



66-Course Specification of Project Management

I. Course Identification and General Information:						
1	Course Title:	<i>Project Management</i>				
2	Course Code & Number:	CE412				
3	Credit hours:	C.H				Credit Hours
		Th.	Tu.	Pr.	Tr.	
		2			2	
4	Study level/ semester at which this course is offered:	5th grade/ 2nd semester				
5	Pre –requisite (if any):	Specifications and quantities; Construction Equipment and Methods				
6	Co –requisite (if any):					
7	Program (s) in which the course is offered:	Civil Engineering				
8	Language of teaching the course:	English+ Arabic				
9	Location of teaching the course:	Classroom				
10	Prepared By:	Dr. Tarek A. Barakat				
11	Date of Approval					

II. Course Description:
<p>This course is designed to introduce and reinforce the principles, tools and techniques of project management, including project planning, scheduling and controlling; budgeting, staffing, task and cost control; communication; resources management; and quality, safety and environmental management. Students will be provided an overview of project management covering fundamental elements of the project management process.</p>

Prepared by Head of Department
Dr. Abdulkareem
Yahya Al khattabi

Quality Assurance Unit
Ass. Prof. Dr. Mohammad
Algorafi

Dean of the Faculty
Prof. Dr. Mohammed
AL-Bukhaiti

Academic Development
Center & Quality Assurance
Ass. Prof. Dr.
Huda Al-Emad

Rector of Sana'a University
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III. Course Intended learning outcomes (CILOs) of the course		Referenced PILOs
a.1	Define the construction process, stages and parties and the various types of construction contracts in projects.	A2
a.2	Define the tools and techniques of project management.	A2 A4
a.3	Define how to use of scheduling software albeit Microsoft Project Manager in project management planning.	A3
b.1	Explain the quality, safety, health and environmental management systems considering the project and relevant international practices and standards.	B1 B3
b.2	Choose relevant software for use in project management.	B2
b.3	Consider the economic, social, and environmental issues as well as management.	B4
c.1	Design project management systems for projects.	C2
c.2	Apply techniques learned to construction planning and project management and develop the ability to use software in projects.	C3
c.3	Perform budgets and project briefs for civil engineering projects.	C4
d.1	Communicate effectively using written, oral and graphical skills.	D1
d.2	Manage schedules and resources.	D2
d.3	Work independently and in a team.	D3

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Algorafi

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Rector of Sana'a University
Prof. Dr. Al-Qassim Mohammed Abbas



(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- Define the construction process, stages and parties and the various types of construction contracts in projects.	Lecture Presentations Reading	Written exam Written assignment
a2- Define the tools and techniques of project management.	Lecture Presentations	Problem set Written exam Written assignment
a3- Define how to use of scheduling software albeit Microsoft Project Manager in project management planning.	Lecture Presentations Reading	Written exam Written assignment

(B) Alignment Course Intended Learning Outcomes of Intellectual Skills to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
b1- Explain the quality, safety, health and environmental management systems considering the project and relevant international practices and standards.	Lecture Presentations Case study Reading	Participation Written exam Written assignment
b2- Choose relevant software for use in project management.	Lecture Presentations	Participation Written exam Written assignment Project
b3- Consider the economic, social, and environmental issues as well as management.	Lecture Presentations Discussion	Participation Written exam Written assignment

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© 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- Design project management systems for projects.	Lecture Presentations Reading	Participation Written exam Written assignment Project
c2- Apply techniques learned to construction planning and project management and develop the ability to use software in projects.	Lecture Presentations Reading	Participation Written exam Written assignment Project
c3- Perform budgets and project briefs for civil engineering projects.	Lecture Presentations Reading	Participation Written exam Written assignment Project

(D) Alignment Course Intended Learning Outcomes of Transferable Skills to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
d1- Communicate effectively using written, oral and graphical skills.	Lecture Presentations Case study Group project	Participation Written exam Written assignment Group presentations
d2- Manage schedules and resources.	Lecture Presentations Case study Group project	Participation Written exam Written assignment Group presentations
d3- Work independently and in a team.	Lecture Presentations Case study Group project	Participation Written exam Written assignment Group presentations

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Prof. Dr. Al-Qassim Mohammed Abbas



IV. Course Content:					
A – Theoretical Aspect:					
Order	Units/Topics List	Learning Outcomes	Sub Topics List	Number of Weeks	contact hours
1	Project cycle Characteristics of construction	a1	The construction project cycle and process and main stages. The unique characteristics of the construction industry and their effect in construction projects.	1	2
2	WBS (work breakdown structure) OBS (organization breakdown structure). Project activities Levels of planning.	a2 - b2- c2 – d2	Introduction to project planning including WBS (work breakdown structure) and OBS (organization breakdown structure). Defining project activities and tasks and the various types. The levels of planning are described and when to be used. Understand how to number activities.	2	4
3	Types and techniques of project scheduling Relationships between activities and constraints.	a2 - c2 - d2	Introduction to types and techniques of project scheduling for planning (mainly AON and AOA). Understand the relationships between activities and constraints affecting scheduling and rules. Provide an example of WBS, OBS and relationships.	1	2
4	Drawing the network schedule diagram CPM calculations. Application of scheduling software.	a2 –a3–b2- c1,c2 – d2	Drawing the network schedule diagram using AOA and AON and performing CPM calculations with forward and backward passes. Understanding float and the critical path(s) of projects. Application of scheduling software.	2	4
5	Productivity for planning. The cost models.	a2 – a3- b3 - c1, c2 – c3 - d2	The need for, benefits and elements of planning. Calculating productivity for planning. Resource loading project	1	2

