
B	Intellectual skills	B2,B3,B13
C	Professional and practical skills	C3,C4,C13,C17
D	General and transferable skills	D3,D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. First Project : Dream House :Analysis of program elements	6	-	
2. Research on residential buildings	6		
3. Zoning (bubble diagram – matrix of function)	6		
4. 3d modeling (masses + site)	6		
5. Concept development till final approval	6		
6. Drawing layout by using glass box Drawing 4 elevations by using glass box	6	-	
7. Mid-Term Exam	6	-	
8. Drawing final layout (to scale)	6	-	
9. Drawing Ground floor plan	6	-	
10. Final plans	6	-	
11. Final elevations	6		
12. Drawing 2 sections	6		
13. Final sections	6		
14. Drawing final skis (pre-complete project)	6	-	
15. Representing final project & Jury	6	-	
Total hours	90		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1	1	1							1		1		1			1	1			
	a2	1	1		1				1	1			1						1	1			
	a3	1	1	1	1							1				1			1	1			
	a4	1	1	1	1							1							1	1			
Intellectual Skills	b1	1			1		1	1	1		1					1	1	1					
	b2			1			1	1	1														
	b3				1		1		1	1			1						1	1			
	b4	1			1		1	1	1		1					1		1					
Applied Professional Skills	c1	1		1	1							1				1		1					
	c2	1		1	1			1	1	1			1						1	1			
	c3							1	1	1			1										
	c4	1		1	1							1				1		1					
General Tran. Skills	d1			1					1			1		1	1	1		1	1	1			
	d2		1	1	1			1	1			1					1	1					
	d3			1					1			1		1	1	1		1	1	1			
	d4		1	1				1	1			1											

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	60
Mid-Term Exam	7-th Week	15
Practical Exam	-	-
Written Exam	Sixteenth week	Secend term
Total		

6- List of references:

6-1 Course notes

6-2 Essential books (text books)

Neufert Architect's Data, Halsied Press, a Division of John Willey & sons Inc, and New York. USA. 1998, vicent jones

6-3 Recommended books

Steele, J., "Architecture Today", Second edition, Phaeton Press Limited, London, UK, 2001.

6-4 Periodicals, Web sites, etc.

- www.greatbuildings.com
- www.archinform.com

7- Facilities required for teaching and learning:

White boards, Data show , Drawing halls

Course coordinator: Ass.Prof. Dr. Ibrahim Gouda

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A212: Architectural Design – (1-b)

A- Affiliation

Relevant program: Architectural Engineering and Building Technology
Department offering the program: Architectural Engineering and Building Technology Dpt.
Department offering the course: Architectural Engineering and Building Technology Dpt.
Date of specifications approval: September,2015

B - Basic information

Title: Architectural Design (1-A) **Code: A211** **Year/level:** Second year - **2nd semester**
Teaching Hours: **Lectures:** 6 **Tutorial:**
Practical: **Total:** 6

C - Professional information

1 – Course Learning Objectives:

The main objective of this course is to acquire the basics of Design process and . Develop design skills.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.

a1 - Seeking, defining and articulating architectural problems. (A4,A14)
a2 -The concepts, methods and techniques of Architectural Design (A13,A24)
a3 - The Principles of design process(A13)
a4 - The Concepts of Residential Buildings(A18,A22)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 -Think systematically along the design process(B3)
b2 -Analyze the different elements of program as well as the site constrains (B3)
b3 - Identify the main design problems of the project (orientation cross – circulation...). (B2)
b4 - Produce innovative design ideas, forms. (B3,B13)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - Produce manual and technical production of2D Drawings and 3D models of architectural projects.(especially residential buildings & commercial centers) (C3,C12)
c2 - Produce new architectural forms and design solutions of the societal problems(C17)
c3 - Draw effectively sketches(C4)
c4 - Present architectural project (C13)

D - General and transferable skills:

By the end of the course the student should be able to:

d1- Ability to search for information from references and internet. (D 7)

d2- Work in stressful environment within constraints. (D3)

d3- Acquire Manual skills (D7)

d4- Communicate effectively (D3)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4,A13,A14,A22,A24
B	Intellectual skills	B2,B3,B13
C	Professional and practical skills	C3,C4,C13,C17
D	General and transferable skills	D3,D7

3 - Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. Choosing one project from 5 general projects	6		
2. Analysis of program elements	6	-	
3. Research on the chosen project	6		
4. Zoning (bubble diagram , matrix of functions	6		
5. 3D modeling (masses , site) , skis	6		
6. Concept development , skis	6		
7. Mid-Term Exam	6		
8. Final plans	6	-	
9. Final sections	6	-	
10. Final elevations	6	-	
11. 3D perspectives	6	-	
12. Final skis	6	-	
13. Representing project by digital media or manual method	6		
14. Representing project by digital media or manual method	6		
15. Representing final project , jury	6		
Total hours	90		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1	1	1							1		1		1			1	1			
	a2	1	1		1				1	1			1						1	1			
	a3	1	1	1	1							1				1			1	1			
	a4	1	1	1	1							1							1	1			
Intellectual Skills	b1	1			1		1	1	1		1					1	1	1					
	b2			1			1	1	1														
	b3				1		1		1	1			1						1	1			
	b4	1			1		1	1	1		1					1		1					
Applied Professional Skills	c1	1		1	1							1				1		1					
	c2	1		1	1			1	1	1			1						1	1			
	c3							1	1	1			1										
	c4	1		1	1							1				1		1					
General Tran. Skills	d1			1					1			1		1	1	1		1	1	1			
	d2		1	1	1			1	1			1					1	1					
	d3			1					1			1		1	1	1		1	1	1			
	d4		1	1				1	1			1											

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	60
Mid-Term Exam	7-th Week	15
Practical Exam	-	-
Written Exam	Sixteenth week	100
Total		250

6- List of references:

6-1 Course notes

6-2 Essential books (text books)

Neufert Architect's Data, Halsied Press, a Division of John Willey & sons Inc, and New York. USA.

Space & Order.

6-3 Recommended books

Steele, J., "Architecture Today", Second edition, Phaeton Press Limited, London, UK, 2001.

6-4 Periodicals, Web sites, etc.

- www.greatbuildings.com
- www.archinform.com

7- Facilities required for teaching and learning:

White boards, Data show , Drawing halls

Course coordinator: Ass.Prof. Dr. Ibrahim Gouda

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A221:History and Theory of Architecture – (1-a)

A- Affiliation

Relevant program: Architectural Engineering and Building Technology
Department offering the program: Architectural Engineering and Building Technology Dpt.
Department offering the course: Architectural Engineering and Building Technology Dpt.

Date of specifications approval: September,2015

B - Basic information

Title: History and Theories of Architecture (1-A) **Code: A221** **Year/level:** Second year 1st semester

Teaching Hours: **Lectures:** 4 **Tutorial:**
Practical: **Total:** 4

C - Professional information

1 – Course Learning Objectives:

The main objective of this course is to acquire the basics of Design process and how to get the best architectural design by knowing buildings elements, components and forming principles .

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.

a1 - Concepts the theories of architecture (A1,A19)
a2 Types and typologies for architectural Buildings (A1,A19)-
a3 - Principles of design process (A4,A14)
a4 - Buildings elements, components , forming principles(A1,A4,A19),
a5 -Contemporary Architectural topics(A12,A19)
a6 - The impact of Architectural design in societal context(A11,A18)
a7 - The impact of advanced building theories on design(A16, A23)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 -Think systematically along the design process(B3,B12)
b2- Produce innovative design ideas, forms and concepts (B3),
b3 -Ability to understand and develop philosophical analogies and symbolic metaphors in architectural context(B3)
b4- Ability to Evaluate the Architectural building from (plans, elements, shapes ,colors, textures, forming principles) (B9,B20)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 -Think, Analyze, understands and makes use of contexts. (C2)
c2 -Analyze Design directions and principles to design the Architectural projects(C1)
c3 - Draw effectively sketches. (C13)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 Ability to search for information from references and internet. (D7)-
d2 Prepare convenient presentations (D7)-
d3 - Communicate effectively (D3)
d4 Search for information and adopt self-learning (D7)-
d5 Work in stressful environment within constraints. (D2)-
d6 Collaborate effectively within teamwork (D1)-

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1,A4,A11,A12,A14,A16,A18,A19,A23
B	Intellectual skills	B3,B9,B12,B20 ,
C	Professional and practical skills	C1,C2,C13
D	General and transferable skills	D1,D2,D3,D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. Introduction: about the relationship between architecture and theories of architecture.	4		
2. Architectural definitions and constrains	4	-	
3. Types and typologies of Buildings	4	-	
4. Design Process :-Briefing -Analysis	4	-	
5. Design Process: synthesis	4	-	
6. Design Process: Design- Appraisal Evaluation.- Communications	4		
7. Mid-Term Exam	4		
8. Architectural Spaces is the basic of design and forming:1:- Architectural Spaces	4		
9. Architectural Spaces forming:2 :-Buildings and spaces elements	4		
10. Architectural Spaces forming: :circulation,vertical,horizontal	4		
11. Architectural Forming: Shape- Color- Texture	4		
12. The Principles of Architectural Forming Process:-	4		
13. Introduction about Architectural Theories: (Functionalism) , (Organism)	4		
14. Researches Discussion	4		
15. Researches Discussion	4		
Total hours	60		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1	1	1					1		1				1		1					
	a2	1	1	1						1	1	1				1		1					
	a3	1	1	1	1			1				1		1					1				
	a4	1	1	1						1	1	1				1		1					
	a5	1	1	1						1		1				1		1	1				
	a6	1	1	1	1					1	1	1				1		1					
	a7	1	1	1						1	1	1				1		1					
Intellectual Skills	b1	1		1								1				1				1			
	b2	1		1	1							1				1				1			
	b3	1		1								1				1				1			
	b4	1	1		1					1			1	1	1			1	1				
Applied Professional Skills	c1	1		1			1	1				1				1				1			
	c2				1		1	1						1									
	c3						1	1						1					1				
General Tran. Skills	d1			1				1				1		1	1	1				1			
	d2			1	1			1				1		1		1				1			
	d3		1	1								1							1				
	d4			1				1				1		1	1	1			1	1			
	d5		1		1									1	1	1			1				
	d6	1	1					1				1											

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes

Anaheed Waked ,"History and theories of architecture "-part one-2009

6-2 Essential books (text books)

6-3 Recommended books

"البيئة و الفراغ "، مركز أبحاث انتركونسلت ، القاهرة ،
١٩٩٦"

على رافت ،" ثلاثية الابداع الفنى فى العمارة

6-4 Periodicals, Web sites, etc.

www.greatbuildings.com

Www. Archspace.com

7- Facilities required for teaching and learning:

Computer, Data show

Course coordinator: Dr. Anaheed Waked

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A222:History and Theory of Architecture – (1-b)

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: September , 2015

B - Basic information

Title: History and Theories of Arch. (1-B) **Code: A222** **Year/level:** Second year 2nd semester

Teaching Hours: **Lectures:** 4 **Tutorial:**
Practical: **Total:** 4

C - Professional information

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.
a1 - Concepts the History of architecture Through Time. (A19)
a2–The history of architecture. (A19)
a3 -The Impact of the Construction on architecture Development through Time(A17,A19)

B - Intellectual skills:

By the end of the course the student should be able to:
b1 -Think systematically within the Historical Features and Heritage along the design process(B20)
b2 - Produce innovative within Historical Characters Design(B20)
b3 - Identify philosophical analogies and symbolic metaphors in Historical architecture (B4,B20)
b4 - Ability to Evaluate the Architectural building features and Characters (B21)

C - Professional and practical skills:

By the end of the course the student should be able to:
c1 -Analyze understand and make use of contexts. (C21,C22)
c2 -Analyze Historical Architecture Features and Characters. (C21)
c3 - Draw effectively sketches. (C18,C21)

D - General and transferable skills:

By the end of the course the student should be able to:
d1 - Ability to search for information's from references and internet. (D1)
d2 - Prepare convenient presentations(D2)
d3 - Communicate effectively (D3)
d4 - Search for information and adopt (D4)
d5 - Work in stressful environment within constraints. (D4)
d6 - Collaborate effectively within teamwork(D4)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A17,A19
B	Intellectual skills	B4,B20,B21
C	Professional and practical skills	C18,C21,C22
D	General and transferable skills	D1,D2,D3,D4

3 - Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. -Introduction : about history of architecture Prehistoric architecture: Ancient Egyptian	4		
2. - The pharaonic Character and Features	4		
3. The Architectural Buildings(Tombs)	4	-	
4. The Architectural Buildings (Temples)	4		
5. The Architectural Buildings(Temples)	4		
6. The Hellenistic Architecture:	4		
7. Mid-Term Exam	4		
8. Greek Architecture: Character and Features	4		
9. The Greek Columns ,Temples, Buildings	4		
10. The Roman Architecture: Features -Columns-temples	4		
11. Buildings (theater-Amphitheater-....	4		
12. Seminars	4		
13. Researches Discussion	4		
14. Researches Discussion	4		
15. Course Revision	4		
• **Total hours**	4		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
& Understand	a1	1	1	1				1				1		1	1	1		1	1	1			
	a2	1	1	1				1				1		1	1	1		1	1	1			

	a3	1	1	1				1				1		1	1	1			1	1			
Intellectual Skills	b1	1	1	1	1							1								1			
	b2	1	1	1	1							1								1			
	b3	1	1	1	1							1								1			
	b4	1	1		1							1											
Applied Professional Skills	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					
General Tran. Skills	d1			1			1					1		1									
	d2			1								1				1				1			
	d3	1	1	1				1				1		1		1		1					
	d4		1							1		1						1					
	d5		1							1		1											
	d6		1							1		1											

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes

Anaheed Waked ,"History and theories of architecture "-part two-2009

6-2 Essential books (text books)

أ د. توفيق عبد الجواد ، تاريخ العمارة و الفنون فى العصور الأولى ، مكتبة الأنجلو ،١٩٧٠

6-3 Recommended books

Sir Banister Fletcher's ,A History of Architecture , London, UK,2000

6-4 Periodicals, Web sites, etc.

www. Egyptmyway .com//:-http

7- Facilities required for teaching and learning:

Computer, Data show

Course coordinator: Dr. Anaheed Waked

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A231:Architecture Construction – (1)-a

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: September , 2015

B - Basic information

Title: Architecture Construction - A	**Code:** A231	**Year/level:** 2nd year/1st semester
Teaching Hours:4	**Lectures:**2	**Tutorial:**2
	Practical: -	**Total:** 4

C - Professional information

1 – Course Learning Objectives:

The main objective of this course is studying the construction processes and the main building construction elements, systems, and materials starting from the foundation till reaching the roof, and recognizing the details of the main elements in the building.

2 - Intended Learning Outcomes (ILOS)

A- Knowledge and understanding:

By the end of the course the student should gain the following knowledge :

a1 - the concepts, methods and techniques of the building construction processes, its stages, elements, materials, etc (A24).
a2 - Preliminary and final design, working details of small projects (A4)
a3 - Modern and traditional construction methods, capabilities and limitations((A24).
a4 - Materials properties and uses in different building contexts. (A3)
a5 - Construction processes, activities, and management. (A24) .

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Think systematically along the design process, and its details, analyze construction problems, propose alternative solutions, and select the best solutions. (B2, B12)
b2 - Solve technical and structural problems of buildings. (B22)
b3 - Analyze the building elements, details, materials and methods of execution. (B5,B11)
b4 - Select and use innovative structural models. (B14)

C- Professional and practical skills:

By the end of the course the student should be able to:

c1 - Prepare professionally sound architectural construction drawings and details using manual techniques. (C3, C14,C24)
c2 - Recognize Different construction and finishing materials and select appropriate material for each specific purpose. (C23), (C25)

c3 - Manage construction processes (C24)
c4 - Prepare professionally sound technical scientific report. (C2, C12)

D- General and transferable skills:

By the end of the course the student should be able to:
d1 - Collaborate effectively within multidisciplinary. (D1)
d2 - Work in stressful environment and within constraints. (D2)
d3 - Communicate effectively. (D3)
d4 - Manage tasks and resources efficiently. (D6)
d5 - Search for information and adopt life –long. (D7)
d6 - Acquire entrepreneurial skills. (D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A3, A4, A24
B	Intellectual skills	B2,B5, B11, B12, B14 , B22, B25
C	Professional and practical skills	C2, C3, C12, C14, C23, C24, C25
D	General and transferable skills	D1, D2, D3, D6, D7, D8

3 - Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. Introduction & Elements of Building.	2	2	-
2. Sequence of Building Construction.	2	2	-
3. Construction Systems: Bearing walls.	2	2	-
4. Construction Systems: Skeleton Construction.	2	2	-
5. Foundations: Surface foundations.	2	2	-
6. Foundations: Deep foundations.	2	2	-
7. Mid Term Exam (M. T1).	2	2	-
8. Brick walls: Types of brick & mortar	2	2	-
9. Brick wall bonding: English Bond & Flemish Bond.	2	2	-
10. Masonry walls: Classifications of stones – walling philosophy.	2	2	-
11. Masonry walls: Sills – Cornices – Copings.	2	2	-
12. Roof Structures: Linear structural elements – Surface resistant.	2	2	-
13. R.C. floors: Sections & details.	2	2	-
14. steel floors: Sections & details	2	2	
15. Revision	2	2	
Total hours	**30**	**30**	**-**

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1	1	1							1				1			1	1			
	a2	1	1	1	1							1						1	1	1			
	a3	1	1	1			1					1		1		1							
	a4	1	1	1	1					1		1	1			1			1	1			
	a5	1	1				1	1				1	1						1	1			
Intellectual Skills	b1	1	1		1				1	1							1	1	1	1			
	b2	1	1		1				1										1	1			
	b3	1	1	1			1		1			1							1	1			
	b4	1		1			1		1			1				1			1				
Applied Professional Skills	c1	1	1				1		1	1		1	1			1			1	1			
	c2				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	1			
General Tran. Skills	d1			1				1	1			1											
	d2		1						1			1				1							
	d3	1	1	1			1	1			1	1		1					1				
	d4	1	1						1		1	1				1	1		1	1			
	d5			1				1	1			1								1			
	d6			1	1		1	1	1			1		1					1	1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	30
Mid-Term Exam	7-th Week	15
Practical Exam	-	-
Written Exam	Sixteenth week	Secend term
Total		100

6- List of references:

6-1 Course notes

Okba, Ehab mahmoud.2005.Building Construction (Arabic).Cairo, Egypt.

6-2 Required books

Abdallah, Moh.Ahmed .1999.Building Construction (Arabic).The Anglo bookshop, Cairo, Egypt.

Hassid, Sami.1984.Architectural Construction Details (English).Dar Al Nahad Al Arabia, Beirut.

6-3 Recommended books

McKay, W.B.1971. Building Construction (English).Longman Group Limited.

6-4 Periodicals, Web sites, etc

7- Facilities required for teaching and learning:

- Overhead projector / projection screen.
- Data Show
- Drawing hall.

Course coordinator: Dr.: Anaheed Waked
Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A232:Architecture Construction – (1)-b

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 Dpt.
Date of specifications approval: September , 2015

B - Basic information

Title: Architecture Construction - B **Code:** A232 **Year/level:** 2nd year/2nd semester
Teaching Hours:4 **Lectures:**2 **Tutorial:**2
Practical: - **Total:** 4

C - Professional information

1 – Course Learning Objectives:

The primary objective of this course is studying the construction processes and the main building construction elements, systems, and materials and recognizing the details of the main elements in the building, and introducing the principles of preparing working drawings of small projects.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge:

a1 - the concepts, methods and techniques of the building construction processes, its stages, elements, materials, etc. (A24)
a2 - Preliminary and final design, working drawings and details of small projects (A24)
a3 -Modern and traditional construction methods, capabilities and limitations(A8,A24)
a4 -Materials properties and uses in different building contexts. (A3)
a5 -Construction processes, activities, and management. (A24)

B - Intellectual skills:

By the end of the course the student should be able to:

b1- Think systematically along the design process, and its details, analyze construction problems, propose alternative solutions, and select the best solutions. (B2,B12)
b2 -Solve technical and structural problems of buildings. (B2.B22,B25)
b3 -Analyze the building elements, details, materials and methods of execution. (B5,B11)
b4 -Select and use innovative structural models. (B14)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - Prepare professionally sound architectural construction drawings and details using manual techniques. (C3, C14,C24)
c2 - Recognize Different construction and finishing materials and select appropriate material for each specific purpose. (C23, C25)
c3 - Manage construction processes(C24)

c4 - Prepare professionally sound technical scientific report. (C2, C12)

D - General and transferable skills:
By the end of the course the student should be able to:
d1 - Collaborate effectively within multidisciplinary. (D1)
d2 - Work in stressful environment and within constraints. (D2)
d3 - Communicate effectively. (D3)
d4 - Manage tasks and resources efficiently. (D6)
d5 - Search for information and adopt life –long self-learning. (D7)
d6 - Acquire entrepreneurial skills. (D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A3, A4 A24
B	Intellectual skills	B2,B5,B11, B12, B14 , B22,B25
C	Professional and practical skills	C2, C3, C12, C14, C23, C24, C25
D	General and transferable skills	D1, D2, D3, D6, D7,D8

3 - Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. Wooden roofs: Sections and details.	2	2	-
2. Settlement & expansion joints.	2	2	-
3. Insulation members: Sections-details.	2	2	-
4. Retaining walls: Uses-types.	2	2	-
5. Stairs: Components.	2	2	-
6. Stairs: Design.	2	2	-
7. Mid term exam	2	2	-
8. Project: How to draft a working plan sheet.	2	2	-
9. Project: How to write information in a working plan sheet.	2	2	-
10. Project: How to draft a working section sheet.	2	2	-
11. Project: How to write information in a working section sheet.	2	2	-
12. Project: How to draft a working elevation sheet.	2	2	-
13. Project: How to write information in a working elevation sheet.	2	2	-
14. Presentation: How to present and discus a working project.	2	2	
15. Revision	2	2	
Total hours	**30**	**30**	**-**

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1	1	1							1							1	1			
	a2	1	1	1	1							1						1	1	1			
	a3	1	1	1			1					1		1									
	a4	1	1	1	1					1		1	1			1			1	1			
	a5	1	1				1	1				1	1						1	1			
Intellectual Skills	b1	1	1		1				1	1							1	1	1	1			
	b2	1	1		1				1										1	1			
	b3	1	1	1			1		1			1							1	1			
	b4	1		1			1		1			1				1			1				
Applied Professional Skills	c1	1	1				1		1	1		1	1			1			1	1			
	c2				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	1			
General Tran. Skills	d1			1				1	1			1											
	d2		1						1			1				1							
	d3	1	1	1			1	1			1	1		1					1				
	d4	1	1						1		1	1				1	1		1	1			
	d5			1				1	1			1								1			
	d6			1	1		1	1	1			1		1					1	1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	30
Mid-Term Exam	7-th Week	15
Practical Exam	-	
Written Exam	Sixteenth week	60
Total		150

6- List of references:

6-1 Course notes

Okba, Ihab mahmoud.2005.Building Construction (Arabic).Cairo, Egypt.

6-2 Required books

Abdallah, Moh.Ahmed .1999.Building Construction (Arabic).The Anglo bookshop, Cairo, Egypt.

Hassid, Sami.1984.Architectural Construction Details (English).Dar Al Nahad Al Arabia, Beirut.

6-3 Recommended books

McKay, W.B.1971. Building Construction (English).Longman Group Limited.

6-4 Periodicals, Web sites, etc.

7- Facilities required for teaching and learning:

- Overhead projector / projection screen.
- Data Show
- Drawing hall.

Course coordinator: Dr.Anaheed Waked

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A241: Sciagraphy and Perspective

A- Affiliation

Relevant program: Architecture Engineering and Building Technology BSC Prog.
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September , 2015

B - Basic information

Title: Sciagraphy and Perspective | **Code:** A241 | **Year/level:** 2nd year , 2nd semester

Teaching Hours: **Lectures: 3** **Tutorial: 2** **Practical: -** **Total:** 5

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 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge:
a1 - The fundamental engineering sciences relevant to architectural practices(A4)
a2 - The three dimensional visualization and representation in terms of shades, shadows and perspective. (A20)
a3 - Perspective rules. (A13)

B - Intellectual skills:

By the end of the course the student should be able to:
b1 - Integrate shadow for different shapes. (B4)
b2 - Relate different shadows together to an architectural elevation. (B14)
b3 - Develop visual sensitivity towards light, shades and shadows. (B4)
b4 - Integrate different perspective rules. (B14)

C- Professional and practical skills:

By the end of the course the student should be able to::
c1– Use techniques of manual presentation using rules for shade and shadows. (C13)
c2 - Draw 3D perspective views with shades and shadows. (C18)

D - General and transferable skills:

By the end of the course the student should be able to:
d1 - Communicate ideas verbally and visually in a clear coherent manner. (D3)
d2 - Determine levels in space. (D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4, A13, A20
B	Intellectual skills	B4,B14
C	Professional and practical skills	C13, C18
D	General and transferable skills	D3, D8

3 – Contents

	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction to shades and shadows, Shade of points and lines.	3	2	-
2	Shades of plains and surfaces	3	2	-
3	Shades of plains and surfaces	3	2	-
4	Shades of circles	3	2	-
5	Shades and shadows of objects and masses (prisms)	3	2	-
6	Shades and shadows of objects and masses (cone and cylinder)	3	2	-
7	Mid-Term Exam	3	2	-
8	Architectural applications	3	2	-
9	Architectural applications	3	2	-
10	One vanishing point perspective	3	2	-
11	Interior perspective	3	2	-
12	Two vanishing points perspective	3	2	-
13	Two vanishing points perspective	3	2	-
14	Applications on two vanishing points perspective	3	2	-
15	Revision	3	2	-
	Total hours	**45**	**30**	**-**

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments		
Knowledge & Understanding	a1	1	1				1					1	1			1			1	1		
	a2	1	1				1					1	1			1			1	1		
	a3	1	1				1					1	1						1	1		
Intellectual Skills	b1	1			1		1	1				1	1			1		1	1	1		
	b2	1			1		1	1				1	1			1		1	1	1		
	b3	1			1		1	1				1	1			1		1	1	1		
	b4	1			1		1	1				1	1			1		1	1	1		
Applied Professional Skills	c1	1	1		1		1			1		1	1			1		1	1	1		
	c2	1	1		1		1			1		1	1			1		1	1	1		
General Tran. Skills	d1		1	1								1	1						1			
	d2		1	1								1	1						1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	60
Mid-Term Exam	7-th Week	30
Practical Exam	-	-
Written Exam	Sixteenth week	60
Total		150

6- List of references:

6-1 Course notes

None

6-2 Required books

- Nassar, Abdel Rahman, “Shades, shadows and perspective”, 1980, The Anglo bookshop, Cairo.
- Mc Goodwin, Henry, “Architectural shades and shadows”, 1991, American Institute of Architects press.

6-3 Recommended books

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

6-4 Periodicals, Web sites, etc.

7- Facilities required for teaching and learning:

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

Course coordinator: Associate Professor. Mona Elbasyoni.
Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A242: Properties & Strength of Materials

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: September , 2015

B- Basic Information

Title: Properties & strength **Code:** A242 **Year/level:** 2nd year1st semester

Teaching Hours: 3 **Lectures:2** **Tutorial:1**

C- Professional Information

1- Course Learning Objectives:

The course aims at introducing students to engineering materials; properties, function, usage and testing.

2- Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire knowledge of:

a1- fundamental knowledge of properties of construction materials relevant to architectural practices (A3-A1)

a2- building codes and regulations (A4 -A15)

a3- materials properties and uses in different building contexts (A3-A15)

B- Intellectual skills:

By the end of the course the student should be able to:

b1- Deduce grounded criteria and guidelines from a given construction problem.(B5-B17)

b2 - Promote investigation and exploration abilities in research work.(B5-B6)

b3 - Integrate theoretical studies with practical reality (B13,B18)

b4 - Improve creative problem-solving and decision-making faculties (B3)

b5 -Develop visual sensitivity towards materials, colors and textures (B5)

C - Professional and practical skills:

By the end of the course the student should be able to undertake:

c1-Selecting construction materials that are functionally sound, environmentally appropriate aesthetically plausible, users' friendly and technologically up-to-date. (C2-C21-C22)

c2 - Mastering material testing skills and site work (C10,C23)

c3 - Coordination between architectural, structural, technical and economic considerations of a project (C2-C10)

c4 - Sound construction material selection for different uses based on properties and limitations (C15)

D - General and transferable skills:

By the end of the course the student should be able to:

d1- Improve communication skills with versatile backgrounds in field research [laymen, administrative personnel, construction labor, academic staff (D3)

d2- work in team environments (D1)

d3- Sound task allocation amongst team members (D5)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1,A3, A4 , A15
B	Intellectual skills	B3, B5, B6, B13,B17,B18
C	Professional and practical skills	C2, C10, C15, C21, C22, C23
D	General and transferable skills	D1,D3,D5

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. Standardization concepts.	2	1	
2. Standard Specifications & Codes.	2	1	
3. Technology and creative use of building materials.	2	1	
4. Concrete technology	2	1	
5. Influence of water upon building materials	2	1	
6. Gypsum. Lime. Timber. Stone.	2	1	
7. Building units and partitions.	2	1	
8. Constituents of reinforced concrete: aggregate, cement, water, and reinforcing steel.	2	1	
9. Constituents of reinforced concrete: aggregate, cement, water, and reinforcing steel.	2	1	
10. Testing mechanics.	2	1	
11. Strain gauges.	2	1	
12. Mechanical properties.	2	1	
13. Strength of materials under static loads: tension, compression, bending, and shear	2	1	
14. Quality control.	2	1	
15. Technical Inspection.	2	1	
Total hours	**30**	**15**	

4 - Teaching and Learning and Assessment methods:

	Course ILO's	Teaching Methods								Learning Methods				Assessment Method				
		Lectures	Presentations and Movies	Discussions	Tutorials/Sketches	Practical and Laboratory experiments	Problem solving	Brain storming	Projects	Researches and Reports	Modeling and Simulation	Site Visits	Discovering	Written Exam	Practical Exam	Quizzes	Term papers	Assignments
Knowledge	a1	1								1				1		1		1
	a2	1								1				1		1		1
	a3	1								1				1		1		1
Intellectual	b1	1					1							1		1		1
	b2	1					1							1		1		1
	b3	1					1							1		1		1
	b4	1					1							1		1		1
	b5	1					1							1		1		1
Applied	c1	1					1							1		1		1
	c2	1					1							1		1		1
	c3	1					1							1		1		1
	c4	1					1							1		1		1
general	d1	1								1						1		1
	d2	1								1						1		1
	d3	1								1						1		1

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of References:

6-1 course notes

Properties and Resistance of Materials, Adham Elalfy, printed lectures

6-2 Required books

المواد الهندسيه، د. كريم محمد عطا، دار الكتب، ١٩٩٥

6-3 Periodicals, Web sites

ASCE Managing

www.ACI.com

7- Facilities required for teaching and learning:

Projectors and data show

Course coordinator: Dr. Adham Elalfy

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification
A251: Visual Training (1)

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Visual Training **Code:** A251 **Year/level:** 2nd year, 1st semester

Teaching Hours: **Lectures: -** **Tutorial: 3**
Practical: - **Total: 3**

C - Professional information

1 – Course Learning Objectives:

The objective of the course is to develop students' sense of proportions, freehand sketching and presentation abilities.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - The fundamental different techniques for sketching. (A13)
a2 - The relationships between shade, shadows and direction of light(A13).
a3 - The difference between copying from drawings and sketching from nature. (A13)
a4 - The texture of different materials. (A13)
a5 - Three dimensional visualization and representation in terms of shades, shadows and perspective. (A20)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 -Integrating different scales of freehand sketching, ranging from interior details to landscape details(B4).
b2 - Integrating theoretical studies with practical reality. (B4,B14)
b3 - Developing architectural and structural sense of scale and proportions(B13)
b4 - Developing visual sensitivity towards materials, colors and textures(B14)

C - Professional and practical skills:

By the end of the course the student should practice:

c1 - Manual drafting and freehand sketching(C13)
c2 - Professional techniques of manual presentation using different tools and media(C17).
c3 - Drawing 3D perspective views with shades and shadows. (C18)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Communicating ideas verbally and visually in a clear coherent manner. (D3)

d2 - Ability to work in team environments. (D1)

d3. Acquire entrepreneurial skills(D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A13 , A20
B	Intellectual skills	B4,B13,B14
C	Professional and practical skills	C13, C17 ,C18
D	General and transferable skills	D1,D3, D8

3 – Contents

	Topic	Lecture hours	Tutorial hours	Practical hours
1	Thickness of lines using pencil.	-	3	-
2	Texture of different materials using pencil	-	3	-
3	Copying a drawing with different scale.	-	3	-
4	Different techniques for sketching.	-	3	-
5	Sketching 2D drawings.	-	3	-
6	Sketching 2D drawings Presentation for different architectural drawings.	-	3	-
7	Mid-Term Exam	-	3	-
8	Techniques for sketching 3D drawings	-	3	-
9	Rules for freehand perspective.	-	3	-
10	Techniques for sketching 3D drawings.	-	3	-
11	Sketching 3D drawings from nature.	-	3	-
12	Sketching 3D drawings from nature.	-	3	-
13	Sketching 3D drawings from nature.	-	3	-
14	Shade and shadows in 3D drawings	-	3	-
15	Shade and shadows in 3D drawings	-	3	-
	Total hours	**-**	**45**	

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1			1		1								1				1	1			
	a2	1			1		1								1				1	1			
	a3	1			1		1								1				1	1			
	a4	1			1		1								1				1	1			
	a5	1			1		1								1				1	1			

Intellectual Skills	b1	1	1		1		1	1	1	1		1	1		1	1		1	1	1			
	b2	1	1		1		1	1	1	1		1	1		1	1		1	1	1			
	b3	1	1		1		1	1	1	1		1	1		1	1		1	1	1			
	b4	1	1		1		1	1	1	1		1	1		1	1		1	1	1			
Applied Professional Skills	c1	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			
General Tran. Skills	d1		1	1								1	1						1				
	d2		1	1								1	1						1				
	d3		1	1								1	1						1				

5- 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
Practical Exam	-	-
Written Exam	Sixteenth week	40
Total		100

6- List of references:

6-1 Course notes

Lecture notes.

6-2 Required books

- **ربيع الحرستانى ،الاظهار المعمارى واللون ، دار قابس ، ١٩٨٧، بيروت ، لبنان.**
- **محمد احمد عبد الله ، الاظهار المعمارى ،١٩٩٧ ، الانجلو ، جمهورية مصر العربية.**

6-3 Recommended books

- Elements of Drawing, John Raskin, M.A., Smith, Elder and Co. 1857, London.
- Perspective drawing handbook, Joseph D.Amelio, Dover Publications, Canada.

6-4 Periodicals, Web sites, etc.

BookSence.com, Amazon. Com, Dover Publications.Com-puplisher.

7- Facilities required for teaching and learning:

- White boards and markers.
- Drawing halls for exercises.

Course coordinator: Associate Professor. Mona Elbasyoni.

