

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

**Introduction to Information Systems
14021101-3**

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	Introduction to Information Systems 14021101-3																						
2. Credit hours	3 credits																						
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																						
4. Name of faculty member responsible for the course	Dr Skander Turki																						
5. Level/year at which this course is offered	Year 1/ Level 3																						
6. Pre-requisites for this course (if any)	None																						
7. Co-requisites for this course (if any)																							
8. Location if not on main campus: Delivered in the four locations where the Information Systems BSc is given:	- Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																						
9. Mode of Instruction (mark all that apply)	<table border="0"> <tr> <td>a. Traditional classroom</td> <td>☒</td> <td>What percentage?</td> <td> 100% </td> </tr> <tr> <td>b. Blended (traditional and online)</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>c. e-learning</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>d. Correspondence</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>f. Other</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> </table>			a. Traditional classroom	☒	What percentage?	100%	b. Blended (traditional and online)	☐	What percentage?		c. e-learning	☐	What percentage?		d. Correspondence	☐	What percentage?		f. Other	☐	What percentage?	
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d. Correspondence	☐	What percentage?																					
f. Other	☐	What percentage?																					
Comments:																							

B Objectives

1. What is the main purpose for this course?

The purpose of the course is to engage students while helping them become intelligent consumers of information. The course puts information center stage to allow the relevance of information systems to be put into context, thus increasing student interest. Our goal is to help students understand that they will be using information throughout their personal and professional lives. Information systems not only produce information, but they also help us make better use of information. By focusing on information, rather than systems, students are grounded in the end goal, and are better able to understand why knowledge of information systems is important. This translates into greater engagement; everyone is more engaged when they understand the relevance of what they are learning.

This course will also expose students to standard building block of an information system and identifies abstractly all its underlying layers. A number of real life examples obtained from Saudi Market will be introduced to students in terms of their business needs such as:

- ERP
- SIS
- HIS
- BIS
- ECM
- GIS

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

An adaptation can be done when reviewing the program.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered		
List of Topics	No of Weeks	Contact hours per week
Introduction to Information Systems in Saudi Market	3	9
Storing Information	1	3
Analysing Information for Decision Making	1	3
Securing and Protecting Information	3	9
Transmitting Information	1	3
Developing information Systems	1	3
Enterprise Information Systems	2	6
Business Processes	2	6
Knowledge and Information for Decision Making	2	6

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	32					32
Credit	2					2

3. Additional private study/learning hours expected for students per week.	2
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
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Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The *National Qualification Framework* provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge By the end of this course, and having completed the Essential reading and the activities specified in this subject guide, you should be able to:		
1.1	explain fundamental assumptions made in studying information and communications technologies in organisations as sociotechnical systems in contrast to purely technical or managerial views	Course lectures, tutorials , homeworks	• Quizzes and/or Online Quizzes, • Midterm, • Final Exam
1.2	express a logical understanding of how the technical parts of computer based information systems work, their principal structures and components including contemporary technologies for information processing and communications	Course lectures, tutorials , homeworks	• Quizzes and/or Online Quizzes, • Midterm, • Final Exam
1.3	explain the various functions of systems and network software and various classes of business-oriented application packages	Course lectures, tutorials , homeworks	• Quizzes and/or Online Quizzes, • Midterm, • Final Exam
1.4	describe fundamental principles that can be applied to ensure that security and personal privacy is respected in information systems	Course lectures, tutorials , homeworks	• Quizzes and/or Online Quizzes, • Midterm, • Final Exam
1.5	explain the tasks required when undertaking the establishment of a new information system and be able to contrast alternative approaches to development	Course lectures, tutorials , homeworks	• Quizzes and/or Online Quizzes, • Midterm, • Final Exam
2.0	Cognitive Skills		

