



## 57 Course Specification of Contracts and Specifications

1. Course Identification and General Information:						
1	<b>Course Title:</b>	<i>Contracts and Specifications</i>				
2	<b>Course Code &amp; Number:</b>	CE403				
3	<b>Credit hours:</b>	C.H				<b>Credit Hours</b>
		Th.	Tu.	Pr.	Tr.	
		2				
4	<b>Study level/ semester at which this course is offered:</b>	5th level/ 1st semester				
5	<b>Pre –requisite (if any):</b>	Civil Drawing				
6	<b>Co –requisite (if any):</b>	-----				
8	<b>Program (s) in which the course is offered:</b>	Civil Engineering				
9	<b>Language of teaching the course:</b>	English+ Arabic				
10	<b>Location of teaching the course:</b>	Classroom				
11	<b>Prepared By:</b>	Dr. Tarek A. Barakat				
12	<b>Date of Approval</b>					

2. Course Description:
<p>This course is designed to provide general knowledge of tenders and contracts with introduction of the various types of construction contracts. The principles and analysis of construction contracts (with an emphasis on FIDIC) and specifications are provided including aspects of construction management. <b>General knowledge and development</b> of skills in measurement of quantities including factors affecting costs of items and preparing detailed estimates <b>will be highlighted</b>.</p>

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<b>3. Course Intended learning outcomes (CILOs) of the course</b>		<b>Referenced PILOs</b>
<b>a.1</b>	Define how to use mathematics and engineering principles for estimation of quantities from engineering drawings.	<b>A1</b>
<b>a.2</b>	Define the various types of construction contracts, the organization of each and their advantages and disadvantages.	<b>A2</b>
<b>a.3</b>	Define the traditional construction contracts with emphasis on FIDIC and the roles of the main parties involved and potential construction disputes and how to overcome them.	<b>A2</b> <b>A4</b>
<b>a.4</b>	Define the specifications and the elements incorporated and codes and standards.	<b>A2</b>
<b>b.1</b>	Identify the factors affecting costs of work and preparation of detailed estimates.	<b>B1</b>
<b>b.2</b>	Analyze data required for preparation of detailed estimates incorporating potential factors affecting costs.	<b>B3</b> <b>B4</b>
<b>b.3</b>	Choose the codes and standards specification for the elements of projects.	<b>B1</b>
<b>b.4</b>	Identify the type of contract for each project.	<b>B1</b>
<b>c.1</b>	Develop the ability to review and make construction contracts and specifications.	<b>C2</b>
<b>c.2</b>	Estimate quantities from engineering drawings and develop project budgets.	<b>C2</b> <b>C4</b>
<b>d.1</b>	Assess the importance of the responsibilities of project professionals and the ethical standards required of individuals and the project management team.	<b>D4</b>

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<b>(A) Alignment Course Intended Learning Outcomes of Knowledge and Understanding to Teaching Strategies and Assessment Strategies:</b>		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
<b>a1-</b> Define how to use mathematics and engineering principles for estimation of quantities from engineering drawings.	Lecture Presentations Reading	Written exam Written assignment
<b>a2-</b> Define the various types of construction contracts, the organization of each and their advantages and disadvantages.	Lecture Presentations Reading	Written exam Written assignment
<b>a3-</b> Define the traditional construction contracts with emphasis on FIDIC and the roles of the main parties involved and potential construction disputes and how to overcome them.	Lecture Discussion Reading	Written exam Written assignment
<b>a4-</b> Define the specifications and the elements incorporated and codes and standards.	Lecture Presentations Reading	Written exam Written assignment

  

<b>(B) Alignment Course Intended Learning Outcomes of Intellectual Skills to Teaching Strategies and Assessment Strategies:</b>		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
<b>b1-</b> Identify the factors affecting costs of work and preparation of detailed estimates.	Lecture Presentations Tutorial Reading	Participation- Problem set- Written exam- Written assignment
<b>b2-</b> Analyze data required for preparation of detailed estimates incorporating potential factors affecting costs.	Lecture Presentations Reading	Participation Written exam Written assignment
<b>b3-</b> Choose the codes and standards specification for the elements of projects.	Lecture Presentations Reading	Participation Written exam Written assignment
<b>b4-</b> Identify the type of contract for each project.	Lecture Presentations Reading	Participation Written exam Written assignment