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A261: Theory of Structures (a)

A- Affiliation

Relevant program:	Architecture Engineering and Building Technology
Department offering the program:	Architecture Engineering and Building Technology
Department offering the course:	Architecture Engineering and Building Technology
Date of specifications approval:	September,2015

B- Basic Information

Title: Theory of Structures (a) **Code:** A261 **Year/level:** 2nd year1st semester
Teaching Hours: 3 **Lectures:2** **Tutorial:1**

C- Professional Information

1- Course Learning Objectives:

The course aims at introducing students to the principles of structural analyses, how to define, analyze and solve structure elements.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire knowledge of:
a1 - Different theories of structures relevant to architectural practices (A1,A4)
a2 - professional standards of construction practice (A4)
a3 - building codes and regulations (A8)
a4 - basic structural analyses and design methods (A5-A14)

B - Intellectual skills:

By the end of the course the student should be able to:
By the end of the course the student should be able to:
b1 - Master structures analyses and manipulation. (B2)
b2 - Relate different branches of studied courses together (arch. Design- building construction). (B2,B4)
b3 - Integrate theoretical studies with practical reality (B13)
b4 - Improve logical reasoning faculties (B5)
b5 - Improve creative problem-solving (B3)
b6 - Analyze problems into sub-problems towards a controllable handling of elements (B3,B11)
b7 -Develop architectural and structural sense of scale and proportions (B13)

C - Professional and practical skills:

By the end of the course the student should be able to undertake:
c1 - Structural analyses (C1-C2)
c2 - Design of structural elements (C3)

D - General and transferable skills:

By the end of the course the student should be able to:
d1 - Interaction with libraries, books, periodicals, internet (D7)

d2 – Organize work and documents. (D6)

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Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4, A5, A14
B	Intellectual skills	B2, B3,B5, B11,B13
C	Professional and practical skills	C1,C2,C3,C7
D	General and transferable skills	D6,D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1) Types of structures.	2	1	
2) Types of loads and supports.	2	1	
3) Resultant of loads.	2	1	
4) Reactions.	2	1	
5) Simple and compound beams.	2	1	
6) Concentrated loads and moments.	2	1	
7) Mid-Term Exam.	2	1	
8) Equilibrium and stability in planner statically determined structures.	2	1	
9) Trussed beams.	2	1	
10) Simple frames, frames with link members, and closed frames.	2	1	
11) Internal forces definition.	2	1	
12) Internal forces in beams, frames, and arches.	2	1	
13) Trusses; definition, method of joints and method of sections.	2	1	
14) Stability conditions.	2	1	
15) Uniform and triangular loads.	2	1	
Total hours	**30**	**15**	

4 - Teaching and Learning and Assessment methods:

	Course ILO's	Teaching Methods								Learning Methods				Assessment Method				
		Lectures	Presentations and Movies	Discussions	Tutorials/Sketches	Practical and Laboratory experiments	Problem solving	Brain storming	Projects	Researches and Reports	Modeling and Simulation	Site Visits	Discovering	Written Exam	Practical Exam	Quizzes	Term papers	Assignments
Knowledge	a1	1								1				1		1		1
	a2	1								1				1		1		1
	a3	1								1				1		1		1
	a4	1								1				1		1		1
Intellectual	b1	1					1							1		1		1
	b2	1					1							1		1		1
	b3	1					1							1		1		1
	b4	1					1							1		1		1
	b5	1					1							1		1		1
	b6	1					1							1		1		1
	b7	1					1							1		1		1
Applied	c1	1					1							1		1		1
	c2	1					1							1		1		1
general	d1	1								1						1		1
	d2	1								1						1		1

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	55
Total		75

6- List of References:

6-1 course notes

Theory of Structures (1), Aiman Ezzat

6-2 Required books

Theory of Structures, Wrigh Wldkhak, Dar Elmaaref, 1995

6-4 Periodicals, Web sites

ASCE Managing

www.ACI.com

7- Facilities required for teaching and learning:

Projectors and data show

Course coordinator: Dr. Tamer Seliem

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A262: Theory of Structures (b)

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September , 2015

B- Basic Information

Title: Theory of Structures (a) **Code:** A262 **Year/level:** 2nd year
Teaching Hours: 3 **Lectures:2** **Tutorial:1**

C- Professional Information

1- Course Learning Objectives:

The course aims at introducing students to the principles of structural analyses, how to define, analyze and solve structure elements.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire knowledge of:
a1 - Different theories of structures relevant to architectural practices (A1,A4)
a2 - professional standards of construction practice (A4)
a3 - building codes and regulations (A8)
a4 - basic structural analyses and design methods (A5-A14)

B - Intellectual skills:

By the end of the course the student should be able to:
By the end of the course the student should be able to:
b1 - Master structures analyses and manipulation. (B2)
b2 - Relate different branches of studied courses together (arch. Design- building construction). (B2,B4)
b3 - Integrate theoretical studies with practical reality (B13)
b4 - Improve logical reasoning faculties (B5)
b5 - Improve creative problem-solving (B3)
b6 - Analyze problems into sub-problems towards a controllable handling of elements (B3,B11)
b7 -Develop architectural and structural sense of scale and proportions (B13)

C - Professional and practical skills:

By the end of the course the student should be able to undertake:
c1 - Structural analyses (C1-C2)
c2 - Design of structural elements (C3)

D - General and transferable skills:

By the end of the course the student should be able to:
d1 - Interaction with libraries, books, periodicals, internet (D7)

d2 – Organize work and documents. (D6)

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Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1,A4, A5,A8, A14
B	Intellectual skills	B2, B3,B4,B5, B11,B13
C	Professional and practical skills	C1,C2,C3
D	General and transferable skills	D6,D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1) Properties of Sections	2	1	
2) Direct Stresses	2	1	
3) Normal Stresses	2	1	
4) Concentric Forces	2	1	
5) Single and Double Moments	2	1	
6) Analyses of statically undetermined structures	2	1	
7) Mid-Term Exam	2	1	
8) Column buckling Moment distribution	2	1	
9) Spatial and non-planner structures	2	1	
10) Shear stresses	2	1	
11) Torsion stresses	2	1	
12) Resultant stresses	2	1	
13) Combined Stresses	2	1	
14) Combined Stresses	2	1	
15) Three Moment Equation	2	1	
Total hours	**30**	**15**	

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods								Learning Methods				Assessment Method				
		Lectures	Presentations and Movies	Discussions	Tutorials/Sketches	Practical and Laboratory experiments	Problem solving	Brain storming	Projects	Researches and Reports	Modeling and Simulation	Site Visits	Discovering	Written Exam	Practical Exam	Quizzes	Term papers	Assignments
Knowledge	a1	1								1				1		1		1
	a2	1								1				1		1		1
	a3	1								1				1		1		1
	a4	1								1				1		1		1
Intellectual	b1	1					1							1		1		1
	b2	1					1							1		1		1

	b3	1					1							1		1		1
	b4	1					1							1		1		1
	b5	1					1							1		1		1
	b6	1					1							1		1		1
	b7	1					1							1		1		1
Applied	c1	1					1							1		1		1
	c2	1					1							1		1		1
general	d1	1								1						1		1
	d2	1								1						1		1

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	55
Total		75

6- List of References:

6-1 course notes

Theory of Structures (2), Aiman Ezzat

6-2 Required books

Theory of Structures, Wrigh Wldkhak, Dar Elmaaref, 1995

6-5 Periodicals, Web sites

ASCE Managing

www.ACI.com

7- Facilities required for teaching and learning:

Projectors and data show

Course coordinator: Dr. Tamer Seliem

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification
A271: Surveying

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B- Basic Information

Title: Surveying **Code:** A271 **Year/level:** 2nd year 2nd semester
Teaching Hours: 4 **Lectures:2** **Tutorial:2**

C- Professional Information

1- Course Learning Objectives:

The course aims at introducing students to different applications of surveying in building construction.

2- Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire knowledge of:

a1 - Surveying processes relevant to architectural practices (A4)
a2 - Standards of surveying techniques (A14)
a3 - Surveying sites, construction processes, activities and management (A14), (A24)
a4 - Land survey systems and mapping methods (A8), (A24)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Developing abilities to undertake data gathering tasks (B2)
b2 - Capacity to synthesize surveying solution mechanisms and components properly (B9)
b3 -Integrating theoretical studies with practical reality (B2)
b4 -Ability to analyze surveying problems into sub-problems towards a controllable handling of elements (B8,B22)

C - Professional and practical skills:

By the end of the course the student should be able to undertake:

c1 - Designing projects of surveying traversing and leveling (C1)
c2 - Implementing projects of surveying traversing and leveling (C6)
c3 - Participate with a team to carry out surveying processes (C15,C16)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Communicating ideas verbally and visually in a clear coherent manner (D3)
d2 - Ability to work in team environments (D5)
d3 - Lead and motivate individuals (D5)
d4 - Organization and documentation skills (D6)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4, A8, A14, A22
B	Intellectual skills	B2, B9, B18, B22
C	Professional and practical skills	C1, C6, C15,C16
D	General and transferable skills	D3, D5, D6

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1) Definition of surveying.	2	2	
2) Types of measurements.	2	2	
3) Measurement errors.	2	2	
4) Linear measurements.	2	2	
5) Taping.	2	2	
6) Distance corrections.	2	2	
7) Mid-Term Exam	2	2	
8) Types of Levels. Leveling	2	2	
9) Profile and cross-sectional leveling.	2	2	
10) Area computations	2	2	
11) Angle measurements and Theodolites	2	2	
12) Traverse surveys and computations	2	2	
13) Contour Maps	2	2	
14) Cut and Fill	2	2	
15) Topographic surveying	2	2	
Total hours	**30**	**30**	

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods										Learning Methods				Assessement 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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1					1					1				1		1	1				
	a2	1			1											1		1	1	1			
	a3	1														1		1	1	1			
Intellectual Skills	b1	1			1	1						1				1		1		1			
	b2	1			1	1										1		1	1	1			

	b3	1			1	1																
	b4	1			1	1																
	b5	1			1	1																
Applied Professional Skills	c1	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						1	1		
	c4	1			1	1																
General Tran. Skills	d1				1							1								1		
	d2				1							1								1		
	d3				1																	
	d4				1																	

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	14-th Week	10
Written Exam	Sixteenth week	60
Total		100

6- List of References:

6-1 course notes

المساحه، أدهم عبد الرازق،كتاب العملى د.أميره جوهر

6-2 Recommended books

المساحه المستوية، علي سالم شكري، منشأة المعارف، ١٩٩٥

مساحة الأراضي، الشحات بركه، دار الكتب المصرية، ١٩٩٧

6-6 Periodicals, Web sites

ASCE Managing

www.ACI.com

7- Facilities required for teaching and learning:

Projectors and data show

Course coordinator: Prof. Dr. AMIRA GOUHAR

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A 281:Computer Application (CAD)-a

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Computer Application (1)
Code:A281 **Year/level:** 2nd year ,1st Semester
Teaching Hours: 4
Lectures: 4 **Tutorial:**
Practical: **Total:** 4

C - Professional information

1 – Course Learning Objectives:

The course familiarizes students with computer applications in architecture. It introduces to them the computer applications in architecture, which is Computer Aided Design and Drafting [CADD] techniques. Beside the bi-dimensional drawing and presentation.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - Professional standards of architectural practice(A15)
a2 - potential computer uses in architectural applications(A20)
a3 - The basic orders and functions in the AutoCAD program. (A13)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Integrate different scales of design, ranging from interior details to urban scales with the computer applications(B13)
b2 - Synthesize solution mechanisms and components properly (B3)
b3 - Produce innovative design and planning ideas and concepts(B4)
b4 - Analyze problems into sub-problems towards a controllable handling of elements(B1)

C - Professional and practical skills:

By the end of the course the student should practice:

c1 - Introducing professional 2D drawings(C13)
c2 - Mastering execution design and full working drawings for architectural projects(C14)
c3 - Mastering the use of computer in the design process in the architectural projects(C5)
c4 - Basic techniques of computer presentation using different tools and media(C12)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Familiarity with computer use and some of its applications (D7)

d2 - Communicating ideas verbally and visually in a clear coherent manner(D3)

d3 - Allocate amongst team members (D6)

d4 - Interaction of computer (D1)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A13, A15, A20
B	Intellectual skills	B1, B3, B4, B13
C	Professional and practical skills	C5, C12, C13, C14
D	General and transferable skills	D1, D3, D6, D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1) Introduction to computer	4	-	-
2) Comp. applications in the architectural profession	4	-	-
3) Comp. applications in the architectural profession	4	-	-
4) CADD techniques	4	-	-
5) Drawing 2D	4	-	-
6) Drawing 2D	4	-	-
7) Mid-Term Exam	4	-	-
8) Drawing 2D	4	-	-
9) Modifying drawing objects	4	-	-
10) Modifying drawing objects	4	-	-
11) Modifying drawing objects	4	-	-
12) Modifying drawing objects	4	-	-
13) layers & object properties	4	-	-
14) layers & object properties	4	-	-
15) layers & object properties	4	-	-
Total hours	**60**	**-**	**-**

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1				1										1				1			
	a2	1		1			1			1						1							
	a3	1	1	1		1				1		1				1	1	1	1	1			
Intellectual Skills	b1	1				1		1		1										1			
	b2	1				1		1		1						1				1			
	b3	1		1		1									1								
	b4	1		1				1				1											
Applied Professional Skills	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						
General Tran. Skills	d1		1	1								1			1								
	d2			1				1		1							1						
	d3					1				1						1	1	1	1	1			
	d4	1	1			1				1		1						1	1				

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	Second term
Total		100

6- List of references:

6-1 Course notes

- Computer Applications (1)

6-2 Required books

- FelixCAD4.01 Quick Start Manual, 2001
- AutoCAD 2002 Bible, Finkelstein / Hardcover / Wiley, John & Sons, Incorporated /2001

6-3 Recommended books

- Frey,D.,"AutoCAD® 2006 and AutoCAD® LT 2006", Autodesk, 2006
- Books available in The Modern Academy for Engineering and Technology Library.

6-4 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

7- Facilities required for teaching and learning:

- Computer facilities and CAD software program

Course coordinator: Dr. Reham Mostafa

Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification
A 282:Computer Application (CAD)-b

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Academic year/level: 2nd year. Arch. Eng. 2nd Semester
Date of specifications approval: September,2015

B - Basic information

Title: Computer Application (1)
Code: A282 **Year/level:** 2nd year ,2nd Semester
Teaching Hours: 4
Lectures: 4 **Tutorial:**
Practical: **Total:** 4

C - Professional information

1 – Course Learning Objectives:

The course familiarizes students with computer applications in architecture. It introduces to them the computer applications in architecture, which is Computer Aided Design and Drafting [CADD] techniques. Beside the bi-dimensional drawing and presentation.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - Professional standards of architectural practice(A15)
a2 - Potential computer uses in architectural applications(A20)
a3 - The orders and functions in the AutoCAD program and Photoshop(A13)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Integrate different scales of design, ranging from interior details to urban scales with the computer applications(B13)
b2 - Synthesize solution mechanisms and components properly (B3)
b3 - Produce innovative design and planning ideas, concepts, and presentation(B4)
b4 - Analyze problems into sub-problems towards a controllable handling of elements(B1)

C - Professional and practical skills:

By the end of the course the student should practice:

c1 - computer architectural applications in: drafting, presentation, & modeling(C13)
c2 - execution design and full working drawings for architectural projects(C14)
c3 - Design of projects of various scales and levels of complexity (C5)
c4 - Basic techniques of computer presentation using different tools and media(C12)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Work under pressure(D2)

d2 - Interact with libraries, books, periodicals, internet … (D7)

d3 - Interact of computer in various academic and field subjects(D4)

d4 - Communicate ideas verbally and visually in a clear coherent manner(D3)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A13, A15, A20
B	Intellectual skills	B1, B3, B4, B13
C	Professional and practical skills	C5, C12, C13, C14
D	General and transferable skills	D1, D3, D6, D7

3 - Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1) Controlling layer features	4	-	-
2) Controlling layer features	4	-	-
3) Dealing with texts	4	-	-
4) Dimension styles and commands,	4	-	-
5) Hatching	4	-	-
6) Creating blocks	4	-	-
7) Mid-Term Exam	4	-	-
8) Revision	4	-	-
9) External references	4	-	-
10) Printing	4	-	-
11) Dealing with images	4	-	-
12) Dealing with images	4	-	-
13) Model and paper space	4	-	-
14) Model and paper space	4	-	-
15) Exercise and projects	4	-	-
Total hours	**60**	**-**	**-**

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1				1														1			
	a2	1		1			1			1													
	a3	1	1	1		1				1		1					1	1	1	1			
Intellectual Skills	b1	1				1		1		1										1			
	b2	1				1		1		1						1				1			
	b3	1		1		1									1								
	b4	1		1				1				1											
Applied Professional Skills	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						
General Tran. Skills	d1		1	1								1			1								
	d2			1				1		1							1						
	d3					1				1						1	1	1	1	1			
	d4	1	1			1				1		1						1	1				

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	40
Total		100

6- List of references:

6-1 Course notes

- Computer Applications (1)

6-2 Required books

- FelixCAD4.01 Quick Start Manual, 2001
- AutoCAD 2002 Bible, Finkelstein / Hardcover / Wiley, John & Sons, Incorporated /2001

6-3 Recommended books

- Frey,D.,"AutoCAD® 2006 and AutoCAD® LT 2006", Autodesk, 2006
- Books available in The Modern Academy for Engineering and Technology Library.

6-4 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

7- Facilities required for teaching and learning:

- Computer facilities and CAD software program

Course coordinator: Dr. Reham Mostafa

Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A291:Building Technology -a

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Academic year/level: 2nd year Arch. Eng. , 1st semester
Date of specifications approval: September,2015

B - Basic information

Title: Building Technology **Code:** A291 **Year/level:** 2nd year , 1st semester
Teaching Hours: **Lectures:2** **Tutorial:**
Practical: **Total:** 2

C - Professional information

1 – Course Learning Objectives:

The course primarily aims at introducing students to the meaning, fundamentals of technology, its development &the impact of that on building technology (Equipment ,materials, construction systems).

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student will gain the knowledge of:

a1– Definitions &concepts related to tech. &building technology. (A1), (A24
a2 - Development of building technology through ages until modern age. (A1)
a3 - Construction Equipment (their names ,functions ,parts ,&capacity). (A24)
a4 - Classifying &dealing with construction materials& systems. (A24)-

B - Intellectual skills:

By the end of the course the student should be able to :

b1 - Recognize the differences &compare between construction Equipment(B4)
b2 - Recognize the differences &compare between construction systems. (B4), **, (B23)**
b3 - Discover &analyze the advantages and disadvantages of construction systems and materials. (B17)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - design a plan for construction Equipment in site. (C14)

c2 -finding and implementing different solutions and alternatives in execution methods. (C18), (C23)

c3 - Demonstrate environmental studies that are applicable to building technology techniques and processes (C25)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - collaborate effectively within multidisciplinary team. (D1)

d2 -communicate effectively. (D3)

d3 -lead and motivate individuals. (D5)

d4 -manage tasks and resources efficiently. (D6)

d5 -search for information and adopt lifelong self-learning. (D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1,A24
B	Intellectual skills	B4,B17, B23
C	Professional and practical skills	C14,C18 C23,C25
D	General and transferable skills	D1, D3, D5, D6,D7

3 – Contents

Topic		Lecture hours	Tutorial hours	Practical hours
1)	Introduction to building Technology	2		
2)	Definition. Fundamentals of technology	2		
3)	Historical overview	2		
4)	Construction methods (traditional methods)	2		
5)	Construction methods (modern construction methods)	2		
6)	Modern building Technology & Expected development	2		
7)	Mid-Term Exam	2		
8)	Construction Equipment	2		
9)	Construction capabilities and limitations	2		
10)	Construction systems and execution methods	2		
11)	Building with pre-cast units	2		
12)	Mobilization, preparation, and mechanization	2		
13)	Standardization & Module systems	2		
14)	Standardization & Module systems	2		
15)	Revision & research presentation	2		
Total hours		**30**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1	1	1							1		1					1	1			
	a2	1	1		1				1	1			1						1	1			
	a3	1	1	1	1							1							1	1			
	a4	1	1	1	1							1							1	1			
Intellectual Skills	b1	1			1		1	1	1		1					1	1	1					
	b2			1			1	1	1														
	b3				1		1		1	1			1						1	1			
	b4	1			1		1	1	1		1					1		1					
Applied Professional Skills	c1	1		1	1							1				1		1					
	c2	1		1	1			1	1	1			1						1	1			
	c3							1	1	1			1										
	c4	1		1	1							1				1		1					
General Tran. Skills	d1			1					1			1		1	1	1		1	1	1			
	d2		1	1	1			1	1			1					1	1					
	d3			1					1			1		1	1	1		1	1	1			
	d4		1	1				1	1			1											

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	7-th Week	5
Practical Exam	-	-
Written Exam	Sixteenth week	Secand term
Total		100

6- List of references:

6-1 Course notes

- Handouts

6-2 Required books

- Serag Eldin, Dr. Samy B., "Construction Building Technology "(Arabic), 2005.

6-3 Recommended books

- Hawass, Dr. M. Zaki , " The Art of contemporary Building " (Arabic) , 1985 , Alam El Kottob , Cairo .
- Ewerda, Dr. M. Mahmoud , " Modern Building Technology " (Arabic)

6-4 Periodicals, Web sites, etc.

7- Facilities required for teaching and learning:

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

Course coordinator: Dr. Asamer Zakaria.
Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A292:Building Technology-b

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Building Technology **Code:** A291 **Year/level:** 2nd year , 2nd semester
Teaching Hours: **Lectures:2** **Tutorial:**
Practical: **Total:** 2

C - Professional information

1 – Course Learning Objectives:

The course primarily aims at introducing students to the concepts of technology science &its relation to building technology, the basics of planning &managing construction site(preparation mechanization),prefabricated buildings ,modular connections &constructional.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 -The definitions and concepts related to tech .and building technology.(A1, A24)
a2 -The major effect of science &its evaluation on building technology. (A24)
a3 - Principles of site mechanization &planning for construction process. (A14)
a4 -Standards& module systems in buildings. (A14)
a5 -Prefabricated buildings (historic view ,concepts disciplines) (A8)
a6 -Structural units & connection in prefabricated building & form work systems. (A14,A24)
a7 -The expected future of construction in Egypt (problems, potentials…).(A14)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Discover & analyze the potentials & constrains of construction site. (B13)
b2 - Recognize the differences &compare between structural units in prefabricated building. (B17) , (B23)
b3 - Identify the advantages & disadvantages of construction systems & materials (traditional, new, prefab & form work). (B17)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 -Design a plan for construction works &Equipment in site. (C17)
c2 -Find and implement different solutions & alternatives in execution methods. (C14 , C23)
c3 - Demonstrate environmental studies that are applicable to building technology techniques and processes (C25)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Collaborate effectively within multidisciplinary team. (D1)
d2 - Communicate effectively. (D3)
d3 - Lead & motivate individuals. (D5)
d4 - Manage tasks & resources efficiently. (D6)
d7 - Search for information and adopt lifelong self learning. (D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1,A8,A14 ,A24
B	Intellectual skills	B13,B17, B23
C	Professional and practical skills	C14,C17, C23,C25
D	General and transferable skills	D1,D3,D5,D6,D7

3 - Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1) Definition of technology. Middle ages building technology.	2		
2) Technology in terms of materials, devices and implementation.	2		
3) Fundamentals of technology science & its relation to technology.	2		
4) Primitive building technology.	2		
5) Construction systems and execution methods	2		
6) Foundations work. Tie beams work	2		
7) Mid-Term Exam	2		
8) Reinforced concrete work	2		
9) Prefabricated buildings.	2		
10) Module connections. Structural units.	2		
11) Form work systems	2		
12) Management site works.	2		
13) Mobilization, preparation & mechanization	2		
14) Prefabrication industry & construction future in Egypt	2		
15) Revision.	2		
Total hours	**30**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1	1	1							1		1					1	1			
	a2	1	1		1				1	1			1						1	1			
	a3	1	1	1	1							1							1	1			
	a4	1	1	1	1							1							1	1			
Intellectual Skills	b1	1			1		1	1	1		1					1	1	1					
	b2			1			1	1	1														
	b3				1		1		1	1			1						1	1			
	b4	1			1		1	1	1		1					1		1					
Applied Professional Skills	c1	1		1	1							1				1		1					
	c2	1		1	1			1	1	1			1						1	1			
	c3							1	1	1			1										
	c4	1		1	1							1				1		1					
General Tran. Skills	d1			1					1			1		1	1	1		1	1	1			
	d2		1	1	1			1	1			1					1	1					
	d3			1					1			1		1	1	1		1	1	1			
	d4		1	1				1	1			1											

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	7-th Week	5
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes

- Handouts

6-2 Required books

- Serag Eldin, Dr. Samy B., "Construction Building Technology "(Arabic), 2005.

6-3 Recommended books

- Hawass, Dr. M. Zaki , " The Art of contemporary Building " (Arabic) , 1985 , Alam El Kottob , Cairo .
- Ewerda, Dr. M. Mahmoud , " Modern Building Technology " (Arabic)

6-4 Periodicals, Web sites, etc.

7- Facilities required for teaching and learning:

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

Course coordinator: Dr. Asamer Zakaria.
Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Course Specifications

Architectural Engineering and Building Technology Department

Third Year

Code	Name
A311	architectural design(2)-a
A312	architectural design(2)-b
A321	Building Const. and Materials(2)- a
A322	Building Const. and Materials(2)- b
A331	History& Theory of arch.(2-a)
A332	History& Theory of arch.(2-b)
A341	Reinf. concrete & Steel Const.(1)
A342	Reinf. concrete & Steel Const.(2)
A351	Environmental control
A352	visual training (2)
A361	Design Methodolgy
A362	Human Architecture Studies
A371	History & Theory of planning
A372	Computer Appl. (Comp.Graph)-b
A381	Computer Appl. (Comp.Graph)-a
A382	Construction equipment-b
A391	Construction equipment-a

Modern Academy for Engineering and Technology

Course Specification

A311:Architectural Design (2) -a

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Architectural design (2) **Code:** A311 **Year/level:** 3rd year , 1st semester
Teaching Hours: **Lectures:** 6 hrs **Tutorial: –**
Practical: — **Total:** 6 hrs

C - Professional information

1 – Course Learning Objectives:

The objective of the course is to develop students' capacities in dealing with architectural design as to solve spatial problems at different levels

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - Fundamental engineering sciences relevant to architectural practices(A5)
a2 - The phases, methods and approaches to design process(A5-A13)
a3 - The spatial regards for cultural context and environmental constraints (A17-A21)
a4 - The relationships between built forms, socio-economic and environmental parameters(A13)
a5 - The principles of environmental and climatic design [including natural ventilation, daylight, passive solar energy] (A23)
a6 - The relationship between aesthetics and functionality, flexibility and adaptability(A13,A14)
a7 - The spatial requirements for human needs and occupants' comfort (A21)
a8 - The principles of landscape architecture(A18)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Develop abilities to undertake data gathering tasks (B3)
b2 - Master data analyses, interpretation, and manipulation. (B4)
b3 -Deduce grounded criteria and guidelines from a given design problem(B3)
b4 - Induce theoretical models out of a particular studied context (B13)
b5 - Relate different branches of studied courses together in a holistic manner(B13)
b6 - Integrate theoretical studies with practical reality(B13)
b7 - Promote investigation and exploration abilities in research work(B3- B13)
b8 - Improve logical reasoning faculties(B4)
b9 - Distill knowledge from precedent experiences(B4)
b10 - Set alternatives (B4)
b11 - Classify, compare, examine and assess the validity / feasibility of pre-set alternatives(B13)
b12 - Improve creative problem-solving and decision-making faculties(B13)
b13 - Ability to analyze problems into sub-problems towards a controllable handling of elements(B14)

b14 - Synthesize solution mechanisms and components properly (B13)
b15 - Improve the ability to understand numeric connotations(B13)
b16 - Develop architectural and structural sense of scale and proportions(B13)
b17 - Stimulate imaginative abilities(B13)
b18 - Improve environmental sense(B13)
b19 - Develop philosophical analogies and symbolic metaphors in architectural context(B13)

C - Professional and practical skills:

By the end of the course the student should practice:

c1 - Professional techniques of manual presentation using different tools and media(C6)
c2 - Architectural model-making with different materials and techniques(C3)
c3 - Introducing professional 2D drawings(C6)
c4 - Developing architectural designs that are functionally sound, environmentally appropriate aesthetically plausible, users' friendly and technologically up-to-date. (C17)
c5 - Designing projects of various scales and levels of complexity (C17)
c6 - Mastering architectural morphology and spatial organization within sound geometric relations (C17)

D - General and transferable skills:

By the end of the course the student should accomplish:

d1 (D3) - Communicating ideas verbally and visually in a clear coherent manner
d2 (D3) - Active involvement in-group discussions and mutual critiques
d3 (D7) - Improved communication skills with versatile backgrounds in field research.
d4 (D7) - Defending ideas and convincing others
d5 (D7) - Presenting seminars and public talks
d6 (D3) - Ability to work in team environments
d7 (D3) - Sound task allocation amongst team members
d8 (D3) - Working under pressure
d9 (D7) - Familiar interaction with libraries, books, periodicals, internet …
d10 (D3) - Organization and documentation skills

Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A5, A13, A14,A17,A18,A21
B	Intellectual skills	B3, B4, B13, B14
C	Professional and practical skills	C3, C6, C17
D	General and transferable skills	D3,D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. 1st project : Central library	6		
2. Library project + site analysis	6		
3. Design criteria of library buildings	6		
4. Bubble diagram + zoning of elements	6		
5. Site model	6		
6. Masses – model Concept development	6		
7. Mid-Term Exam	6		

8. Drawing master plan	6		
9. Solving design – problems in plan	6		
10. Final plans	6		
11. Drawing main sections	6		
12. Drawing elevations	6		
13. Formation development in elevations	6		
14. Drawing 3d perspectives or isometric + site design	6		
15. Final preservation of project + jury	6		
Total hours	90		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1	1	1							1	1	1						1			
	a2	1	1	1	1		1	1	1			1	1	1		1		1		1			
	a3	1	1	1	1							1	1	1						1			
	a4	1	1	1	1		1	1	1			1		1						1			
	a5	1	1	1	1		1	1	1			1		1					1	1			
	a6	1	1		1			1	1						1				1	1			
	a7	1	1		1			1	1						1	1			1	1			
	a8	1	1		1			1	1						1				1	1			
Intellectual Skills	b1	1		1	1		1	1	1	1			1						1	1			
	b2	1		1	1		1	1	1	1			1						1	1			
	b3	1		1	1		1	1	1	1			1			1			1	1			
	b4		1	1			1	1	1										1				
	b5		1	1			1	1	1										1				
	b6		1	1			1	1	1										1				
	b7	1	1	1	1		1	1	1	1			1						1				
	b8			1	1		1	1	1				1		1					1			
	b9			1	1		1	1	1				1		1					1			
	b10			1	1		1	1	1				1		1	1				1			
	b11		1	1			1	1	1										1				
	b12		1	1			1	1	1										1				
	b13	1	1					1	1			1		1	1	1				1			
	b14		1	1			1	1	1										1				
	b15		1	1			1	1	1										1				
	b16		1	1			1	1	1										1				
	b17		1	1			1	1	1										1				
	b18		1	1			1	1	1										1				
	b19		1	1			1	1	1										1				
Applied Professional Skills	c1	1	1	1	1		1		1	1		1	1			1			1	1			
	c2				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				
	c5				1		1	1	1			1				1			1				
	c6				1		1	1	1			1				1			1				
General Tran. Skills	d1	1	1	1			1	1				1		1									
	d2	1	1	1			1	1				1		1									
	d3			1					1			1							1	1			
	d4			1					1			1							1	1			
	d5			1					1			1							1	1			
	d6	1	1	1			1	1				1		1									
	d7	1	1	1			1	1				1		1									
	d8	1	1	1			1	1				1		1									
	d9			1					1			1							1	1			
	d10	1	1	1			1	1				1		1									

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	60
Mid-Term Exam	7-th Week	15
Practical Exam	-	-
Written Exam	Seconed Semester	
Total		75

6- List of references:

6-1 Course notes

- lecture notes & handouts

6-2 Required books

- Timesaver standard for landscape architecture
- Neufert & architecture , division of john willy & sans IRC , network , USA , press

6-3 Recommended books

- Libraries vol. 1, 2. image

6-4 Periodicals, Web sites, etc.

- www.archinform.com
- www.greatbuildings.com
- Arca
- Medina
- Alem Al Benaa
- Al Beneaa Ksa

7- Facilities required for teaching and learning:

- Classroom
- Drawing hall
- Store for saving project of student
- Computer Lab for students who prefer modeling by computer

Course coordinator: Dr. Asamer Zakaria

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification
A312:Architectural Design (2)-b

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Academic year/level: 3rd year, Arch. Eng. 2nd semester
Date of specifications approval: September,2015

B - Basic information

Title: Architectural design (2)	**Code:** A312	**Year/level: 3rd year , 2nd semester**
Teaching Hours:	**Lectures: 6 hrs**	**Tutorial: —**
	Practical: —	**Total: 6 hrs**

C - Professional information

1 – Course Learning Objectives:

The objective of the course is to develop students' capacities in dealing with architectural design as to solve spatial problems at different levels:

- Site plan relationships and constraints.
- Massing, forms and spaces.
- Structural system and morphology.
- Form and functional, individual, social and civic needs.
- Architectural patterns and the physical, environmental, structural and symbolic dimensions.
- Aesthetics in architectural forms.
- Devising architectural modeling techniques towards improving structural comprehension.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - The fundamental engineering sciences relevant to architectural practices(A5)
a2 - The phases, methods and approaches to design process(A5,A13)
a3 - The spatial regards for cultural context and environmental constraints (A17-A21)
a4 - The relationships between built forms, socio-economic and environmental parameters(A13)
a5 - The principles of environmental and climatic design [including natural ventilation, daylight, passive solar energy. (A23)
a6 - The relationship between aesthetics and functionality, flexibility and adaptability .(A13,A14)
a7 - The spatial requirements for human needs and occupants' comfort .(A21)
a8 -The principles of landscape architecture .(A18)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Develop abilities to undertake data gathering tasks (B3)
b2 - Master dala analysis, interpretation, and manipulation. (B3)
b3 -Deduce grounded criteria and guidelines from a given design problem(B4)
b4 - Induce theoretical models out of a particular studied context (B13)
b6 - Relate different branches of studied courses together in a holistic manner(B13)
b7 - Integrate theoretical studies with practical reality(B13)
b8 - Promoting investigation and exploration abilities in research work(B3-B13)
b9 - Improve logical reasoning faculties(B4)
b10 - Set alternatives(B4)
b11 - Classify, compare, examine and assess the validity / feasibility of pre-set alternatives(B13)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - Apply techniques of manual presentation using different tools and media(C6)
c2 - Practice model-making with different materials and techniques(C3)
c3 - Introduce professional 2D drawings(C6)
c4 - Develop architectural designs that are functionally sound, environmentally appropriate aesthetically plausible, users' friendly and technologically up-to-date. (C17)
c5 - Design projects of various scales and levels of complexity(C17)
c6 - Master architectural morphology and spatial organization within sound geometric relations (C17)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Communicate ideas verbally and visually in a clear coherent manner (D3)
d2 - Engage in-group discussions and mutual critiques(D5)
d3 - Improve communication skills with versatile backgrounds in field research-(D7)
d4 - Defend ideas and convincing others (D7)
d5 - Present seminars and public talks(D7)
d6 - Work in team environments(D3)
d7 - Allocate tasks amongst team members(D3)
d8 - management to meet deadlines(D6)
d9 - Work coordination amongst others(D3)
d10 - Work under pressure(D2)
d11 - Interaction with libraries, books, periodicals, internet … (D2)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4,A5,,A12,A13,A14,A17,A18,A19,A21,A23
B	Intellectual skills	B3,B4,B13
C	Professional and practical skills	C3, C6,C17
D	General and transferable skills	D2 ,D3,D5,D6,D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. 2nd project : future – School	6		
2. School project + site analysis	6		
3. Design criteria of School & educational buildings	6		
4. Bubble diagram + zoning of elements	6		
5. Site + masses model	6		
6. Concept development + drawing plans	6		
7. Mid-Term Exam	6		
8. Drawing sections + elevations+ Final plans	6		
9. Drawing sections + elevations	6		
10. Final sections + Final elevations	6		
11. Formation development in 3D	6		
12. Final site design	6		
13. Final preservation of project + jury	6		
14. 3rd project : residential building	6		
15. Residential project Site analysis Drawing main plans + sections + elevations Final presentation	6		
Total hours	90 hrs		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1	1	1							1	1	1						1			
	a2	1	1	1	1		1	1	1			1	1	1		1		1		1			
	a3	1	1	1	1							1	1	1						1			
	a4	1	1	1	1		1	1	1			1		1						1			
	a5	1	1	1	1		1	1	1			1		1					1	1			
	a6	1	1		1			1	1						1				1	1			
	a7	1	1		1			1	1						1	1			1	1			
	a8	1	1		1			1	1						1				1	1			
Intellectual Skills	b1	1		1	1		1	1	1	1			1						1	1			
	b2	1		1	1		1	1	1	1			1						1	1			
	b3	1		1	1		1	1	1	1			1			1			1	1			
	b4		1	1			1	1	1										1				
	b5		1	1			1	1	1										1				
	b6		1	1			1	1	1										1				
	b7	1	1	1	1		1	1	1	1			1						1				
	b8			1	1		1	1	1				1		1					1			
	b9			1	1		1	1	1				1		1					1			

	b10			1	1		1	1	1				1		1	1				1			
	b11		1	1			1	1	1										1				
	b12		1	1			1	1	1										1				
	b13	1	1					1	1			1		1	1	1				1			
	b14		1	1			1	1	1										1				
	b15		1	1			1	1	1										1				
	b16		1	1			1	1	1										1				
	b17		1	1			1	1	1										1				
	b18		1	1			1	1	1										1				
	b19		1	1			1	1	1										1				
Applied Professional Skills	c1	1	1	1	1		1		1	1		1	1			1			1	1			
	c2				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				
	c5				1		1	1	1			1				1			1				
	c6				1		1	1	1			1				1			1				
General Tran. Skills	d1	1	1	1			1	1				1		1									
	d2	1	1	1			1	1				1		1									
	d3			1					1			1							1	1			
	d4			1					1			1							1	1			
	d5			1					1			1							1	1			
	d6	1	1	1			1	1				1		1									
	d7	1	1	1			1	1				1		1									
	d8	1	1	1			1	1				1		1									
	d9			1					1			1							1	1			
	d10	1	1	1			1	1				1		1									

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	60
Mid-Term Exam	7-th Week	15
Practical Exam	-	-
Written Exam	Sixteenth week	100
Total		150

6- List of references:

6-1 Course notes

- lecture notes & handouts

6-2 Required books

- Time saver ,1990,joseph de chim
- Neufert & Architecture , Division of John willy & sans IRC , network , USA , press

6-3 Recommended books

- Steele, J., "Architecture Today", Second edition, Phaeton Press Limited, London, UK, 2001.

6-4 Periodicals, Web sites, etc.

- www.archinform.com
- www.greatbuildings.com

7- Facilities required for teaching and learning:

- Classroom
- Drawing hall
- Store for saving project of student
- Computer Lab for students who prefer modeling by computer

Course coordinator: Dr. Asamer Zakaria

Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A321:Building Construction and Materials(2)-a

A- Affiliation

Relevant program: Architectural Engineering and Building Technology
Department offering the program: Architectural Engineering and Building Technology Dpt.
Department offering the course: Architectural Engineering and Building Technology Dpt.
Date of specifications approval: September,2015

B - Basic information

Title: Architectural Construction and building Materials | Code: A321 | Year/level: Third,1st Semester
Teaching Hours: | Lectures: 2 | Tutorial: 2
Practical: - | Total: 4

C - Professional information

1 – Course Learning Objectives:

The main objective of this course is to enable the student to :

- Develop the ability to be updated with new building construction systems.
- Define and recognize the basic building materials and buildings main components and their implementation into different kinds of buildings.
- To be up knowledge with working drawing details (Insulation , Stairs , Doors , Windows) & qualify the student to handle with site work & details.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.

a1 - Principles of building technologies, structure & construction methods, technical installations, properties of materials, and the way they may influence design decisions(A14-A24).
a2 - Fundamentals of building acquisition, operational costs, and of preparing construction documents and specifications of materials, components, and systems appropriate to the building (A15).
a3 - Physical modeling, multi-dimensional visualization, multimedia applications, and computer-aided design (A20).
a4 - The role of the architecture profession relative to the construction industry and the overlapping interests of organizations representing the built environment (A21- A25).
a5 -Various dimensions of Simple building problem and the range of approaches, policies, and practices that could be carried out to solve this problem (A23).