2.1	debate the relevance of the sociotechnical approach and demonstrate this through the study of a number of practical business and administrative information systems within real organisations	Lectures Involve students in short discussions about their understanding of the practical cases presented.	- Quizzes and/or Online Quizzes, - Midterm, - Final Exam
2.2	describe and justify a range of professional roles in information systems development activity, and their changing nature reflecting in part changes in technology use in and between organisations	Lectures Involve students in short discussions about their understanding of the practical cases presented.	- Quizzes and/or Online Quizzes, - Midterm, - Final Exam
3.0	Interpersonal Skills & Responsibility		
3.1	discuss the social, organisational, legal and economic context of computer use and be able to debate the significance of information and communications technologies for the economy and society	Lectures Involve students in short discussions about their understanding of the practical cases presented.	- Quizzes and/or Online Quizzes, - Midterm, - Final Exam
3.2			
4.0	Communication, Information Technology, Numerical		
4.1	Acquire the basic skills required for collecting, classifying and presenting data to decision makers.	Assignments on office tools	Assignments assessment
4.2	Use statistical software packages and utilize them in data analysis.	Assignments on office tools	Assignments assessment
5.0	Psychomotor		
5.1	N/A		
5.2			

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict,

	justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Midterm Exam	8	20%
2	Quizzes	Each 4 weeks	20%
3	Assignments	4	20%
5	Final Exam	Exams week	40%

D. Student Support

1. Arrangements for availability of teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

Office hours and meeting on projects

E Learning Resources

1. Required Text(s) : Information Systems for Business: An Experiential Approach, France Belanger, Craig Van Slyke January 2012
2. Essential References
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
4-.Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations Lab on computer systems

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) Lecture room Lab with office tools installed
2. Computing resources Office suite installed
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching End-of-term course/teacher evaluation for is to be completed by students at the end of the semester, evaluating the content of the course, its teaching, the learning, assessment methods.. The monitoring of these students feedback will allows the course quality improvement
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department • Peer Evaluation Procedure • Instructor self-evaluation

3. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution) • Upon student request, his/her work might be remarked by another faculty member within the department.
4 Processes for Improvement of Teaching • (Self , Peer) Review, Identify, Analyse, and Revise
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. - Review and update course content - Update course references - Use students feedback

Faculty or Teaching Staff: _____

Signature: _____ Date Report Completed: _____

Received by: _____ Dean/Department Head: Dr. Skander Turki

Signature: _____ Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

**Problem Solving Skills
14021601-3**

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	Problem Solving Skills 14021601-3																						
2. Credit hours	3 credits																						
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																						
4. Name of faculty member responsible for the course	dr. Skander Turki																						
5. Level/year at which this course is offered	1st year (after preparatory)/ level 3																						
6. Pre-requisites for this course (if any)	None																						
7. Co-requisites for this course (if any)																							
8. Location if not on main campus: Delivered in the four locations where the Information Systems BSc is given:	- Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																						
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Comments:																							

B Objectives

1. What is the main purpose for this course? a- Apply problem solving strategies b- Develop intuition-driven strategies selection c- Understand and apply problem generalization and problem abstraction d- Apply simple mathematics to solve real world problems/puzzles e- Improve computational thinking
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field) Develop a lab manual for a series of sessions on a robots block-programming simulator such as Scratch, Robot Emile, or a Logo Turtle- like graphical tool. Use as textbook: Puzzle-based Learning: Introduction to critical thinking, mathematics, and problem solving. Matthew Michalewicz But also make use of online puzzles websites, robots programming simulators and visual block-programming tools.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered		
List of Topics	No of Weeks	Contact hours per week
Introduction to number theory	3	2
Understanding the problem: Through puzzles, we illustrate how problem misunderstanding leads to wrong answers: The student learns that spending sufficient time understanding the problem makes the difference.	1	2
Intuition: Through simple puzzles, we illustrate how intuition can be biased. The student learns that relying too much on intuition without analyzing the problem is dangerous. Solid calculations are much more reliable.	1	2
Modeling the problem: Through puzzles, we illustrate the importance of building a simple model of the problem yet keeping significant details. The student learns how to abstract a problem statement and define appropriate models of his problem clearly stating its variables, constraints and objectives. We also show how a bad model may be counterproductive.	2	2
Basic mathematical principles: We illustrate basic mathematical principles and how they can solve apparently complex puzzles. Invariance principle, Extremal principle, problem decomposition and divide & conquer.	2	2
Solving simple constraint satisfaction problems through puzzles.	1	2
Solving simple optimization problems through puzzles: Translate the objective to an evaluation function then search for the best feasible solution.	1	2
Solving simple probability problems.	1	2
Solving simple statistics problems. Show the importance of the sampling process.	1	2