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	Application of scheduling software.		schedules. The effect of early completion on direct and indirect costs and overall project cost. Application of scheduling software.		
6	Project control. Application of scheduling software.	a2 –a3–b2- b3 - c1, c2- d2	Project control and the mechanism and dynamics involved. Application of scheduling software.	1	2
7	Project budgeting. Resource loading.	a2 –a3–b2- b3 - c1, c2 – c3 – d2	Project planning and control using scheduling software.	2	4
8	Quality management and control.	a2 – b1 – b3- c1,c2	Quality management in construction projects and its importance. Control of quality in construction projects.	1	2
9	HSE management and control.	a2 – b1 – b3- c1,c2	HSE management in construction projects and its importance as well as control mechanisms.	2	4
10	The building profession. Communication in construction.	d1 ,d3– b3	The building professions and their roles, social obligations and professional responsibilities and the ethical standards required of individuals and the project management team. Communication in the construction industry and its importance.	1	2
Number of Weeks /and Units Per Semester				14	28

Prepared by Head of Department
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Algorafi

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V. Teaching strategies of the course:
Lecture
Presentations
Participation
Case Study
Project
Reading

VI. Assignments:				
No	Assignments	Aligned CILOs(symbols)	Week Due	Mark
1	WBS and OBS	a2 - b2- c1,c2 – d2	5	0.5
2	Creating a project schedule using CPM	a2 –a3–b2- c1,c2 – d2	7	1
3	Calculating productivity Budgeting Resource loading	a2 –a3–b2- b3 - c1, c2 – c3 – d2	10	1
4	QA/QC	a2 – b1 – b3- c1,c2	12	1
5	HSE	a2 – b1 – b3- c1,c2	13	1
6	Communication	d1,d3- b3	14	0.5

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	Written assignment	5- 7- 10 -12 - 14- 15	5	5	a2 –a3–b2- b3 - c1,c2 – c3 – d1 - d2
2	Quizzes.	Two time	10	10	b1-b2- b3 - c2 – c3
	Group project	14	5	5	c2 – c3 – d1 - d2 – d3
3	Mid-term exam.	7 th	10	10	a.1,b1-b2- b3 - c2 – c3
4	Final-exam.	15	70	70	b1-b2- b3 - c2 – c3

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Academic Development
Center & Quality Assurance
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Rector of Sana'a University
Prof. Dr. Al-Qassim Mohammed Abbas



VIII. Learning Resources:	
I. Written in the following order: (Author - Year of publication – Title – Edition – Place of publication – Publisher).	
1- Required Textbook(s) (maximum two).	
	<ol style="list-style-type: none"> 1. O'Brien and Plotnick – 2006 – CPM in Construction Management - 6th Edition, McGraw Hill 2. Pulmia and Khandelwal- 2002 – Project Planning and Control with CPM and PERT, 4th ed., Laxmi Publications Ltd. 3. Fellows et al. –2002 - Construction Management in Practice, 2nd Edition, Blackwell Science
2- Essential References.	
	1- Project Management Body of Knowledge (PMBOK) 5th edition
3- Electronic Materials and Web Sites etc.	
	1- Microsoft Project Manager

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Algorafi

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Center & Quality Assurance
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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.
4	Assignments & Projects: The assignment is given to the students after each chapter, the student has to submit all the assignments for checking on time.
5	Cheating: If any cheating occurred during the examination, the student is not allowed to continue and he/she has to face the examination committee for enquiries .
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	<u>Vice Dean for Academic Affairs and Post Graduate Studies</u> <u>Dr. Tarek A. Barakat</u> <u>Dr. Mohammad Algorafi</u>
	<u>Deputy Rector for Academic Affairs Dr. Ibrahim AlMutaa</u> <u>Dr. Ahmed mujahed</u> <u>Dr. Munaser Alsubri</u>

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Quality Assurance Unit
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Algorafi

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Course Plan (Syllabus) of Project Management

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

II. Course Identification and General Information:					
1-	Course Title:	<i>Project Management</i>			
2-	Course Number & Code:	CE412			
3-	Credit hours:	C.H			
		Th.	Tu.	Pr.	Tr.
		2			
		Credit Hours			
		2			
4-	Study level/year at which this course is offered:	5th grade/ 2nd semester			
5-	Pre –requisite (if any):	Specifications and Quantities ; Construction Equipment and Methods			
6-	Co –requisite (if any):	-----			
7-	Program (s) in which the course is offered	Civil Engineering			
8-	Language of teaching the course:	English+ Arabic			
9-	System of Study:	Semester			
10-	Mode of delivery:	Lecture			
11-	Location of teaching the course:	Classroom			

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III. Course Description:

This course is designed to introduce and reinforce the principles, tools and techniques of project management, including project planning, scheduling and controlling; budgeting, staffing, task and cost control; communication; resources management; and quality, safety and environmental management. Students will be provided an overview of project management covering fundamental elements of the project management process.