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Integrate different forms of knowledge, ideas from other disciplines, and manage information retrieval to create new solutions (B13).
b2 - Think three-dimensionally and engage images of places & times with innovation and creativity in the exploration of design (B14-B23).
b3 - Predict possible consequences, by- products and assess expected performance of design alternatives (B15).
b4 - Integrate relationship of structure, building materials, and construction elements into design (B17-B22)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - Produce professional workshop and technical drawings using traditional drawing and computer-aided drawings' techniques (C14).

c2 - Use appropriate construction techniques and materials to specify and implement different designs (C15- C23).

c3– Display imagination and creativity (C18-C24).

c4- Demonstrate environmental studies that are applicable to building technology techniques and processes.(C25.)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 -Collaborate effectively within multidisciplinary team(D1)

d2 -Work in stressful environment and within constraints(D2)

d3 -Communicate effectively(D3)

d4 -Manage tasks and resources efficiently(D6)

d5 -Search for information and adopt life-long self-learning(D7)

d6 -Acquire entrepreneurial skills(D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A14,A15, A20,A21, A23, A24,A25,
B	Intellectual skills	B13, B14, B15, B17 ,B22,B23
C	Professional and practical skills	C14,C15,C18,C23,C24, C25
D	General and transferable skills	D1, D2,D3, D6, D7, D8

3 – Contents

S	Topic	Lecture hours	Tutorial hours	Practical hours
1	Introduction & Revision (Symbols)	2	2	
2	Waterproofing – Heat, sound and Radiation Insulations (Methods -Types- Materials).	2	2	
3	Insulation Layers and Applying methods.	2	2	
4	Expansion, Settlement and Material Joints. (Floors-Roofs-Walls…) .	2	2	
5	Walls and Floors (Interior & Exterior) (Finishing Materials, Plaster, painting).	2	2	
6	Stairs (Design–Types-Specifications and Construction).	2	2	
7	Mid-Term Exam	2	2	
8	Reinforced Concrete Stairs (Details) Reinforced Concrete Stairs (Specifications – Handrails – Finishing material).	2	2	
9	Wood (introduction–types–use in buildings)	2	2	
10	Wooden Work & Products Design and Drawing basics (Joist sizes - Joints- accessories).	2	2	

11	Wooden Doors (Interior& Exterior) (Frames, Stock and Hardware).	2	2	
12	Wooden doors Details (Solid Molded, Slat).	2	2	
13	Wood doors Details (Paneled, Flush doors).	2	2	
14	Wood doors Details (Doors Hardware Equipment).	2	2	
15	Revision: .....Revision	2	2	
Total hours		30	30	

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1		1		1		1			1							1	1			
	a2	1	1	1					1			1				1			1	1			
	a3	1	1				1					1		1	1				1	1			
	a4	1	1	1			1	1				1			1	1			1	1			
	a5	1	1	1					1			1							1	1			
Intellectual Skills	b1	1	1	1					1			1		1					1	1			
	b2	1	1		1				1			1	1			1			1	1			
	b3	1	1		1					1		1	1										
	b4	1		1			1	1	1							1			1	1			
Applied Professional Skills	c1				1			1	1			1							1	1			
	c2	1			1				1	1									1	1			
	c3	1		1			1	1	1			1			1	1			1	1			
General Tran. Skills	d1			1			1	1	1			1			1								
	d2			1			1	1				1				1			1	1			
	d3			1			1	1				1			1								
	d4	1	1	1			1		1			1				1			1	1			
	d5	1					1		1			1			1								
	d6	1		1	1		1	1	1			1			1	1			1	1			

5- 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
Practical Exam	-	-
Written Exam	Sixteenth week	-
Total		60

6- List of references:

6-1 Course notes

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

6-2 Essential books (text books)

W.B.McKay (vol.1), Building Construction.

6-3 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

6-4 Periodicals, Web sites, etc.

http://products.construction.com/ - Sweets Construction .

7- 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:	Prof. Dr. Magdy Tammam
Head of the Department:	Associate Professor: Nahed Omran
Date:	September , 2015

Modern Academy for Engineering and Technology

Course Specification

A322:Building Construction and Materials(2)b

A- Affiliation

Relevant program: Architectural Engineering and Building Technology
Department offering the program: Architectural Engineering and Building Technology Dpt.
Department offering the course: Architectural Engineering and Building Technology Dpt.
Date of specifications approval: September,2015

B - Basic information

Title: Architectural Construction and building Materials	Code: A322	Year/level: Third 2nd Semester
Teaching Hours:	Lectures: 4	Tutorial: 2
	Practical: -	Total: 6

C - Professional information

1 – Course Learning Objectives:

The main objective of this course is to enable the student to :

- Continue to develop the ability to be updated with new building construction systems and building technology.
- Define and recognize the finishing building materials .
- Recognize building cracks (cause – preventing – repairing) .
- To be up knowledge with working drawing (plans ,sections, elevations, details) and use the checklist to quality control drawings .

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.

a1 - Principles of building technologies, structure & construction methods, technical installations, properties of materials, and the way they may influence design decisions(A14-A24).

a2 - Fundamentals of building acquisition, operational costs, and of preparing construction documents and specifications of materials, components, and systems appropriate to the building (A15).

a3 - Physical modeling, multi-dimensional visualization, multimedia applications, and computer-aided design (A20).

a4 - The role of the architecture profession relative to the construction industry and the overlapping interests of organizations representing the built environment (A21- A25.

a5 -Various dimensions of Simple building problem and the range of approaches, policies, and practices that could be carried out to solve this problem (A23).

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Integrate different forms of knowledge, ideas from other disciplines, and manage information retrieval to create new solutions (B13).

b2 - Think three-dimensionally and engage images of places & times with innovation and creativity in the exploration of design (B14-B23).

b3 - Predict possible consequences, by- products and assess expected performance of design alternatives (B15).
b4 - Integrate relationship of structure, building materials, and construction elements into design (B17-B22)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - Produce professional workshop and technical drawings using traditional drawing and computer-aided drawings' techniques (C14).
c2 - Use appropriate construction techniques and materials to specify and implement different designs (C15-C23).
c3– Display imagination and creativity (C18-C24).
c4- Demonstrate environmental studies that are applicable to building technology techniques and processes.(C25.)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 -Collaborate effectively within multidisciplinary team(D1)
d2 -Work in stressful environment and within constraints(D2)
d3 -Communicate effectively(D3)
d4 -Manage tasks and resources efficiently(D6)
d5 -Search for information and adopt life-long self-learning(D7)
d6 -Acquire entrepreneurial skills(D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A14,A15, A20, A21,A 23, A24,A25
B	Intellectual skills	B13, B14, B15, B17 ,B22,B23
C	Professional and practical skills	C14, C15,C18,C23,C24,C25
D	General and transferable skills	D1, D2,D3, D6, D7, D8

3 – Contents

Topic		Lecture hours	Tutorial hours	Prac. Hours
1	Wooden Windows(Dormer- Casement–Screens for windows)	4	2	
2	Wooden Windows Details. (Window Hardware Equipment).	4	2	
3	Wood Furring, Paneling and fences (Molding- Softwood Plywood-Hardboard)	4	2	
4	Wooden Stairs (Specifications –Treads - Risers - Handrails – Details).	4	2	
5	Metal Work & Products. (Miscellaneous Steel Shapes-Joints).(Doors-Windows-Chutes). (Metal Lath and Plaster Ceilings).	4	2	
6	Metallic Stairs(Specifications–Tread-Risers-Handrails– Details).	4	2	
7	Mid-Term Exam	4	2	
8	Advanced building systems. Escalators , Stairs and Elevators	4	2	
9	Project (Small Villa – Bank Branch – Two-story Shop) & Sanitary Work (Symbols - Bath room plumbing – Pipes and Fittings – Riser Diagram –Water Tank).	4	2	

10	Project & Electric Work (Symbols - Residential Wiring – Elevators)	4	2	
11	Project & Modular Coordination (Plans Dimension – Elevations- Column, Walls, Partitions, doors and Windows- Pre-cast).	4	2	
12	Project & Measurement	4	2	
13	Project & Quality control	4	2	
14	Project & Defectives Correction	4	2	
15	Revision: ……..Revision.	4	2	
Total hours		**60**	**30**	

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1		1		1		1			1							1	1			
	a2	1	1	1					1			1				1			1	1			
	a3	1	1				1					1		1	1				1	1			
	a4	1	1	1			1	1				1			1	1			1	1			
	a5	1	1	1					1			1							1	1			
Intellectual Skills	b1	1	1	1					1			1		1					1	1			
	b2	1	1		1				1			1	1			1			1	1			
	b3	1	1		1					1		1	1										
	b4	1		1			1	1	1							1			1	1			
Applied Professional Skills	c1				1			1	1			1							1	1			
	c2	1			1				1	1									1	1			
	c3	1		1			1	1	1			1			1	1			1	1			
General Tran. Skills	d1			1			1	1	1			1			1								
	d2			1			1	1				1				1			1	1			
	d3			1			1	1				1			1								
	d4	1	1	1			1		1			1				1			1	1			
	d5	1					1		1			1			1								
	d6	1		1	1		1	1	1			1			1	1			1	1			

5- 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
Practical Exam	-	-
Written Exam	Sixteenth week	100
Total		160

6- List of references:

6-1 Course notes

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

6-2 Essential books (text books)

W.B.McKay (vol.1), Building Construction.

6-3 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

6-4 Periodicals, Web sites, etc.

http://products.construction.com/ - Sweets Construction .

7- 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: Prof. Dr. Magdy Tammam
Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A331:History & Theories of Architecture(2) - A

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: History and Theories of Architecture (2)- A | **Code: A331** | **Year/level:** 3rd year , 1st semester

Teaching Hours: **Lectures: 4** **Tutorial:**
Practical: **Total: 4**

C - Professional information

1 – Course Learning Objectives:

Main objective of this course is to introduce the basic concept, the philosophy and the design criteria for public and service buildings

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1- The fundamental engineering sciences relevant to architectural practices(A15)
a2 - Spatial regards for cultural context and environmental constraints (A17)
a3- The relationships between built forms, socio-economic and environmental parameters(A18,A19)
a4- The relationship between aesthetics and functionality, flexibility and adaptability(A18)
a5- Spatial requirements for human needs and occupants' comfort (A18)

B - Intellectual skills:

By the end of the course the student should be able to:

b1-Deduct grounded criteria and guidelines from a given design problem(B1)
b2- Induct theoretical models out of a particular studied context (B2)
b3- Integrate theoretical studies with practical reality(B3)
b4- Promote investigation and exploration abilities in research work(B6)
b5- Improve logical reasoning faculties(B5)
b6- Distill knowledge from precedent experiences (B6)
b7- Improve environmental sense(B7)
b8- Understand and develop philosophical analogies and symbolic metaphors in architectural context(B8)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1- Develop architectural designs that are functionally sound, environmentally appropriate aesthetically plausible, users' friendly and technologically up-to-date accourding to what have been studied(C1)
c2- Design projects of various scales and levels of complexity (C2)
c3- Master architectural morphology and spatial organization within sound geometric relations

according to the studied era. (C3)
c4- Contribute positively to the aesthetic, architecture and urban identity, and cultural life of the community.(C22.)

D - General And Transferable Skills:

By the end of the course the student should be able to:
d1- Communicate ideas verbally and visually in a clear coherent manner(D1)
d2- involvement in-group discussions and mutual critiques(D2)
d3 - Improve communication skills with versatile backgrounds in field research-(D3)
d4 - Defend ideas and convincing others (D4)
d5 - Present seminars and public talks(D5)
d6 - Work in team environments(D6)
d7 - Allocate task amongst team members(D7)
d8 - Manage time to meet deadlines(D8)
d9 - Coordinate work amongst various sites and parties(D9)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A16,A18,A19
B	Intellectual skills	B1,B2,B3,B4,B5,B6,B7,B8
C	Professional and practical skills	C1,C2,C3,C22
D	General and transferable skills	D1,D2,D3,D4,D5,D6,D7,D8,D9

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1) building types	4		
2) Educational building	4		
3) Educational building	4		
4) office building	4		
5) Hotels	4		
6) Commercial buildings	4		
7) Mid-Term Exam	4		
8) Restaurants	4		
9) Restaurants	4		
10) Theatres	4		
11) Theatres	4		
12) Museum	4		
13) Hospitals – parking	4		
14) architectural themes	4		
15) architectural themes	4		
Total hours	**60**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1	1								1			1	1							
	a2	1	1	1	1		1	1				1			1	1				1			
	a3	1	1	1	1		1	1				1			1	1							
	a4	1	1	1	1		1	1				1			1	1							
	a5	1	1	1	1		1	1				1			1	1							
Intellectual Skills	b1	1			1							1	1										
	b2	1	1	1			1	1				1				1							
	b3			1	1		1	1				1	1			1				1			
	b4		1	1				1				1				1				1			
	b5	1	1	1	1		1	1				1				1				1			
	b6	1		1								1				1							
	b7	1	1	1			1					1				1							
	b8	1	1	1	1		1	1				1				1				1			
Applied Professional Skills	c1	1		1	1		1					1				1				1			
	c2	1		1	1		1					1				1				1			
	c3				1		1	1				1				1				1			
General Tran. Skills	d1	1	1	1			1	1				1											
	d2			1			1	1				1				1				1			
	d3	1	1	1	1		1	1				1				1							
	d4	1	1		1							1	1			1							
	d5	1	1	1			1	1															
	d6	1	1	1								1				1				1			
	d7	1	1				1	1				1								1			
	d8	1	1	1	1		1					1			1	1				1			
	d9	1										1			1	1				1			
	d10			1			1	1				1				1				1			
	d11	1	1				1	1				1								1			
	d12	1	1	1								1				1				1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes

Lecture notes & hand out , book

6-2 Required books

Arfan sami, theories of architecture

6-3 Recommended books

Tawfek abd gawad Islamic architecture,1984. Alanglo.

2 Ali Raafat ,Triad of Architecture Creativity,1997, Alahram .

6-4 Periodicals, Web sites, etc.

(concept & civilization) , Anglo library , Cairo

7- Facilities required for teaching and learning:

Blackboard / whiteboard & chalk.
Listing methods.
Books, scientific references, specific internet sites.
Data Show projects.

Course coordinator: Associate Professor.walaa nour

Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A332:History and Theories of Architecture (2)-B

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: History and Theories of Architecture (2)-B **Code:** A332 **Year/level:** 3rd year, 2nd semester
Teaching Hours: **Lectures:4** **Tutorial:**
Practical: **Total:** 4

C - Professional information

1 – Course Learning Objectives:

Main objective of this course is to study the evolution of architecture until the renaissance era- Analytical study of the architecture of historical epochs: the Christian age and Coptic architecture in Egypt; Byzantine architecture; Romanesque architecture and gothic style in Europe.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - History of architecture. (A19)
a2 - New concepts for buildings forms through history. (A19)
a3 - basic feature of the early Christian architecture. (A12, A19)
a4 - basic feature of the Romanesque and gothic architecture. (A12, A19)
a5 - Comprehending the main features of historic art and architectural styles(A19)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Develop abilities to undertake data gathering tasks (B7)
b2 - Master data analyses, interpretation, and manipulation. (B13,B14)
b3 -Deduct grounded criteria and guidelines from a given design problem(B14)
b4 - Induct theoretical models out of a particular studied context (B14,B21)
b5 -Integrate different scales of design, ranging from interior details to urban development and town planning schemes(B20,B21)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1– Practice manual drafting and freehand sketching(C13)
c2 - Identify the difference between styles of Architecture & interpret their concepts. (C18)
c3 - Present architectural project in digital research & produce it visually to the audience. (C12)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Work in team environments(D2)
d2 - Write reports and prepare visual presentations(D9)
d3 - Present researches in teamwork(D3- D4-D5)
d4 - Use the Email for communication (D3)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A12,A19
B	Intellectual skills	B7,B13,B14,B20,B21
C	Professional and practical skills	C12,C13,C18
D	General and transferable skills	D2,D3,D4,D5,D9

3 – Contents

Topic	Lecture h,ours	Tutorial hours	Practical hours
1) General introduction for the course	4		
2) Christian age	4		
3) Christian age	4		
4) Coptic architecture	4		
5) Coptic architecture	4		
6) Byzantine architecture	4		
7) Mid-Term Exam	4		
8) Romanesque architecture	4		
9) Romanesque architecture	4		
10) Romanesque architecture	4		
11) Gothic style in France	4		
12) Gothic style in Italy	4		
13) Gothic style in Europe	4		
14) Digital Presentation of the Final Researches: 15) (Jury) : *Staff's Criticism / Evaluation for each Student*	4		
16) Digital Presentation of the Final Researches: 17) (Jury) : *Staff's Criticism / Evaluation for each Student*	4		
Total hours	**60**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1	1								1			1	1							
	a2	1	1	1	1		1	1				1			1	1				1			
	a3	1	1	1	1		1	1				1			1	1							
	a4	1	1	1	1		1	1				1			1	1							
	a5	1	1	1	1		1	1				1			1	1							
Intellectual Skills	b1	1			1							1	1										
	b2	1	1	1			1	1				1				1							
	b3			1	1		1	1				1	1			1				1			
	b4		1	1				1				1				1				1			
	b5	1	1	1	1		1	1				1				1				1			
	b6	1		1								1				1							
	b7	1	1	1			1					1				1							
	b8	1	1	1	1		1	1				1				1				1			
Applied Professional Skills	c1	1		1	1		1					1				1				1			
	c2	1		1	1		1					1				1				1			
	c3				1		1	1				1				1				1			
General Tran. Skills	d1	1	1	1			1	1				1											
	d2			1			1	1				1				1				1			
	d3	1	1	1	1		1	1				1				1							
	d4	1	1		1							1	1			1							
	d5	1	1	1			1	1															
	d6	1	1	1								1				1				1			
	d7	1	1				1	1				1								1			
	d8	1	1	1	1		1					1			1	1				1			
	d9	1										1			1	1				1			
	d10			1			1	1				1				1				1			
	d11	1	1				1	1				1								1			
	d12	1	1	1								1				1				1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes

None

6-2 Essential books (text book)

 Reham Ibrahem momtaz – 2009

6-3 Recommended books

- Ali Raafat ,Triad of Architecture Creativity
- Cruickshank , D., A History of Architecture
- Becktel, H. "The Built Environment", USA, (1998).
- Tawfek abd gawad – Islamic architecture-Al-anglo (1982)
- Kaufmann, E., Architecture in the Age of reason , Baroque and post – Baroque in England
- Mcnutt , S. Churches & Cathedrals Masterpieces of Architecture

6-4 Periodicals, Web sites, etc.

 Progressive Architecture

www.Greatbuilgings.com

www.Archinform.com

7- Facilities required for teaching and learning:

Blackboard / whiteboard & chalk.

Listing methods.

Books, scientific references, specific internet sites.

Data Show – projects.

Course coordinator: Associate Professor.Reham Ibrahem Momtaz.

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A341: Reinforced Concrete & Steel Structures - A

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B- Basic Information

Title: Reinforced Concrete & Steel Structures A **Code:** A341 **Year/level:** 3rd year,1ST semester
Teaching Hours: 4 **Lectures: 2** **Tutorial: 2**

C - Professional Information

1- Course Learning Objectives:

The course aims at introducing students to Reinforced Concrete; properties, function, usage in building construction.

2- Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire knowledge of:

a1 - Fundamental knowledge about reinforced concrete & steel structures relevant to architectural practices (A4)
a2 - Building codes and regulations of reinforced concrete & steel structures (A4)
a3 - Properties and uses of reinforced concrete & steel sections (A6)
a4 - Basic reinforced concrete & steel structural analyses and design methods (A5)
a5 - The principles of reinforced concrete & steel construction and design criteria (A5)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Deduct grounded criteria and guidelines from a given R.C & steel structure design problem. (B2)
b2 - Master data analyses, interpretation, and manipulation. (B3)
b3 - Integrate theoretical studies with practical reality (B3)
b4 - Improve creative problem-solving and decision-making faculties (B3-B4-B24)
b5 - Classify, compare, examine and assess the validity / feasibility of pre-set alternatives. (B11)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - Introduce professional 2D drawings (C1)
c2- Master execution skills and site work of R.C & steel structures (C3-C7)
c3 - Coordinate between architectural, structural, technical and economic considerations of a project (C3-C24)

c4 - Design R.C & steel projects of various scales and levels of complexity (C3)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Manage tasks and resources efficiently (D6)

d2 - Search for information and adopt life-long self learning (D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4, A5,A6
B	Intellectual skills	B2, B3, B4, B11,B24
C	Professional and practical skills	C1, C3, C7,C24
D	General and transferable skills	D6, D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1) Introduction to reinforced concrete.	2	2	
2) Design fundamentals for concrete structures.	2	2	
3) Design fundamentals for concrete structures	2	2	
4) Analysis and design of sections under bending moment	2	2	
5) Analysis and design of sections under bending moment	2	2	
6) Load distribution	2	2	
7) Mid-Term Exam	2	2	
8) Details of beams' reinforcement	2	2	
9) Solid slabs.	2	2	
10) Solid slabs.	2	2	
11) Columns.	2	2	
12) Stairs.	2	2	
13) Ribbed slabs and hollow blocks.	2	2	
14) Paneled beams.	2	2	
15) Flat slabs.	2	2	
Total hours	**30**	**30**	

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods										Learning Methods				Assessement Method							
		Lecture	Presentations and Movies	Discussions and seminars	Tutorials	Problem solving	Brain storming					Researches and Reports	Modeling and Simulation			Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1					1					1				1		1	1				
	a2	1			1											1		1	1	1			
	a3	1			1											1		1	1	1			
	a4	1			1																		
	a5	1			1																		
Intellectual Skills	b1	1			1	1						1				1		1		1			
	b2	1			1	1										1		1	1	1			
	b3	1			1	1																	
	b4	1			1	1																	
	b5	1			1	1																	
Applied Professional Skills	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						1	1			
	c4	1			1	1																	
General Tran. Skills	d1			1	1							1								1			
	d2			1								1								1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of References:

6-1 course notes

Reinforced Concrete-a , Aiman Ezzat

6-2 Recommended books

Reinforced Concrete Design Handbook, Abd Elfatah Ibrahim, Dar Elkotob 1988

6-7 Periodicals, Web sites

ASCE Managing

www.ACI.com

7- Facilities required for teaching and learning:

Projectors and data show

Course coordinator: Dr. Aiman Ezzat

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A342: Reinforced Concrete & Steel Structures - B

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: November,2011

B- Basic Information

Title: Reinforced Concrete & Steel Structures B **Code:** A342 **Year/level:** 3rd year 2nd semester
Teaching Hours: 4 **Lectures:2** **Tutorial:2**

C- Professional Information

1-Course Learning Objectives:

The course aims at introducing students to Steel Structures; properties, function, usage in building construction.

2-Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire knowledge of:

a1- Fundamental knowledge about reinforced concrete & steel structures relevant to architectural practices (A4)
a2 - Building codes and regulations of reinforced concrete & steel structures (A4)
a3 - Properties and uses of reinforced concrete & steel sections (A6)
a4 - Basic reinforced concrete & steel structural analyses and design methods (A5)
a5 - The principles of reinforced concrete & steel construction and design criteria (A5)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Deduct grounded criteria and guidelines from a given R.C & steel structure design problem. (B2)
b2 - Master data analyses, interpretation, and manipulation. (B3)
b3 -Integrate theoretical studies with practical reality (B3)
b4 - Improve creative problem-solving and decision-making faculties (B3-B14-B24)
b5 - Classify, compare, examine and assess the validity / feasibility of pre-set alternatives. (B11)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - Introduce professional 2D drawings(C1)
c2 - Master execution skills and site work(C3-C7)
c3 - Coordinate between architectural, structural, technical and economic considerations of a project (C3,C24)
c4 - Design steel structure projects of various scales and levels of complexity(C3)
c5 - Structural analyses for Steel (C7)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 (D6) - Manage tasks and resources efficiently

d2 (D7) - Search for information and adopt life-long self learning

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4, A5,A6
B	Intellectual skills	B2, B3, B4, B11,B24
C	Professional and practical skills	C1, C3, C7,C24
D	General and transferable skills	D6, D7

3 – Contents

Topic		Lecture hours	Tutorial hours	Practical hours
1)	Introduction to steel structures.	2	2	
2)	Design fundamentals for Steel structures.	2	2	
3)	Dimensions and loads of trusses	2	2	
4)	Axially loaded tension members	2	2	
5)	Axially loaded compression members	2	2	
6)	Dimensions and loads of trusses	2	2	
7)	Mid-Term Exam	2	2	
8)	Structural details for trusses and steel frames	2	2	
9)	Joint details..	2	2	
10)	Bolted connections	2	2	
11)	Bolted connections	2	2	
12)	Welded connections	2	2	
13)	Design of beams	2	2	
14)	Design of columns	2	2	
15)	Base connections and supports	2	2	
Total hours		**30**	**30**	

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods										Learning Methods				Assessement Method							
		Lecture	Presentations and Movies	Discussions and seminars	Tutorials	Problem solving	Brain storming					Researches and Reports	Modeling and Simulation			Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1					1					1				1		1	1				
	a2	1			1											1		1	1	1			
	a3	1			1											1		1	1	1			
	a4	1			1																		
	a5	1			1																		
Intellectual Skills	b1	1			1	1						1				1		1		1			
	b2	1			1	1										1		1	1	1			
	b3	1			1	1																	
	b4	1			1	1																	
	b5	1			1	1																	
Applied Professional Skills	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						1	1			
	c4	1			1	1																	
General Tran. Skills	d1			1	1							1								1			
	d2			1								1								1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of References:

6-3 Course notes

Reinforced Concrete-b , Aiman Ezzat

6-4 Recommended books

الموسوعة الهندسيةلأنشاء المباني و المرافق العامة، عبداللطيف العطار، مطابع الوفاء، ١٩٩٤

Periodicals, Web sites

ASCE Managing

7- Facilities required for teaching and learning:

Projectors and data show

Course coordinator: Dr. Aiman Ezzat

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification
A351:Environmental Control

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Environmental control **Code:** A351 **Year/level: 3rd year , 1st semester**
Teaching Hours: **Lectures: 2** **Tutorial:**
Practical: **Total:** 2

C - Professional information

1 – Course Learning Objectives:

The main objective of this course is studying the principles of environmental performance of the building, and the evaluation methods of this performance through the different environmental design tools

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - The natural sciences, engineering information relevant to architectural practices and the role of the architect in simulating and modeling of physical environment and its processes, and application of such information on the built environment. (A1)

a2 - The relationships between built forms and environmental parameters(A12)

a3 -The principles of environmental and climatic design [including solar radiation, heat transfer, natural ventilation, daylight, energy saving…](A24)

a4 - Spatial requirements for human comfort. (A4)

a5- Principles of sustainable design, climatic considerations, and energy consumption and efficiency in buildings and their impacts on the environment.(A23.)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Think systematically along the design process, analyze design problems, propose alternative solutions, and select the best solutions. (B2)

b2 -Produce innovative design ideas and concepts from environmental point of view(B15-B13)

b3 - Solve environmental problems of buildings and analyze their elements, details, materials. (B3-B17)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - Develop architectural designs that are functionally sound, environmentally appropriate aesthetically plausible, users' friendly and technologically up-to-date. (C1-C17)

c2 - Analyze , understand and make use of environmental circumstances and contexts(C2-C19)

c3 - Prepare professionally sound technical scientific report. (C11)

c4-. Demonstrate environmental studies that are applicable to building technology techniques and processes(C25)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Collaborate effectively within multidisciplinary. (D1)
d2 - Work in stressful environment and within constraints. (D2)
d3 - Communicate effectively. (D3)
d4 - Demonstrate efficient IT capabilities. (D4)
d5 - Lead and motivate individuals. (D5)
d6 - Manage tasks and resources efficiently. (D6)
d7 - Search for information and adopt life –long self-learning. (D7)
d8 - Acquire entrepreneurial skills. (D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1,A4,A5, A9, A12, A23,A24
B	Intellectual skills	B2, B3, B13, B15, B17
C	Professional and practical skills	C1, C2, C11, C17, C19,C25
D	General and transferable skills	D1, D2,D3, D4,D5,D6, D7, D8

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1) Introduction –Environment and its physical aspects – climatic regions and levels of studing	2		
2) Climatic Elements affecting design process	2		
3) Solar Radiation and its properties	2		
4) Design of sun breakers	2		
5) eat and thermal behavior of the building	2		
6) wind and air movement	2		
7) Mid-Term Exam	2		
8) Heat performance of the building	2		
9) basics of natural ventilation	2		
10) Elements of human comfort	2		
11) Components of day lighting	2		
12) Day lighting design tools	2		
13) Research presentation & Discussion	2		
14) Final Research	**2**		
15) Revision	**2**		
Total hours	**30**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1				1					1				1		1		1			
	a2	1	1	1			1					1						1		1			
	a3	1	1	1	1			1				1											
	a4	1	1	1			1					1						1					
Intellectual Skills	b1	1	1				1	1				1				1							
	b2	1	1		1		1	1				1	1			1				1			
	b3	1	1		1		1	1				1	1			1				1			
Applied Professional Skills	c1	1		1			1	1				1				1		1		1			
	c2	1		1			1	1				1				1		1		1			
	c3			1			1					1											
General Tran. Skills	d1			1				1				1	1		1				1				
	d2			1			1	1				1				1				1			
	d3			1				1				1	1		1				1				
	d4	1	1	1			1	1				1				1							
	d5			1				1				1	1		1				1				
	d6						1					1				1			1	1			
	d7			1								1								1			
	d8	1	1				1	1				1			1	1				1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	55
Total		75

6- List of references:

6-1 Course notes

Okba, Ehab mahmoud.2007. Environmental Control (Arabic).Cairo, Egypt.

6-2 Required books

6-3 Recommended books

-أ.د. على رأفت، ثلاثية الإبداع المعمارى (البيئة والفراغ)، مركز أبحاث أنتركونسلت، مطابع الشروق، فبراير ١٩٩٦.

– أ.د. شفق العوضى الوكيل، محمد عبد الله سراج، "المناخ وعمارة المناطق الحارة"، شركة الطوبجى للطباعة ،الطبعة الثانية، القاهرة، ١٩٨٥.

- Donald Watson, FAIA and Kenneth labs, Climatic Design. McGraw-Hill, Inc. U.S.A. 1983.
- Fuller Moore, “Environmental Control (heating cooling lighting)”, McGraw-Hill, Inc. U.S.A. 1993.

6-4 Periodicals, Web sites, etc.

7- Facilities required for teaching and learning:

- Data Show
- Overhead projector
- Projection screen

Course coordinator: Dr.Reham Mostafa
Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A352:Visual Training(2)

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Visual training (2) **Code:** A352 **Year/level:** 3rd year , 2nd semester
Teaching Hours:4 **Lectures:2** **Tutorial: 2**
Practical: **Total: 4**

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 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge:

a1 - Naturally Definition of color The fundamentals of. (A1)
a2 - Different color theories and philosophy of color(A19)
a3 - The coloring techniques in architectural presentation (A13)
a4 - different elements of presentation of architectural projects(A13)

B - Intellectual skills:

By the end of the course the student should be able to:

b1- Think systematically along the design process, and its color scheme, propose alternative solutions. b1 (B16)
b2 - Integrate theoretical studies of colors with practical reality(B14)
b3 - select the best color scheme for architectural projects(B13)
b4 - Develop visual sensitivity towards materials, colors and textures(B13)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - Practice Manual drafting and freehand sketching(C14)
c2 - Practice techniques of manual presentation using different tools and media(C14)
c3 - Introduce professional 2D drawings(C13)
c4 - Draw 3D perspective views with full presentation of colors ,shades and shadows(C13)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Collaborate effectively within multidisciplinary. (D1)
d2 - Work in stressful environment and within constraints. (D2)
d3 - Communicate effectively. (D3)
d4 - Manage tasks and resources efficiently(D6).
d5 - Search for information and adopt life –long self-learning. (D7)
d6 - Acquire entrepreneurial skills. (D6)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1, A13, A19
B	Intellectual skills	B13, B14, B16
C	Professional and practical skills	C13, C14
D	General and transferable skills	D1, D2, D3, D6, D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1 Introduction of color as phenomena, color symbol, properties, and psychology of color effect	2	2	
2 Painting circle of (3)basic color (6 -12)	2	2	
3 color theory of Ostwald and coloring techniques	2	2	
4 color notation (munsell theory) and coloring techniques	2	2	
5 Color value and Grey scale	2	2	
6 Intensity of color (chrome) Cool & warm colors	2	2	
7 Mid-Term Exam	2	2	
8 Research presentation & Discussion	2	2	
9 Combining & contrasting colors	2	2	
10 Harmony & disharmony of colors	2	2	
11 Introduction water colors naturally	2	2	
12 Drawing architecturalwater colors project and manual presentation	2	2	
13 water colors in presenting layout and plans	2	2	
14 water colors in presenting elevations	2	2	
15 water colors in presenting perspectives	2	2	
Total hours	**30**	**30**	

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1	1								1											
	a2	1	1		1			1								1			1	1			
	a3	1	1		1				1	1		1				1				1			
	a4	1	1		1				1	1		1				1				1			
Intellectual Skills	b1	1		1	1		1	1	1											1			
	b2		1					1	1			1							1	1			
	b3	1	1	1			1		1				1			1			1	1			
	b4	1	1	1			1		1				1			1			1	1			
Applied Professional Skills	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			
	c4	1	1	1	1			1		1									1	1			
General Tran. Skills	d1			1				1		1		1											
	d2		1						1							1				1			
	d3			1				1		1		1											
	d4	1	1									1				1			1	1			
	d5						1		1			1			1								
	d6	1	1									1				1			1	1			

5- 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
Practical Exam	-	-
Written Exam	Sixteenth week	40
Total		100

6- List of references:

6-1 Course notes

- lecture notes and hand outs

6-2 Required books

6-3 Recommended books

1- David Roth, B & Q understanding colors at home, thames & Hudson

٢ - د.محمد عبدالله – الاظهار المعمارى – الانجلو المصريه – ١٩٩٧

٣ - ربيع الحرستانى – الاظهار المعمارى واللون – دار القابس بيروت – ١٩٨٧

6-4 Periodicals, Web sites, etc.

7- Facilities required for teaching and learning:

- Hall for lectures
- Drawing hall

Course coordinator: Dr.Amira Mostafa

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification
A361: Design Methodology

A- Affiliation

Relevant program: Architectural Engineering and Building Technology
Department offering the program: Architectural Engineering and Building Technology Dpt.
Department offering the course: Architectural Engineering and Building Technology Dpt.
Date of specifications approval: September,2015

B - Basic information

Title: Automatic Control **Code:A361** **Year/level: Third**
Teaching Hours: **Lectures:** 2 **Tutorial:**
Practical: **Total:** 2

C - Professional information

1 – Course Learning Objectives:

The main objective of this course is to introduce the basic concepts and the methods of Architectural designing process

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.

a1 - defining and articulating architectural designing problem (A5).
a2 - The concepts, methods of designing process (A4)
a3 - The impact of advanced building technology on design(A8,A11).
a4 - Ethics and morals of practicing the architectural profession. (A9)
a5 - The relationships between built forms, socio-economic and environmental parameters(A9-A11)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 -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(B4).
b2 - 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(B4).
b3 - Solve problems of buildings and analyze their elements, details, materials and methods of execution(B4).
b4 - Analyze problems into sub-problems towards a controllable handling of elements(B7)
b5 - Develop philosophical analogies and symbolic metaphors in architectural context(B7)
b6 -Produce innovative design ideas and concepts (B20).