Pattern recognition: Pattern identification in sequences, numbers, actions or events in order to discover future ones: Generalization of the solution. Misleading patterns are illustrated.	2	2
Illustrate different strategies for problem solving. Discovering winning strategy. Difficulty of strategy generalization.	1	2
Labs Description		
Simple Algorithm Design : Computational Thinking through the use of “Turtle” to draw geometrical figures by sequencing instructions executed by a drawing turtle.	7	14
Other simple robotics simulation environments are used to introduce in an attractive way basic computational thinking concepts to the student: -Instruction sequences. -Variables and assignment. -Problem decomposition.	9	18

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	32		32			64
Credit	80%		20%			3 credits

3. Additional private study/learning hours expected for students per week.	4
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
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Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

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Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Understand problem solving strategies	Lab work, use of robotics simulators such as Turtle, Scratch, etc.	LAB EXAMS with personal presentation and explanation of student's solutions to the lab instructor
1.2	Understand problem generalization and problem abstraction	Problem sets, Puzzles.	EXAMS
1.3	Understand simple mathematics and its applications to solve real world problems/puzzles		
1.4	Understand basics of computational thinking		
2.0	Cognitive Skills		
2.1	Apply problem solving strategies	Exercises, lab problem	Quizzes and/or Online Quizzes,
2.2	Develop intuition-driven strategies selection	Exercises, lab problem	Midterm,
2.3	Apply problem generalization and problem abstraction	Exercises, lab problem	Final Exam
2.4	Apply simple mathematics to solve real world problems/puzzles	Exercises, lab problem	
2.5	Improve computational thinking	Exercises, lab problem	
3.0	Interpersonal Skills & Responsibility		
3.1	N/A		
4.0	Communication, Information Technology, Numerical		
4.1	Use of simple educational robotics simulations environments	Lab work, use of robotics simulators such as Turtle, Scratch, etc.	Lab Exams
5.0	Psychomotor		
5.1	N/A		

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop,

Cognitive Skills	create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Duration in weeks	Proportion of Final Assessment
1	Problem sets	Bi-monthly	10%
2	Online Quizzes	Every 3 weeks	10%
3	Midterm Exam	Eight week	20%
4	2 Lab Exams	Eight and fifteenth week	30%
5	Final exam	Exams week	30%

D. Student Support

1. Arrangements for availability of teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

Office hours

E Learning Resources

1. Required Text(s) :

- a- Algorithmic Problem Solving, R. Blackhouse, John Wiley & Sons, 2011, ISBN-13: 978-0470684535
- b- Puzzle-based Learning: Introduction to critical thinking, mathematics, and problem solving. Matthew Michalewicz,
http://www.amazon.com/Puzzle-based-Learning-Introduction-critical-mathematics/dp/1876462639/ref=sr_1_1?ie=UTF8&s=books&qid=1212262753&sr=1-1

2. Essential References

- a- Adventures in Group Theory: Rubik's Cube, Merlin's Machine, and Other Mathematical Toys:
<http://mike.verdone.ca/media/rubiks.pdf>

3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)

4- Electronic Materials, Web Sites etc

5- Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Lecture rooms, laboratories, etc.)