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<b>C Alignment Course Intended Learning Outcomes of Professional and Practical Skills to Teaching Strategies and Assessment Strategies:</b>		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
<b>c1-</b> Develop the ability to review and make construction contracts and specifications.	Lecture Presentations Reading	Participation Written exam Written assignment
<b>c2-</b> Estimate quantities from engineering drawings and develop project budgets.	Lecture Presentations Reading	Participation Written exam Written assignment

<b>(D) Alignment Course Intended Learning Outcomes of Transferable Skills to Teaching Strategies and Assessment Strategies:</b>		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
<b>d1-</b> Assess the importance of the responsibilities of project professionals and the ethical standards required of individuals and the project management team.	Lecture Presentations Reading	Participation Written exam Written assignment

<b>4. Course Content:</b>					
<b>A – Theoretical Aspect:</b>					
Order	Units/Topics List	Learning Outcomes	Sub Topics List	Number of Weeks	contact hours
1	Types of contracts. Project cycle. Parties to the contract.	a2- a3- b4 – d1	Types and organization of various contracts and advantages and disadvantages of each. The main parties to the contracts and their roles in the project cycle.	1	2
2	Tender documents. Project team.	a2 - a3-d1	Tender documents for traditional contracts and their importance and functions. Project team members and their roles in the project stages.	1	2

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<b>4. Course Content:</b>					
<b>A – Theoretical Aspect:</b>					
<b>Order</b>	<b>Units/Topics List</b>	<b>Learning Outcomes</b>	<b>Sub Topics List</b>	<b>Number of Weeks</b>	<b>contact hours</b>
3	Types of specifications. BOQ.	a1- a2 – b1 – c1 - c2	Types of specifications principles and analysis. Preparation of BOQ and specifications for minor works.	2	4
4	Quantity surveying. Writing BOQs.	a1- b1- b2 – b3- c1- c2	Introduction to quantity surveying and the stages involved. Introduction on how to write BOQs and the descriptions.	2	4
5	Estimation.	a1 – a4- b1- b2 – b3 – c2	Types of measurements and estimation of quantities. Identification of factors affecting costs and incorporating them in the estimation.	1	2
6	Estimation.	a1 – a4- b1- b2 – b3 – c2	Types of measurements and estimation of quantities. Identification of factors affecting costs and incorporating them in the estimation.	3	6
7	Calculations for estimation.	a1 – a4- b1- b2 – b3 – c2	Calculations of various aspects of construction projects incorporating principles learned.	2	4
8	Construction law.	a3 - c1- d1	Introduction to principles of construction law. Analysis and detailed review of FIDIC traditional construction contract.	3	6
<b>Number of Weeks /and Units Per Semester</b>				<b>14</b>	<b>28</b>

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5. Teaching strategies of the course:	
Lecture	
Presentations	
Participation	
Reading	

6. Assignments:				
No	Assignments	Aligned CILOs(symbols)	Week Due	Mark
1	Contracts and organization	a2- a3- b4 – d1	3	0.5
2	Specifications	a1- a2 – b1 – c1 - c2	5	2
3	Quantity take-off and BOQ	a1- a2 – b1 – c1 - c2	7	1.5
4	Quantity take-off	a1- b1- b2 – b3- c1- c2	9	2
5	Quantity take-off	a1- b1- b2 – b3- c1- c2	11	2
6	Construction contract	a3 - c1- d1	14	2

7. Schedule of Assessment Tasks for Students During the Semester:					
No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Written assignment	3- 5- 7 -9 - 11-14	10	10	a1-a2 - a3 – a4 - b1-b2-b3 - c1- c2 - d1
2	Quizzes.	Two time	10	10	b1-b2-b3 -c1- c2
3	Mid-term exam.	7 <sup>th</sup>	10	10	b1-b2-b3 -c1- c2
4	Final-exam.	15	70	70	b1-b2-b3 -c1- c2