C - Professional and practical skills:

By the end of the course the student should be able to:

c1- Analyze architectural projects of various scales and levels of complexity (C4,C12)
c2 - Recognize different construction& finishing materials and the concept of each one. (C3,C15)
c3 - Manage architectural designing processes. (C8,C9)
c4- Analyze, understand and make use of environmental and Scio-culture circumstances and contexts. (C8,C20)
c5 - Design and compare analyze and interpret the results. (C15)
c6 - Produce new architectural forms and design solutions of real societal problem(C18)

D - General and transferable skills:

By the end of the course the student should be able to:
d1 - Search for information's from references, journals and internet. (D3)
d2 - Communicate effectively. (D3)
d3 - Lead and motivate individuals. (D5)
d4 - Manage tasks and resources efficiently. (D6)
d5 - Adopt life-long self-learning. (D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4, A5, A8, A9,A11
B	Intellectual skills	B4, B7, B20
C	Professional and practical skills	C3, C4, C8, C9,C12,C15,C18
D	General and transferable skills	D3, D5, D6, D7

3 – Contents

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	2		
7) Mid-Term Exam	2		
8) Methods of Data Collection Tools of Architectural invention	2		
9) Methods of Architectural process	2		
10) Architectural Design Process phases	2		
11) Examples of Different Building Design ,Goals , Zoning	2		
12) Different components forms ,shapes, in Architecture	2		
13) Different Architectural ,icons Ideas	2		
14) Explain Different Architectural examples ,concept ,idea	2		
15) Researches Presentation, revision	2		
Total hours	**30**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1		1							1				1							
	a2	1		1								1											
	a3	1														1		1		1			
	a4	1		1			1									1		1		1			
	a5	1		1			1									1		1		1			
Intellectual Skills	b1	1		1			1	1					1										
	b2	1		1			1	1					1										
	b3	1		1			1	1					1										
	b4	1		1	1		1	1				1				1				1			
	b5	1		1	1		1	1				1				1				1			
	b6	1		1								1											
Applied Professional Skills	c1	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			1							
	c5	1	1	1	1			1					1							1			
	c6	1	1										1										
General Tran. Skills	d1			1				1				1											
	d2			1				1				1											
	d3	1	1	1			1	1								1		1		1			
	d4	1	1				1	1				1											
	d5			1								1			1					1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	7-th Week	5
Practical Exam	-	-
Written Exam	Sixteenth week	35
Total		50

6- List of references:

6-1 Course notes

Digital notes

6-2 Essential books (text books)

Lectures of systematic design (3rd year) By : Dr. Nahed Omran ,cairo,

6-3 Recommended books

- Architectural form Space and Order Francis D.K Ching
- Concept source Book a vocabulary of Architectural Forms .Edward. white, 1974

3- الابداعالفنيفيالعمارة) ثلاثيةالابداعالمعماري (د.علي رافت

6-4 Periodicals, Web sites, etc.

www.greatbuildings.com

7- Facilities required for teaching and learning:

traditional system - the board.
Presentation methods – Projector-data show.
Books, Magazine, internet .
Researches and Applied Researches

Course coordinator: Associate Professor: Nahed Omran

Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A362: Human Architecture Studies

A- Affiliation

Relevant program: Architectural Engineering and Building Technology Dpt.
Department offering the program: Architectural Engineering and Building Technology Dpt.
Department offering the course: Architectural Engineering and Building Technology Dpt.
Date of specifications approval: September,2015

B - Basic information

Title: Architectural and human studies **Code: A362** **Year/level:** third/2ed. term
Teaching Hours: **Lectures:2** **Tutorial:**
Practical: - **Total:2**

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 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.

a1 - defining and articulating human behaviors considerations and problems (A5).
a2 - The concepts, methods of the building designing, its stages, elements, material in human behaviors, culture ,local communities(A4).
a3 - The concept of Interrelation between behavior and the built environment(A17)
a4 - The pattern and problems of city at the local, urban and regional levels (A17).
a5 - Significance of urban spaces and the replicable effects between man and the visual elements of the city, Humanistic principles in modern architecture(A24)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Think in a creative way in the design process, analyze architectural and urban problem, and propose, alternative solutions with high concern of the history of human needs in architecture over the years (B3).
b2 - Select and combine and assess different ideas,design situations, problems concentrating on analyzing specific groups of human needs and producing new solutions and designs at various levels of the system of design process of architectural, urban and planning projects under the challenge of culture environment requirement and information flow of the general design system(B4).
b3 - Solve problems of buildings and analyze their elements, details, materials on the basis of limited and possibly contradicting information (B4)
b4- Produce innovative design ideas and concepts(B19)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - Use a wide range of analytical tools (C6).
c2 - Present architectural projects, models for local, regional culture(C12).
c3 - Recognize different types and finishing materials and select appropriate material for each human needs, culture, and purpose (C17).
c4 - Analyze and make use of environmental circumstances and contexts (C25).
c5 - Design and compare analyze and interpret the results of societal and culture needs (C21).
c6 - Produce new architectural forms and design solutions of real societal problems (C21).
C7- Contribute positively to the aesthetic, architecture and urban identity, and cultural life of the community.(C22.)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Collaborate effectively within multidisciplinary team. (D1)
d2 - Communicate effectively. (D3)
d3 - Lead and motivate individuals. (D5)
d4 - Manage tasks and resources efficiently. (D6)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4,A5,A24
B	Intellectual skills	B3,B4,B19
C	Professional and practical skills	C6,C12,C17,C21,C22,C25
D	General and transferable skills	D1,D3, D5,D6

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. Introduction, basic definitions and terminology	2		
2. Main topics of human studies &Architecture	2		
3. Human needs & its impact on space& Arch.	2		
4. Islamic culture in Arch.	2		
5. Arch. values in Islamic city	2		
6. Arch. As build environment + The role of the environment (green &smart) Arch.	2		
7. Mid-Term Exam			
8. Shaping the culture & behavior of a Society throughout history	2		
9. Shaping the culture & behavior of a Society throughout history	2		
10. Vernaculars & traditional arch	2		
11. Relation between man & environment	2		
12. Relation between man & environment 13. natural& informal arch. Nubian / siwa / etc.	2		
14. Informal arch	2		
15. Community participation	2		
Total hours	**30**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments
Knowledge & Understanding	a1	1						1							1				1	
	a2	1						1							1				1	
	a3	1						1							1	1			1	
	a4	1						1							1	1			1	
	a5	1						1							1					
Intellectual Skills	b1	1	1	1				1	1			1				1			**1**	**1**
	b2	1	1					1	1			1				1			**1**	**1**
	b3	1	1	1				1	1			1				1		1	**1**	**1**
Applied Professional Skills	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		١	1																
	C5		١	1																
	C6		١	1																
General Tran. Skills	d1		1	1					1			1		1					1	
	d2		1	1					1			1		1					1	
	d3		1	1					1			1		1					1	
	D4	1						1				1								

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	55
Total		75

6- List of references:

6-1 Course notes

Human Architecture Studies lecture notes

6-2 Essential books (text books)

ناهد احمد عمران : محاضرات الدراسات الأنسانية المعمارية

أسماعيل سراج الدين:التجديد والتأصيل في عمارة المجتمعات الإسلامية ،كتاب اليوم،مكتبة الأسكندرية،الأسكندرية،٢٠٠٧.

6-3 Recommended books

علي رأفت –الابداع الفني &الابداع المعماري (البيئة والفراغ)، مطابع الأهرام،١٩٩٧

6-4 Periodicals, Web sites, etc.

- Architectural Periodicals
- www.worldarchitecture.org
- www.humanarchitecture.org

7- Facilities required for teaching and learning:

- White board
- Data show
- Internet

Course coordinator: Dr. Mohamed Thabat

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A371:History & Theory of Planning

A- Affiliation

Relevant program: Architectural Engineering and Building Technology Dpt.
Department offering the program: Architectural Engineering and Building Technology Dpt.
Department offering the course: Architectural Engineering and Building Technology Dpt.
Date of specifications approval: September,2015

B - Basic information

Title: History & Theory of planning **Code: A371** **Year/level:** third year
Teaching Hours: **Lectures:4** **Tutorial:** -
Practical: **Total:** 4

C - Professional information

1 – Course Learning Objectives:

The course primarily aims at identifying the parameters of human settlement and city qualities in different civilizations, as well as the historic emergence and evolution of 'city planning'
يهدف المقرر الي التعريف بعوامل الأستقرار البشري في مختلف الحضارات وخصائص المدينة فيها للتعرف علي النشأة التاريخية لتخطيط المدن وأسس نظريات التخطيط.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.

a1 - Articulating architectural and urban planning process. (A16)
a2 - The concepts, methods of the city planning processes, its stages, building types, elements, etc. (A15)
a3 - The pattern and problems of city at the local, urban and regional levels. (A17)
a4 - Significance of urban spaces and the replicable effects between man and the visual elements of the city. (A18)
a5 - History of the city and evolution of urban planning theory from the past up to recent times. (A 18)
a6 - structural behavior of buildings and construction elements (A18-A19)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Think systematically along the analyze urban problem, solutions(B2)
b2 - select the best solutions- with high concern of the history of city, urban planning, the evolution of its theories and applications over the years. (B3)
b3 - Select and use solve design problems concentrating on analyzing specific groups of needs and producing urban and planning projects (B18-B20)
b4 - Analyze innovative design ideas and concepts. (B21)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - apply different historical types of city planning construction. (C13)

c2 - use understands and makes use of environmental circumstances and contexts. (C13)
c3 - Produce new architectural forms and design solutions of real societal problems. (C22)
C4- Contribute positively to the aesthetic, architecture and urban identity, and cultural life of the community.(C22.)

D - General and transferable skills:

By the end of the course the student should be able to:
d1 - Search for information's from references, journals and internet. (D1)
d2 - Write technical reports and prepare convenient presentations(D7)
d3 - Use the Email for communication(D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A15,A16,A17,A18,A19
B	Intellectual skills	B2,B3,B18,B20,B21
C	Professional and practical skills	C13,C22
D	General and transferable skills	D1,D7,D8

3 – Contents

Topic		Lecture hours	Tutorial hours	Practical hours
1)	The beginning of the city	4	2	
2)	Mesopotamia cities.	4	2	
3)	Ancient Egyptian civilization	4	2	
4)	Planning of Greek cities	4	2	
5)	Planning of roman cities.	4	2	
6)	Analysis for the planning theories in that ear	4	2	
7)	Mid-Term Exam	4	2	
8)	Cities in the middle eras+ Analysis for the plannin theories in that era (research	4	2	
9)	Islamic cities	4	2	
10)	Islamic city (case studies)	4	2	
11)	The renaissance cities.	4	2	
12)	Applications for the model towns	4	2	
13)	Theories for city planning	4	2	
14)	The Contemporary Egyptian city and its problems-environmental problems-pollution-slum areas	4	2	
15)	Final revision – discussion for the second requirement report	4	2	
Total hours		**60**	**30**	

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1		1															1				
	a2	1		1								1							1				
	a3	1		1								1							1				
	a4	1		1								1							1				
	a5	1		1								1							1				
Intellectual Skills	b1	1	1					1	1			1			1			1	1	1			
	b2	1	1					1	1			1			1			1	1	1			
	b3	1	1					1	1			1			1			1	1	1			
	b4	1	1					1	1			1			1			1	1	1			
Applied Professional Skills	c1	1	1				1					1						1		1			
	c2	1	1				1					1			1			1		1			
	c3	1	1				1					1			1			1		1			
General Tran. Skills	d1		1						1									1					
	d2		1						1						1				1				
	d3		1						1						1								

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes

Dr. Nahed Omran, City History & Theory of urbanPlanning ***(lecture notes)***

6-2 Essential books (text books)

Non

6-3 Recommended books

أحمد خالد علام،تاريخ ونظريات تخطيط المدن،مكتبة الأنجلو،القاهرة، ٢٠٠٠
احمد خالد علام:تخطيط المدن،مكتبة الأنجلو،القاهرة،١٩٩٨
توفيق محمد عبد الجواد: العمارة وحضارة مصر الفرعونية ،مكتبة الأنجلو،القاهرة، القاهرة
توفيق محمد عبد الجواد: العمارة الأسلامية فكر وحضارة ،مكتبة الأنجلو،القاهرة

6-4 Periodicals, Web sites, etc.

www.googleearth.com
www.Islamic **art - Wikipedia, the free encyclopedia.mht**

7- Facilities required for teaching and learning:

Data show –white board

Course coordinator:	Associate Professor: Nahed Omran
Head of the Department:	Associate Professor: Nahed Omran
Date:	September , 2015

Modern Academy for Engineering and Technology

Course Specification

A372:Computer Applications (Comp. Graph)-b

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Computer Applications **Code:A372** **Year/level:**3th year ,2nd semester
Teaching Hours: **Lectures: 3** **Tutorial:**
Practical: **Total: 3**

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to Script most aspects of the program's use, such as modeling, animation, materials, rendering, and so on and to tend or replace the user interface for objects, modifiers, materials, textures, render effects, and atmospheric effects, and to Build scripted plug-ins for custom mesh objects, modifiers, render effects and more.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1- Fundamental engineering sciences relevant to architectural practices(A1,A4)
a2- Recognizing professional standards of architectural practice (A13)
a3- Realizing materials properties and uses in different building contexts (A14)
a4- Potential computer uses in architectural applications(A20)
a5- Three dimensional visualization and representation in terms of shades, shadows and perspective using different computer applications(A20)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Analyze, interpret, and manipulate data. (B1)
b2 - Integrate different scales of design, ranging from interior details to urban development and town planning schemes(B21)
b3 -Relate different branches of studied courses together in a holistic manner(B14)
b4 -Integrate theoretical studies with practical reality(B13)
b5 - Improve logical reasoning faculties(B4)
b6 - Analyze problems into sub-problems towards a controllable handling of elements(B15)
b7 - Synthesize solution mechanisms and components properly (B15)
b8 - Stimulate imaginative abilities(B14)
b9 Improve environmental sense(B9)
b10- Develop visual sensitivity towards materials, colors and textures.....Using this course in design

drawings. (B17)

C - Professional and practical skills:

By the end of the course the student should able to:

c1- model-making with different materials and techniques(C14,C15)

c2- Draw 3D perspective views with shades and shadows(C17)

c3 - Master computer architectural applications in: drafting, presentation, modeling, geographic information systems, project management and building economics(C14)

c4- Design projects of various scales and levels of complexity (C14)

c5- Master architectural morphology and spatial organization within sound geometric relations (C21)

C6- Contribute positively to the aesthetic, architecture and urban identity, and cultural life of the community.(C22.)

D - General and transferable skills:

By the end of the course the student should be able to:

d1- Communicate ideas verbally and visually in a clear coherent manner(D1)

d2 - Present seminars and public talks (D3)

d3 - Work in team environments(D5)

d4 - allocation amongst team members(D5)

d5 - management to meet deadlines(D2)

d6 - Work coordination amongst various sites and parties(D6)

d7 - Work under pressure(D2)

d8 - Interact with libraries, books, periodicals, internet … (D7)

d9 - Master computer and applications (D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1,A4, A13, A 20
B	Intellectual skills	B1, B4, B9, B13, B14, B15 ,B21
C	Professional and practical skills	C14, C17,C21,C22
D	General and transferable skills	D1,D2, D3, D5,D6 D7, D8

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
introduction	3		
accessing MAXScript	3		
Locating Information in Help File	3		
2d modeling	3		
Modeling & modifying	3		
MAXScript syntax an terminology	3		
Mid – term	3		
General advanced topic	3		
Practical questions	3		
Lighting & background	3		
Materials	3		
Materials	3		
MAXScript tools and interaction with 3D Max	3		
Camera & view ports	3		

Modifiers	3		
Total hours	**45**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1		1		1	1			1		1								1			
	a2	1				1										1				1			
	a3	1		1		1				1										1			
	a4	1	1	1		1	1										1			1			
	a5	1	1	1		1	1									1	1			1			
Intellectual Skills	b1					1	1	1												1			
	b2						1	1				1											
	b3	1	1			1	1									1	1			1			
	b4					1		1				1								1			
	b5	1	1			1	1	1												1			
	b6	1				1	1			1					1					1			
	b7	1				1	1			1					1					1			
	b8	1	1			1	1									1	1			1			
	b9	1		1		1	1	1		1						1				1			
	b10	1				1	1			1					1	1				1			
Applied Professional Skills	c1				1	1				1										1			
	c2					1	1	1		1		1				1	1			1			
	c3				1	1				1						1				1			
	c4				1	1				1						1				1			
	c5	1	1		1	1	1			1		1				1				1			
General Tran. Skills	d1			1			1	1		1					1								
	d2			1			1	1		1					1								
	d3			1			1	1		1										1			
	d4			1			1	1		1													
	d5			1			1	1		1										1			
	d6			1			1	1		1					1								
	d7			1			1	1		1										1			
	d8			1			1	1		1		1			1					1			
	d9	1		1								1				1				1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	30
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixtheen week	50
Total		125

6- List of references:

6-1 Course notes

Lecture notes

6-2 Required books

Autodesk manual book (AutoCAD LT User's Guide) -
Photoshop manual - 3Dmax

6-3 Recommended books

6-4 Periodicals, Web sites, etc.

Autodesk home page
MAX Script references

7- Facilities required for teaching and learning:

- Lap with networking – AutoCAD and 3Dmax program – net meeting program

Course coordinator: Dr. Hosam Mohamed Abd el Aziz
Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A381: Computer Applications (Comp. Graph.)-a

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Computer Applications **Code:A381** **Year/level:**3th year ,1st semester
Teaching Hours: **Lectures: 3** **Tutorial:**
Practical: **Total: 3**

C - Professional information

1 – Course Learning Objectives:

The course familiarizes students with computer applications in architecture, with particular reference to tri-dimensional modeling and colored presentation by Introduction to 3D software packages and rendering and coloring software packages and Thorough applications on 3D modeling and colored presentation.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1- Fundamental engineering sciences relevant to architectural practices(A1)
a2- Recognizing professional standards of architectural practice (A13)
a3- Realizing materials properties and uses in different building contexts (A14)
a4- Potential computer uses in architectural applications(A20)
a5- Three dimensional visualization and representation in terms of shades, shadows and perspective using different computer applications(A20)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Analyze, interpret-, and manipulate data. (B1)
b2 - Integrate different scales of design, ranging from interior details to urban development and town planning schemes(B21)
b3 -Relate different branches of studied courses together in a holistic manner(B14)
b4 -Integrate theoretical studies with practical reality(B13)
b5 - Improve logical reasoning faculties(B4)
b6 - Analyze problems into sub-problems towards a controllable handling of elements(B15)
b7 - Synthesize solution mechanisms and components properly (B15)
b8 - Stimulate imaginative abilities(B14)
b9 Improve environmental sense(B9)
b10- Develop visual sensitivity towards materials, colors and textures.....Using this course in design drawings. (B17)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1- model-making with different materials and techniques(C14,C15)
c2- Draw 3D perspective views with shades and shadows(C17)
c3-Master computer architectural applications in: drafting, presentation, modeling, geographic information systems, project management and building economics(C14)
c4- Design projects of various scales and levels of complexity (C14)
c5-Master architectural morphology and spatial organization within sound geometric relations (C21)
C6- Contribute positively to the aesthetic, architecture and urban identity, and cultural life of the community.(C22.)

D - General and transferable skills:

By the end of the course the student should be able to:

d1- Communicate ideas verbally and visually in a clear coherent manner(D1)
d2 - Present seminars and public talks (D3)
d3 - Work in team environments(D5)
d4 - Allocate task amongst team members(D5)
d5 - management to meet deadlines(D2)
d6 - Work coordination amongst various sites and parties(D6)
d7 - Working under pressure(D2)
d8 - Familiar interaction with libraries, books, periodicals, internet … (D7)
d9 - Familiarity with computer use and applications (D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1,A4, A13,A14,A20
B	Intellectual skills	B1, B4, B9, B13, B14, B15 ,B21
C	Professional and practical skills	C14,C15, C17,C21,C22
D	General and transferable skills	D1,D2, D3, D5,D6 D7, D8

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1) Solids extrude	3		
2) Solids extrude	3		
3) Solid editing	3		
4) Solid editing	3		
5) Solid editing	3		
6) 3D operation	3		
7) Mid-Term Exam	3		
8) 3D operation	3		
9) 3D meshes	3		
10) 3D meshes	3		
11) Rendering	3		
12) Renderin	3		
13) Rendering	3		

14) 3d max introduction	3		
15) 3d max introduction	3		
Total hours	**45**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1		1		1	1			1		1								1			
	a2	1				1										1				1			
	a3	1		1		1				1										1			
	a4	1	1	1		1	1										1			1			
	a5	1	1	1		1	1									1	1			1			
Intellectual Skills	b1					1	1	1												1			
	b2						1	1				1											
	b3	1	1			1	1									1	1			1			
	b4					1		1				1								1			
	b5	1	1			1	1	1												1			
	b6	1				1	1			1					1					1			
	b7	1				1	1			1					1					1			
	b8	1	1			1	1									1	1			1			
	b9	1		1		1	1	1		1						1				1			
	b10	1				1	1			1					1	1				1			
Applied Professional Skills	c1				1	1				1										1			
	c2					1	1	1		1		1				1	1			1			
	c3				1	1				1						1				1			
	c4				1	1				1						1				1			
	c5	1	1		1	1	1			1		1				1				1			
General Tran. Skills	d1			1			1	1		1					1								
	d2			1			1	1		1					1								
	d3			1			1	1		1										1			
	d4			1			1	1		1													
	d5			1			1	1		1										1			
	d6			1			1	1		1					1								
	d7			1			1	1		1										1			
	d8			1			1	1		1		1			1					1			
	d9	1		1								1				1				1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	35
Mid-Term Exam	7-th Week	-
Practical Exam	-	-
Written Exam	Sixteenth week	-
Total		**35**

6- List of references:

6-1 Course notes

Lecture notes

6-2 Required books

Autodesk manual book (AutoCAD LT User's Guide) -
Photoshop manual - 3Dmax

6-3 Recommended books

6-4 Periodicals, Web sites, etc.

Autodesk home page

7- Facilities required for teaching and learning:

Lap with networking – AutoCAD and 3Dmax program – net meeting program

Course coordinator: Dr. Hosam Mohamed Abd el Aziz
Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A382:Construction and Building Equipment -b

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Construction and Building Equipment **Code:** A382 **Year/level:** 3rd year , 2nd semester
Teaching Hours: **Lectures:3** **Tutorial:**
Practical: **Total:3**

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to introduce different techniques optimizing equipment for best production.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - Program for construction equipment. (A15)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Use the scientific material to generate unprecedented ideas, which does not exist. (B2-B3-B4)

b2 - Use the scientific material to link between various subjects to reach a new system, which is more effective. (B4-B9)

b3 - Develop the recent systems. (B9-B20)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - Execute or achieve the suggested system. (C11-C12)

c2 - Evaluate the system; put the efficiency criteria for this system. (C16)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - using material in achieving a complete project. (D6-D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A14,A15
B	Intellectual skills	B2,B3,B4,B9,B20
C	Professional and practical skills	C11,C12 ,C16,
D	General and transferable skills	D6,D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1) Introduction	3		
2) Different techniques .	3		
3) Different techniques optimizing equipment for best production	3		
4) Different techniques optimizing equipment for best production	3		
5) Equipment Costs	3		
6) Determining Equipment Costs	3		
7) Mid-Term Exam	3		
8) Time Schedule	3		
9) Calculating Equipment Costs and Monitoring its Development According time Schedule	3		
10) Calculating Equipment Costs and Monitoring its Development According time Schedule	3		
11) FIDIC Contracts	3		
12) Equipment Items in FIDIC Contracts	3		
13) Equipment Items in FIDIC Contracts	3		
14) Equipment Items in FIDIC Contracts	3		
15) Equipment Items in FIDIC Contracts	3		
Total hours	**45**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods										Learning Methods				Assessement 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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1	1			1					1				1		1	1				
	a2	1			1											1		1	1	1			
	a3	1														1		1	1	1			
Intellectual Skills	b1	1			1	1						1				1		1		1			
	b2	1			1	1										1		1	1	1			
	b3	1			1	1																	
	b4	1			1	1																	
	b5	1			1	1																	
	b6	1			1	1																	

Applied Professional Skills	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						1	1			
	c4	1			1	1																	
General Tran. Skills	d1			1	1							1								1			
	d2			1								1								1			
	d3																						

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	7-th Week	5
Practical Exam	-	-
Written Exam	Sixteenth week	90
Total		125

6- List of references:

6-1 Course notes

معدات التشييد و البناء، أسامر زكريا

6-2 Required books

الموسوعة الهندسيةلأنشاء المباني و المرافق العامة، عبداللطيف العطار، مطابع الوفاء، ١٩٩٤

6-3 Periodicals, Web sites, etc.

- www.caterpillar.com

7- Facilities required for teaching and learning:

- isit site and company who owns construction equipment used in different building operations like earthmoving, foundation construction, concrete, masonry and steel construction methods.

Course coordinator: Dr. Amr Moatasem

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A391:Construction Equipment-a

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Construction and Building Equipment **Code:** A391 **Year/level:** 3rd year , 1st semester
Teaching Hours: **Lectures:3** **Tutorial:**
Practical: **Total:3**

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to introduce the study of construction operations as a dynamic process, construction equipment usage in different building operations like earthmoving, foundation construction, concrete, masonry and steel construction methods.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:
a1 - Construction equipment in site. (A15)
a2 - Site Planning and preparation for construction equipment. (A1,A15)

B - Intellectual skills:

By the end of the course the student should be able to:
b1 - Perform analysis of soil properties for earth moving operation. (B2-B3-B4)
b2 - Perform optimization analysis of earthmoving operations and equipment. (B3-B9)
b3 - Recognize basic terminology and methodologies of foundation construction, concrete, masonry and steel construction and the equipment inter. (B4-B9)

C - Professional and practical skills:

By the end of the course the student should be able to:
c1 - Establish a design system using the specialized information in the material. (C11-C10)
c2 - Modify the system after the design to adapt with the surrounding circumstances. (C15)

D - General and transferable skills:

By the end of the course the student should be able to:
d1 - understanding the scientific material using it in fields. (D6)
d2 - understanding the equipment and manage it efficiently(D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A14,A15
B	Intellectual skills	B2,B3,B4,B9
C	Professional and practical skills	C10,C11,C15
D	General and transferable skills	D6,D7

3 - Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1) Introduction to construction Equipment	3		
2) Construction equipment in site	3		
3) Construction equipment in site	3		
4) Construction equipment in site	3		
5) Construction equipment in site	3		
6) Cost analysis	3		
7) Mid-Term Exam	3		
8) Cost analysis	3		
9) Site Planning and preparation for a construction equipment	3		
10) Site Planning and preparation for a construction equipment	3		
11) Site Planning and preparation for a construction equipment	3		
12) Execution Programmer for a construction equipment	3		
13) Execution Programmer for a construction equipment	3		
14) Execution Programmer for a construction equipment	3		
15) Execution Programmer for a construction equipment	3		
Total hours	**45**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods										Learning Methods				Assessement 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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1	1			1					1				1		1	1				
	a2	1			1											1		1	1	1			
	a3	1														1		1	1	1			

Intellectual Skills	b1	1			1	1						1				1		1		1			
	b2	1			1	1										1		1	1	1			
	b3	1			1	1																	
	b4	1			1	1																	
	b5	1			1	1																	
	b6	1			1	1																	
Applied Professional Skills	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						1	1			
	c4	1			1	1																	
General Tran. Skills	d1			1	1							1								1			
	d2			1								1								1			
	d3																						

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Second Term	-
Total		20

6- List of references:

6-1 Course notes

- معدات التشييد و البناء، أسامر زكريا

6-2 Required books

الموسوعة الهندسيةلأنشاء المباني و المرافق العامة، عبداللطيف العطار، مطابع الوفاء، ١٩٩٤

6-٣ Periodicals, Web sites, etc.

- www.caterpillar.com

7- Facilities required for teaching and learning:

- Visit same site and company who owns construction equipment used in different building operations like earthmoving, foundation construction, concrete, masonry and steel construction methods.

Course coordinator: Dr. Amr Moatasem

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Course Specifications

Architectural Engineering and Building Technology Department

Fourth Year

Code	Name
A411	Architecture Design(3)-a
A412	Architecture Design(3)-b
A421	History,Th. of Arts & Arch. (3) -a
A422	History,Th. of Arts & Arch. (3) -b
A431	Working Dr.&Const.Methods (1)-a
A432	Working Dr.&Const. Methods (1)-b
A441	Technical&Sanitary Installations-a
A442	Technical&Sanitary Installations-b
A451	City Planning & Housing(1)-a
A452	City Planning & Housing(1)-b
A461	Project Management
A462	Foundations
A471	Elective Course-1(housing of developing countries)
A472	Elective Course2 (Urban renewell)
A481	Modular Coordination-a
A482	Modular Coordination-b.
A491	Building Economics-a
A492	Building Economics-b

Modern Academy for Engineering and Technology

Course Specification

A411: Architectural Design (3)-a

A- Affiliation

Relevant program: Architectural Engineering and Building Technology
Department offering the program: Architectural Engineering and Building Technology Dpt.
Department offering the course: Architectural Engineering and Building Technology Dpt.
Date of specifications approval: September,2015

B - Basic information

Title: Architectural Design (3)-a **Code:** A411 **Year/level:** 4th year 1st Semester
Teaching Hours: **Lectures:** 6 **Tutorial: -**
Practical: - **Total:** 6

C - Professional information

1 – Course Learning Objectives:

This course aims to develop the student awareness and understanding of architectural design implications emphasizing application of analytical, conceptual, and representational skills integral to the architect.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.

a1 - Professional ethics and impacts of architectural design on human. (A11)
a2 - Principles of architectural design, human dimensions as a prime determinant of the scale, proportions, and spatial arrangement of a building spaces. (A4-A13)
a3 - Regulatory factors and zoning ordinance. (A13)
a4 - The role of the grid pattern (module) in the design process in reinforcing the functional, structural and spatial organization of a building design. (A13)
a5 - The use of various structural systems and its role in the design product. (A13)
a6 - The preparation and presentations of design projects in a variety of contexts, scales, types and degree of complexity. (A13)
a7- 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. (A23)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Think in a creative and innovative way in problems based on analytical manner and informed design process. (B3)
b2 - Combine, exchange and assess different ideas, views and knowledge from given architectural designs and projects. (B4)
b3 - Integrate site analysis tools, architectural data and design principles with analyzed project examples to create new solutions. (B13)
b4 - Think three-dimensionally and engage images of spaces and masses in the exploration of design. (B14)
b5 - Reconcile conflicting functional, regulatory and contextual objectives to reach optimum solutions. (B16)
b6 - Integrate relationship of appropriate structural solutions into the design process. (B17)

b7 - Appraise the spatial, aesthetic, technical, cultural and social qualities of a design within the scope of a wider context. (B19)
b8 - Discuss research and formulate informed opinions appropriate to specific context affecting design and architectural practice. (B20)

C - Professional and practical skills:

By the end of the course the student should be able to:
c1 - Practice the neatness and aesthetics in design and approach. (C4)
c2 - Produce a fully presented architectural projects using appropriate range of media and techniques. (C13)
c3 - Use appropriate construction and structural techniques to achieve creative designs. (C15)
c4 - Demonstrate professional competence in developing innovative and appropriate solutions of architectural problems. (C17)
c5 - Display imagination and creativity. (C18)
c6 - Respect all alternative solutions. (C19)
c7 - Provide designs with reference to sustainable design principles. (C20)
c8 - Respond effectively to the broad constituency of determinants with consideration of functional, regulatory and contextual realities. (C21)

D - General and transferable skills:

By the end of the course the student should be able to:
d1 - Practice teamwork in the research work of a certain project. (D1)
d2 - Ability to present and explain concepts and ideas. (D3)
d3 - manage to order an architectural project. (D6)
d4 - Search for information from different sources. And effectively refer to it. (D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4,A11,A13,A23
B	Intellectual skills	B3,B4,B13,B14,B16,B17,B19,B20
C	Professional and practical skills	C4,C13,C14,C16,C17,C18,C20,C21
D	General and transferable skills	D1,D3,D6,D7

3 – Contents

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)	6		
2- Research: relevant architectural data and similar projects either International or local projects.	6		
3- Research: Data gathering, site analysis, climatic studies, zoning and analysis of similar projects	6		
4- Sketch 1 (Schematic / conceptual design)	6		
5- Sketch 2 (focuses on designing and formulating project plans)	6		
6- Sketch 3 (Design development for plans)	6		
7- Mid-Term Exam	6		
8- Sketch 4 (focuses on designing and formulating project elevations) Sketch 5 (focuses on preparing project sections)	6		
9- Semi final sketch (Design Development for Layout, plans, elevations, sections and 3d models)	6		

10- Final sketch (Presenting Layout, plans, elevations, sections and 3d models for approval). Presentation and rendering sessions	6		
11- Final Submission and Project Discussion	6		
12- Introduction to 2nd project(A type of a building of symbolic and structural implications)	6		
13- Sketch 1 (Schematic / conceptual design)	6		
14- Sketch 2 (Presenting proposed layout, plans, elevations, sections and 3d models)	6		
15- Final Submission and Project Discussion	6		
Total hours	**90**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1												1		1							
	a2	1	1		1				1	1			1							1			
	a3	1	1						1	1			1							1			
	a4	1	1		1				1	1			1			1				1			
	a5	1	1		1				1	1			1							1			
	a6	1	1		1				1	1			1							1			
	a7	1							1			1											
Intellectual Skills	b1			1				1	1														
	b2								1	1			1										
	b3	1			1			1	1														
	b4				1			1	1			1											
	b5			1				1															
	b6	1		1					1					1									
	b7							1	1														
	b8	1			1				1					1									
Applied Professional Skills	c1	1							1	1													
	c2							1				1								1			
	c3				1	1			1	1			1										
	c4	1		1				1							1								
	c5	1							1				1			1							
	c6				1				1	1			1		1	1							
	c7			1				1	1														
	c8			1				1				1											
General Tran. Skills	d1			1				1				1		1									
	d2	1		1				1		1					1								
	d3								1			1											
	d4											1		1	1					1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	60
Mid-Term Exam	7-th Week	15
Practical Exam	-	-
Written Exam	Second Semeste	
Total		75

6- List of references:

6-1 Course notes

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

6-2 Essential books (text books)

- Callender, J. et al.," Time Saver Standards for Architectural Design Data ", 6th Ed., McGraw – Hill, Singapore, 1982.
- Ching, F., "Architecture – Form, Space and Order ",-2nd Ed. International Thomson Publishing Inc., New York, 1996.
- Steele, J., "Architecture Today", 2nd Ed., Phaeton Press Limited, London, UK, 2001.

6-3 Recommended books

- Jencks, C., "Architecture 2000 and Beyond", John Wiley & Sons Ltd, UK, 2000.
- Paul, Laseau, "Graphic Thinking of Architects and Designers", Reinhold Co., NY, USA, 1980.
- White, Edward T., "A vocabulary of Architectural Forms", Architectural Media, 1975.

6-4 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

7- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board , data show, models, computer lab
-

Course coordinator: Dr. El Moataz Bellah

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A412: Architectural Design (3)-b

A- Affiliation

Relevant program:	Architectural Engineering and Building Technology
Department offering the program:	Architectural Engineering and Building Technology Dpt.
Department offering the course:	Architectural Engineering and Building Technology Dpt.
Date of specifications approval:	September,2015

B - Basic information

Title: Architectural Design (3)-b	**Code:** A412	**Year/level:** 4th year 2nd Semester
Teaching Hours:	**Lectures:** 6	**Tutorial: -**
	Practical: -	**Total:** 6

C - Professional information

1 – Course Learning Objectives:

This course aims to develop the student awareness and understanding of architectural design implications emphasizing the application of analytical, conceptual, and representational skills integral to the architect.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.

a1 - Professional ethics and impacts of architectural design on human. (A11)

a2 - Principles of architectural design, human dimensions as a prime determinant of the scale, proportions, and spatial arrangement of a building spaces. (A4-A13)

a3 - Regulatory factors and zoning ordinance. (A13)

a4 - The role of the grid pattern (module) in the design process in reinforcing the functional, structural and spatial organization of a building design. (A13)

a5 - The use of various structural systems and its role in the design product. (A13)

a6 - The preparation and presentations of design projects in a variety of contexts, scales, types and degree of complexity. (A13)

a7- 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. (A24)

B - Intellectual skills:

By the end of the course the student should be able to:

b1- Think in a creative and innovative way in problems based on analytical manner and informed design process. (B3)

b2 - Combine, exchange and assess different ideas, views and knowledge from given architectural designs and projects. (B4)

b3 - Integrate site analysis tools, architectural data and design principles with analyzed project examples to create new solutions. (B13)

b4 - Think three-dimensionally and engage images of spaces and masses in the exploration of

design. (B14)
b5 - Reconcile conflicting functional, regulatory and contextual objectives to reach optimum solutions. (B16)
b6 - Integrate relationship of appropriate structural solutions into the design process. (B17)
b7 - Appraise the spatial, aesthetic, technical, cultural and social qualities of a design within the scope of a wider context. (B19)
b8 - Discuss research and formulate informed opinions appropriate to specific context affecting design and architectural practice. (B20)

C - Professional and practical skills:

By the end of the course the student should be able to:
c1 - Practice the neatness and aesthetics in design and approach. (C4)
c2- Produce a fully presented architectural projects using appropriate range of media and techniques. (C13)
c3 - Use appropriate construction and structural techniques to achieve creative designs(C14)
c4- Demonstrate professional competence in developing innovative and appropriate solutions of architectural problems. (C17)
c5 - Display imagination and creativity. (C18)
c6 - Respect all alternative solutions. (C19)
c7 - Provide designs with reference to sustainable design principles. (C20)
c8 - Respond effectively to the broad constituency of determinants with consideration of functional, regulatory and contextual realities. (C21)

D - General and transferable skills:

By the end of the course the student should be able to:
d1 - Practice teamwork in the research work of a certain project. (D1)
d2 - Ability to present and explain concepts and ideas. (D3)
d3 - manage to order an architectural project. (D6)
d4 - Search for information from different sources. And effectively refer to it. (D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4,A11,A13,A24
B	Intellectual skills	B3,B4,B13,B14,B16,B17,B19,B20
C	Professional and practical skills	C4,C13,C14,C16,C17,C18,C20,C21
D	General and transferable skills	D1,D3,D6,D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1) Introduction to 3rd project (A Multi-story Residential and commercial Building)	6		
2) Research: relevant architectural data and similar projects either International or local projects.	6		
3) Sketch 1 (Schematic / conceptual design)	6		
4) Sketch 2 (focuses on designing and formulating project plans)	6		

5) Sketch 3 (Design development for plans)	6		
6) Sketch 4 (focuses on designing and formulating project elevations and main sections)	6		
7) Mid-Term Exam	6		
8) Sketch 5 - Semi final sketch (Design Development for Layout, plans, elevations, sections and 3d models) Sketch 6 - Final sketch (Presenting Layout, plans, elevations, sections and 3d models for approval). Presentation and rendering sessions	6		
9) Final Submission and Project Discussion	6		
10) Introduction to 4th project (A type of a project with both function and structural implications)	6		
11) Research: Data gathering, site analysis, climatic studies, zoning and analysis of similar projects	6		
12) Sketch 1 (Schematic / conceptual design)	6		
13) Sketch 2 (Design development for plans)	6		
14) Sketch 3 (Presenting proposed layout, plans, elevations, sections and 3d models)			
15) Final Submission and Project Discussion	6		
Total hours	90		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1												1		1							
	a2	1	1		1				1	1			1							1			
	a3	1	1						1	1			1							1			
	a4	1	1		1				1	1			1							1			
	a5	1	1		1				1	1			1							1			
	a6	1	1		1				1	1			1							1			
	a7	1							1			1											
Intellectual Skills	b1			1				1	1														
	b2								1	1			1										
	b3	1			1			1	1														
	b4				1			1	1			1											
	b5			1				1															
	b6	1		1					1					1									
	b7							1	1														
	b8	1			1				1					1									
Professional	c1	1							1	1													
	c2							1				1								1			

	c3				1	1			1	1			1										
	c4	1		1				1							1								
	c5	1							1				1			1							
	c6				1				1	1			1		1	1							
	c7			1				1	1														
	c8			1				1				1											
General Tran. Skills	d1			1				1				1		1									
	d2	1		1				1		1					1								
	d3								1			1											
	d4											1		1	1					1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	60
Mid-Term Exam	7-th Week	15
Practical Exam	-	-
Written Exam	Sixteenth week	100
Total		250

6- List of references:

6-1 Course notes

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

6-2 Essential books (text books)

- Callender, J. et al.," Time Saver Standards for Architectural Design Data ", 6th Ed., McGraw – Hill, Singapore, 1982.
- Ching, F., "Architecture – Form, Space and Order ",-2nd Ed. International Thomson Publishing Inc., New York, 1996.
- Steele, J., "Architecture Today", 2nd Ed., Phaeton Press Limited, London, UK, 2001.