- Data Show
- Computer Lab

2. Computing resources

- Computer PCs with the following software installed
 - 1. Scratch (MIT free software) : <http://scratch.mit.edu/>
 - 2. Tutle Academy online site: <http://www.brainpop.com/games/turtleacademy/>

3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

End-of-term course/teacher evaluation for is to be completed by students at the end of the semester, evaluating the content of the course, its teaching, the learning, assessment methods.. The monitoring of these students feedback will allows the course quality improvement

2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department
• Peer Evaluation Procedure • Instructor self-evaluation
3. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)
• Upon student request, his/her work might be remarked by another faculty member within the department.
4 Processes for Improvement of Teaching
• (Self , Peer) Review, Identify, Analyse, and Revise
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.
- Review and update course content - Update course references - Use students feedback

Faculty or Teaching Staff: _____

Signature: _____ Date Report Completed: _____

Received by: _____ Dean/Department Head: Dr. Skander Turki

Signature: _____ Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

IT Skills 14021201-3

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	IT Skills 14021201-3																						
2. Credit hours	3 credits																						
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																						
4. Name of faculty member responsible for the course	Dr Hassen Sallay																						
5. Level/year at which this course is offered	year 1 after preparatory / Level 4.																						
6. Pre-requisites for this course (if any)	14021601-3 Problem Solving Skills																						
7. Co-requisites for this course (if any)	No																						
8. Location if not on main campus: Delivered in the four locations where the Information Systems BSc is given:	- Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																						
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Comments:																							

B Objectives

1. What is the main purpose for this course?

The purpose of the course is to familiarize students with computer hardware and commonly used operating systems as users as well as maintenance technicians. It contains lab content that includes technical concepts and terminology of the PC's internal and external components and operating systems. It concentrates on understanding terminology, how to do fundamental tasks, and advanced configuration and troubleshooting, including using command line to accomplish technical tasks. Students learn how to install, configure and maintain PC hardware and these operating systems. They are introduced to operating systems basic scripting.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

An adaptation can be done when reviewing the program.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered		
List of Topics	No of Weeks	Contact hours per week
Computer hardware composition	2	3
Computer hardware maintenance	2	3
Computer operating systems features and installation	2	3
Computer operating systems file management	2	3
OS command line (linux, windows)	2	3
OS main services	2	3
OS Scripting	4	3

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	32		32			64
Credit	60%		40%			3

3. Additional private study/learning hours expected for students per week.	4
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
--

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The *National Qualification Framework* provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Ability to compose and maintain computer hardware.	-Lectures covering foundation concepts relating to the course -Audio visual presentation including some scientific movies for specific topics in operating systems and computer hardware. -Class sessions where issues relating to operating systems and network will be discussed and explored. -Debriefing: Usually conducted at the conclusion of a lesson, debriefing allows students to condense and coalesce their knowledge and information as a group or whole class. Hands-on lab experiments to acquire practical skills.	Lab exams Written exams (midterm and final)
1.2	Ability to use, install and maintain commonly used operating systems		
2.0	Cognitive Skills		
2.1	Understand modern computer components and how to maintain them	Reading around the systems and PC hardware, including core materials, materials introduced via lectures and the module website, and any relevant magazine and journal articles; Practical sessions will provide opportunities to explore issues relating to hardware and systems on the computer. Hands-on labs where students have the opportunity to gain hands-on experience on course topics	Written exams (midterm and final). Lab exams and assignments Written exams/lab exams reports all require application of the techniques and concepts presented throughout the course.
2.2	Recognize the importance of operating systems and their roles		
2.3	Explore the modern operating systems and the strengths and weaknesses of the most popular ones.		
2.4	Explain the internal architecture of computer		
2.5	Set up and Use operating systems facilities and software.		
2.6	Understand scripting for operating systems		
3.0	Interpersonal Skills & Responsibility		
3.1	Work harmoniously with others	In-class discussions with the students.	Instructor personal observations. student peer-to-peer
3.2	Evaluate and accept responsibilities		

3.3	Identify methods to use to respond to conflict	Group projects where the students are divided into small group and are assigned <i>small to medium sized</i> lab tasks. Regular critique of performed tasks by team members Constructive feedback on both content	assessments
3.4	Work in teams more efficiently		
3.5	Ability to actively collaborate within teams		
4.0	Communication, Information Technology, Numerical		
4.1	Use of the computer and systems tools and techniques	Lab tutorials and hands-on exercises to develop the skills needed for using the available tools.	Homework and assignments involving the use of the systems and computer tools .
4.2			
5.0	Psychomotor		
5.1	No significant component		
5.2			

