Sana'a University
Faculty of Engineering
Department: Basic Engineering Sciences
Title of the Program: B.Sc. Of Architectural Engineering

1- Course Specification of Working Drawings (2)

I. Course Identification and General Information:						
1	**Course Title:**	**working Drawing (2)**				
2	**Course Code & Number:**	**AE359**				
3	**Credit hours:**	C.H				TOTAL
		Th.	Seminar	Pr	Tr.	
		2		2		***3***
4	**Study level/ semester at which this course is offered:**	4th Year/ Level 1st semester				
5	**Pre –requisite (if any):**	**Working Drawing (1)**				
6	**Co –requisite (if any):**	**Non**				
8	**Program (s) in which the course is offered:**	**Architectural Engineering**				
9	**Language of teaching the course:**	**English and Arabic**				
10	**Location of teaching the course:**	**Classes / studios**				
11	**Prepared By:**	**Dr. Ahmed Ghaleb Al-Sharjabi**				
12	**Date of Approval**					

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Dr. Samir Mohsen Al-Sirry	Assoc. Prof. Dr. Mohammad Algorafi	Prof. Dr. Mohammed AL-Bukhaiti	Assoc. Prof. Dr. Huda Al-Emad	Prof. Dr. Al-Qassim Mohammed Abbas

II. Course Description:

This course aim to apply knowledge and skills into students for all working drawings and Details, and determine all technical sings and terms of Architectural engineering and apply practical knowledge from related courses. Such as building technology and structural systems for into medium size buildings, such as Library, Bank, Offices building**.**

III. Course Intended learning outcomes (CILOs) of the course		Referenced PILOs
a.1	Understand technical symbols and graphical terminology.	A1
a.2	Identify technical symbols and measures in practical working, according to material and construction standard drawings.	A5
a3	Identify practical ways of technical systems into construction of building, related to sanitary systems, electrical systems, and safety and security.	A5
b.1	Define integrated solutions to design using various specification and technical criteria mainly to sanitary and electrical systems.	B3
b.2	Recognize an integrated set of working drawings, and select appropriate strategies for the whole design, related to construction systems applying practically.	B6
c.1	Demonstrate proficiency in the integration of information and processes in working drawings, related to environmental and structural systems.	C2
c.2	Apply theoretical and practical knowledge gained from other related courses, such as environmental, structural and construction.	C3
c.3	Produce construction documents (working drawings) , detail drawings, by Use software Auto-Cad packages and other tools.	C3
d.1	Apply ethical principles and commit to professional ethics	D2

(A) Alignment Course Intended Learning Outcomes of Knowledge and Understanding to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
a1- Understand technical symbols and graphical terminology.	Lecture Selection design project Tutorial Reading Case studies Studio works Individual projects	Problem set – assignment Work in Project assessment Presentations Partial and total work assessment.
a2- Identify technical symbols and measures in practical working, according to material and construction standard drawings	Lecture Tutorial / demonstration Discussions Studio works Individual projects	Work in Project assessment Presentations Partial and total work assessment
a3 Identify practical ways of technical systems into construction of building, related to sanitary systems, electrical systems, and safety and security.	Lecture Tutorial / demonstration Discussions Studio works Individual projects	Work in Project assessment Presentations Partial and total work assessment

(B) Alignment Course Intended Learning Outcomes of Intellectual Skills to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
b1- Define integrated solutions to design using various specification and technical criteria mainly to sanitary and electrical systems.	Lecture demonstration Discussions Studio works Individual projects	Work in progress assessment Problem set – assignment Presentations Partial and total work assessment
b2- Recognize an integrated set of working drawings, and select	lectures demonstration	Work in progress assessment Problem set – assignment

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appropriate strategies for the whole design related to construction systems applying practically.	Discussions Studio works Individual projects	Presentations Partial and total work assessment

© **Alignment Course Intended Learning Outcomes of Professional and Practical Skills to Teaching Strategies and Assessment Strategies:**		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
C1- Demonstrate proficiency in the integration of information and processes in working drawings, related to environmental and structural systems.	demonstration Discussions Studio works Individual projects	Work in progress assessment Problem set – assignment Presentations Work in projects assessment
C2- Apply theoretical and practical knowledge gained from other related courses, such as environmental, structural and construction.	demonstration Discussions Studio works Individual projects	Work in progress assessment Problem set – assignment Work in projects assessment
C3- Produce construction documents (working drawings) , detail drawings, by Use software Auto-Cad packages and other tools.	Lectures using Auto-cad software Discussions Studio works Individual projects	Work in progress assessment Presentations Work in projects assessment

(D) Alignment Course Intended Learning Outcomes of Transferable Skills to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
d1- Apply ethical principles and commit to professional ethics	Lecture demonstration Discussions Studio presentation	Work in progress assessment Problem set – assignment Presentations Partial and total work assessment