6-3 Recommended books

- Jencks, C., "Architecture 2000 and Beyond", John Wiley & Sons Ltd, UK, 2000.
- Paul,Laseau, "Graphic Thinking of Architects and Designers", Reinhold Co., NY, USA, 1980.
- White,Edward T., "A vocabulary of Architectural Forms", Architectural Media, 1975.

6-4 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

7- Facilities required for teaching and learning:

- Appropriate teaching design studios including presentation board, data show, models, computer labs.

Course coordinator: Dr. El Moataz Bellah

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A421:History and Theories of Architecture (3)-a

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: History and Theories of Architecture (3)-a **Code:** A422 **Year/level:** 4th year, 1st semester
Teaching Hours: **Lectures:3** **Tutorial:-**
Practical: - **Total:** 3

C - Professional information

1 – Course Learning Objectives:

Main objective of this course is to study the social, political, and cultural forces which shaped art and architecture, starting from Renaissance era until the end of 19th century: Introduction to Modern Architecture, Rationalism, Functionalism, Organic Architecture, Industrial Revolution.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - History of architecture(renissence & 19th centry era). (A19)
a2 - New concepts for buildings forms through history. (A19)
a3 - Basic Architectural theories of (Renaissance & Enlightenment) Eras. (A4, A13)
a4 - basic feature of 19th century architecture. (A4, A13)
a5 - New ideas of building construction systems and their technology. (A24)
a6 - The main features of historic art and architectural styles. (A13, A19)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Analyze the given examples of the architectural works with high concern of the history of architecture & the evolution of its theories and applications over years. (B12- B21)
b2 - Produce innovative design ideas and concepts. (B14)
b3 - Develop his/her creativity & innovation. (B14)
b4 - Solve design problems. (B3)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - Produce creative & innovative designs. (C17,C18)
c2 - Identify the difference between styles of Architecture & interpret their concepts. (C19)
c3 - Present architectural project in digital research & produce it visually to the audience. (C13)

D - General and transferable skills:

By the end of the course the student should be able to:

d1- Write reports and prepare visual presentations. (D9)

d2 - Present researches in teamwork . (D3, D4, D5)

d3-Use the Email for communication. (D3)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4, A13,A19,A24,
B	Intellectual skills	B3,B12 ,B14,B21
C	Professional and practical skills	C13,C17,C18,C19
D	General and transferable skills	D3,D4,D5,D9

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1) General introduction for the course	3		
2) Architectural characteristics of Renaissance Era Analyzing projects of Architects.	3		
3) Architectural characteristics of Renaissance Era Analyzing projects of Architects.	3		
4) Architectural characteristics of BAROQUE, Analyzing projects of Architects	3		
5) Architectural characteristics of The Age of Enlightenment	3		
6) Social, technical and urban transformation in19th century	3		
7) Mid-Term Exam	3		
8) The influences of the industrial revolution on art and architecture in 19th century	3		
9) Architectural trends and schools in 19thcentury	3		
10) Architectural trends and schools in 19thcentury	3		
11) The impact of new materials on architecture	3		
12) Architecture of steel and reinforced concrete in19th century	3		
13) Architecture of steel and reinforced concrete in19th century	3		
14) Digital Presentation of the Final Researches: 15) (Jury) : *Staff's Criticism / Evaluation for each Student*	3		
Final Revision	3		
Total hours	**45**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods										Learning Methods				Assessement 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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1							1		1	1	1									
	a2	1	1							1		1	1	1									
	a3	1		1				1				1				1							
	a4	1		1				1				1				1							
	a5	1		1								1		1						1			
	a6	1		1				1				1				1							
Intellectual Skills	b1	1	1					1					1										
	b2		1										1										
	b3	1										1			1								
	b4	1		1			1	1								1							
Applied Professional Skills	c1			1								1						1		1			
	c2				1					1		1	1										
	c3	1	1																	1			
General Tran. Skills	d1											1								1			
	d2			1				1				1											
	d3			1				1				1			1								

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	15
Mid-Term Exam	7-th Week	5
Practical Exam	-	-
Written Exam	Sixteenth week	55
Total		75

6- List of references:

6-1 Course notes: None

6-2 Essential books (text book)

- Reham Ibrahem momtaz

6-3 Recommended books

- Ali Raafat ,Triad of Architecture Creativity
- Cruickshank , D., A History of Architecture
- Kaufmann, E., Architecture in the Age of reason , Baroque and post – Baroque in England.
- Sir Banister Fletcher, ' A History Of Architecture ' London, UK.(2000)

6-4 Periodicals, Web sites, etc.

- Progressive Architecture
- www.Greatbuilgings.com
- www.Archinform.com

7- Facilities required for teaching and learning:

- Gallery to present the best researches.
- Computer, Data show

Course coordinator: Dr.Passaint Masoud.

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A422: History & Theories of Architecture and Arts (3)-B

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title : History & Theories of Arch. & Arts (3)-B **Code:** A422 **Year/level:** 4thyear, 2nd semester
Teaching Hours: **Lectures: 3** **Tutorial: -**
Practical: - **Total: 3**

C - Professional information

1 – Course Learning Objectives:

The course aims at the development of the architectural, artistic, and urban traditions in the Islamic world. Introduces the artistic evolution and aesthetic values throughout different ages.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - The relationship between the development of the ecological sittings (socio-culture, technological and physical factors in different societies) and development architecture. (A18)

a2 - The main features of Early Islamic reign, as well recognize the art schools and its pioneers in 19th and 20th century. (A19)

B - Intellectual skills:

By the end of the course the student should be able to:

b1- Criticize objectively the architectural forms and styles and understanding the influences, which oriented guide them. (B4)

b2 - Identify the development process of architecture within its historical context. (B13)

b3 - Expand and correct their artistic and design experiences. (B20,B21)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1- Improve evaluation skills of architectural forms and recognize the different forces which guide it. (C21,C22)

c2 - Development of architectural forms and styles. (C20)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Improving skills. (D8)

d2 - Work in groups. (D1)
d3 - Present work documentation in written and oral form. (D3)
d4- Use graphic tools and multi-media in presentation(IT). (D4)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A18,A 19
B	Intellectual skills	B4,B13,B 20,B21
C	Professional and practical skills	C 20, C 21,C22
D	General and transferable skills	D1,D3,D 4, D8

3. Content

Topic	Lecture hours	Tutorial hours	Practical hours
1) Urban traditions in the Islamic world.	3	-	-
2) Caliph. Periods.	3	-	-
3) Tulane's period.	3	-	-
4) Building concepts in Islamic Arch.	3	-	-
5) Fatimid caliphs' period.	3	-	-
6) Ayyubids period.	3	-	-
7) Mid-Term Exam	3	-	-
8) Home in Islamic Arch.	3	-	-
9) Mamluks (Bahri and Circassian) period.	3	-	-
10) Ottoman (Turks) period.	3	-	-
11) Napolic Invasion (Mohamed Ali) period.	3	-	-
12) Art trends and schools in 19th.	3	-	-
13) Art trends and schools in 20th	3	-	-
14) Modern art in Egypt.	3	-	-
15) Individual presentation.	3	-	-
Total hours	**45**	**-**	**-**

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments	Researches and Reports		
Knowledge & Understanding	a1	1		1										1		1		1			1		
	a2	1		1										1		1		1			1		
Intellectual Skills	b1	1		1				1				1				1		1			**1**		
	b2	1		1				1				1				1		1			**1**		
	b3	1		1				1				1				1		1			**1**		
Applied Professional Skills	c1	1		1						1		1		1		1		1			1		
	c2	1		1						1		1		1		1		1			1		
General Tran. Skills	d1			1								1		1		1		1			1		
	d2			1								1		1		1		1			1		
	d3			1								1		1		1		1			1		
	d4			1								1		1		1		1			1		

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	15
Mid-Term Exam	7-th Week	5
Practical Exam	-	-
Written Exam	Sixteenth week	55
Total		75

6- List of references:

6-1 Course notes

Course notes, The mosque, Mona Elbasyoni, 2008.

6-2 Required books

- العمارة الاسلامية فكر وحضارة، توفيق عبد الجواد،مكتبة الأنجلو -القاهرة ١٩٨٧

- Robert Hillenbrand, Islamic Architecture, 1994, Newen, U.K.

6-3 Recommended books

- اسس التصميم المعمارى والتخطيط الحضرى فى العصور الاسلامية المختلفة بالعاصمة القاهرة ،مركز الدراسات التخطيطية والمعمارية، منظمة العواصم والمدن الاسلامية ١٤١١هج- ١٩٩٠ م .
- K.Frampton " Modern Architecture, a critical history "
- N.Pevsner " An Outline of European Architecture "
- N.Pevsner " The Sources of Modern Architecture and Design "

6-4 Periodicals, Web sites, etc.

http://www.islamic-council.org.
http://www.islamonline.com

7- Facilities required for teaching and learning:

- Well equipped space for lectures and digital presentation

Course coordinator: Dr.Mona El Basyoni.
Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A 431: Working Drawing and Construction Methods (1)-a

A- Affiliation

Relevant program: Architectural Engineering and Building Technology
Department offering the program: Architectural Engineering and Building Technology Dpt.
Department offering the course: Architectural Engineering and Building Technology Dpt.
Date of specifications approval: September,2015

B - Basic information

Title: Working Drawing &Const. Methods (1a) **Code:** A431 **Year/level:** 4th year/ 1st semester

Teaching Hours: **Lectures:4** **Tutorial: 2**
Practical: **Total:6**

C - Professional information

1 – Course Learning Objectives:

This course is intended to provide the students with fundamental skills and understanding necessary for the preparation of working drawings and detailing. The main objective is to introduce the working drawing as a set of drawings from which an architectural design project could be carried through to reality.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.

a1- Principles of working drawings and executive designs including elements, process and/or systems related to construction methods (A4).
a2- Current engineering technologies as related to disciplines (A8, A25).
a3- Principles of building technologies, structure & construction methods, technical installations, and the way they may influence design decisions (A14,A24).
a4- Fundamentals of building acquisition, operational costs, and of preparing construction documents and specifications of materials, components, and systems appropriate to the building (A15, A24).
a5- The role of the architecture profession relative to the construction industry (A21).

B - Intellectual skills:

By the end of the course the student should be able to:

b1- Deduce the appropriate type of construction for a certain building (B3,B22).
b2- Assign finishing materials for exterior and interior elements (B4).
b3- Integrate relationship of structure, building materials, and construction elements into design (B17,B24).

C - Professional and practical skills:

By the end of the course the student should be able to:

c1- 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 (C14,C24).

c2- Practice the neatness and accuracy in the representation of how an object looks and how it is constructed (C4).

c3- Apply established architectural graphic conventions to indicate sizes, material, and related information that is needed to bring the objects or spaces into reality (C10,C24).

c4- Produce professional workshop and technical drawings using both manual and computer aided drawing techniques (C14).

c5- Use appropriate construction techniques and materials to specify and implement different designs (C15,C23).

c6- Display creativity in transforming design ideas into construction drawings by selecting and adopting the appropriate structural and architectural elements (C18).

D - General and transferable skills:

By the end of the course the student should be able to:

d1- Work in stressful environment carrying out a working drawing project within given constrains and time (D2).

d2- Communicate and display work effectively either manually drafted or elecreconcally via computer aided design and drafting applications (CADD) (D3).

d3- Manage and coordinate tasks and deciplins to fulfill a complete set of working drawings (D5).

d4- Search for required informayion and construction details online and in references (D6).

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4, A8, A14, A21,A24
B	Intellectual skills	B3, B4, B17 ,B22,B24
C	Professional and practical skills	C4, C10,C14,C15,C18,C23,C24
D	General and transferable skills	D2, D3, D5, D6

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1- Introduction to Working Drawing and construction methods	4	2	
2- An overview of the selected projects and determining the project for each student	4	2	
3- 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 particular floor level. It also shows how to mark out the axis, dimensions, widths and locations of doors and windows, and other utility features.	4	2	
4- Typical floor plans	4	2	
5- Basement plans , Roof plans	4	2	

6- Site plan (Layout) Lecture discuses 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.	4	2	
7- Mid-Term .	4	2	
8- 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.	4	2	
9- 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.	4	2	
10- Sanitary drawings • Water supply systems and plumbing fixture	4	2	
11- Sanitary Drainage and sewage disposal systems	4	2	
12- Electrical drawings • Electric power and lighting outlets.	4	2	
13- Electric power and lighting outlets.	4	2	
14- Final Project submission and discussion	4	2	
15- Final Project submission and discussion	4	2	
Total hours	60	30	90

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods										Learning Methods				Assessement Method							
		Lecture	Presentations and Movies	Discussions and seminars	Tutorials	Problem solving	Laboratory & Experiments	projects	sketches			Self-learning	Discovering	Researches and Reports	Projects	Written Exam	Practical Exam	Quizes	Mid-Term Exam	Assignments	Project		
Knowledge & Understanding	a1	1						1	1						1	1		1	1	1	1		
	a2	1						1	1					1							1		
	a3	1						1	1						1	1					1		
	a4	1													1						1		
	a5	1												1	1						1		
Intellectual Skills	b1	1						1	1						1	1			1	1	1		
	b2	1													1	1				1	1		
	b3	1						1	1						1	1			1	1	1		
fes sio	c1	1													1	1		1	1	1	1		

	c2								1						1					1	1		
	c3	1													1	1							
	c4							1							1	1			1	1	1		
	c5	1						1						1	1	1				1	1		
	c6	1													1					1	1		
General Tran. Skills	d1							1							1	1		1	1				
	d2							1						1	1					1	1		
	d3							1						1	1	1			1	1	1		
	d4							1						1	1					1	1		

5- 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
Practical Exam	-	-
Written Exam	End of Second term	-
Total		60

6- List of references:

6-1 Course notes

- د.هيثم سمير " الرسومات التنفيذية وطرق الانشاء" مذكرات الأكاديمية الحديثة للهندسة والتكنولوجيا - للسنة الرابعة عمارة

6-2 Essential books (text books)

- Barry, R., "The Construction of Buildings ", Blackwell, USA
- فاروق عباس حيدر "الموسوعة الحديثة فى تشييد المبانى" الطبعة الرابعة، منشأة المعارف، الاسكندرية، ١٩٩٤
- محمد عبد الله " الرسومات التنفيذية والتفاصيل المعمارية" مكتبة الأنجلو المصرية، القاهرة، ١٩٨٩
- محمد عبد الله " إنشـــاء المبانى" مكتبة الأنجلو المصرية، القاهرة، ١٩٨٩

6-3 Recommended books

- Ching, F., "Building Construction Illustrated ", 3rd Ed. John Willy & Sons Publishing Inc., New York, 2001
- McKay, W.B., "Building Construction", 5th Ed. Longmans, 1971

6-4 Periodicals, Web sites, etc.

Non

7- Facilities required for teaching and learning:

- Design studio equipped with appropriate drawing boards.
- Resources available in the library.
- Computer lab with AutoCAD installed on computers

Course coordinator: Dr. M. Haitham Samir

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A 432: Working Drawing and Construction Methods (1)-b

A- Affiliation

Relevant program:	Architectural Engineering and Building Technology
Department offering the program:	Architectural Engineering and Building Technology Dpt.
Department offering the course:	Architectural Engineering and Building Technology Dpt.
Date of specifications approval:	September,2015

B - Basic information

Title: Working Drawing &Const.Methods (1b) **Code:** A432 **Year/level:** 4th year/ 2ndsemester

Teaching Hours: **Lectures:4** **Tutorial: 2**
Practical: **Total:6**

C - Professional information

1 – Course Learning Objectives:

This course continues on from where the first course (A431) ends, and not only reinforces the skills presented there, but introduces new topics not previously covered. It provides the students with skills and understanding necessary for detailing the common architectural elements used in the buildings. The student will develop details for the project previously presented and discussed in the first course.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.

a1- Principles of working drawings and executive designs including elements, process and/or systems related to construction methods (A4).

a2- Current engineering technologies as related to disciplines (A8,A25).

a3- Principles of building technologies, structure & construction methods, technical installations, and the way they may influence design decisions (A14,A24).

a4- Fundamentals of building acquisition, operational costs, and of preparing construction documents and specifications of materials, components, and systems appropriate to the building (A15, A24).

a5- The role of the architecture profession relative to the construction industry (A21).

B - Intellectual skills:

By the end of the course the student should be able to:

b1- Deduce the appropriate type of construction for a certain building (B3,B22).

b2- Assign finishing materials for exterior and interior elements (B4).

b3- Integrate relationship of structure, building materials, and construction elements into design (B17,B24).

C - Professional and practical skills:

By the end of the course the student should be able to:

c1- 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 (C14,C24).

c2- Practice the neatness and accuracy in the representation of how an object looks and how it is constructed (C4).

c3- Apply established architectural graphic conventions to indicate sizes, material, and related information that is needed to bring the objects or spaces into reality (C10,C24).

c4- Produce professional workshop and technical drawings using both manual and computer aided drawing techniques (C14).

c5- Use appropriate construction techniques and materials to specify and implement different designs (C15,C23).

c6- Display creativity in transforming design ideas into construction drawings by selecting and adopting the appropriate structural and architectural elements (C18).

D - General and transferable skills:

By the end of the course the student should be able to:

d1- Work in stressful environment carrying out a working drawing project within given constrains and time (D2).

d2- Communicate and display work effectively either manually drafted or elecreconcally via computer aided design and drafting applications (CADD) (D3).

d3- Manage and coordinate tasks and deciplins to fulfill a complete set of working drawings (D5).

d4- Search for required informayion and construction details online and in references (D6).

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4, A8, A14, A21 ,A24,A25
B	Intellectual skills	B3, B4, B17 ,B22,B24
C	Professional and practical skills	C4, C10, C14, C15,C18,C23,C24
D	General and transferable skills	D2, D3, D5, D6

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1- Stairs, elevators and escalators (an overview of the design, types and requirements)	4	2	-
2-Concrete stairs	4	2	-
3-Steel stairs	4	2	-
4-Special stairs	4	2	-
5- Door types, operation, hardware & finishes.	4	2	-
6- Window types, operation, hardware & finishes.	4	2	-
7- Mid-Term	4	2	-
8- Suspended ceilings and raised floors , Finish work and flooring (Gypsum plaster and Cement plaster or stucco, Ceramic tiles, Marble, wood, Terrazzo and stone flooring)	4	2	-
9- Bathroom space, plumbing fixtures and details	4	2	-

10- Wall Sections and cladding (Precast concrete panels, Masonry veneer, Metal cladding)	4	2	-
11- Glazed curtain walls and systems	4	2	-
12- skylight details	4	2	-
13- Revision and guidelines for preparing working detailing sheets and the final project	4	2	-
14- Final Project submission and discussion	4	2	-
15- Final Project submission and discussion	4	2	-
Total hours	60	30	90

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods										Learning Methods				Assessement 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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1						1	1						1	1		1	1	1	1		
	a2	1						1	1					1							1		
	a3	1						1	1						1	1					1		
	a4	1													1						1		
	a5	1												1	1						1		
Intellectual Skills	b1	1						1	1						1	1			1	1	1		
	b2	1													1	1				1	1		
	b3	1						1	1						1	1			1	1	1		
Applied Professional Skills	c1	1													1	1		1	1	1	1		
	c2								1						1					1	1		
	c3	1													1	1							
	c4							1							1	1			1	1	1		
	c5	1						1						1	1	1				1	1		
	c6	1													1					1	1		
General Tran. Skills	d1							1							1	1		1	1				
	d2							1						1	1					1	1		
	d3							1						1	1	1			1	1	1		
	d4							1						1	1					1	1		

5- 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
Practical Exam	-	-
Written Exam	Sixteenth week	80
Total		200

6- List of references:

6-1 Course notes

- د.هيثم سمير " الرسومات التنفيذية وطرق الانشاء" مذكرات الأكاديمية الحديثة للهندسة والتكنولوجيا - للسنة الرابعـــة عمارة

6-2 Essential books (text books)

- Barry, R., "The Construction of Buildings ", Blackwell, USA
- فاروق عباس حيدر "الموسوعة الحديثة فى تشييد المبانى" الطبعة الرابعة، منشأة المعارف، الاسكندرية، ١٩٩٤
- محمد عبد الله " الرسومات التنفيذية والتفاصيل المعمارية" مكتبة الأنجلو المصرية، القاهرة، ١٩٨٩
- محمد عبد الله " إنشـــاء المبانى" مكتبة الأنجلو المصرية، القاهرة، ١٩٨٩

6-3 Recommended books

- Ching, F., "Building Construction Illustrated ", 3rd Ed. John Willy & Sons Publishing Inc., New York, 2001
- McKay, W.B., "Building Construction", 5th Ed. Longmans, 1971

6-4 Periodicals, Web sites, etc.

Non

7- Facilities required for teaching and learning:

- Design studio equipped with drawing boards.
- Resources available in the library.

Course coordinator:	Dr. M. Haitham Samir
Head of the Department:	Associate Professor: Nahed Omran
Date:	September , 2015

Modern Academy for Engineering and Technology

Course Specification

A441:Technical Installation in Buildings-a

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology Dpt.
Department offering the course: Architecture Engineering and Building Technology Dpt.
Date of specifications approval: September,2015

B - Basic information

Title: technical installation in buildings-a **Code: A441** **Year/level: 4th year, 1st semester**
Teaching Hours: **Lectures:2** **Tutorial: 2**
Practical: **Total:** 4

C - Professional information

1 – Course Learning Objectives:

The main objective of this course is to introduce the basic concepts and theory of Designing technical installation in buildings.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - Concepts and theories of mathematics and sciences, appropriate to the discipline. (A1)
a2 - Principles of design including elements design, process and/or a system related to specific disciplines. (A4)
a3- Methodologies of solving engineering problems. (A5)
a4 - Quality assurance systems, codes of practice and standards, health and safety requirements and environmental issues. (A6)
a5- Contemporary engineering topics. (A12)
a6 - The concepts, methods and techniques of the building construction processes, its stages, elements, material, etc. (A24)
a7- The concepts, methods and techniques of mechanical installations' processes including structural, water, sewage, air conditioning systems. (A14)
a8 - The impact of advanced building technology on design. (A11,A24)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Select appropriate solutions for engineering problems based on analytical thinking. (B1-B2-B22)
b2 - Assess and evaluate effectively the characteristics and performance of components, systems and processes. (B5)
b3 - Analyze systems, processes and components critically. (B11)
b4 - 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 projects under the challenge of resource management and information flow of the general design system. .(B4,B7,B24)

b5 - Produce innovative design ideas and concepts. (B3)

C - Professional and practical skills:

By the end of the course the student should practice :

c1 - Integrate knowledge of mathematics, science, information technology, design, business context and engineering practice to solve engineering problems. (C1)

c2 - Merge engineering knowledge and understanding to improve design, products and/or services. (C15 –C23)

c3 - Prepare professionally sound technical scientific reports. (C12)

c4 - Analyze, understand and make use of environmental circumstances and contexts(C19,C22,C25)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Work in stressful environment and within constraints. (D6)

d2 - Manage tasks and resources efficiently. (D6)

d3 - Search for information and adopt life-long self-learning. (D6)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1, A4, A5,A6 ,A11, A12,A24
B	Intellectual skills	B2, B4,B5, B7,B11, B24
C	Professional and practical skills	C1 , C12, C14, C15, C19,C22,C25
D	General and transferable skills	D6

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. Principles of light. Principles of heat.	2	2	
2. Nature of light. Nature of heat.	2	2	
3. Nature of vision. Thermal load on buildings.	2	2	
4. Measurement of lighting. U – values.	2	2	
5. Measurement of lighting. U – values.	2	2	
6. Measurement of lighting. Thermal load upon building envelope.	2	2	
7. Mid-Term	2	2	
8. Artificial lighting. Luminaries. Thermal load upon building envelope.	2	2	
9. Artificial Lighting costs. Heat gain \ loss in buildings.	2	2	
10. Artificial Lighting design. Heat gain \ loss in buildings.	2	2	
11. Artificial Lighting design. Solar air temperature.	2	2	
12. Natural lighting. Heat gain \ loss in buildings.	2	2	
13. Natural light sources. Heat gain \ loss in buildings.	2	2	
14. Daylight factors. Thermal insulation.	2	2	
15. Combined lighting. Thermal insulation.	2	2	
Total hours	**30**	**30**	

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1		1			1									1							
	a2	1					1	1				1				1		1					
	a3	1		1								1											
	a4	1	1													1							
	a5	1		1									1			1				1			
	a6	1										1	1			1				1			
	a7	1		1			1																
	a8	1	1					1												1			
Intellectual Skills	b1			1			1	1					1					1					
	b2						1	1										1					
	b3			1			1	1				1						1					
	b4	1		1								1				1							
	b5	1										1			1					1			
Applied Professional Skills	c1	1		1			1	1										1		1			
	c2					1	1													1			
	c3			1			1	1		1			1										
	c4				1					1			1										
General Tran. Skills	d1			1								1				1		1					
	d2			1								1				1		1					
	d3			1								1				1		1					

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes

-**Technical installation in buildings-a (lecture notes**).

6-2 Required books

Mcmullan R., *Environmental Science in Building*, Fifth Edition, Ashford Colour Press Ltd., London, 2002.

6-3 Recommended books
6-4 Periodicals, Web sites, etc.

7- Facilities required for teaching and learning:

- Data Show
- Blackboard / white board and chalk

Course coordinator: Dr. Sayed Abd El Khalek

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A442:Technical Installation in Buildings-b

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology Dpt.
Department offering the course: Architecture Engineering and Building Technology Dpt.
Academic year/level: 4th year , Arch. Eng. , 1st semester
Date of specifications approval: September,2015

B - Basic information

Title: technical installation in buildings-a **Code: A442** **Year/level: 4th year, 2nd semester**
Teaching Hours: **Lectures:2** **Tutorial: 2**
Practical: **Total:** 4

C - Professional information

1 – Course Learning Objectives:

The main objective of this course is to introduce the basic concepts and theory of Designing technical installation in buildings.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1- Concepts and theories of mathematics and sciences, appropriate to the discipline. (A1)
a2 - Principles of design including elements design, process and/or a system related to specific disciplines. (A4)
a3 - Methodologies of solving engineering problems. (A5)
a4 - Quality assurance systems, codes of practice and standards, health and safety requirements and environmental issues. (A6)
a5- Contemporary engineering topics. (A12)
a6 - The concepts, methods and techniques of the building construction processes, its stages, elements, material, etc. (A24)
a7 - The concepts, methods and techniques of mechanical installations' processes including structural, water, sewage, air conditioning systems. (A14)
a8 - The impact of advanced building technology on design. (A11,A24)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Select appropriate solutions for engineering problems based on analytical thinking. (B2)
b2 - Assess and evaluate effectively the characteristics and performance of components, systems and processes. (B5)
b3 - Analyze systems, processes and components critically. (B11)
b4 - 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 projects under the challenge of resource management and information flow of the general design system. .(B4-B7,B24)

b5 - Produce innovative design ideas and concepts. (B3)

C - Professional and practical skills:

By the end of the course the student should practice :

c1 - Integrate knowledge of mathematics, science, information technology, design, business context and engineering practice to solve engineering problems. (C1)

c2 - Merge engineering knowledge and understanding to improve design, products and/or services. (C15 –C23)

c3 - Prepare professionally sound technical scientific reports. (C12)

c4 - Analyze, understand and make use of environmental circumstances and contexts(C19,C22,C25)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Work in stressful environment and within constraints. (D6)

d2 - Manage tasks and resources efficiently. (D6)

d3 - Search for information and adopt life-long self-learning. (D6)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1, A4, A5,A6, A8, A11, A12, A24
B	Intellectual skills	B2, B4, B5, B7,B11,B24
C	Professional and practical skills	C1 , C5, C7, C11, C12,C14,C15,C19,C22,C25
D	General and transferable skills	D6

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. Principles of sound. Principles of sanitary installations.	2	2	
2. Nature of sound. Sanitary installation in buildings.	2	2	
3. Sound levels. Sources of water.	2	2	
4. Sound levels. Water treatment.	2	2	
5. Attenuation of sound. Water supply in buildings.	2	2	
6. Nature of hearing. Water supply in buildings.	2	2	
7. Mid-Term	2	2	
8. Measurement of noise. Drainage systems.	2	2	
9. Noise control. Waste water treatment.	2	2	
10. Noise trnsfer. Under ground water tanks.	2	2	
11. Artifsound insulation. Fire fighting in buildings.	2	2	
12. Acoustic principles. Electricity installation in buildings.	2	2	
13. Reflection of sound. Fire alarm in buildings.	2	2	
14. Absorption of sound. Air control in buildings.	2	2	
15. Reverberation of sound. HVAC systems.	2	2	
Total hours	**30**	**30**	

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1		1			1									1							
	a2	1					1	1				1				1		1					
	a3	1		1								1											
	a4	1	1													1							
	a5	1		1									1			1				1			
	a6	1										1	1			1				1			
	a7	1		1			1																
	a8	1	1					1												1			
Intellectual Skills	b1			1			1	1					1					1					
	b2						1	1										1					
	b3			1			1	1				1						1					
	b4	1		1								1				1							
	b5	1										1			1					1			
Applied Professional Skills	c1	1		1			1	1										1		1			
	c2					1	1													1			
	c3			1			1	1		1			1										
	c4				1					1			1										
General Tran. Skills	d1			1								1				1		1					
	d2			1								1				1		1					
	d3			1								1				1		1					

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes

-**technical installation in buildings-a (lecture notes**).

6-2 Required books

Mcmullan R., *Environmental Science in Building*, Fifth Edition, Ashford Colour Press Ltd., London, 2002.

6-3 Recommended books

6-4 Periodicals, Web sites, etc.

7- Facilities required for teaching and learning:

- Data Show
- Blackboard / white board and chalk

Course coordinator: Dr. Sayed Abd El Khalek

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A451: City Planning& Housing (1)-a

A- Affiliation

Relevant program: Architecture Engineering and Building Technology

Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: City Planning & housing Studies **Code:** A 451 4th Year , 1st semester
Teaching Hours: **Lectures: 4** **Tutorial:**
Practical: **Total:** 4

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 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1-Planning Principles. (A16,19)
a2- Geographic information systems concepts & application . (A17)
a3- Housing principles & how to plan a complete complex . (A22)

B - Intellectual skills:

By the end of the course the student should be able to:

b1- Develop a design by linking different related subjects essential for the design such as: urban, financial, environmental & topographic studies. (B10,B12)
b2- Develop new ideas during the design process using the principles of planning.
b3- Analyze data affecting the design process. (B11)
b4- Solve urban problems. (B10,12)
b5- Apply Planning principles in new urban areas (B13)

C - Professional and practical skills:

On successful completion of the course, the student should be able to:

c1- Computerize the studies of site analysis with assistance of the (GIS) . (C6)
c2- Collect & analyze data that will make him / her develop a design for a complete complex. (C5)
c3- Design a residential complex in existing urban areas. (C21)

D - General and transferable skills:

On successful completion of the course, the student should be able to:

d1- Learn methods to solve problem.

d2- communicate via digital techniques and present data using different software . (D2,3,5)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A16,A17,A19,A22
B	Intellectual skills	B10,B11,B12,B13
C	Professional and practical skills	C5,C6,C21
D	General and transferable skills	D2,D3,D5

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. Planning definition , elements & level	4		
2. Thinking methodology	4		
3. Thinking methodology	4		
4. Site analysis studies	4		
5. Site analysis studies (GIS Application)	4		
6. Following up the project (GIS Application)	4		
7. Mid-Term	4		
8. Following up the project (GIS Application)	4		
9. Evaluating site analysis studies	4		
10. Simian on neighbor hoods (Introducing neighbor hoods)	4		
11. Following up the alternatives + Evaluation	4		
12. Following up the alternatives + Evaluation	4		
13. Evaluating alternatives	4		
14. Semi final presentation (Following up the project)	4		
15. Final Presentation	4		
Total hours	**60**		

4 - Teaching and Learning methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1			1			1	1		1	1	1									
	a2	1	1	1					1							1							
	a3	1		1								1				1							
Intellectual Skills	b1	1							1			1				1				1			
	b2				1			1		1				1									
	b3	1	1						1							1							
	b4	1	1						1							1				1			
	b5								1			1		1		1							
Applied Professional Skills	c1				1	1			1	1			1							1			
	c2				1	1			1	1			1							1			
	c3	1							1														
General Tran. Skills	d1	1		1				1	1						1	1							
	d2			1				1	1			1											

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Second Term	-
Total		30

6- List of references:

6-1 Course notes

- The Residential neighborhood – M. Hasan Allana

6-2 Required books

6-3 Recommended books

- The Residential neighborhood – M. Hasan Allana

6-4 Periodicals, Web sites, etc.

www.clac.comwww.googleearth.com

7- Facilities required for teaching and learning:

- GPS
- Internet access
- Updated computers
- Educational Software License
- Data Show

Course coordinator: Dr. Mohamed Mostafa

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A452: City Planning & Housing(1) -b

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Housing & City Planning-B **Code:** A452 **Year/level:** 4th year – 2nd semester
Teaching Hours: **Lectures: 4** **Tutorial: ----**
Practical: --- **Total:** 4

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to know about: Introduction to housing, Housing crisis in Egypt ,Contemporary housing schemes and trends
Human dimensions in housing 'models', Urban, socio-economic, and environmental dimensions influencing housing.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1- Planning Principles (A16,19)
a2- Geographic information systems concepts & application (A17)
a3- Housing principles & how to plan a complete complex (A22)

B - Intellectual skills:

By the end of the course the student should be able to:

b1- Develop a design by linking different related subjects essential for the design such as: urban, financial, environmental & topographic studies. (B10-B12)
b2- Develop new ideas during the design process using the principles of planning. (B13)
b3- Analyze data affecting the design process. (B11)
b4- Solve urban problems. (B10,12)
b5- Apply Planning principles in new urban areas (B13)

C - Professional and practical skills:

By the end of the course the student should practice:

c1- Computerize the studies of site analysis with assistance of the (GIS) (C6)

c2- Collect & analyze data that will make him / her develop a design for a complete complex. (C5)

c3- Design a residential complex in existing urban areas. (C21)

D - General and transferable skills:

By the end of the course the student should be able to:

d1- Learn methods to solve problem.

d2- communicate via digital techniques and present data using different software (D2,3,5)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A16,A17,A19,A22
B	Intellectual skills	B10,B11,B12,B13
C	Professional and practical skills	C5,C6,C21
D	General and transferable skills	D2,D3,D5

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. Planning elements & introducing the project	4		
2. Site analysis studies (Revision on GIS)	4		
3. Site analysis studies	4		
4. Site analysis studies (following up the project)	4		
5. Following up the site analysis studies & evaluation	4		
6. Following up the site analysis studies & evaluation	4		
7. Mid-Term	4		
8. Evaluating the site analysis studies	4		
9. Solving strategies (following up the alternatives)	4		
10. Solving strategies (following up the alternatives)	4		
11. Solving strategies (following up the alternatives)	4		
12. Evaluating alternatives	4		
13. Evaluating alternatives	4		
14. Semi-final presentation (following up the project)	4		
15. Final presentation	4		
Total hours	**60**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1			1			1	1		1	1	1									
	a2	1	1	1					1							1							
	a3	1		1								1				1							
Intellectual Skills	b1	1							1			1				1				1			
	b2				1			1		1				1									
	b3	1	1						1							1							
	b4	1	1						1							1				1			
	b5								1			1		1		1							
Applied Professional Skills	c1				1	1			1	1			1							1			
	c2				1	1			1	1			1							1			
	c3	1							1														
General Tran. Skills	d1	1		1				1	1						1	1							
	d2			1				1	1			1											

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	40
Total		100

6- List of references:

6-1 Course notes

6-2 Required books

6-3 Recommended books

6-4 Periodicals, Web sites, etc.

www.clac.edu.eg

www.googleearth .com

7- Facilities required for teaching and learning:

- GIPS
- Internet Access
- Updated computers
- Software License
- Data Show

Course coordinator: Dr. Marwa Adel

Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A 461:Project Management

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Modern Building systems & materials **Code: A461** **Year/level: 4th year, 1st semester**
Teaching Hours: **Lectures:2** **Tutorial:**
Practical:1 **Total:** 3

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to know about introduction to project management and management process: planning, organizing, staffing, and development of a project.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - Project management system. (A7,A25)
a2 - Systems of planning projects. (A6)
a3 - Time and financial management in any project (A7)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Select new planning methods for a project. (B2)
b2 - Study properties of different tendering. (B16)
b3 - Determine suitable solution for project design. (B3-B18)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - Estimate cost budgeting (C2-C3)
c2 - Schedule, crash and control time. (C3-C9)
c3 – Manage resources. (C2-C12)
c4 –Control cost. (C3)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Master Report Writing (D9)

d2 – Acquire Presentation Skills (D9

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A6, A7,A25
B	Intellectual skills	B2, B13,B16,B18
C	Professional and practical skills	C2, C3,C9,C12
D	General and transferable skills	D6, D9

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. Introduction to construction industry	2		
2. Bid study	2		
3. Unbalanced bids	2		
4. Project case study (tender project).	2		
5. Project planning.	2		
6. Project planning..	2		
7. Mid-Term	2		
8. Project planning..	2		
9. Project planning..	2		
10. Time reduction.	2		
11. Time management.	2		
12. Financial management.	2		
13. Financial management.	2		
14. Resource management	2		
15. Resource management	2		
Total hours	**30**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods										Learning Methods				Assessement Method							
		Lecture	Presentations and Movies	Discussions and seminars	Tutorials	Problem solving	Brain storming					Researches and Reports	Modeling and Simulation			Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1	1			1					1				1		1	1				
	a2	1			1											1		1	1	1			
	a3	1														1		1	1	1			
Intellectua Skills	b1	1			1	1						1				1		1		1			
	b2	1			1	1										1		1	1	1			
	b3	1			1	1																	
Applied Professional Skills	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						1	1			
	c4	1			1	1																	
General Tran. Skills	d1			1	1							1								1			
	d2			1								1								1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes

-***Construction Project management*** **(lecture notes)**.