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
	Lab exams		30%
	Midterm		20%
	Final Lab Exam		30%
	Final Exam		20%

D. Student Support

1. Arrangements for availability of teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

Office hours

E Learning Resources

1. Required Text(s) : Build It. Fix It. Own It: A Beginner's Guide to Building and Upgrading a PC, by Paul McFedries, Que Publishing; 1 edition (May 29, 2008)
2. Essential References
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
4-.Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations Lab on computer systems

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) Lecture room with: * at least 30 seats * A data show projector connected to a PC preferably with Internet connection * sliding board PC Lab (at least 30 seats)
2. Computing resources 30 FreeBSD/Linux/Windows PCs
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list) A maintenance lab + A PC lab with various operating systems such as Linux windows etc.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching End-of-term course/teacher evaluation for is to be completed by students at the end of the semester, evaluating the content of the course, its teaching, the learning, assessment methods.. The monitoring of these students feedback will allows the course quality improvement
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department • Peer Evaluation Procedure • Instructor self-evaluation

3. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution) • Upon student request, his/her work might be remarked by another faculty member within the department.
4 Processes for Improvement of Teaching • (Self , Peer) Review, Identify, Analyse, and Revise
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. - Review and update course content - Update course references - Use students feedback

Faculty or Teaching Staff: _____

Signature: _____ Date Report Completed: _____

Received by: _____ Dean/Department Head: Dr. Skander Turki

Signature: _____ Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

**Internet Technologies
14022401-3**

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	Internet Technologies 14022401-3																						
2. Credit hours	3 credits																						
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																						
4. Name of faculty member responsible for the course	Dr. Skander Turki																						
5. Level/year at which this course is offered	2 nd year / level 6																						
6. Pre-requisites for this course (if any)	Database I 14012301-3																						
7. Co-requisites for this course (if any)																							
8. Location if not on main campus: Delivered in the four locations where the Information Systems BSc is given:	- Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																						
9. Mode of Instruction (mark all that apply)	<table border="0"> <tr> <td>a. Traditional classroom</td> <td>☒</td> <td>What percentage?</td> <td> 100% </td> </tr> <tr> <td>b. Blended (traditional and online)</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>c. e-learning</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>d. Correspondence</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>f. Other</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> </table>			a. Traditional classroom	☒	What percentage?	100%	b. Blended (traditional and online)	☐	What percentage?		c. e-learning	☐	What percentage?		d. Correspondence	☐	What percentage?		f. Other	☐	What percentage?	
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d. Correspondence	☐	What percentage?																					
f. Other	☐	What percentage?																					
Comments:																							

B Objectives

1. What is the main purpose for this course? Learn the process of website creation Learn how to use front-end programming languages such as HTML, CSS Learn about client side scripting such as JavaScript Learn about server- side programming such as PHP, Ruby on Rails, Django. Build a Front-End Website from scratch as course project.
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field) Web development languages evolve continuously, the course responsible has to update the content of the course to reflect state-of-the-art web development languages.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered		
List of Topics	No of Weeks	Contacthours
Introduction to the Web, HTTP, and HTML/XHTML	2	3
Website creation process	2	3
Information design and architecture Fonts, visual grids and page layout Colors and graphics	3	3
Cascading Style Sheets (CSS)	3	3
Client-side scripting I: Javascript	2	3
Client-side scripting II: Javascript	2	3
Server-side programming I: PHP	2	3
Server-side programming II: PHP	2	3

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	32		32			64
Credit	80%		20%			3 credits