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IV. Course Content:

A – Theoretical Aspect:

Order	Units/Topics List	Learning Outcomes	Sub Topics List	Number of Weeks	contact hours
1	Introduction	a1-a2- b2 c1	Review related subjects and Selection of project for works	1	3
2	Methods or ways of produce WD (2)	a1-a2-a3 b1 b2 c1	Selection specific works of the Project including building systems for WD (2) Criteria and data to use	2	2
3	-Principles of preparing working drawings (2) .	a1-a2- b1 b2 c1 c2 c3	Drafting and presentation Techniques, for environmental and structural systems, Criteria terminology, and standards	2	2
4	Technical Works Detail construction Integrate Parts to systems	a1-a2- b1 b2 c1 c2 c3 d1	Primary and final data in plans, Section, and elevations,	6	6
5	Classifications and numbering	a1-a2- b1 b2 c3 d1	Details and sheet numbering.	1	1
Number of Weeks /and Units Per Semester				**14**	**14**

B - Practical Aspect: (if any)				
Order	**Tasks/ Experiments**	**Number of Weeks**	**contact hours**	**Learning Outcomes**
1	**Discussion methods of selection works.**	**1**	**0**	**a2 b1 b2 c1**
2	**Discussion principles of work in plans (technical information)**	**2**	**6**	**a2 b1 b2 c1**
3	**work in plans integration systems related to WD2..**	**2**	**6**	**b1 b2 c1 c2 c3**
4	**Discussion work in Sections technical data**	**1 for assessment**	**6**	**b1 b2 c1 c2 c3**
5	**Discussion work in elevations technical data, construction and structure**	**2**	**7**	**b1 b2 c1 c2 c3**
6	**work in technical details, systems etc.**	**2**	**7**	**a1 a2 b1 b2 c1 c2 c3**
7	**Final drafting and Description**	**1 for assessment**	**6**	**b1 b2 c1 c2 c3**
8	**Final classification and Numbering sets of drawings**	**1**	**4**	**b1 b2 c1 c2 c3**
	Total	**14 Weeks**	**42 Hrs**	
	Theoretical + Practical	**For the 14th Weeks**	**56 Hr**	
Number of Weeks /and Units Per Semester				

V. Teaching strategies of the course:

Teaching is divided into four main stages: stage I , II , III, IV
Lecturing
Discussions , criticism and corrections in studios
Presentations
Tutorial
Reading
using Auto-cad software
Studio works
Individual projects

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VI. Assignments:

No	Assignments	Aligned CILOs(symbols)	Week Due	Mark
1	Phase I Presenting primary data of working Drawings	a1-a2- b1 c1	4	10%
2	Phase II Presentation plans in working Documents	a1 a2 a3 b1 b2 c1 c2	8	25%
3	Phase III Presentation sections and elevations in working Documents	a1 a2 a3 b1 b2 c1 c2	12	15%
4	Phase IV Presentation sections and details in working Documents	b1 b2 c1 c2 c3 d1	14	10%
5	Participation and Attendance	a1 a2 b1 b2 c1 c2 c3 d1	1-14	10%

VII. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Re-design project in WD ways (assignment / Quizzes) + Plans, sections, elevations and details presentation in WD documents in four phases,	4- 13	105	70%	**a1 a2 b1 b2 c1 c2 c3 d1**
2	As final-exam (Submission final WD documents) Project	14 final	45	30%	**a1 a2 b1 b2 c1 c2 c3 d1**
	Sum		**150**	**100%**	

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VIII. Learning Resources:

- *Written in the following order: (Author - Year of publication – Title – Edition – Place of publication – Publisher).*

1- Required Textbook(s) (maximum two).

1- Wakita, Osamu A. and Richard M. Linde, **The Professional Practices of Architectural Working Drawing,** John Wiley & sons, NY, USA. 1994
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2- Essential References.

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3-Jack Stroud Foster & Raymond Harington**,** MITCHELL'S BUILDING SER **Structure and Fabric II,** B T, Batsford Limited, London, 2004 2nd edition

3- Electronic Materials and Web Sites *etc*.

1- Auto-Cad all versions , Rivet, Google sketches up
2- working Drawings E-books,

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IX. Course Policies:

1	**Class Attendance:** The students should have more than 75 % of attendance according to rules and regulations of the faculty.
2	**Tardy:** The students should respect the timing of attending the lectures. They should attend within 1 minute from starting of the lecture.
3	**Exam Attendance/Punctuality:** The student should attend the exam on time. The punctuality should be implemented according to rules and regulations of the faculty for midterm exam and final exam.
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6	**Plagiarism:** The student will be terminated from the Faculty, if one student attends the exam on another behalf according to the policy, rules and regulations of the university.
7	**Other policies:** _ All the teaching materials should be kept out the examination hall. _ the mobile phone is not allowed. _There should be a respect between the student and his teacher.