6-2 Required books

-*الادارة التنفيذية لمشروعات التشييد ج١-٢ د، د.ماجد خلوصى، ١٩٩٦.*

6-3 Recommended books

- تشييد المبانى ج١-٢ ،د. فاروق حيدر،منشأة المعارف، ١٩٩٧.

6-4 Periodicals, Web sites, etc.

-***American Society of Civil Engineers***

7- Facilities required for teaching and learning:

- Data Show
- Blackboard / white board nd chalk

Course coordinator: Dr. Amira Abd Elaziz Gouhar

Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification
A462: Foundations

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Academic year/level: 4th year Arch. Eng. , 2nd semester
Date of specifications approval: September,2015

Basic Information

Title: Foundations **Code:** A462 **Year/level:**4th year
Teaching Hours: 3 **Lectures:3** **Tutorial:**

B- Professional Information

1- Course Learning Objectives:

The course aims at introducing students to Soil Mechanics and properties, Principles of Foundation Design.

2- Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire knowledge of:
a1 - soil investigation. (A3)
a2 - Principles of determining bearing capacity of soil. (A4-A5)
a3 - Basics of foundation design. (A4-A5-A15)
a4 - The use of deep foundation. (A9 -A15)

B - Intellectual skills:

By the end of the course the student should be able to:
b1 - Select the type of foundation to be used for building. (B2,B22)
b2 - Choose the most suitable way for soil classification. (B2)
b3 - Use the principles of Design to Design economical foundation. (B5)
b4 - Choose the suitable types of piles to be used. (B5-B6)

C - Professional and practical skills:

By the end of the course the student should be able to undertake:
c1 - Utilize the soil investigation report. (C1-C12)
c2 - Design different types of foundations. (C13)
c3 - Check if the foundation can be safe or not. (C14)

D - General and transferable skills:

By the end of the course the student should be able to:
d1 - Supervise work in the site. (D6)
d2 - Cooperate with other to design Architect projects. (D1)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4,A5,A9, A15
B	Intellectual skills	B2,B5,B6,B22
C	Professional and practical skills	C1,C2,C13,C14
D	General and transferable skills	D1,D6

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. Introduction to Soil Mechanics	3	-	
2. Soil Exploration	3	-	
3. Soil classification	3	-	
4. Physical properties of soil	3	-	
5. Mechanical properties	3	-	
6. Active soil pressure	3	-	
7. Mid-Term	3	-	
8. Bearing Capacity of the types of soil+ Compaction of soil	3	-	
9. Foundation introduction	3	-	
10. Design of isolated square footing	3	-	
11. Design of isolated rectangular footing	3	-	
12. Design of combined footing	3	-	
13. Design of raft foundation	3	-	
14. Deep foundation	3	-	
15. Deep foundation	3	-	
Total hours	**45**	**-**	

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods								Learning Methods				Assessment Method				
		Lectures	Presentations and Movies	Discussions	Tutorials/Sketches	Practical and Laboratory experiments	Problem solving	Brain storming	Projects	Researches and Reports	Modeling and Simulation	Site Visits	Discovering	Written Exam	Practical Exam	Quizzes	Term papers	Assignments
Knowledge	a1	1								1				1		1		1
	a2	1								1				1		1		1
	a3	1								1				1		1		1
	a4	1								1				1		1		1
Intellectual	b1	1					1			1				1		1		1
	b2	1					1							1		1		1
	b3	1					1							1		1		1

	b4	1					1							1		1		1
Applied	c1	1					1							1		1		1
	c2	1					1							1		1		1
	c3	1					1							1		1		1
general	d1	1								1						1		1
	d2	1								1						1		1

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of References:

6-5 Course notes

Foundations, Adham Elalfy

6-6 Recommended books

Foundation design, khalil waked, Dar Elkotob, 1998

Periodicals, Web sites

ASCE Managing

www.ACI.com

7- Facilities required for teaching and learning:

Projectors and data show

Course coordinator: Dr. Adham El Alfy

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Course Specification

A471: Elective Course (1)

Housing of The Developing Countries

A- Affiliation

- **Relevant program:** Architectural Engineering and Building Technology
- **Department offering the program:** Architectural Engineering and Building Technology Dpt.
- **Department offering the course:** Architectural Engineering and Building Technology Dpt.
- **Date of specifications approval:** September,2015

B - Basic information

Title: Housing of The Developing Countries **Code:** A471 **Year/level:** 4th year 1st Semester

Teaching Hours: **Lectures:** 2 **Tutorial: -**
Practical: - **Total:** 2

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to handle:

- Introduction to housing problems in developing countries, different approaches for solving these problems, emphasis on the complex social, cultural and economical parameters & public involvement.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1- Topics related to humanitarian interests and moral issues. (A9)

a2- Various dimensions of housing problem and the range of approaches, policies and practices that could be carried out to solve this problem. (A22)

a3 –Main policies of dwelling "Centralization – Decentralization". (A16-A22)

a4 –Users participation in dwelling. (A9)

a5 –Recent Cases. (A24)

…..Knowledge about international leaders in each of (centralization – decentralization)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 –Dwelling projects evaluation. (B2)

b2- Combine, exchange and asses different ideas, views and knowledge from a range of sources. (B4)

b3 –Improving student's skill of logical analysis. (B12)

….Student's reorganization of his country situation

C - Professional and practical skills:

By the end of the course the student should be practice:

c1 - Use available resources with the lowest cost. (C15,16)

D - General and transferable skills:

By the end of the course the student should be able to:

d1– Able to work in all urban sectors. (D2)

d2– Able to evaluate Costs. (D6)

d3- know general knowledge about social & economical studies. (D8)

d4– Refer to relevant literature effectively. (D9)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A9,A16,A22,A24
B	Intellectual skills	B2,B4,B12
C	Professional and practical skills	C15,C16
D	General and transferable skills	D2,D6,D8,D9

3 - Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1- User's participation US. Policy of centralization	2		
2- John Turners US rod burgess	2		
3- Users participation in dueling	2		
4- Cases of users participation outside Egypt	2		
5- Cases of users participation outside Egypt	2		
6- Main elements in dwelling process	2		
7- Mid-Term	2		
8- Turner's Concepts and his main issues	2		
9- Recent dwelling approach in Egypt	2		
10- Quantitative proprieties of dwelling sectors	2		
11- Quantitative proprieties of dwelling sectors	2		
12- Quantitative proprieties of dwelling sectors	2		
13- Quantitative proprieties of dwelling sectors	2		
14- Dwelling Levels	2		
15- Dwelling Levels	2		
Total hours	**30**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1	1			1					1				1		1	1				
	a2	1														1		1	1	1			
	a3	1														1		1	1	1			
	a4	1	1	1			1					1				1		1	1				
	a5	1														1		1	1	1			
Intellectual Skills	b1	1														1		1		1			
	b2	1				1										1		1	1	1			
	b3	1	1	1			1					1				1	1		1				
Applied ProfSkills	C1	1	1			1	1									1	1	1	1	1			
General Tran. Skills	d1			1		1						1							1				
	d2		1	1								1							1				
	d3			1		1						1							1				
	d4		1	1								1							1				
	d5			1		1						1							1				

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	7-th Week	5
Practical Exam	-	-
Written Exam	Sixteenth week	35
Total		50

6- List of references:

6-1 Course notes

- Lectures Notes

6-2 Essential books (text books)

6-3 Recommended books

- Alfred Nipage, Warren R. Seyfried, “Urban Analysis: Readings in Housing and Urban Development”, Published by Scott, Foresman, 1970.

6-4 Periodicals, Web sites, etc.

7- Facilities required for teaching and learning:

- Data Show.
- Updated computers.

Course coordinator: Prof. Dr. Walaa Nour

Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification
A472: Elective Course (2)
Urban Renewal

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Urban Renewal **Code:** A472 **Year/level:4th year , 2nd semester**
Teaching Hours: 2hours / week **Lectures: 2** **Tutorial:**
Practical: **Total: 2**

C - Professional information

1 – Course Learning Objectives:

The course primarily presents Fundamentals and stages of urban renewal and rehabilitation, Optimum use of built environment and its human and urban resources. Evaluation of local and international renewal and rehabilitation experiences, Urban problems and reasons,Rehabilitation means and techniques.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:
a1- Dwelling policies "centralization and Decentralization, applying it on study cases. (A7,16.
...Understanding number of study cases.

B - Intellectual skills:

By the end of the course the student should be able to:
b1- Evaluate Projects. (B11,B20)
b2- Link meanings and strategies in dwelling projects.(B10)

C - Professional and practical skills:

By the end of the course the student should able to:
c1- Use available resources. (C1,C8)
c2 - Motivate user's participation in dwelling. (C1)
.....Practice the whole course through a practical research

D - General and transferable skills:

By the end of the course the student should be able to:
d1- Able to apply case studies. (D6)
d2- Cooperate with other to design Architect projects(D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A7,A16
B	Intellectual skills	B10,B11,B20
C	Professional and practical skills	C1,C8
D	General and transferable skills	D6,D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1. General introduction on renovation	2		
2. Ismailia projects	2		
3. Ismailia projects	2		
4. Projects analysis	2		
5. Helwan project	2		
6. Projects analysis	2		
7. Mid-Term	2		
8. Asyout projects	2		
9. syout projects	2		
10. Projects analysis	2		
11. Projects analysis	2		
12. Researches	2		
13. Researches	2		
14. Difference between projects	2		
15. Difference between projects	2		
Total hours	**30 hours**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods										Learning Methods				Assessement 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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a1	1	1						1			1		1									
Intellectual Skills	b1	1						1	1				1			1							
	b2	1	1						1			1				1							
Applied Professional Skills	c1	1		1	1		1		1			1				1							
	c2			1	1		1		1			1											
General Tran Skills	d1							1	1			1		1	1								
	d2			1				1	1			1											

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	7-th Week	5
Practical Exam	-	-
Written Exam	Sixteenth week	35
Total		50

6- List of references:

6-1 Course notes

- Lecture notes

6-2 Required books

احمد خالد علام /تجديد الأحياء د

6-3 Recommended books

6-4 Periodicals, Web sites, etc.

7- Facilities required for teaching and learning:

- Data Show
- Black board / white board

Course coordinator: Dr.Walaa Nour

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A481:Modular Coordination-a

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Modular coordination **Code:** A481 **Year/level:** 4th year ,1st semester
Teaching Hours: **Lectures: 2** **Tutorial:**
Practical: **Total: 2**

C - Professional information

1 – Course Learning Objectives:

The course aims to introduce the principles of modular coordination of buildings , measurement procedures, types of scale, design using modules, computer and modulation, and module types and quality control.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:
a1 -The nature of measurements, units, methods of measurements (A1)
a2 - Types of modular coordination, Types of modules and concept of standardization (A8)
a3 - Quality management (A6)

B - Intellectual skills:

By the end of the course the student should be able to
b1 -Use modules in design (B1)
b2 -Create modules(B2)
b3 -Apply service quality to architecture projects (B9)

C - Professional and practical skills:

By the end of the course the student should be able to:
c1 -Dependence of pre-cost & prefab on modules, (C1)
c2 -Manage sight and workshops(C1-C5)
c3 - Design using standards modular systems(C5)
c4–How to use different building types codes and standards for construction. (C10)
c4 -Quality control on architecture projects(C5)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 -Cooperate with other to design Architect projects(D1-D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1,A6,A8
B	Intellectual skills	B1,B2,B9
C	Professional and practical skills	C1,C5,C10
D	General and transferable skills	D1,D7

3 - Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1- Measurements & units	2		
2- Measurements & units	2		
3- Measurements & units	2		
4- SI system	2		
5- SI system	2		
6- Module concepts	2		
7- Mid-Term	2		
8- Module concepts	2		
9- Module concepts	2		
10- Types of modules	2		
11- Types of modules	2		
12- Types of modules	2		
13- Quality management	2		
14- Quality management	2		
15- Quality management	2		
Total hours	**30**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods								Learning Methods				Assessment Method				
		Lectures	Presentations and Movies	Discussions	Tutorials/Sketches	Practical and Laboratory experiments	Problem solving	Brain storming	Projects	Researches and Reports	Modeling and Simulation	Site Visits	Discovering	Written Exam	Practical Exam	Quizzes	Term papers	Assignments
Knowledge	a1	1								1				1		1		1
	a2	1								1				1		1		1
	a3	1								1				1		1		1
Intellectual	b1	1								1				1		1		1
	b2	1								1				1		1		1
	b3	1								1				1		1		1
Applied	c1	1								1				1		1		1
	c2	1								1				1		1		1
	c3	1								1				1		1		1
	c4	1								1				1		1		1
nel al Tr	d1	1								1				1		1		1

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	-	-
Practical Exam	-	-
Written Exam	Second Term	-
Total		10

6- List of references:

6-1 Course notes

اسس التوحيد القياسى و الجودة فى العمارة و التشييد

6-2 Required books

Ernat Neufert " Architect data "

6-3 Periodicals, Web sites, etc.

- www.eos.org.eg
- www.iso.com

7- Facilities required for teaching and learning:

- Blackboard & whiteboard.
- Overhead projector.

Course coordinator: Dr. Mohamed Goubara

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification
A482:Modular Coordination-b

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Modular coordination **Code:** A482 **Year/level:** 4th year ,2nd semester
Teaching Hours: **Lectures: 2** **Tutorial:**
Practical: **Total: 2**

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to: The course aims IS Introducing the principles of modular coordination of buildings , Measurement procedures, Types of scale, Design using modules, Computer and modulation, Module types: Basic module, Multiple module, Structural module, Design module, Planning module

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:
By the end of the course the student should acquire the flowing knowledge and understanding:
a1 - Mass production, (A4)
a2 -Different standardization entities. (A7,A12)
a3 -Concept of standardization and dealing with it (A9,A25)
a4 -Quality management and control(A6)

B - Intellectual skills:
By the end of the course the student should be able to
b1 -Compare between different quality control theories(B2,B13)
b2 - Estimate personnel requirements for different projects(B23)
b3 -Differentiate between different entities working in standardization (B22)

C - Professional and practical skills:
By the end of the course the student should be able to
c1 -Identify characteristics of planning projects components(C9)
c2 - Verify the practical revenue of a good specification(C21)
c3 - How to use the bar code concept in architecture projects(C10)

D - General and transferable skills:
By the end of the course the student should be able to:

d1 -Use and apply standardization principles . (D6)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4,A6,A7,A9,A12,A25
B	Intellectual skills	B2,B13,B22,B23
C	Professional and practical skills	C9,C10,C21
D	General and transferable skills	D6

3 - Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1- Quality control systems	2		
2- Quality control systems development	2		
3- Quality control in construction projects	2		
4- Quality control problems	2		
5- Standardization and ISO	2		
6- Specifications	2		
7- Mid-Term	2		
8- ISO +Project management with ISO	2		
9- Different entities in standardization	2		
10- Egyptian authority of standardization	2		
11- Egyptian authority of standardization role in quality	2		
12- Egyptian authority of standardization role in quality	2		
13- Egyptian quality program	2		
14- Applications (the bar code)	2		
15- Bar code and construction projects	2		
Total hours	**30**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods								Learning Methods				Assessment Method				
		Lectures	Presentations and Movies	Discussions	Tutorials/Sketches	Practical and Laboratory experiments	Problem solving	Brain storming	Projects	Researches and Reports	Modeling and Simulation	Site Visits	Discovering	Written Exam	Practical Exam	Quizzes	Term papers	Assignments
Knowledge	a1	1								1				1		1		1
	a2	1								1				1		1		1
	a3	1								1				1		1		1
	a4	1								1				1		1		1
Intellectual	b1	1								1				1		1		1
	b2	1								1				1		1		1

	b3	1								1				1		1		1
Applied	c1	1								1				1		1		1
	c2	1								1				1		1		1
	c3	1								1				1		1		1
Tr	d1	1								1				1		1		1

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes

اسس التوحيد القياسى و الجودة فى العمارة و التشييد

6-2 Required books

Ernat Neufert " Architect data "

6-3 Periodicals, Web sites, etc.

www.eos.org.eg
www.iso.com

7- Facilities required for teaching and learning:

- Blackboard & whiteboard.
- verhead projector

Course coordinator: Dr. Mohamed Goubara

Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A491:Building Economics-a

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Building Economies **Code:** A491 **Year/level: 4th year. 1st semester**
Teaching Hours: **Lectures: 2** **Tutorial:**
Practical: **Total: 2**

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to know about: Factors involved in direct costs, general overheads, markups, and profits, Fundamentals of cost recording in construction accounts, Rational debate and decision-making in: sources and reliability of cost-information in the construction industry

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:
a1 -The nature of economic problem and need. (A2,A5)
a2 - Resources, utilities, demand and supply related to building & construction. (A14)
a3 - Definition of construction systems; markets types, and factors of production (A6)
a4 - how to deal with costs and revenues of construction projects. (A15)

B - Intellectual skills:

By the end of the course the student should be able to:
b1 -Use economic terms, tools in construction field, (B2,B10)
b2 -Analyze construction. Economic problem, (B7- B22)
b3 -Utilize the relationship between competitiveness and economic terms (B22)

C - Professional and practical skills:

By the end of the course the student should
c1 -Solve economic functions, relationships and laws, (C2)
c2 -Use the resources available in project evaluation, (C15)
c3 - calculate costs, and demand and supply. (C2)

D- General and transferable skills:

d1- use different aspects of analysis in projects(D3)
d2- Apply recources in studies(D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A2,A5,A6,A14,A15
B	Intellectual skills	B2, B7, B10, B22
C	Professional and practical skills	C2,C7,C15
D	General and transferable skills	D3,D8

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1- Introduction to Construction Economy	2		
2- Economic principals	2		
3- Economic principals	2		
4- Supply & demand	2		
5- Supply & demand	2		
6- Supply & demand	2		
7- Mid-Term	2		
8- Resources	2		
9- Resources	2		
10- Resources	2		
11- Resources	2		
12- Costs	2		
13- Costs	2		
14- Costs	2		
15- Costs	2		
Total hours	**30**		

4 - Teaching and Learning and Assessment methods:

	Course ILO's	Teaching Methods								Learning Methods				Assessment Method				
		Lectures	Presentations and Movies	Discussions	Tutorials/Sketches	Practical and Laboratory experiments	Problem solving	Brain storming	Projects	Researches and Reports	Modeling and Simulation	Site Visits	Discovering	Written Exam	Practical Exam	Quizzes	Term papers	Assignments
Knowledge	a1	1								1				1		1		1
	a2	1								1				1		1		1
	a3	1								1				1		1		1
	a4	1								1				1		1		1
Intellectual	b1	1								1				1		1		1
	b2	1					1							1		1		1
	b3	1								1				1		1		1
Applied	c1	1					1							1		1		1

	c2	1					1							1		1		1
	c3	1					1							1		1		1
general	d1	1								1						1		1
	d2	1								1						1		1

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	-	-
Practical Exam	-	-
Written Exam	-	-
Total		10

6- List of references:

6-1 Course notes

اقتصاديات البناء

6-2 Required books

الموسوعه الهندسية لأنشاء المباني و المرافق العامة، عبد اللطيف أبو العطا، مطابع الوفاء، ١٩٩٤

6-٣ Periodicals, Web sites, etc.

- CAPMS, EMOP, EMOE, ENR, IC, SIS

7- Facilities required for teaching and learning:

- Blackboard / whiteboard / OHP.
- Reference, & periodical / library visit & research paper reporting.
- Catalogue of material.
- National statistics & economic parameters and data.

Course coordinator: Dr. Mohamed Goubara

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A492:Building Economics-b

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Building Economies **Code:** A492 **Year/level: 4th year. 2nd semester**
Teaching Hours: **Lectures: 2** **Tutorial:**
Practical: **Total: 2**

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to know about: Factors involved in direct costs, general overheads, markups, and profits, Fundamentals of cost recording in construction accounts, Rational debate and decision-making in: sources and reliability of cost-information in the construction industry.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:
a1 -The nature of economic housing planning problem and need. (A2-A5)
a2 - Resources, utilities, demand and supply related to housing planning & construction. (A14)
a3 - Definition of B.O.T systems; markets types, and factors of production(A6)
a4 -Knowledge about how to deal with depreciation and revenues of construction projects(A15)

B - Intellectual skills:

By the end of the course the student should be able to:
b1 -Use economic terms, tools in construction field, (B2,B10)
b2-Analyze depreciation in construction projects (B7 -B22)
b3 -Estimate the housing expenditure(B22)

C - Professional and practical skills:

By the end of the course the student should
c1-Solve economic functions, relationships and laws, (C2)
c2 -Use the resources available in project evaluation, (C15)
c3 -Calculating costs, and demand and supply. (C2)

D - General and transferable skills:

By the end of the course the student should be able to:
d1 - Use laws in project. (D3)

d2 -Apply Resources studies. (D8)

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Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A2, A5,A6,A14,A15
B	Intellectual skills	B2,B7,B10,B22
C	Professional and practical skills	C2, C15
D	General and transferable skills	D3,D8

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1- Economic housing Planning	2		
2- Factors of housing production	2		
3- Specifications of building projects and environment	2		
4- Housing expenses	2		
5- Housing expenditure tree structure	2		
6- B.O.T systems + B.O.T financing and implementation	2		
7- Mid-Term	2		
8- Advantages and disadvantages of B.O.T systems	2		
9- Depreciation	2		
10- Depreciation	2		
11- Depreciation	2		
12- Competitiveness in housing sector	2		
13- Types and indicators of Competitiveness	2		
14- Government role in supporting Competitiveness	2		
15- S.W.O.T analysis	2		
Total hours	**30**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods								Learning Methods				Assessment Method				
		Lectures	Presentations and Movies	Discussions	Tutorials/Sketches	Practical and Laboratory experiments	Problem solving	Brain storming	Projects	Researches and Reports	Modeling and Simulation	Site Visits	Discovering	Written Exam	Practical Exam	Quizzes	Term papers	Assignments
Knowledge	a1	1								1				1		1		1
	a2	1								1				1		1		1
	a3	1								1				1		1		1
	a4	1								1				1		1		1

Intellectual	b1	1								1				1		1		1
	b2	1					1							1		1		1
	b3	1								1				1		1		1
Applied	c1	1					1							1		1		1
	c2	1					1							1		1		1
	c3	1					1							1		1		1
general	d1	1								1						1		1
	d2	1								1						1		1

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	10
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes

اقتصاديات البناء

6-2 Required books

الموسوعه الهندسية لأنشاء المباني و المرافق العامة، عبد اللطيف أبو العطا، مطابع الوفاء، ١٩٩٤

6-٣ Periodicals, Web sites, etc.

- CAPMS, EMOP, EMOE, ENR, IC, SIS

7- Facilities required for teaching and learning:

Blackboard / whiteboard / OHP.
Reference, & periodical / library visit & research paper reporting.
Catalogue of material.
National statistics & economic parameters and data.

Course coordinator: Dr. Mohamed Goubara

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Course Specifications

Architectural Engineering and Building Technology Department

Fifth Year

Code	Name
A511	Architectural Design(4)-a
A512	Architectural Design(4)-b
A521	Working Dr.&Const. Docum.(2)-a
A522	Working Dr.&Const. Docum. (2)-b
A531	Urban Design(a)
A532	Urban Design(b)
A541	City Planning(2)-a
A542	City Planning(2)-b
A551	History & Th.of Architecture (4)
A552	Elective Course (4)-(Aesthetics of the composition)
A561	Elective Course(3)(urban ad Environmental conservation)
A562	Final Graduation Project
A571	Modern System Building Materials
A572	Laws& regulations for engineering
A581	Quantities & Contracts -a
A582	Quantities & Contracts -b

Modern Academy for Engineering and Technology

Course Specification

A511 : Architectural Design (4)-a

A- Affiliation

Relevant program: Architectural Engineering and building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Architectural design (4) **Code:** A511 **Year/level:** 5th year 1st semester
Teaching Hours: **Lectures: 6** **Tutorial:-**
Practical: - **Total: 6**

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to:

- Building design on basic concepts through Interacting buildings and urban projects with surrounding environment.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - Knowledge and up dated of design and building Technology.(A14)
a2– Principles of architectural design. (A13)
a3 - Principles of building technologies, (A14)
a4 - Physical modeling, 3D, and computer-aided design. (A20)
a5 - Principles of sustainable design, climatic considerations.(A23)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Integrate different forms of knowledge. (B4)
b2 - Think 3d and engage images of places using Computer aided design (B14)
b3 - Decide optimum solutions based on various objectives and design problems. (B16)
b4 - The informed consideration of the wider context in the design process (B19)
b5 - formulate informed opinion related to design issues (B20)
b6 - Analyze the range of patterns and traditions in design process. (B21)

C - Professional and practical skills:

By the end of the course the student should practice:

c1 -Produce and present architectural design projects considering neatness, aesthetics and precession. (C4, C13)
c2- Display imagination and creativity in the design development, form generation and facade design

(C18)
c3 -Respect all alternative solutions applied to a single design problem. (C19)
c4 -Contribute positively to the aesthetic, architecture and urban identity. (C22)

D - General and transferable skills:
By the end of the course the student should be able to:
d1 - Ability to present and explain concepts and ideas within a limited time and defined constrains (D2-D3)
d2 - Search for information from different sources. And effectively refer to it (D7- D9)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A12,A13,A14,A20, A23
B	Intellectual skills	B3, B4, B14, B16, B19, B20, B21
C	Professional and practical skills	C4, C13, C18, C19,C22
D	General and transferable skills	D2, D3, D7, D9

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1-Introduction : Malti purpose hall project			
2-Site analysis and site model	6	-	-
3-Mosses & analytic study	6	-	-
4-Layout	6	-	-
5-Concept development	6	-	-
6-Master plan (zoning – organization)	6	-	-
7-Plans pollutions (circulation)	6	-	-
8-Development and final Plans	6	-	-
9-Level Study (sections) -Elevations design	6	-	-
10- Interiors and details-Landscape-3D Perspective or isometric	6	-	-
11- interiors - details and presentation	6	-	-
12 - Exhibition hall	6	-	-
13- Development and final Plans	6	-	-
14-Sections- Elevations	6	-	-
15-3D Models	6	-	-
Total hours	**90 hrs**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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	Quizzes	Term papers	Assignments
Knowledge	a1	1	1						1	1										
	a2	1	1									1				1				
	a3	1	1				1					1								1
	a4		1									1		1						
	A 5	1	1		1				1											
Intellectual	b1	1										1			1					
	b2								1	1								1		
	b3	1	1									1				1				
	b4	1	1						1	1					1					1
	B 5	1	1	1					1							1		1	1	1
	B 6	1	1	1					1			1								
Applied	c1	1		1					1											
	c2								1			1								
	c3		1		1				1	1			1							
	c4				1			1	1	1			1							
al	d1	1	1					1												
H	d2								1			1					1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	75
Mid-Term Exam	-	-
Practical Exam	-	-
Written Exam	-	-
Total		75

6- List of references:

6-1 Course notes

6-2 Required books

- Steele, J., "Architecture Today",-2nd Ed. – Phaeton Press Limited, London, UK, 2001.
- Ching, F., "Architecture – Form, Space and Order ",-2nd Ed. International Thomson Publishing Inc., New York, 1996.
- Callender, J. et al.," Time Saver Standards for Architectural Design Data "-6th Ed. – Singapore: McGraw – Hill. 1982.

6-3 Recommended books

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

6-4 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

7- Facilities required for teaching and learning:

- Data Show

Course coordinator: .Dr. Haitham Samir

Head of the Department: Associate Professor: Nahed Omran

September , 2015

Modern Academy for Engineering and Technology

Course Specification

A512 : Architectural Design (4) -b

A- Affiliation

Relevant program: Architectural Engineering and building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Architectural design **Code:** A512 **Year/level: 5th year , 2nd semester**
Teaching Hours: **Lectures: 6** **Tutorial:**
Practical: **Total: 6**

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to:

- Building design on basic concepts through Interacting buildings and urban projects with surrounding environment.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - Knowledge and up dated of design and building Technology.(A14)
a2 - Principles of architectural design. (A13)
a3 - Principles of building technologies. (A14)
a4 - Physical modeling, 3D, and computer-aided design. (A20)
a5 - Principles of sustainable design, climatic considerations.(A23)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Integrate different forms of knowledge. (B4)
b2 - Think 3d and engage images of places using Computer aided design (B14)
b3 - Decide optimum solutions based on various objectives and design problems. (B16)
b4 - The informed consideration of the wider context in the design process (B19)
b5 - formulate informed opinion related to design (B20)
b6 -Analyze the range of patterns and traditions in design process. (B21)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 -Produce and present architectural design projects considering neatness, aesthetics and precession. (C4, C13)

c2- Display imagination and creativity in the design development, form generation and facade design (C18)

c3 -Respect all alternative solutions applied to a single design problem. (C19)

c4 -Contribute positively to the aesthetic, architecture and urban identity. (C22)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Ability to present and explain concepts and ideas within a limited time and defined constrains (D2-D3)

d2 - Search for information from different sources. And effectively refer to it (D7- D9)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A12, A14, A20,A23
B	Intellectual skills	B3, B4, B14, B16, B19, B20, B21
C	Professional and practical skills	C4, C13, C18, C19,C22
D	General and transferable skills	D2, D3, D7, D9

3 - Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1-Cultural buildings and research center	6 hrs	-	-
2-Site analysis and site model	6	-	-
3-Mosses	6	-	-
4-Layout	6	-	-
5-Concept development	6	-	-
6-Master plan	6	-	-
7-Mid-Term Exam	6		
8-Plans pollutions (circulation)	6	-	-
9-Development and final Plans	6	-	-
10-Level Study (sections)	6	-	-
11-Elevations design- Interiors and details	6	-	-
13-3D Perspective	6	-	-
14-Model Study -Semi final sketch	6	-	-
15- Finalpresentation of projects + jury	6	-	-
Total hours	**90**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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	Quizzes	Term papers	Assignments
Knowledge	a1	1	1						1	1										
	a2	1	1									1				1				
	a3	1	1				1					1								1
	a4		1									1		1						
	A 5	1	1		1				1											
Intellectual	b1	1										1			1					
	b2								1	1								1		
	b3	1	1									1				1				
	b4	1	1						1	1					1					1
	B 5	1	1	1					1							1		1	1	1
	B 6	1	1	1					1			1								
Applied	c1	1		1					1											
	c2								1			1								
	c3		1		1				1	1			1							
	c4				1			1	1	1			1							
al	d1	1	1					1												
H	d2								1			1					1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	65
Mid-Term Exam	7th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	100
Total		175

6- List of references:

6-1 Course notes

6-2 Required books

- Steele, J., "Architecture Today",-2nd Ed. – Phaeton Press Limited, London, UK, 2001.
- Ching, F., "Architecture – Form, Space and Order ",-2nd Ed. International Thomson Publishing Inc., New York, 1996.
- Callender, J. et al.," Time Saver Standards for Architectural Design Data "-6th Ed. – Singapore: McGraw – Hill. 1982.

6-3 Recommended books

Jencks, C., "Architecture 2000 and Beyond", John Wiley & Sons Ltd, UK, 2000. **6-4 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

7- Facilities required for teaching and learning:

- Data Show

Course coordinator: Dr. Haitham Samir

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A521: Working Drawing & Construction Documents (2)-a

A- Affiliation

Relevant program: Architectural Engineering and Building Technology
Department offering the program: Architectural Engineering and Building Technology Dpt.
Department offering the course: Architectural Engineering and Building Technology Dpt.
Date of specifications approval: September,2015

B - Basic information

Title: Working Drawing & Construction Documents(2)-a | Code: A521 | Year / level: Fifth 1st Semester

Teaching Hours: Lectures: 6 | Tutorial: -
Practical: - | Total : 6

C - Professional information

1 – Course Learning Objectives:

The main objective of this course is to enable the student to :

- Be update with new high-tech building construction materials and systems.
- The student must understand and be up knowledge with working drawings and details and executable drawings for complex buildings.
- The student should be able to self check and quality controls working drawings.
- The student should be able of designing and drawing working and handle site workshop drawings and details.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.

a1 -Characteristics of architectural materials(A3) (A24)
a2 - The concepts and Methodologies of solving Construction Problems. (A5)(A25)(A28)
a3 - Professional ethics and socio-economical impacts of architectural solutions . (A5)
a4 - Quality assurance systems, codes of practice . (A6)(A25)
a5 - Architectural symbols and Technical language and report writing. (A10)
a6 - Professional ethics and impacts of Architectural solutions on society and environment. (A11)(A24)
a7 - Contemporary Architectural topics. (A12)
a8 - Principles of building technologies, structure & construction methods, technical installations, properties of materials, and the way they may influence design decisions. (A14)(A24)
a9 - Fundamentals of building acquisition, operational costs, and of preparing construction documents and specifications of materials, components, and systems appropriate to the building. (A15)(A25)
a10 - Physical modeling, multi-dimensional visualization, multimedia applications, and computer-aided design. (A20)
a11 - The role of the architecture profession relative to the construction industry and the overlapping interests of organizations representing the built environment. (A21)(A24)

a12 -Various dimensions of complex building problem and the range of approaches, policies, and practices that could be carried out to solve this problem. (A21)(A25)
a13 -Principles of sustainable design, climatic considerations, and energy consumption and efficiency in buildings and their impacts on the environment. (A23)(A24)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Judge engineering decisions considering balanced costs, benefits, safety, quality, reliability, and environmental impact. (B9)(B23)
b2 - Develop a systematic and methodic approach in dealing with new and advancing technology. (B12)(B23)
b3 - Integrate different forms of knowledge, ideas from other disciplines, and manage information retrieval to create new solutions. (B13)(B23)
b4 - Think three-dimensionally and engage images of places & times with innovation and creativity in the exploration of design. (B14)(B24)
b5 - Predict possible consequences, by- products and assess expected performance of design alternatives. (B15)(B22)
b6 - Reconcile conflicting objectives and manage the broad constituency of interests to reach optimum solutions. (B16)(B24)(B25)
b7 - Integrate relationship of structure, building materials, and construction elements into design process. (B17)(B18)(B22)
b8 - Discuss research and formulate informed opinions appropriate to specific context and circumstances affecting architecture profession & practice. (B20)(B22)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 -Apply knowledge of architectural practice on integrative base to solve engineering problems. (C1)(C24)
c2 - Merge professionally the architectural knowledge, understanding, and feedback to improve design, construction and/or services. (C2)(C24)(C23)
c3 - Apply quality assurance procedures and follow codes and standards. (C10)(C24)(C23)
c4 - Prepare and present technical reports. (C11)
c5 - Produce professional workshop and technical drawings using traditional drawing and computer-aided drawings' techniques. (C13)(C25)
c6 - Use appropriate construction techniques and materials to specify and implement different designs. (C14)(C25)
c7 - Participate professionally in managing construction processes. (C15)(C25)

D - General and transferable skills:

By the end of the course the student should be able to:

d1-Collaborate effectively within multidisciplinary team (D1)
d2 -Work in stressful environment and within constraints(D2)
d3 -Communicate effectively(D3)
d4 -Manage tasks and resources efficiently(D6)
d5 -Search for information and adopt life-long self learning(D7)
d6 -Acquire entrepreneurial skills(D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A3, A5, A6, A11,A12, A15, A16, A20, A21, A23, A24,A25
B	Intellectual skills	B9, B12, B13, B14, B15, B16, B18, B20, B22,B23 ,B24,B25
C	Professional and practical skills	C1, C10,C11, C12, C14, C15, C23,C24, C25
D	General and transferable skills	D1, D2, D3, D6, D7, D8

3 - Contents

	Topic	Lecture hours	Tutorial hours	Prac. hours
1	• Revision and Working drawings importance (Working Drawings 4th Year , Building technology)	6		
2	• Project Determination and Preparing software (layers-text style-dimension - blocks - xref. ...etc)	6		
3-4	• . 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.)	6		
5-6	• Plans (advanced working Drawings studies). (walls- doors - windows -stairs - finishing,.... etc).	6		
7	• Advanced structure systems (meshes – trusses – shell -cables-space structures)	6		
8	• Advanced Escalators , Stairs and Elevators designing and construction studies	6		
9	• Methods of choosing and applying advanced finishing materials (GRC-GRP-GRG-Partitions-....etc) using (green materials)	6		
10	• Special doors "revolving – sliding – electrical ....."& Windows (Curtain walls - aluminum glassing systems)	6		
11	• Sections (advanced working drawing studies) . (Structure - Levels- dimensions - Layers.....etc).	6		
12	• Advanced roofing and skylight systems	6		
13	• Theater and cinema design in plan and section (vision – sound – light – A.C.) and construction methods	6		
14	• Sport and lecture halls (vision – sound – light – A. C.)	6		
15	• Elevations for complex and high-tech buildings	6		
	Total hours	**90**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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	Quizzes	Term papers	Assignments
Knowledge	a1	1	1											1						
	a2	1														1		1		
	a3	1					1									1				
		1	1						1							1				
	a4	1	1													1				
Intellectual	b1	1		1								1								
	b2		1						1			1				1				
	b3	1										1							1	1
	b4	1							1			1							1	
Applied	c1		1									1		1						
	c2	1	1	1																
	c3	1										1		1						
	c4	1	1									1				1				
General Tran.	d1	1										1				1				
	d2	1						1												
	d3														1					
	d4								1	1								1		
	d5	1	1						1			1		1						
	d6	1										1				1				
	d7	1		1								1		1						

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	60
Mid-Term Exam	-	-
Practical Exam	-	-
Written Exam	-	-
Total		60

6- List of references:

6-1 Course notes

- Working Drawing & Construction Documents
  Prepared by Prof. Dr. Magdy Tammam

6-2 Essential books (text books)

- Ching, F., "Building Construction Illustrated ", 3rd Ed. John Willy & Sons Publishing Inc., New York, 2001

6-3 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

6-4 Periodicals, Web sites, etc.

http://products.construction.com/ - Sweets Construction.
All Building Construction Sites
All Architectural Sites

7- 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: Prof. Dr. Magdy Tammam
Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A522: Working Drawing & Construction Documents (2)-b

A- Affiliation

Relevant program: Architectural Engineering and Building Technology
Department offering the program: Architectural Engineering and Building Technology Dpt.
Department offering the course: Architectural Engineering and Building Technology Dpt.
Date of specifications approval: September,2015

B - Basic information

Title: Working Drawing & Const. Documents(2b) **Code:** A522 Year / level: Fifth/2nd Semester
Teaching Hours: Lectures: 6 Tutorial: -
Practical: - Total : 6

C - Professional information

1 – Course Learning Objectives:

The main objective of this course is to enable the student to :

- The student must understand and be up knowledge with working drawing of all workshop drawings (Structural, plumbing, air condition, electrical ….etc.)
- The student must be able to coordinate and manage tender documents.
- The student must manage construction documentation and coordinate construction phases.
- The student must be able to project cost analysis and estimation .