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<b>8. Learning Resources:</b>	
I. Written in the following order: (Author - Year of publication – Title – Edition – Place of publication – Publisher).	
<b>1- Required Textbook(s) ( maximum two ).</b>	
	<ul style="list-style-type: none"> <li>• Collier, Keith – 2001 – Construction Contracts (3<sup>rd</sup> ed.) – Upper Saddle River, New Jersey Prentice Hall, Inc</li> </ul>
<b>2- Essential References.</b>	
	1- FIDIC - 2009 – CONDITIONS OF CONTRACT FOR CONSTRUCTION, 29 <sup>th</sup> edition
<b>3- Electronic Materials and Web Sites etc.</b>	

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9. Course Policies:	
1	<b>Class Attendance:</b> The students should have more than 75 % of attendance according to rules and regulations of the faculty.
2	<b>Tardy:</b> The students should respect the timing of attending the lectures. They should attend within 1 minute from starting of the lecture.
3	<b>Exam Attendance/Punctuality:</b> 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.
4	<b>Assignments &amp; Projects:</b> The assignment is given to the students after each chapter, the student has to submit all the assignments for checking on time.
5	<b>Cheating:</b> If any cheating occurred during the examination, the student is not allowed to continue and he/she has to face the examination committee for <b>enquiries</b> .
6	<b>Plagiarism:</b> 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	<b>Other policies:</b> _ 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.

<b>Reviewed By</b>	<b><u>Vice Dean for Academic Affairs and Post Graduate Studies</u></b> <b><u>Dr. Tarek A. Barakat</u></b> <b><u>Dr. Mohammad Algorafi</u></b>
	<b><u>Deputy Rector for Academic Affairs Dr. Ibrahim AlMutaa</u></b> <b><u>Dr. Ahmed mujahed</u></b> <b><u>Dr. Munaser Alsubri</u></b>

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## Course Plan (Syllabus) of Contracts and Specifications

I. - Information about Faculty Member Responsible for the Course:						
<b>Name of Faculty Member</b>	Dr. Tarek A. Barakat	<b>Office Hours</b>				
<b>Location &amp; Telephone No.</b>		<b>SAT</b>	<b>SUN</b>	<b>MON</b>	<b>TUE</b>	<b>WE D</b>
<b>E-mail</b>				8-10		

II. Course Identification and General Information:						
1-	<b>Course Title:</b>	<i>Contracts and Specifications</i>				
2-	<b>Course Number &amp; Code:</b>	CE403				
3-	<b>Credit hours:</b>	<b>C.H</b>				<b>Credit Hours</b>
		Th.	Tu.	Pr.	Tr.	
		2				2
4-	<b>Study level/year at which this course is offered:</b>	5th Level/ 1st semester				
5-	<b>Pre –requisite (if any):</b>	Civil Drawing, Surveying 3				
6-	<b>Co –requisite (if any):</b>	-----				
7-	<b>Program (s) in which the course is offered</b>	Civil Engineering				
8-	<b>Language of teaching the course:</b>	English+ Arabic				
9-	<b>System of Study:</b>	Regular				
10-	<b>Mode of delivery:</b>	Lecture				
11-	<b>Location of teaching the course:</b>	Classroom				

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### III. Course Description:

This course is designed to provide general knowledge of tenders and contracts with introduction of the various types of construction contracts. The principles and analysis of construction contracts (with an emphasis on FIDIC) and specifications are provided including aspects of construction management. **General knowledge and development** of skills in measurement of quantities including factors affecting costs of items and preparing detailed estimates **will be highlighted**.