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

- Brief summary of the knowledge or skill the course is intended to develop:
- a.1** Define the construction process, stages and parties and the various types of construction contracts in projects. A2
- a.2** Define the tools and techniques of project management. A2 A4
- a.3** Define how to use of scheduling software albeit Microsoft Project Manager in project management planning. A3
- b.1** Explain the quality, safety, health and environmental management systems considering the project and relevant international practices and standards. B1 B3
- b.2** Choose relevant software for use in project management. B2
- b.3** Consider the economic, social, and environmental issues as well as management. B4
- c.1** Design project management systems for projects. C2
- c.2** Apply techniques learned to construction planning and project management and develop the ability to use software in projects. C3
- c.3** Perform budgets and project briefs for civil engineering projects. C4
- d.1** Communicate effectively using written, oral and graphical skills. D1
- d.2** Manage schedules and resources. D2
- d.3** **Work** independently and in a team. D3

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Quality Assurance Unit
Ass. Prof. Dr. Mohammad
Algorafi

Dean of the Faculty
Prof. Dr. Mohammed
AL-Bukhaiti

Academic Development
Center & Quality Assurance
Ass. Prof. Dr.
Huda Al-Emad

Rector of Sana'a University
Prof. Dr. Al-Qassim Mohammed Abbas



V. Course Content:				
Distribution of Semester Weekly Plan Of course Topics/Items and Activities.				
A – Theoretical Aspect:				
Order	Topics List	Sub Topics List	Week Due	Contact Hours
1	Project cycle Characteristics of construction	The construction project cycle and process and main stages. The unique characteristics of the construction industry and their effect in construction projects.	1	2
2	WBS (work breakdown structure) OBS (organization breakdown structure). Project activities Levels of planning.	Introduction to project planning including WBS (work breakdown structure) and OBS (organization breakdown structure). Defining project activities and tasks and the various types. The levels of planning are described and when to be used. Understand how to number activities.	2,3	4
3	Types and techniques of project scheduling Relationships between activities and constraints.	Introduction to types and techniques of project scheduling for planning (mainly AON and AOA). Understand the relationships between activities and constraints affecting scheduling and rules. Provide an example of WBS, OBS and relationships.	4	2
4	Drawing the network schedule diagram CPM calculations. Application of scheduling software.	Drawing the network schedule diagram using AOA and AON and performing CPM calculations with forward and backward passes. Understanding float and the critical path(s) of projects. Application of scheduling software.	5,6	4
5	Productivity for planning. The cost models. Application of scheduling software.	The need for, benefits and elements of planning. Calculating productivity for planning. Resource loading project schedules. The effect of early completion on	7	2

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Algorafi

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		direct and indirect costs and overall project cost. Application of scheduling software.		
6	Midterm Exam		8	2
7	Project control. Application of scheduling software.	Project control and the mechanism and dynamics involved. Application of scheduling software.	9	2
8	Project budgeting. Resource loading.	Project planning and control using scheduling software.	10,11	4
9	Quality management and control.	Quality management in construction projects and its importance. Control of quality in construction projects.	12	2
10	HSE management and control.	HSE management in construction projects and its importance as well as control mechanisms.	13,4	4
11	The building profession. Communication in construction.	The building professions and their roles, social obligations and professional responsibilities and the ethical standards required of individuals and the project management team. Communication in the construction industry and its importance.	15	2
12	Final Exam		16	2
Number of Weeks /and Units Per Semester			16	32

VI. Teaching strategies of the course:

Lecture
Presentations
Participation
Reading
Project

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Yahya Al khattabi

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Algorafi

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AL-Bukhaiti

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VII. Assignments:				
No	Assignments	Aligned CILOs(symbols)	Week Due	Mark
1	WBS and OBS	a2 - b2- c1,c2 – d2	5	0.5
2	Creating a project schedule using CPM	a2 –a3–b2- c1,c2 – d2	7	1
3	Calculating productivity	a2 –a3–b2- b3 - c1, c2 – c3 – d2	10	1
4	QA/QC	a2 – b1 – b3- c1,c2	12	1
5	HSE	a2 – b1 – b3- c1,c2	13	1
6	Communication	d1,d3- b3	14	0.5

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	5- 7- 10 -12 - 13-14	10	10
2	Quizzes.	Two time	10	10
3	Mid-term exam.	7 th	10	10
4	Final-exam.	15	70	70

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Center & Quality Assurance
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Huda Al-Emad

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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: -----	
1	<p>Class Attendance:</p> <p>The students should have more than 75 % of attendance according to rules and regulations of the faculty.</p>
2	<p>Tardy:</p> <p>The students should respect the timing of attending the lectures. They should attend within 1 minutes from starting of the lecture.</p>
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Rector of Sana'a University
Prof. Dr. Al-Qassim Mohammed Abbas