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.

a1 -Characteristics of architectural materials(A3) (A24)
a2 - The concepts and Methodologies of solving Construction Problems. (A5)(A25)
a3 - Professional ethics and socio-economical impacts of architectural solutions . (A5)
a4 - Quality assurance systems, codes of practice . (A6)(A25)
a5 - Architectural symbols and Technical language and report writing. (A10)
a6 - Professional ethics and impacts of Architectural solutions on society and environment. (A11)(A26)
a7 - Contemporary Architectural topics. (A12)
a8 - Principles of building technologies, structure & construction methods, technical installations, properties of materials, and the way they may influence design decisions. (A14)(A24)
a9 - Fundamentals of building acquisition, operational costs, and of preparing construction documents and specifications of materials, components, and systems appropriate to the building. (A15)(A25)
a10 - Physical modeling, multi-dimensional visualization, multimedia applications, and computer-aided design. (A20)
a11 - The role of the architecture profession relative to the construction industry and the overlapping interests of organizations representing the built environment. (A21)

a12 -Various dimensions of complex building problem and the range of approaches, policies, and practices that could be carried out to solve this problem. (A21)(A25)

a13 -Principles of sustainable design, climatic considerations, and energy consumption and efficiency in buildings and their impacts on the environment. (A23)(A25)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Judge engineering decisions considering balanced costs, benefits, safety, quality, reliability, and environmental impact. (B9)(B23)

b2 - Develop a systematic and methodic approach in dealing with new and advancing technology. (B12)(B23)

b3 - Integrate different forms of knowledge, ideas from other disciplines, and manage information retrieval to create new solutions. (B13)(B23)

b4 - Think three-dimensionally and engage images of places & times with innovation and creativity in the exploration of design. (B14)(B24)

b5 - Predict possible consequences, by- products and assess expected performance of design alternatives. (B15)(B22)

b6 - Reconcile conflicting objectives and manage the broad constituency of interests to reach optimum solutions. (B16)(B24)

b7 - Integrate relationship of structure, building materials, and construction elements into design process. (B17)(B22)(B25)

b8 - Discuss research and formulate informed opinions appropriate to specific context and circumstances affecting architecture profession & practice. (B20)(B22)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 -Apply knowledge of architectural practice on integrative base to solve engineering problems. (C1)(C24)

c2 - Merge professionally the architectural knowledge, understanding, and feedback to improve design, construction and/or services. (C2)(C24)(C23)

c3 - Apply quality assurance procedures and follow codes and standards. (C10)(C24)(C23)

c4 - Prepare and present technical reports. (C11)

c5 - Produce professional workshop and technical drawings using traditional drawing and computer-aided drawings' techniques. (C13)(C25)

c6 - Use appropriate construction techniques and materials to specify and implement different designs. (C14)(C25)

c7 - Participate professionally in managing construction processes. (C15)(C25)

D - General and transferable skills:

By the end of the course the student should be able to:

d1-Collaborate effectively within multidisciplinary team (D1)

d2 -Work in stressful environment and within constraints(D2)

d3 -Communicate effectively(D3)

d4 -Manage tasks and resources efficiently(D6)

d5 -Search for information and adopt life-long self learning(D7)

d6 -Acquire entrepreneurial skills(D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A3, A5, A6, A10, A11, A12,A14, A15, A20, A21, A23, A24,A25
B	Intellectual skills	B9, B12, B13, B14, B15, B16, B17, B20, B22,B23 ,B24,B25
C	Professional and practical skills	C1, C2, C10, C11, C13, C14, C15, C23, C24, C25
D	General and transferable skills	D1, D2, D3, D6, D7, D8

3 – Contents

	Topic	Lecture hours	Tutorial hours	Practical hours
1	• Drawing sanitary, electrical, mechanical networks and facilities (Symbols - theories - construction)	6		
2	• Stairs work shop drawings	6		
3	• Bathes work shop drawings	6		
4	• Project & Quality control (checklists and revision methods)	6		
5	• Project & Defectives Correction	6		
6	• Presentation and defense for working drawing project.	6		
7	• Mid-Term Exam	6		
8-	• Project Documentations	6		
9	• Site Documentations	6		
10	• Cost analysis	6		
11	• Cost estimation	6		
12	• Tender documents "Quality control – ADM …"	6		
13	• Tender recommendations "owner designer …… "	6		
14	• Recapitulation	6		
15	• Revison	6		
	Total hours	**90**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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	Quizzes	Term papers	Assignments
Knowledge	a1	1	1											1						
	a2	1														1		1		
	a3	1	1						1							1				
		1	1						1							1				
	a4	1	1													1				
Intellectual	b1	1		1								1								
	b2		1						1			1				1				
	b3	1										1							1	1
	b4	1							1			1							1	
Applied	c1		1									1		1						
	c2	1	1	1																
	c3	1										1		1						
	c4	1	1									1				1				
General Tran.	d1	1										1				1				
	d2	1						1												
	d3														1					
	d4								1	1								1		
	d5	1	1						1			1		1						
	d6	1										1				1				
	d7	1		1								1		1						

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	50
Mid-Term Exam	6-th Week	10
Written Exam	Sixteenth week	80
Total		140

6- List of references:

6-1 Course notes

- Working Drawing & Construction Documents
  Prepared by Prof. Dr. Magdy Tammam

6-2 Essential books (text books)

- Ching, F., "Building Construction Illustrated ", 3rd Ed. John Willy & Sons Publishing Inc., New York, 2001

6-3 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

6-4 Periodicals, Web sites, etc.

http://products.construction.com/ - Sweets Construction.
All Building Construction Sites
All Architectural Sites

7- 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: Prof. Dr. Magdy Tammam

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A531:Urban Design -a

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Urban Design (A) **Code:**A531 **Year/level:**5th year , 1st term
Teaching Hours: **Lectures: 3** **Tutorial:**
Practical: **Total:**

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to:

- Understand the definition of urban design.
- Analyses the site forces for both of physical and cultural dimensions.
- Analyses the urban tissue for its basic elements.
- Be aware of landscape elements.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:
a1- Analyzing an Urban space to the basic elements. (A9)
a 2- Site forces. (A16)
a 3 - Problems and constrains of site. (A16)
a4- High knowledge about soft and hardscapes. (A19)

B - Intellectual skills:

By the end of the course the student should be able to:
b1- Analyze of site forces. (B10)
b2-Gather problems and constrains in a matrix. (B20)
b3 -Develop his / her analysis. (B20)
b4 -Valuate his / her analysis. (B20).

C - Professional and practical skills:

By the end of the course the student should practice:
c1-Analyze urban spaces in large scale sites. (C22)
c2-Establish matrix of problems and constrains. (C13)
c3-Converting constrains into problems and dealing with them(C18,19)
c4-Dealing with any existed urban space and redesigning it. .(C13)

D - General and transferable skills:

By the end of the course the student should be able to:

d1- Participate in urban design team. (D1)

d2- Develop presentation. (D5)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A9, A16,A19
B	Intellectual skills	B10, B20
C	Professional and practical skills	C13,C18,C19,C22,
D	General and transferable skills	D1, D5

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1-Introduction+ Urban design &urban planning 1 - project	3		
2-Urban design &urban planning 2 - project	3		
3-Urban character 1 - project	3		
4-Urban character 2 - project	3		
5-Urban fabric 1- project	3		
6-Urban fabric 2 - project	3		
7-Visual perception - project	3		
8-Urban space 1 - project	3		
9-Urban space 2 - project	3		
10-Façade analysis - project	3		
12-Urban development - project	3		
13-Landscape elements 1 - project	3		
14-Landscape elements 2 - project	3		
15-Site analysis - project	3		
Total hours	**45**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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	Quizzes	Term papers	Assignments
Knowledge	a1	1	1									1				1			1	
	a2	1	1					1	1			1								
	a3	1	1					1	1			1				1			1	
		1							1											1
	a4	1						1		1		1	1	1	1					1

Intellectual	b1	1						1		1		1	1	1	1				1
	b2	1						1		1		1	1	1	1				1
	b3	1		1					1			1		1					
	b4	1		1					1			1		1					
Applied	c1			1					1										
	c2		1				1	1	1									1	
	c3	1	1									1				1			1	
	c4	1	1					1	1			1							
General Tran.	d1	1	1					1	1			1				1			1	
	d2	1							1											1
	d3	1						1		1		1	1	1	1					1
	d4	1						1		1		1	1	1	1					1
	d5	1						1		1		1	1	1	1					1
	d6	1		1					1			1		1						
	d7	1		1					1			1		1						

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	50
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	40
Total		100

6- List of references:

6-1 Course notes

6-2 Required books

6-3 Recommended books

- Lynch , K. (1960) Image of the city, MIT Press

6-4 Periodicals, Web sites, etc.

- Krier, R. (1979) urban space - Academy Press

7- Facilities required for teaching and learning:

- Blackboard.
- Transparencies.

Course coordinator: Dr. walaa nour

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A532:Urban Design -b

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Urban Design (B) **Code:** A532 **Year/level:**5th year , 2nd semester
Teaching Hours: **Lectures: 3** **Tutorial:**
Practical: **Total:**

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to:

- Understand basic urban design theories.
- Be aware of urban regulations.
- Prepare urban design proposal for a specific site.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:
a1- Environmental, economic & aesthetic data. (A11)
a2- Development an urban design programs. (A16)

B - Intellectual skills:

By the end of the course the student should be able to:
b1- Analyze of site conditions. (B13)
b2-Solve spatial problems. (B13)
b3- Develop his / her proposal Experience. (B20)
b4- Evaluate his / her proposal. (B20)

C - Professional and practical skills:

By the end of the course the student should practice:
c1-Solve spatial problems in large – scale sites(C8).
c2- Generate urban design concepts. (C21)
c3-Reaching tiny details in urban designing.(C13,C17)
C4-Dealing with site and environmental hard circumstances.(c22)

D - General and transferable skills:

By the end of the course the student should be able to:

d1- Participate urban team. (D1)

d2- Develop his / her presentation skills. (D5)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A11,A16
B	Intellectual skills	B13,B20
C	Professional and practical skills	C8,C13,C17,C21,C22
D	General and transferable skills	D1,D5

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1-Urban design process 1 + Urban design process 2 - project	3		
2-Theories of urban design - project	3		
3-Urban regulations 1 – project	3		
4-Urban regulations 2 – project	3		
5-Urban analysis 1 - project	3		
6-Urban analysis 2 - project	3		
7-Mid-Term Exam	3		
8-Site design 1 - project	3		
9-Site design 2 - project	3		
10-Urban field 1 - project	3		
11-Urban field 2 - project	3		
12-Urban landscape elements - project	3		
13-Project	3		
14-Project	3		
15-Project	3		
Total hours	**45**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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	Quizzes	Term papers	Assignments
Knowledge	a1	1	1									1				1			1	
	a2	1	1					1	1			1								
	a3	1	1					1	1			1				1			1	1
	a4	1						1		1		1	1	1	1					1
Intellectual	b1	1						1		1		1	1	1	1					1
	b2	1						1		1		1	1	1	1					1
	b3	1		1					1			1		1						
	b4	1		1					1			1		1						
Applied	c1			1					1											
	c2		1				1	1	1									1		
	c3	1	1									1				1			1	
	c4	1	1					1	1			1								
General Tran.	d1	1	1					1	1			1				1			1	
	d2	1							1											1
	d3	1						1		1		1	1	1	1					1
	d4	1						1		1		1	1	1	1					1
	d5	1						1		1		1	1	1	1					1
	d6	1		1					1			1		1						
	d7	1		1					1			1		1						

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	50
Mid-Term Exam	6-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	40
Total		100

6- List of references:

6-1 Course notes

6-2 Required books

6-3 Recommended books

- Lynch, k (1960) Image of the city , MIT press

6-4 Periodicals, Web sites, etc.

- Krier, R. (1979) urban space. Academy press

7- Facilities required for teaching and learning:

Course coordinator: Dr . Walaa Nour

Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A541: City Planning(2)-a

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: City planning **Code:** A551 **Year/level:** 5th year , 1st semester
Teaching Hours: **Lectures: 6** **Tutorial: -**
Practical: - **Total:** 6

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to:

- Extend understanding of spatial & socioeconomics studies
- Apply development concepts with regard of constraints concepts the current situation in planning from diffract aspects (cultural, socioeconomics, etc)
- Perform site analysis studies

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:
a1- Planning Principles (A16,A19)
a2- Geographic information systems concepts & application (A17)
a3-Housing principles & how to plan a complete complex (A11)

B - Intellectual skills:

By the end of the course the student should be able to:
b)- Develop a design by linking different related subjects essential for the design such as: urban, financial, environmental & topographic studies. (B10)
b2- Develop new ideas during the design process using the principles of planning. (B14)
b3-Analyze data affecting the design process. (B11)
b4-Learn urban problems in city. (B10,11)
b5- Apply Planning principles in new urban areas(B19)

C - Professional and practical skills:

By the end of the course the student should practice:
c1- Computerize the studies of site analysis with assistance of the (GIS) (C6)
c2-Collect & analyze data that will make him / her develop a design for a complete complex. (C6)
c3- Design a residential complex in existing urban areas. (C20)

D - General and transferable skills:

By the end of the course the student should be able to:
d1- Able to work in team (D1)

d2- communicate via digital techniques and present data using different software . (D2,3,5)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A11, A16, A17, A19
B	Intellectual skills	B10, B11,B19
C	Professional and practical skills	C6, C20
D	General and transferable skills	D1,D2, D3, D5

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1-Planning regions in Egypt	6	-	-
2-Planning regions in Egypt	6		
3-Historians and development approaches	6	-	-
4-Historians and development approaches	6		
5-Natural resources in Egypt	6		
6-Natural resources in Egypt	6	-	-
7- Sustainable development	6		
8-Sustainable development	6		
9-Sustainable development	6	-	-
10-Getting maps for menout city	6	-	-
11-Getting maps for menout city	6		
12-Getting maps for menout city	6	-	-
13-Report about el sadat city	6		
14-Report about el sadat city	6		
15-Revision	6		
Total hours	**90**	**-**	**-**

4 - Teaching and Learning and Assessment methods:

Course ILO's		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	Quizzes	Term papers	Assignments
Knowledge	a1	1		1		1		1										1		
	a2	1							1			1								
	a3	1												1		1				
		1							1											1
	a4	1						1								1	1			
Intellectual	b1	1							1					1						
	b2	1						1	1					1		1				

	b3							1	1							1		1		
	b4	1	1			1												1		
Applied	c1	1	1			1												1		
	c2	1	1				1	1								1				
	c3								1			1								
	c4			1				1				1			1		1			
General Tran.	d1	1		1		1		1										1		
	d2	1							1			1								
	d3	1												1		1				
	d4	1							1											1
	d5	1						1								1	1			
	d6	1							1					1						
	d7	1						1	1					1		1				

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	30
Mid-Term Exam	-	-
Practical Exam	-	-
Written Exam	-	-
Total		30

6- List of references:

6-1 Course notes

Course notes

6-2 Required books

- Pople, "Experimental Houses", Laurence, 2000.
- Nicholson, "Local Planning in Practice", Hutchinson, 1997.

6-3 Recommended books

- Alfred N. Page, Warren R. Seyfried, Urban Analysis: Readings in Housing and Urban Development , Published byScott, Foresman, 1970.

6-4 Periodicals, Web sites, etc.

www.clac.edu.eg , www.googleearth .com

7- Facilities required for teaching and learning:

- **GIPS**
- **Internet Access**
- **Updated computers**
- **Educational Software License**
- **Data Show**

Course coordinator: Dr. Marwa Adel

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A542: City Planning(2)-b

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: City planning **Code:** A551 **Year/level:** 5th year , 2nd semester
Teaching Hours: **Lectures: 6** **Tutorial: -**
Practical: - **Total:** 6

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to:

- Extend under standing of spatial & socioeconomics studies
- Apply development concepts with regard of constraints concepts the current situation in planning from diffract aspects (cultural, socioeconomics, etc)
- Perform site analysis studies

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1- Planning Principles (A16,A19)
a2- Geographic information systems concepts & application (A17)
a3- understanding Housing principles & how to plan a complete complex(A11)

B - Intellectual skills:

By the end of the course the student should be able to:

b1-Develop a design by linking different related subjects essential for the design such as: urban, financial, environmental & topographic studies. (B10)
b2- Develop new ideas during the design process using the principles of planning.
b3- Analyze data affecting the design process. (B11)
b4-Learn urban city problem. (B10,11)
b5- Apply Planning principles in new urban areas *(B19)*

C - Professional and practical skills:

By the end of the course the student should practice:

c1-Computerize the studies of site analysis with assistance of the (GIS) (C6)

c2- Collect & analyze data that will make him / her develop a design for a complete complex. (C6)

c3- Design a residential complex in existing urban areas. (C20)

D - General and transferable skills:

By the end of the course the student should be able to:

d1- Learn working as team . (D1)

d2- communicate via digital techniques and present data using different software(D2,3,5)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A11,A16,A17,A19
B	Intellectual skills	B10,B11,B19
C	Professional and practical skills	C6,C20
D	General and transferable skills	D1,D2,D3,D5

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1-Comparing the current situation and the suggested situation for el sadat city	6		
2-Comparing the current situation and the suggested situation for el sadat city	6		
3-Explaining concepts of overall	6		
4-Explaining concepts of overall	6		
5-Development sustainable development ways of development	6		
6-Development sustainable development ways of development	6		
7-Mid Term Exam	6		
8-Development sustainable development ways of development	6		
9-Explaining the balanced development the unbalanced development	6		
10-Explaining the balanced development the unbalanced development	6		
11-Explaining the balanced development the unbalanced development	6		
12-Make planning alternatives	6		
13-Make planning alternatives	6		
13-Make planning alternatives	6		
14-Revision			
Total hours	**90**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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	Quizzes	Term papers	Assignments
Knowledge	a1	1		1		1		1										1		
	a2	1							1			1								
	a3	1							1					1		1				1
	a4	1						1								1	1			
Intellectual	b1	1							1					1						
	b2	1						1	1					1		1				
	b3							1	1							1		1		
	b4	1	1			1												1		
Applied	c1	1	1			1												1		
	c2	1	1				1	1								1				
	c3								1			1								
	c4			1				1				1			1		1			
General Tran.	d1	1		1		1		1										1		
	d2	1							1			1								
	d3	1												1		1				
	d4	1							1											1
	d5	1						1								1	1			
	d6	1							1					1						
	d7	1						1	1					1		1				

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	14-week	30
Written Exam	Sixteenth week	60
Total		120

6- List of references:

66-1 Course notes

Course notes

6-2 Required books

- Pople, "Experimental Houses", Laurence, 2000.
- Nicholson, "Local Planning in Practice", Hutchinson, 1997.

6-3 Recommended books

- Alfred N. Page, Warren R. Seyfried, Urban Analysis: Readings in Housing and Urban Development , Published byScott, Foresman, 1970.

6-4 Periodicals, Web sites, etc.

www.clac.edu.eg , www.googleearth .com

7- Facilities required for teaching and learning:

- GIPS
- Internet Access
- Updated computers
- Software License
- Data Show

Course coordinator: Dr. Marwa Adel
Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A551:History & Theory of Architecture (4)

A- Affiliation

Relevant program: Architectural Engineering and Building Technology
Department offering the program: Architectural Engineering and Building Technology Dpt.
Department offering the course: Architectural Engineering and Building Technology Dpt.
Date of specifications approval: September,2015

B - Basic information

Title: History & Theory of Architecture (4) **Code: A551** **Year/level:** Fifth / 1st Semester
Teaching Hours: **Lectures:** 4 **Tutorial:**
Practical: **Total:** 4

C - Professional information

1 – Course Learning Objectives:

The main objective of this course is to introduce the basic concepts of the Architectural Evolution through 20th Century and recognition of the different philosophies & styles affecting architecture today.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.

a1- The history of architecture and evolution of architectural theories throughout 20th century, by studying the basic features and trends of Modernism, Late-Modernism, Post-Modernism, Deconstruction, Performative, and Digital Architectures (A8, A13, A17)
a2- New concepts of building forms and aesthetics (A13)
a3- Principles of Architectural Design theories and elements of design (A4)
a4- New ideas of building construction systems and technologies (A8-A24)
a5- New materials used in building the selected projects (A3)
a6- Initial characteristics of the futuristic Architecture at the 21st Century (A13)
a7- A scientific methodology of how to proceed a technical research (A10)

B - Intellectual skills:

b1- Analyze the given examples of the architectural works with high concern of the history of architecture & the evolution of its theories and applications over years (B19, B14)
b2 - Produce innovative design ideas and concepts (B5, B4)
b3 - Develop the creativity & innovation (B3)
b4 - Solve design problems (B2, B16)
b5- Use different techniques of construction systems in the design projects (B17, B19)
b6 - Know how to extract certain components, systems, & processes from history of architecture, and how to use them into the design process (B5)

C - Professional and practical skills:

On successful completion of the course, the student should be able to:

c1 - Produce creative & innovative ideas (C1, C2)

c2 - Identify the difference between the architectural styles & interpret their concepts (C13)

c3- Examine new types of aesthetics in architecture through experinceing projects of the 20th century (C4)

c4 - Present architectural project in digital research & produce it visually to the audience (C12)

.

D - General and transferable skills:

On successful completion of the course, the student should be able to:

d1- Search for information's from references, magazines and internet (D7)

d2- Write reports - singularly/pluraly - and prepare visual presentations (D2, D3, D4)

d3- Train how to present researches in teamwork (D1, D3, D5)

d4- Use the Email for communication (D3, D4)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1, A3, A4, A7, A8, A9, A11,A14, A17
B	Intellectual skills	B5,B14, B16,B17,B19
C	Professional and practical skills	C1, C2, C12, C13
D	General and transferable skills	D1, D2, D3, D4, D5, D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Pract. hours
1-General introduction for the course	4		
2-Mechanical analogy:Futurism - De stijl -Constructivism – Expressionism	4		
3-Architecture of Modernism Analyzing characteristics of: International Style / SIAM Group /Organic Architecture / Functions	4		
4-Continue- Architecture of Modernism: **Analyzing landmark projects of the Pioneer:** *Frank Lloyd Write / Le Corbusier*	4		
5-Continue- Architecture of Modernism: **Analyzing landmark projects of the Pioneers** *Mies van der Rohe / Walter Gropius*	4		
6-Architecture of Late Modernism **Analyzing characteristics of:**Expressionism / Brutalism **Analyzing projects of American Architects:** *Paul Rudolph / Lois Khan / Alvar Alto*	4		
7-Mid term Exam	4		

8-Continue- Architecture of Late Modernism: Metabolism / Archigram **Analyzing projects of the Japanese Architects:** *Kenzo Tange / Kisho Kurokawa*	**4**		
9-Continue- Architecture of Late Modernism: Trend of Hi-Tech Architecture **Analyzing landmark projects of Architects:** *Richard Rogers / Renzo Piano /Norman Foster / Nicolas Grimshow.*	**4**		
10-Architecture of Post Modernism : Neo Classicism / Historicism / Revivalism /Metaphors **Analyzing projects of the American Architects:** *Robert Venturi / Philip Johnson /Charles Moore/ Michael Graves*	**4**		
11-Continue- Architecture of Post Modernism: Trend of Deconstruction Architecture **Analyzing landmark projects of Architect**: *Daniel Libeskind*	**4**		
12-Continue- Architecture of Post Modernism: Trend of Deconstruction Architecture **Analyzing landmark projects of Architect**: *Frank O' Gehry / Zaha Hadid / Bernard Tshumi*	**4**		
13-Continue- Architecture of Deconstruction **Analyzing landmark projects of Architects**: *Peter Eisenman Maya Lynn /Coop Himmilblau*	**4**		
14-Digital Presentation of the Final Researches: (Jury) : *Staff's Criticism / Evaluation for each Student*	**4**		
15-Continue Students' Digital Presentation of the their Researches	**4**		
Total hours	**60**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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	Quizzes	Term papers	Assignments
Knowledge	a1	1	1	1								1				1	1		1	1
	a2	1	1	1				1				1	1	1		1	1		1	
	a3	1	1					1						1		1	1			
		1	1	1								1	1	1		1	1		1	1
	a4	1	1	1								1				1	1		1	
Intellectual	b1	1	1					1								1				
	b2	1	1									1	1	1					1	
	b3	1	1					1		1						1	1			
	b4	1	1	1						1			1						1	1
pli	c1	1	1	1						1		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		1	1			
General Tran.	d1	1								1			1			1				1
	d2	1	1	1								1	1			1	1		1	
	d3	1	1					1				1	1			1				1
	d4	1	1	1		1				1		1	1						1	
	d5					1				1		1	1	1					1	1
	d6	1	1	1		1		1		1		1	1	1					1	
	d7	1	1									1	1	1					1	

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	20
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		100

6- List of references:

6-1 Course notes None.

6-2 Essential books (text books) Momtaz, Reham, " ", Cairo, Egypt, 2008.

6-3 Recommended books

Jencks, Charles, *"Architecture Today",* Thames & Hudson, New York, USA, 1990.

Steele, James, *"Architecture Today",* Thames & Hudson, New York, USA, 1990.

Watkin, " History of Western Architecture ", Laurence, 2005 .

6-4 Periodicals, Web sites, etc.

- Progressive Architecture.
- Architecture Design Profiles.
- Tasmeem Magazine.
- Medina Magazine.
- Al Benaa.

www.Greatbuildings.com

www.Archinform.com

7- Facilities required for teaching and learning:

- Gallery to present the best researches.
- Computer, Data show

Course coordinator: Dr. : Reham Momtaz

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification
A552: Elective Course(4)
(Aesthetics of the composition)

A- Affiliation

Relevant program: Architecture Engineering and Building Technology

Department offering the program: Architecture Engineering and Building Technology

Department offering the course: Architecture Engineering and Building Technology

Date of specifications approval: September,2015

B - Basic information

Title: Aesthetics of the composition **Code:** A522 **Year/level:**5rd year ,1nd semester

Teaching Hours:4 **Lectures:2** **Tutorial: -**

Practical: **Total: 2**

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 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge:

a1 -Fundamental Channels of architectural Aesthetic**s**(A13)

a2 - Different theories and philosophy of Aesthetics of the composition (A16)

a3 - The relationships between Art and Architectural, built form . (A14)

a4 - Elements of Evaluation of architectural projects. (A19)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Think systematically along the design process, propose alternative solutions. (B14)

b2 - Integrate theoretical studies o Aesthetic thoughtf with practical architectural reality(B4,B5)

b3 - select the best Compiance creative thought in architectural projects(B18)

b4 - Develop Relations and structural design and visual art and architecture(B13)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - Practice Manual drafting and freehand sketching with Fine architectural vocabulary(C9)

c2 - Practice techniques of manual design projects using different Aesthetics tools and

media(C3)

c3 - Introduce professional 2D design drawings(C13)

c4 - Draw 3D perspective views with principles of the aesthetics of composition in architecture, art(C13)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Communicate ideas verbally and visually in a clear coherent manner(D1)

d2 - Collaborate effectively within multidisciplinary. (D1)

d3 - Work in stressful environment and within constraints. (D2)

d4 - Communicate effectively. (D2)

d5 - Manage tasks and resources efficiently. (D3)

d6 - Search for information and adopt life –long self-learning. (D7)

d7 - Acquire entrepreneurial skills(D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A13,A14,A16,A19
B	Intellectual skills	B1,B2,B4,B5,B18
C	Professional and practical skills	C3,C9,C13
D	General and transferable skills	D1,D2,D3,D7,D8

3 – Contents

Topic	Lecture hours	Tutorial hours	Pract. hours
1-Sources of Architectural Aesthetics	2		
2-Channels of Architectural Aesthetics	2		
3- Introduction(spatial-tension-interlocking-harmony-gradation-contrast)	2		
4-Formal approaching (dominance -repetition balance)	2		
5-Values and order for Architectural Aesthetics	2		
6-Unity and continuity	2		
7-Mid-Term Exam			
8-Repose-scale- rhythm-proportions	2		
9-Theories geometric form	2		
10-Organic morphology-sculpturesque form	2		
11-The principles of Aesthetics of composition in Architectural & art	2		
12-Relations between art and Architectural	2		
13-Intellctual of historical Architectural and technological	2		
14-Research for Architectural Aesthetics project	2		
15-Research evaluation	2		
Total hours	**30**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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	Quizzes	Term papers	Assignments
Knowledge	a1	1	1	1	1							1								
	a2	1	1	1	1		1					1			1	1				1
	a3	1	1	1	1		1	1				1			1	1				1
		1	1				1			1		1	1							
	a4	1	1	1			1	1				1	1			1				1
Intellectual	b1	1		1	1		1	1				1			1	1				1
	b2	1		1			1	1				1			1	1				1
	b3	1	1	1			1					1				1				
	b4	1	1				1	1				1		1	1	1				1
Applied	c1	1	1	1	1		1	1		1		1				1				
	c2		1	1	1							1								
	c3		1		1					1		1	1							
	c4	1		1			1	1				1	1		1					
General Tran.	d1	1		1			1	1				1	1		1					
	d2		1				1					1				1				1
	d3		1				1					1				1				1
	d4	1	1	1	1		1	1				1			1					
	d5		1				1					1								1
	d6		1	1	1		1					1			1					1
	d7	1	1	1	1							1								

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	5
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	35
Total		50

6- List of references:

6-1 Course notes

- lecture notes and hand outs

6-2 Required books

6-3 Recommended books

١ - على رافت -ثلاثيه الابداع المعمارى-انتر كونسلت – القاهره- ٢٠٠٣ -

٢ - محمد شهاب احمد – العماره قواعد واساليب – دار قابس- ١٩٩٠

3-john wilsey-The Architecture Of Ecology-italy-1997.

4- Michal Hays- Architecture theory-U S A- 1998.

6-4 Periodicals, Web sites, etc

7- Facilities required for teaching and learning:

- Black board- White board
- Bo0ks, scientific, internet sites.
- Hall for lectures
- Data Show- Projector

Course coordinator: Dr. Amira Mostafa

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification
A 561 Elective course(3)
Urban and Environmental Conservation

A- Affiliation

- **Relevant program:** • Architectural Engineering and Building Technology
- **Department offering the program:** • Architectural Engineering and Building Technology Dpt.
- **Department offering the course:** • Architectural Engineering and Building Technology Dpt.
- **Date of specifications approval:** September,2015

B - Basic information

Title: Urban and Environmental Conservation **Code:** A561 **Year/level:** 5th year/ 2nd semester

Teaching Hours: **Lectures:2** **Tutorial:** -

Practical: - **Total:2**

C - Professional information

1 – Course Learning Objectives:

This course is intended to provide the students with fundamental skills and professional understanding necessary for dealing with urban and architectural Heritage, In the frame of this Course, several definitions, theories, issues, concepts are put forward to encourage a constructive knowledge in the field of conservation.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

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

a1- Theories, issues, concepts of urban and environmental conservation. (A1)
a2- Patterns and problems characterize sites of historic and cultural significance. (A17 ,A18)
a3- International restoration and conservation charters (A16)
a4- Cultural Heritage and Local Economic Development (A11)
a5-The role of participation and community involvement in Conservation(A18-A11)
a6- urban revitalization of historic areas(A11-A18)
a7- Rehabilitation of historic buildings(A11-A21)
a8 - Conservation economics and the debate between cultural and economic values (A11)
a9 - The significance of public intervention in heritage(A9)

B - Intellectual skills:

On successful completion of the course, the student should be able to.

b1-Identify, analyze, understand historic urban sites and buildings. (B19-A21)
b2- Deal appropriately with historic areas and quarters of cities. (B2-B21)
b3- Integrate community concerns to conservation projects (B18)
b4- Discuses conservation problems and formulate informed opinions appropriate to architectural and urban heritage (B19)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1-Generate and develop selective interventions that cope with the significance of urban and architectural historic sites. (C17)

c2- Respond effectively to the significant value of heritage sites and buildings with consideration of social and economic concerns(C22)

c3- Contribute positively to the aesthetic, architecture and urban identity, and cultural life of the community (C21,C22)

D - General and transferable skills:

On successful completion of the course, the student should be able to:

d1-workig effectively as a member in the conservation team ,reaching the optimum decisions(D1)

d2- Achieving his role as a conservation by guiding community individuals to values & conserve their environment (D5)

d3- depending on his experiences & own vision which he gained to find many alternative of solutions for conservation problems (D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A1, A11, A16,A17,A18,A19,A21
B	Intellectual skills	B18,B19, B21,
C	Professional and practical skills	C17, C21,C22
D	General and transferable skills	D1, D5,D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1- Introduction to the field of urban and environmental conservation. (General definitions, terms, fundamentals and theories)	2		
2- Urban Conservation of Heritage sites.	2		
3- Issues and problems facing heritage sites	2		
4-Concept of value in heritage conservation	2		
5- The role of international institutions.	2		
6- A critical review of international restoration & conservation charters	2		
7-Mid-Term Exam	2		
8- Cultural Heritage and Local Economic Development	2		
9- The role of participation and community involvement in Conservation	2		
10- urban revitalization of historic areas	2		
11- Rehabilitation of historic buildings	2		
12- Conservation economics and the debate between cultural and economic values	2		
13- The significance of public intervention in heritage	2		
14- Local and international case studies of urban conservation	2		
15- Research project presentation &revision	2		
Total hours	30		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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	Quizzes	Term papers	Assignments
Knowledge	a1	1	1	1								1				1		1		
	a2	1	1	1					1			1	1		1	1		1		1
	a3	1		1								1			1	1				
		1		1					1				1		1	1		1		1
	a4	1		1		1			1			1	1		1	1		1		
Intellectual	b1	1	1	1									1	1	1	1		1		
	b2	1	1	1		1			1			1	1	1	1	1		1		1
	b3	1		1		1			1			1				1		1		
	b4	1		1					1				1			1		1		
Applied	c1	1	1	1		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	1		1		
General Tran.	d1	1	1	1		1			1			1	1	1	1	1		1		1
	d2	1		1		1						1	1		1	1		1		
	d3	1		1		1						1	1		1	1		1		
	d4			1		1			1			1			1					
	d5		1	1								1	1	1		1		1		
	d6	1	1									1								
	d7			1		1						1		1		1		1		

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	5
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	35
Total		50

6- List of references:

6-1 Course notes

د. هيثم سمير **"الحفاظ الحضرى والبيئى"**، مذكرات الأكاديمية الحديثة للهندسة والتكنولوجيا، ٢٠٠٩

6-2 Essential books (text books)

Non (Course notes are essential)

6-3 Recommended books

Feilden , Bernard M., **"Conservation of historic buildings"**, Butterworth Scientific, London, 1982.

Teisdell, S., Oc, T., and Heath, T. (1996) **"Revitalizing Historic Urban Quarters"** Architectural Press, Oxford.

Appleyard, D. (1979) **"The conservation of European cities"** The MIT Press, Cambridge.

Fielden, B. and Jokilehto, J. (1993) **"Management Guidelines for World Cultural Heritage Sites"** The international Center for the Study of the Preservation and Restoration of Cultural Property (ICCROM), Rome.

Larkham, P. J. (1996) **"Conservation and the City"** Routledge, London.
Worksett, R. (1969) **"The character of towns: an approach to conservation"** The Architectural Press, London.