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

- Brief summary of the knowledge or skill the course is intended to develop:
  - a1-** Define how to use mathematics and engineering principles for estimation of quantities from engineering drawings.
  - a2-** Define the various types of construction contracts, the organization of each and their advantages and disadvantages.
  - a3-** Define the traditional construction contracts with emphasis on FIDIC and the roles of the main parties involved and potential construction disputes and how to overcome them.
  - a4-** Define the specifications and the elements incorporated and codes and standards.
  - b1-** Identify the factors affecting costs of work and preparation of detailed estimates.
  - b2-** Analyze data required for preparation of detailed estimates incorporating potential factors affecting costs.
  - b3-** Choose the codes and standards specification for the elements of projects.
  - b4-** Identify the type of contract for each project.
  - c.1-** Develop the ability to review and make construction contracts and specifications.
  - c.2-** Estimate quantities from engineering drawings and develop project budgets.
  - d.1-** Assess the importance of the responsibilities of project professionals and the ethical standards required of individuals and the project management team.

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<b>V. Course Content:</b>				
<b>II. Distribution of Semester Weekly Plan Of course Topics/Items and Activities.</b>				
<b>A – Theoretical Aspect:</b>				
<b>Order</b>	<b>Topics List</b>		<b>Week Due</b>	<b>Contact Hours</b>
1	Types of contracts. Project cycle. Parties to the contract.	Types and organization of various contracts and advantages and disadvantages of each. The main parties to the contracts and their roles in the project cycle.	1	2
2	Tender documents. Project team.	Tender documents for traditional contracts and their importance and functions. Project team members and their roles in the project stages.	2	2
3	Types of specifications. BOQ.	Types of specifications principles and analysis. Preparation of BOQ and specifications for minor works.	3-4	4
4	Quantity surveying. Writing BOQs.	Introduction to quantity surveying and the stages involved. Introduction on how to write BOQs and the descriptions.	5-6	4
5	Estimation.	Types of measurements and estimation of quantities. Identification of factors affecting costs and incorporating them in the estimation.	7	2
6	Midterm Exam		8	2
7	Estimation.	Types of measurements and estimation of quantities. Identification of factors affecting costs and incorporating them in the estimation.	9-10	4
8	Calculations for estimation.	Calculations of various aspects of construction projects incorporating principles learned.	11-12	2
9	Construction law.	Introduction to principles of construction law. Analysis and detailed review of FIDIC traditional construction contract.	13-15	6
10	Final Exam		16	2
<b>Number of Weeks /and Units Per Semester</b>			<b>16</b>	<b>32</b>

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### VI. Teaching strategies of the course:

Lecture  
Presentations  
Participation  
Reading

### VII. Assignments:

No	Assignments	Aligned CILOs(symbols)	Week Due	Mark
1	Contracts and organization	a2- a3- b4 – d1	3	0.5
2	Specifications	a1- a2 – b1 – c1 - c2	5	2
3	Quantity take-off and BOQ	a1- a2 – b1 – c1 - c2	7	1.5
4	Quantity take-off	a1- b1- b2 – b3- c1- c2	9	2
5	Quantity take-off	a1- b1- b2 – b3- c1- c2	11	2
6	Construction contract	a3 - c1- d1	14	2

### VIII. Schedule of Assessment Tasks for Students During the Semester:

Assessment	Type of Assessment Tasks	Week Due	Mark	Proportion of Final Assessment
1	Written assignment	3- 5- 7 -9 - 11-14	10	10
2	Quizzes.	Two time	10	10
3	Mid-term exam.	7 <sup>th</sup>	10	10
4	Final-exam.	15	70	70

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<b>IX. Learning Resources:</b>	
Written in the following order: (Author – Year of publication – Title – Edition – Place of publication – Publisher).	
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<b>X. Course Policies:</b>	
Unless otherwise stated, the normal course administration policies and rules of the Faculty of ----- apply. For the policy, see: -----	
1	<b>Class Attendance:</b> The students should have more than 75 % of attendance according to rules and regulations of the faculty.
2	<b>Tardy:</b> The students should respect the timing of attending the lectures. They should attend within 1 minutes from starting of the lecture.
3	<b>Exam Attendance/Punctuality:</b> 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.
4	<b>Assignments &amp; Projects:</b> The assignment is given to the students after each chapter, the student has to submit all the assignments for checking on time.
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