Reviewed By	**Vice Dean for Academic Affairs and Post Graduate Studies** **Dr. Tarek A. Barakat** **Quality Assurance Unit Dr. Mohammad Algorafi** **Name of Reviewer from the Department** **Dr : Riyad Muharam** **Dr : Samir Mohsen AL-Sirry**
	Deputy Rector for Academic Affairs Dr. Ibrahim AlMutaa **Dr. Ahmed Mujahed** **Dr. Munaser Alsubri**

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Sana'a University
Faculty of Engineering
Department: Basic Engineering Sciences
Title of the Program: B.Sc. Of Architectural Engineering

Template for Course Plan (Syllabus)

I. Information about Faculty Member Responsible for the Course:								
Name of Faculty Member	Associ Prof . Ahmed Ghaleb Al-Sharjabi	**Office Hours**						
Location& Telephone No.	**Architecture Department** 00967 777141317	**SAT**	**SUN**	**MON**	**TUE**	**WED**	**THU**	
E-mail	ahgfn8989@Gmail.com		**10-12 AM**			12-14 PM		

II. Course Identification and General Information:						
1	**Course Title:**	**Working Drawings (2)**				
2-	**Course Number & Code:**	**AE359**				
3-	**Credit hours:**	**C.H**				**Total**
		Th.	**Seminar**	**Pr.**	**F. Tr.**	
		2		4		***3***
4-	**Study level/year at which this course is offered:**	**4th Year/ Level 1st semester**				
5-	**Pre –requisite (if any):**	**Working Drawings (1)**				
6-	**Co –requisite (if any):**	**Non**				
7-	**Program (s) in which the course is offered**	**Architectural Engineering**				
8-	**Language of teaching the course:**	**English and Arabic**				
9-	**System of Study:**	**Semester / Regular**				
10-	**Mode of delivery:**	**Lecture / Drafting Studio**				
11-	**Location of teaching the course:**	**Studios in Architecture Dept.**				

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IV. Intended learning outcomes (ILOs) of the course:

- Brief summary of the knowledge or skill the course is intended to develop**:**

a1- Understand technical symbols and graphical terminology...
a2- Identify technical symbols and measures in practical working, according to material a construction standard drawings.
a3 Identify practical ways of technical systems into construction of building, related to sanitary systems, electrical systems, and safety and security.
b1- Define integrated solutions to design using various specification and technical criteria mainly to sanitary and electrical systems.
b2- Recognize an integrated set of working drawings, and select appropriate strategies fo whole design related to construction systems applying practically..
C1- Demonstrate proficiency in the integration of information and processes in working drawings, related to environmental and structural systems..
C2- Apply theoretical and practical knowledge gained from other related courses, such as environmental, structural and construction.
C3- Produce construction documents (working drawings) , detail drawings, by Use softw Auto-Cad packages and other tools.
d1- Apply ethical principles and commit to professional ethics

V.Course Content:

- Distribution of Semester Weekly Plan of Course Topics/Items and Activities.

A – Theoretical Aspect:

Order	Topics List	Week Due	Contact Hours
1	Introduction, identify the subject, and related issues, selection of working Project for work. Describe the time schedule of the working process, and the content. Ways of integrate data, re-drifting project into a Working Drawing document.	1-3	3
2	Methods and ways of produce WD (1) Selection villa Project or small size building for WD (1),	4- 6	2
3	-Introduction to principles of preparing (such as symbols, terminology, measurements, and detail construction) data in plans, Section, and elevations, and layout of water pipes, electricity conduits, rainwater plan, drainage manholes layout to the main sewerage of the city. -consideration to infrastructure systems, site plan,. - Describe criteria and data to use, when integration BoQ and specifications.	7-12	4
4	Technical Works Integrate Parts to systems, sorting sheets and numbering system.	12-13	2
5	Classifications and numbering	14	1
	Total	14	12
Number of Weeks /and Units Per Semester			

B – Practical Aspect: *(if any)*			
Order	**Topics List**	**Week Due**	**Contact Hours**
1	**Discussion methods of selection works.**	**1**	**0**
2	**Discussion principles of work in plans (technical information)**	**2**	**6**
3	**Discussion work in plans integration sys.**	**2**	**6**
4	**Discussion work in Sections technical data**	**1 for assessment**	**6**
5	**work in elevations technical data**	**2**	**7**
6	**work in technical details, systems etc.**	**2**	**7**
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X. Course Policies:	
Unless otherwise stated, the normal course administration policies and rules of the Faculty of ----- apply. For the policy, see: ----------	
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