6-4 Periodicals, Web sites, etc.

http://whc.unesco.org/ (World Heritage)
http://www.icomos.org/ (International Council on Monuments and Sites)
http://www.iccrom.org/ (International Center for the Study of the Preservation and Restoration of Cultural Property)

7- Facilities required for teaching and learning:

Appropriate teaching class including presentation board and data show,
Resources available in the library.

Course coordinator: Dr. Asamer Zakaria

Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A562: Final Graduation Project

A- Affiliation

Relevant program: Architectural Engineering and Building Technology

Department offering the program: Architectural Engineering and Building Technology Dpt.
Department offering the course: Architectural Engineering and Building Technology Dpt.

Date of specifications approval: September,2015

B - Basic information

Title: Final Graduation Project **Code: A562** **Year/level:** Fifth 2nd Semester
Teaching Hours: **Lectures:** 6 **Tutorial:**
Practical: **Total:** 6

C - Professional information

1 – Course Learning Objectives:

This course aims to inspire and promote the ability of the students to deal with large-scale architectural and urban complex design-problems, presenting a complete project report of integrated details including functional, environmental, structural, humanistic, aesthetic and cultural aspects studied and analyzed throughout the project, together with full architectural presentation and modeling of their individual designs. The course relies on the accumulation of all previously acquired skills and taught courses throughout the four-year architectural study.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should gain the following knowledge.

a1- The design process and the importance of other relevant areas of study (e.g. cultural context, environmental technologies, human needs …ext) (A4, A8, A17)
a2- Creating new concepts including the design process which may be inspired from the contemporary real projects (A1, A5, A12)
a3- Architectural technology, sustainability issues and interrelationships with site location, aesthetic and technical issues (A13,A23)
a4- Regulations and building codes in the urban context (A15)
a5- Preparing an appropriate complete report of graduation project including the topic, main aims, reason of the chosen site, site analysis, elements of program, zoning diagram, concept study, and the initial ideas of drawings (A9)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Develop a design strategy based on the results of his/her research. (B20)
b2 - Select the best sites for constructing projects, extract its potentials, and functionate them in design. (B7, B13)
b3 - Analyze and criticize similar projects and remarkable relevant buildings to build upon

previous experiences (B4, B15)

b4 - Develop - through integrated analyses of the design principles and architectural data - a brief to inform design proposal (B14, B15)

b5- Analyze architectural problems, propose alternative solutions, and select the best solutions (B2, B3, B4)

b6- Solve design problems concentrating on achieving specific needs (B7, B17)

b7- Produce innovative design ideas and concepts (B3)

.

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - Transform the project program into design alternatives and ideas relevant to the selected site, and select the appropriate design ideas according to a reasonable evaluation process (C2)

c2 - Carry a design strategy through to a final design solution (C3)

c3 - Integrate structural systems, building services systems and building envelope design as an appropriate architectural expression (C1, C2, C3)

c4 - Present architectural projects (C3, C4, C12, C13)

c5 - Produce new architectural forms and design solutions of real societal problems (C2, C3,C22)

D - General and transferable skills:

By the end of the course the student should be able to:

d1- Search for information in references, magazines and internet (D6, D7)

d2 - Write reports and prepare written & digital presentations (D2, D3, D4)

d3 - Communicate ideas verbally and visually in a clear coherent manner through a variety of tools and media including digital media (D3, D4)

d4 - Apply computer skills (D4, D8)

d5 - Work in stressful environment and within constraints (D2)

d6 - Arrange time for life-long submissions (D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A4, A5, A8, A10, A11,A12, A13,A16, A17
B	Intellectual skills	B2,B3, B4, B13, B15, B17
C	Professional and practical skills	C1, C2, C3, C4, C13,C22
D	General and transferable skills	D2, D3, D4, D6, D7, D8

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
Week 1:Presentation of program development & analysis; site selection and analysis; similar projects and analysis.	6	-	
Week 2: Zoning alternatives presentation	6	-	
Week 3: Design alternatives and ideas presentation	6	-	
Week 4: Layout development	6	-	

Week 5: Layout and Master plan development	**6**	-	
Week 6: Master plan	**6**	-	
Week 7: Other floor plans	**6**	-	
Week 8: Sections	**6**	-	
Week 9: study model	**6**	-	
Week 10: Interaction and updating of model & drawings	**6**	-	
Week 11: Elevations	**6**	-	
Week 12: Elevations	**6**	-	
Week 13: Final 3D conceptions	**6**	-	
Week 14: Presentation phases rendering & delineation	**6**	-	
Week 15:(Jury is often being after second term exams) Presentation phase :perspectives & computer animations	**6**	-	
Total hours	**90**	-	

4 - Teaching and Learning and Assessment methods:

Course ILO's		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	Quizzes	Term papers	Assignments
Knowledge	a1	1	1	1	1	1										1		1	1	
	a2	1	1	1	1	1							1			1		1	1	
	a3	1	1	1	1								1			1		1	1	
		1		1		1										1			1	
	a4	1	1	1	1							1	1					1	1	
Intellectual	b1	1		1	1	1						1	1			1			1	
	b2	1	1	1		1						1				1		1	1	
	b3	1	1	1	1	1						1							1	
	b4	1		1	1	1						1				1		1	1	
Applied	c1	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	
General Tran.	d1	1	1	1	1	1						1				1		1	1	
	d2	1	1	1	1	1										1		1		
	d3	1	1	1	1							1	1			1		1	1	
	d4	1	1	1	1	1										1		1		
	d5											1							1	
	d6	1		1	1	1						1	1						1	
	d7	1	1	1	1	1						1	1			1			1	

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	180
project	End of the term	120
Total		300

6- List of references:

6-2 Essential books (text books)

- Callender, J. et al.," Time Saver Standards for Architectural Design Data ", 6th Ed., McGraw – Hill, Singapore, 1982.
- Ching, F., "Architecture – Form, Space and Order ",-2nd Ed. International Thomson Publishing Inc., New York, 1996.
- Steele, J., "Architecture Today", 2nd Ed., Phaeton Press Limited, London, UK, 2001.

6-3 Recommended books

- Jencks, C., "Architecture 2000 and Beyond", John Wiley & Sons Ltd, UK, 2000.
- Paul, Laseau, "Graphic Thinking of Architects and Designers", Reinhold Co., NY, USA, 1980.
- White, Edward T., "A vocabulary of Architectural Forms", Architectural Media, 1975.

6-4 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.
- Architecture Competition Annual, Published every 6 months by Archiworld Co., Ltd., Korea.
- Medina Magazine, Tasmeem Magazin &البناء العربى

6-4 Periodicals, Web sites, etc.

- http://www.greatbuildings.com
- http://www.archpedia.com
- http://www.archnet.org
- http://www.vitruvio.ch

7- Facilities required for teaching and learning:

- Design Studios equipped with overhead projector.
- Computer Lab.
- Gallery to present the projects.

Course coordinator: Associate Professor: Nahed Omran

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A571:Modern Systems and Building Materials

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Modern Building systems & materials **Code: A571** **Year/level:** 5th year, 1st semester
Teaching Hours: **Lectures:2** **Tutorial:**
Practical: **Total:** 2

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to:

- Determine importance of materials & systems for buildings.
- Understand properties and construction of traditional and new technique building.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 -The nature of economic problem and need. (A2)
a2 – New Resources, utilities, demand and supply related to building & construction. (A2,A24)
a3 - Definition of new construction systems; markets types, and factors of production (A6,A25)
a4 - how to deal with costs and revenues of construction projects. (A13).

B - Intellectual skills:

By the end of the course the student should be able to:

b1 -Use economic terms, new tools in construction field, (B2,B22,B25)

b2 -Analyze construction and new Economic problems (B9-B16,B23)
b3 -Utilize the relationship between competitiveness and economic terms (B16)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 -Solve economic functions, relationships and laws, (C2)
c2 -Use the resources available in project evaluation, (C15)
c3 - calculate costs, and demand and supply. (C2)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 -apply laws to problems. (D3)

d2 -Allocate Resources to projects. (D8)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A2, A6, A13, , A24 , A25
B	Intellectual skills	B2, B9, B16, B22, B23,B25
C	Professional and practical skills	C2, C15
D	General and transferable skills	D3, D8,

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1-Basics of building system & materials	2		
2-Relationship between the structural system & architectural design.	2		
3-Introduction to traditional and advanced construction systems.	2		
4-Concepts of Form work.	2		
5-Concepts of concrete industry.	2		
6-Concrete tests.	2		
7-Mid term	2		
8-Mechanization of skeleton construction and foundation works.	2		
9-Lift slab.	2		
10-Tilt- up construction.	2		
11-Vertical slip for system.	2		
12-Tunnel system.	2		
13-Concrete additives and epoxy materials.	2		
14-Concrete additives and epoxy materials.	2		
15-Paints and proofing materials.	2		
Total hours	**30**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		Teaching Methods										Learning Methods				Assessement 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 Visites	Discovering	Written Exam	Practical Exam	Quizes	Term papers	Assignments			
Knowledge & Understanding	a 1	1	1	1			1					1				1		1	1				
	a 2	1			1											1		1	1	1			
	a 3	1														1		1	1	1			
Intellectual Skills	b 1	1			1	1						1				1		1		1			
	b 2	1			1	1										1		1	1	1			
	b 3	1			1	1																	
Applied Professional Skills	c1	1	1		1	1	1									1	1	1	1	1			
	c2	1			1		1									1		1	1	1			
General Tran. Skills	d 1			1	1							1								1			
	d 2			1								1								1			

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	5
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	35
Total		50

6- List of references:

6-1 Course notes

-Modern Systems and Building Materials (lecture notes).

6-2 Required books

- *Modern Systems and Building Materials, Dr. Mohammed Abdullah, 2002*

6-3 Recommended books

6-4 Periodicals, Web sites, etc.

-American Society of Civil Engineers

7- Facilities required for teaching and learning:

- Sites
- Blackboard / white board and chalk

Course coordinator: Dr. Amira Abd Elaziz Gouhar

Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A572: Laws and Regulations for Engineers

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology
Department offering the course: Architecture Engineering and Building Technology
Date of specifications approval: September,2015

B - Basic information

Title: Building Regulations and Professional Practice **Code:** A 572 **Year/level:** 5thyear – 2ndsemester

Teaching Hours: **Lectures:** 2 **Tutorial: ----**
Practical: --- **Total:** 2

C - Professional information

1 – Course Learning Objectives:

A study of this course will enable the student to:

- This course is structured in a format which relates explicitly to the architect and the contractor.
- It introduces the professional and legal responsibilities of the architect and the contractor as well as the building codes and land use legislation.
- Principles of professional practice – Scope of work – Fees – Tenders – Contracts between owners and architect and between owner and contractor, Legal responsibilities, Redistribution Scheme, Rebuilding Scheme, Re-housing Scheme, Street Widening Scheme, and Building Scheme.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - The architects and the contractor's legal responsibilities. (A7)
a2 - Building codes and land legislation. (A25)
a3 - Contracts between owners and architect and between owner and contractor. (A7)
a4 - Legislations, rules, regulations for urban planning and building construction. (A25)
a5 - Redistribution scheme rebuilding scheme, re-housing scheme, street scheme, street widening scheme building scheme. (A7)

B - Intellectual skills:

By the end of the course the student should be able to:

b1–Analyze contractor and consultants in their own enterprise. (B11-B20)
b2 –Studying as an architect in a construction company to regulate the relation between him, owner and contractor. (B11-B20)

C - Professional and practical skills:

By the end of the course the student should be able to:

c1 - overall responsibility for design, construction and relation with owner and contractor. (C1-C8)
c2- design and building regulations. (C1-C8)
c3- providing construction know ledge. (C1-C8)

c4- arrange the relation with contractor. (C1-C8)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Make consultations decisions on different levels. (D6-D7)

d2 - Manage tasks and resources efficiently (D6-D7)

d3 - Search for information and adopt life-long self learning (D6-D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A7,A25
B	Intellectual skills	B11,B20
C	Professional and practical skills	C1,C8
D	General and transferable skills	D6,D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1-Introduction on the professional and legal responsibilities of the architect	2		
2-Building Regulations	2		
3-Legislations& rules for Building	2		
4-Regulations for urban planning	2		
5-Legislations& rules for urban planning	2		
6-The architects' legal responsibilities	2		
7-Mid term Exam	2		
8-The contractors' legal responsibilities.	2		
9-Relation Between the owners , the architect and the contractor	2		
10-Relation Between the owners , the architect and the contractor			
11-Principles of professional practice - Scope of work - Fees – Tenders	2		
12-Principles of professional practice - Scope of work - Fees – Tenders	2		
13-Contracts between owners and architect and between owner and contractor	2		
14-Contracts between owners and architect and between owner and contractor			
15-Conclusion on the course	2		
Total hours	**30**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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	Quizzes	Term papers	Assignments
Knowledge	a1	1	1	1								1				1		1	1	
	a2	1			1											1		1	1	1
	a3	1		1								1				1		1	1	1
	A 4	1			1															
	A 5	1		1								1								
Intellectual	b1	1			1	1						1				1		1		1
	b2	1			1	1										1		1	1	1
	b3	1	1		1	1										1	1	1	1	1
	b4	1			1											1		1	1	1
Applied	c1	1			1	1														
	c2	1	1		1	1														
	c3			1	1							1								1
	c4			1								1								1
General Tran.	d1			1																
	d2	1	1	1								1				1		1	1	
	d3	1			1											1		1	1	1
	d4	1		1								1				1		1	1	1
	d5	1			1															
	d6	1		1								1								
	d7	1			1	1						1				1		1		1

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	5
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	35
Total		50

6- List of references:

6-1 Course notes

Lecture notes

6-2 Required books

- LAW NO.106/1976 RELATED TO ORIENTATION AND ORGANIZATION OF BUILDING WORKS AS AMENDED BY LAW NO.30/1983 AND LAW NO. 101/1996.

6-3 Recommended books

None.

6-4 Periodicals, Web sites, etc.

None

7- Facilities required for teaching and learning:

- The course will be more beneficial if it has more credit hours.
- Data show available and handy all time.

Course coordinator: Dr. Sayed Abd El Khalek

Head of the Department: Associate Professor: Nahed Omran

Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A581:Quantities & Contracts-a

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology Dpt.
Department offering the course: Architecture Engineering and Building Technology Dpt.
Date of specifications approval: September,2015

B - Basic information

Title: Quantities & Contracts-a **Code: A581** **Year/level: 5th year, 1st semester**
Teaching Hours: **Lectures:3** **Tutorial:**
Practical: **Total:** 3

C - Professional information

1 – Course Learning Objectives:

The main objective of this course is to make tender documents for projects & to be able to determine the quality & quantity for engineering projects.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - The main concept of making specification for different item. (A3,A26)
a2 - Principles of design including elements design, process and/or a system related to specific disciplines. (A8,A24)
a3 - Methodologies of solving engineering problems. (A5,A25)
a4 - Quality assurance systems, codes of practice and standards, health and safety requirements and environmental issues. (A5, A6,A24)
a5 - Contemporary engineering topics. (A14,A24)
a6 - The concepts, methods and techniques of the building construction processes, its stages, elements, material, etc. (A15,A24)
a7 - The concepts, methods and techniques of mechanical installations' processes including structural, water, sewage, air conditioning systems. (A15,A24)
a8 - Appreciate the impact of advanced building technology on design. (A8,A24)

B - Intellectual skills:

By the end of the course the student should be able to:

b1 - Determine the overall cost of the construction project. (B9-B23,B22)
b2 - Assess and evaluate effectively the characteristics and performance of components, systems and processes. (B17-B22,)
b3 - Analyze systems, processes and components critically. (B19-B23)
b4 – Practicing to make a project contract. (B23-B24)
b5 - Produce innovative design ideas and concepts (B3- B24-B25)

C - Professional and practical skills:

By the end of the course the student should practice :

c1 - Evaluate the total time requires to finish the projects. (C8- C25)

c2 - Merge engineering knowledge and understanding to improve design, products and/or services. (C3-C6 -C23)

c3 - Use the time scheduling sheet (C8- C11-C15)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Work in stressful environment and within constraints. (D2)

d2 –Able to Manage resources efficiently. (D1)

d3 - Search for information and adopt life-long self-learning.. (D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A3, A5, A6, A8, A14,A24,A25
B	Intellectual skills	B9,B17,B19,B22,B23,B25
C	Professional and practical skills	C3, C6, C8, C11, C15,C23
D	General and transferable skills	D1, D2, D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1-Tender documents components.	3		
2-General & special conditions for engineering projects.	3		
3-Structural drawings.	3		
4-Fire fighting & sanitary & electricity drawings.	3		
5-HVAC works & drawings.	3		
6-Ordinary & reinforced concrete specifications & BOQ.	3		
7-Mid-Term Exam	3		
8-Concrete insulation specification & BOQ.	3		
9-Masonry work specifications & BOQ.	3		
10-Cement plaster specifications & BOQ.	3		
11-Wall & ceiling painting specifications & BOQ.	3		
12-External & internal wall cladding.	3		
13-Water proof & heat insulation works.	3		
14-Types of stairs & finishing.	3		
15-Door & window specifications & BOQ.	3		
Total hours	**45**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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	Quizzes	Term papers	Assignments
Knowledge	a1	1	1	1			1					1				1		1	1	
	a2	1			1		1									1		1	1	1
	a3	1		1			1					1				1		1	1	1
		1			1		1													
	a4	1		1			1					1								
Intellectual	b1	1			1		1													
	b2	1		1								1								
	b3	1			1		1													
	b4	1			1	1						1				1		1		1
Applied	c1	1			1	1										1		1	1	1
	c2	1			1	1	1													
	c3	1			1	1														
	c4	1			1	1														
General Tran.	d1	1	1		1	1										1	1	1	1	1
	d2	1			1		1									1		1	1	1
	d3	1			1	1														
	d4			1	1							1								1
	d5			1			1					1								1
	d6			1			1													
	d7	1	1	1			1					1				1		1	1	

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	15
Mid-Term Exam	-	
Practical Exam	-	
Total		15

6- List of references:

6-1 Course notes

-**technical installation in buildings-a (lecture notes**).

6-2 Required books

Abdel-Fatah ElKasaby, Specification of engineering works

6-3 Recommended books

6-4 Periodicals, Web sites, etc.

7- Facilities required for teaching and learning:

- Data Show
- Blackboard / white board and chalk

Course coordinator: Dr. Sayed Abd El Khalek

Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Modern Academy for Engineering and Technology

Course Specification

A582:Quantities & Contracts-b

A- Affiliation

Relevant program: Architecture Engineering and Building Technology
Department offering the program: Architecture Engineering and Building Technology Dpt.
Department offering the course: Architecture Engineering and Building Technology Dpt.
Date of specifications approval: September,2015

B - Basic information

Title: Quantities & Contracts-b **Code: A582** **Year/level:** 5th year, 2nd semester
Teaching Hours: **Lectures:3** **Tutorial:**
Practical: **Total:** 3

C - Professional information

1 – Course Learning Objectives:

The main objective of this course is to make tender documents for projects & to be able to determine the quality & quantity for engineering projects.

2 - Intended Learning Outcomes (ILOS)

A - Knowledge and understanding:

By the end of the course the student should acquire the flowing knowledge and understanding:

a1 - The main concept of making specification for different item. (A3,A26)
a2 - Principles of design including elements design, process and/or a system related to specific disciplines. (A8,A24)
a3 - Methodologies of solving engineering problems. (A5,A25)
a4 - Quality assurance systems, codes of practice and standards, health and safety requirements and environmental issues. (A5, A6,A24)
a5 - Contemporary engineering topics. (A14,A24)
a6 - The concepts, methods and techniques of the building construction processes, its stages, elements, material, etc. (A15,A24)
a7 - The concepts, methods and techniques of mechanical installations' processes including structural, water, sewage, air conditioning systems. (A15,A24)
a8 - Appreciate the impact of advanced building technology on design. (A8,A24)

B - Intellectual skills:

By the end of the course the student should be able to:
By the end of the course the student should be able to:

b1 - Determine the overall cost of the construction project. (B9-B23,B22)
b2 - Assess and evaluate effectively the characteristics and performance of components, systems and processes. (B17-B22,)
b3 - Analyze systems, processes and components critically. (B19-B23)
b4 – Practicing to make a project contract. (B23-B24)
b5 - Produce innovative design ideas and concepts (B3- B24-B25)

C - Professional and practical skills:

By the end of the course the student should practice :

c1 - Evaluate the total time requires to finish the projects. (C8- C25)

c2 - Merge engineering knowledge and understanding to improve design, products and/or services. (C3-C6 -C23)

c3 - Use the time scheduling sheet (C8- C11-C15)

D - General and transferable skills:

By the end of the course the student should be able to:

d1 - Work in stressful environment and within constraints. (D2)

d2 –Able to Manage resources efficiently. (D1)

d3 - Search for information and adopt life-long self-learning.. (D7)

Course Contribution in the Program ILO's

ILO's		Program ILO's
A	Knowledge and understanding	A3, A5, A6, A8, A14, A24,A25
B	Intellectual skills	B9,B17,B19,B22,B23,B25
C	Professional and practical skills	C3, C6, C8, C11, C15,C23
D	General and transferable skills	D1, D2, D7

3 – Contents

Topic	Lecture hours	Tutorial hours	Practical hours
1-External & internal wall cladding.	3		
2-Floor & skirting finishings.	3		
3-False ceiling works.	3		
4-Water proof & heat insulation works.	3		
5-Handrail specifications & BOQ.	3		
6-Types of stairs & finishing.	3		
7-Mid term Exam	3		
8-Door specifications & BOQ.	3		
9-Window specifications & BOQ.	3		
10-Curtain wall specifications & BOQ.	3		
11-Special work specifications & BOQ.	3		
12-Cost calculations for engineering projects.	3		
13-Contracting methods.	3		
14-Contracting methods.	3		
15-Revisio	3		
Total hours	**45**		

4 - Teaching and Learning and Assessment methods:

Course ILO's		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	Quizzes	Term papers	Assignments
Knowledge	a1	1	1	1			1					1				1		1	1	
	a2	1			1		1									1		1	1	1
	a3	1		1			1					1				1		1	1	1
		1			1		1													
	a4	1		1			1					1								
Intellectual	b1	1			1		1													
	b2	1		1								1								
	b3	1			1		1													
	b4	1			1	1						1				1		1		1
Applied	c1	1			1	1										1		1	1	1
	c2	1			1	1	1													
	c3	1			1	1														
	c4	1			1	1														
General Tran.	d1	1	1		1	1										1	1	1	1	1
	d2	1			1		1									1		1	1	1
	d3	1			1	1														
	d4			1	1							1								1
	d5			1			1					1								1
	d6			1			1													
	d7	1	1	1			1					1				1		1	1	

5- Assessment Timing and Grading:

Assessment Method	Timing	Grade (Degrees)
Semester Work: seminars, quizzes assignments and reports	Bi-Weekly	5
Mid-Term Exam	7-th Week	10
Practical Exam	-	-
Written Exam	Sixteenth week	70
Total		85

6- List of references:

6-1 Course notes

-**technical installation in buildings-a (lecture notes**).

6-2 Required books

Abdel-Fatah ElKasaby, Specification of engineering works

6-3 Recommended books

6-4 Periodicals, Web sites, etc.

7- Facilities required for teaching and learning:

- Data Show
- Blackboard / white board and chalk

Course coordinator: Dr. Sayed Abd El Khalek

Head of the Department: Associate Professor: Nahed Omran
Date: September , 2015

Appendix 3

قواعد حساب التقدير والتيسير للجان رصد الدرجات

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قواعد حساب التقدير والتيسير للجان رصد الدرجات

تنفيذا للقرار الوزاري رقم ١٦٦٣ بتاريخ ٢٠١٣/٦/٢٢ بشأن قواعد التيسير لطلاب المعاهد العالية الخاصه الخاضعه لوزاره التعليم العالي يتم منح درجات التيسير كما يلي.

اولا : نص القرار

مادة (١) يخصص للطالب سله درجات تعادل ٢% من مجموع النهايات العظمي لمجموع مقررات الفرقه ليستفيد بها لتغيير حالته وتطبق علي نتيجه العام بالكامل (الفصلين الدارسيين) بعد امتحان الطلاب في شهر مايو من كل عام ، ولا تطبق هذه القواعد للتخفيف علي الطالب الراسب ، ولا يسمح بتجاوز السله لدرجات الرأفه والرفع ، وتكون درجات الرأفه المضافه لاي مقرر بحد اقصي ٦% من النهايه العظمي لدرجات المقرر ، وتطبق قواعد الرأفه والتيسير طبقا للقواعد والاولويات التاليه.

١. لا ينظر لحالة الطالب الراسب في اكثر من نصف عدد المقرارت الخاصه بفرقته ولا تطبق عليه ايه قواعد للرأفه.
٢. لا يتم تطبيق قواعد التيسير علي المواد التي يحصل فيها الطالب علي اقل من ٣٠% من درجه التحريري للماده.
٣. ترتيب المقررات الراسب فيها الطالب (حاصل علي اقل من ٥٠% من النهايه العظمي للمقرر) طبقا لنوعيتها (مقررات التخلف ثم مقررات الفرقه)
٤. ترتب بعد ذلك كل نوعيه طبقا لقربها من درجه النجاح (٥٠%)
٥. تتم تجربه اضافه درجات الرأفه للمقررات الاقرب للنجاح خصما من السله ، دون تعدي الحد الاقصي للسله بدءا بمقررات التخلف ثم مقررات الفرقه، فاذا ادت الي تغيير حالة الطالب من راسب الي ناجح في جميع المقررات أو بمقرر تخلف أو مقررين تخلف يتم تطبيقها ، اما اذا استنزفت السلة وتبقي مقررات لم يتم رفعها تزيد عن مقررين تعود حالة الطالب كما هي ولا تخفف عليه ايه مقررات.
٦. ويجوز رفع مقررات التخلف أو تخفيفها حتي لو لم ينجح الطالب وظل راسباً في الفرقة دون تجاوز الحد الاقصي للسة.

ماده (٢) يخضع الطالب المعرض للفصل لقواعد رأفه أكثر مرونه ، فتزاد السلة الي ٤% من النهاية العظمي لمجموع درجات المقررات ، وترفع درجات الرأفة للمقرر الواحد لتكون في حدود ١٠% من النهاية العظمي للمقرر وتطبق نفس القواعد عاليه.

ماده (٣) الطالب الذي رسب في أي مقرر واعادة بنجاح يحصل علي الدرجات الفعلية التي حصل عليها في الاعادة يحيث لا تتعدي أعلي درجه في تقدير مقبول.

ماده (٤) الطلاب المطبق عليهم نظام المجموع التراكمي (المقيدين بالفرقة الأولي في العام ٩٦/٩٥ بالمعاهد العالية وعام ٩٨/٩٧ بالنسبة للمعاهد المتوسطة)، يمكن أن يتم رفع التقدير العام لهم في حدود سلة مقدارها ١% من النهاية العظمي لجميع المقررات التي درسها الطالب خلال سنوات الدراسة ، متي كان هناك متبقي من السلة التي خصصت للطالب بجميع سنوات الدراسة.

ماده (٥) يرفع تقدير الطالب في أي مقرر الي التقدير الأعلي متي كانت درجات الرفع لا تتعدي ١% من النهاية العظمي لدرجات المقرر وتخصم من سلة رفع التقدير العام.

ماده (٦) تعلن نتيجة الفصل الدراسي الأول في المعاهد التي تطبق نظام الفصلين بالتقدير بدون تطبيق قواعد التيسير.

ماده (٧) يعتبر دور نوفمبر بالنسبة للسنوات النهائيه دوراً مكملا ويطبق عليه القواعد السابقة مع عدم تخطي المتبقي في السلة من دور مايو لنفس العام.

ماده (٨) لا تطبق قواعد التيسير السابقة علي المواد العمليه والتي لا يدخل في إمتحانها جزء تحريري مثل المشروع او التدريب الميداني ، وكذا المواد التي لا تدخل درجاتها ضمن المجموع الكلي للمواد.

ماده (٩) يعمل بهذا القرار إعتباراً من العام الدراسي ٢٠١٤/٢٠١٣ ، ولا يعتد بأي قرارات سابقة تتعارض مع ما جاء به، وعلي جميع الجهات المختصه تنفيذ هذا القرار.

ثانيا: التعليمات التفصيلية لمنح درجات التيسير

لجان رصد الدرجات تلتزم برصد الدرجات المسلمة اليها بكشوف الرصد من واقع

- درجة التحريرى المسجلة على ورقة الامتحان
- درجة أعمال السنة والامتحان العملى أو الشفهى المسجلة بالكشوف المقدمة من أستاذ المادة وموقع على جميع صفحاتها منه مع التأكد من التوقيع قرين أى كشط أو تعديل فى الدرجة
- قرارات التأديب ولجان الممتحنين وأى قرارات أخرى لمجلس تعليم الأكاديمية إن وجدت.

أ- تطبق القواعد التالية على الطلبة الجدد والباقون للإعادة ودور نوفمبر:

١- الحد الأقصى لدرجات التيسير:

السنة الأولى	٣٠ درجة
السنة الثانية	٣٠ درجة
السنة الثالثة عدا العمارة	٢٨ درجة
السنة الثالثة عمارة	٣٠ درجة
السنة الرابعة عدا العمارة والتصنيع	٢٩ درجة
السنة الرابعة عمارة و تصنيع	٣٠ درجة
السنة الخامسة عدا العمارة	٢٦ درجة
السنة الخامسة عمارة	٢٤ درجة
دور نوفمبر عدا العمارة	٢٦ درجة
دور نوفمبر العمارة	٢٤ درجة

٢- الحد الأقصى لدرجة التيسير التى تمنح للمادة:

الدرجة القصوى للمادة	٥٠	٧٥	١٠٠	١٥٠	٢٠٠	٢٥٠
الحد الأدنى للدرجة للسماح بالتيسير	٢٢	٣٣	٤٤	٦٦	٨٨	١١٠
الحد الأقصى لدرجة لتيسير التى تمنح	٣	٥	٦	٩	١٢	١٥

٣- أولوية المواد الخاضعة للتيسير:

أولوية أولى: مواد التخلف التى تحتاج لدرجات أقل للنجاح فالأعلى

أولوية ثانية: المواد الأساسية الأقرب للنجاح (التى تحتاج لأقل درجات للنجاح فالأعلى)

أولوية ثالثة: المواد الانسانية التى تحتاج لدرجات أقل للنجاح فالأعلى

٤- يتم رفع التقدير العام التراكمي للطلاب في حدود سله مقدارها ١% من النهايه العظمي للخمس سنوات اذا كان متبقي درجات رأفــة في السله وفي هذه الحاله لم يعد هناك ضرورة لرفع تقدير الفرقه في اي سنه من السنوات الدراسية.

٥- يتم رفع تقدير الطالب في أي مقرر الي التقدير الأعلي في حدود ١% من النهايه العظمي لدرجات المقرر وتخصم من سلة رفع التقدير العام التراكمي كما هو موضح في الجدول الاتي:

النهايه العظمي	قبل الرفع		بعد الرفع	
	الدرجه	التقدير	الدرجه	التقدير
٥٠	٣٢	ل	٣٣	ج
	٣٧	ج	٣٨	ج ج
	٤٢	ج ج	٤٣	م
٧٥	٤٨	ل	٤٩	ج
	٥٥.٥	ج	٥٧	ج ج
	٦٣	ج ج	٦٤	م
١٠٠	٦٤	ل	٦٥	ج
	٧٤	ج	٧٥	ج ج
	٨٤	ج ج	٨٥	م
١٢٥	٨٠ إلى ٨١	ل	٨٢	ج
	٩٢.٥ إلى ٩٣	ج	٩٤	ج ج
	١٠٥ إلى ١٠٦	ج ج	١٠٧	م
١٥٠	٩٦ إلى ٩٧	ل	٩٨	ج
	١١١ إلى ١١٢	ج	١١٣	ج ج
	١٢٦ إلى ١٢٧	ج ج	١٢٨	م
٢٠٠	١٢٨ إلى ١٢٩	ل	١٣٠	ج
	١٤٨ إلى ١٤٩	ج	١٥٠	ج ج
	١٦٨ إلى ١٦٩	ج ج	١٧٠	م
٢٥٠	١٦٠ إلى ١٦٢	ل	١٦٣	ج
	١٨٥ إلى ١٨٧	ج	١٨٨	ج ج
	٢١٠ إلى ٢١٢	ج ج	٢١٣	م

ب- تطبق القواعد التالية على الطالب المتقدم من الخارج والمعرض للقيد من الخارج أو الفصل لاستنفـاذ مـرات الرسوب في حدود ١٠% في المقرر.

١- الحد الأقصى لدرجات التيسير:

السنة الأولى	٦٠ درجة
السنة الثانية	٦٠ درجة
السنة الثالثة عدا العمارة	٥٦ درجة
السنة الثالثة عمارة	٦٠ درجة
السنة الرابعة عدا العمارة و التصنيع	٥٨ درجة
السنة الرابعة عمارة	٦٠ درجة
السنة الرابعة تصنيع	٥٦ درجة
السنة الخامسة عدا العمارة	٥٢ درجة
السنة الخامسة عمارة	٤٨ درجة
دور نوفمبرعدا العمارة	٥٢ درجة
دور نوفمبر العمارة	٤٨ درجة

٢- الحد الأقصى لدرجة التيسير التى تمنح للمادة:

الدرجة القصوى	٥٠	٧٥	١٠٠	١٥٠	٢٠٠	٢٥٠
الحد الأدنى للدرجة للسماح بالتيسير	٢٠	٣٠	٤٠	٦٠	٨٠	١٠٠
الحد الأقصى لدرجة التيسير التى تمنح	٥	٨	١٠	١٥	٢٠	٢٥

ت- أقصى درجة تسجل لمواد التخلف:

الدرجة القصوى لمادة التخلف	٥٠	٧٥	١٠٠	١٥٠	٢٠٠	٢٥٠
الحد الأقصى لدرجة النجاح التى تسجل (وتسجل الدرجة الفعلية إذا كانت أقل)	٣٢	٤٨	٦٤	٩٦	١٢٨	١٦٠

ث- حالة الغياب بعذر

الطالب المحمل بمادة تخلف (غياب بعذر) بقرارمجلس الأكاديمية وموافقة الوزارة يمنح درجته كاملة مالم يكن قد سبق له الرسوب فى هذه المادة.

ج- خامسا: التقدم للامتحان من الخارج

حالات التقدم من الخارج ينظمها القرار الوزارى رقم ٤٧٩ بتاريخ ١٩٩٤/٤/١٧ بشأن تعديل بعض أحكام لائحة المعاهد العليا التابعة و الخاضعة لوزارة التعليم العالى.

الفرقة	حالة الطالب					
	مستبعد	باق للإعادة	متقدم من الخارج للمرة الأولى	متقدم من الخارج للمرة الثانية	متقدم من الخارج للمرة اثالثة	
الأولى	دراسة منتظمة		فصل نهائى			
الثانية	دراسة منتظمة		من الخارج	فصل نهائى		
الثالثة	دراسة منتظمة		من الخارج			فصل نهائى
الرابعة	دراسة منتظمة		من الخارج			فصل نهائى
الخامسة	دراسة منتظمة		من الخارج			فصل نهائى فى حالة رسوب الطالب فى اكثر من نصف مقررات السنة النهائية
						فى حالة نجاح الطالب فى نصف مقررات السنة النهائية فأكثر يبقى من الخارج حتى يتم نجاحه فى جميع مقررات السنة

ح- تقديرات المواد والسنوات والتخرج

١- يحتسب تقدير المادة على أساس النسبة المئوية التى حصل عليها الطالب فى المادة و طبقا للجدول أدناه.

٢- يحتسب تقدير النجاح فى العام الدراسى للطالب فى حالة النجاح بدون مواد تخلف من العام الحالى أو سنوات سابقة. يحتسب التقدير على أساس النسبة المئوية لمجموع الدرجات التى حصل عليها الطالب فى مواد نفس العام . ولا يدخل فى حساب التقدير أى مواد تخلف وطبقا للجدول أدناه.

٣- فى حالة النجاح فى مواد التخلف فإنها تدخل فى حساب تقدير عامها الأصلى.

٤- يحتسب تقدير التخرج على أساس النسبة المئوية للمجموع التراكمى للخمس سنوات و طبقا للجدول أدناه.

الدرجة	أقل من ٣٠%	من ٣٠% إلى أقل من ٥٠%	من ٥٠% إلى أقل من ٦٥%	من ٦٥% إلى أقل من ٧٥%	من ٧٥% إلى أقل من ٨٥%	٨٥% فأكثر
التقدير	ض ج ضعيف جدا	ض ضعيف	ل مقبول	ج جيد	ج ج جيد جدا	م امتياز

خ- مرتبة الشرف

يحصل الطالب على مرتبة الشرف عند التخرج إذا حقق الشروط الآتية:

١- أن يحصل على تقدير امتياز أوجيد جدا فى المجموع التراكمى للخمس سنوات

٢- ألايقل تقديره فى أى عام من أعوام الدراسة عن جيد جدا أو إمتياز فى سنوات التخصص عدا السنة الأولى

٣- ألا يرسب فى أى إمتحان تقدم إليه عدا السنة الأولى

د- كيفية حساب أعمال السنة لطالب السنة النهائية فى امتحان الدور الثانى (دور نوفمبر)

١- إذا كان الطالب ناجحا فى أعمال السنة تؤخذ درجات أعمال السنة الحاصل عليها الطالب دون تعديل من دور مايو .

٢- إذا كان الطالب راسبا فى أعمال السنة فيؤخذ بدرجة التحريرى مع تنسيب الدرجة الحاصل عليها الطالب لتشمل أعمال السنة بشرط أن يكون ناجحا فى ورقة الإجابة .