3. Additional private study/learning hours expected for students per week.	4
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
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Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The **National Qualification Framework** provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Acquire the fundamental principles and concepts and tools in the general area of Web Development	Course lectures, tutorials, homeworks, term project	Quiz, Term Project, Exam
1.2			
2.0	Cognitive Skills		
2.1	Understand and apply web development principles	Course lectures, tutorials, homeworks, term project	Quiz, Term Project, Exam, Lab Exam
2.2			
3.0	Interpersonal Skills & Responsibility		
3.1	N/A		
3.2			
4.0	Communication, Information Technology, Numerical		
4.1	N/A		
4.2			
5.0	Psychomotor		
5.1	N/A		
5.2			

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize

Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct
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Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Basic Concepts of Web and Website creation process	3	
2	Information design and architecture Fonts, visual grids and page layout Colors and graphics	7	
3	Cascade Style Sheets	8	
4	JavaScript	10	
5	PHP	14	
6			
7			
8			

D. Student Support

1. Arrangements for availability of teaching staff for individual student consultations and academic advice.
(include amount of time teaching staff are expected to be available each week)

Office hours and meeting on projects

E Learning Resources

1. Required Text(s) [slides and lab documentation](#)

2. Essential References

[Programming the Web Using XHTML and JavaScript, By Larry Randles Lagerstrom](#)
[An Introduction to Web Design + Programming by Paul S. Wang & Sanda S. Katila](#)

3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)

[Beginning PHP5, Apache, and MySQL Web Development](#) Elizabeth Naramore, Jason Gerner, Yann
[Le Scouarnec, Jeremy Stolz, Michael K. Glass](#)

4-.Electronic Materials, Web Sites etc

5- Other learning material such as computer-based programs/CD, professional standards/regulations

[Web Development Learning Websites like codecademy.com](#)

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Lecture rooms, laboratories, etc.)

Lab

2. Computing resources
Computers.
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department
3 Processes for Improvement of Teaching
4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

--

Faculty or Teaching Staff: _____

Signature: _____ Date Report Completed: _____

Received by: _____ Dean/Department Head: Dr. Skander Turki

Signature: _____ Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

Operating Systems and Networks

14022202-3

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	Operating Systems and Networks 14022202-3																						
2. Credit hours	3 credits																						
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																						
4. Name of faculty member responsible for the course	Dr Hassen Sallay																						
5. Level/year at which this course is offered	2 th year after preparatory/ level 5																						
6. Pre-requisites for this course (if any)	14021201-3 IT Skills																						
7. Co-requisites for this course (if any)																							
8. Location if not on main campus:	Delivered in the four locations where the Information Systems BSc is given: - Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																						
9. Mode of Instruction (mark all that apply)	<table border="0"> <tr> <td>a. Traditional classroom</td> <td>☒</td> <td>What percentage?</td> <td> 100% </td> </tr> <tr> <td>b. Blended (traditional and online)</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>c. e-learning</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>d. Correspondence</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>f. Other</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> </table>			a. Traditional classroom	☒	What percentage?	100%	b. Blended (traditional and online)	☐	What percentage?		c. e-learning	☐	What percentage?		d. Correspondence	☐	What percentage?		f. Other	☐	What percentage?	
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Comments:																							

B Objectives

1. What is the main purpose for this course?

This course introduces principles of operating systems and networking. The operating system manages hardware resources and provides a simplified interface for programs to use these resources. Networking allows different computers to communicate and potentially act as a larger virtual system. These topics are closely related; 50% of the module is on operating systems, and 50% is on computer networks. By the end of this course, student will understand the requirements and design of modern systems and networks, their operation and use by applications.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered		
List of Topics	No of Weeks	Contact hours
Introduction to operating systems and networking	1	3
System interfaces	1	3
Process management and concurrency	2	6
Inter Process Communication and deadlock detection	2	6
I/O, file systems and virtual memory	2	6
models of communication (ISO reference model)	2	6
network topologies	1	3
packet / circuit switching and routing algorithms	2	6
client-server systems and socket programming	1	3
Network services	2	6

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	32		32			64
Credit	60%		40%			3

3. Additional private study/learning hours expected for students per week.	3
--	---

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
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Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

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Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Understand the main principles of processes and threads, inter-process communication, process synchronization, and algorithms for process scheduling	1. Lectures covering foundation concepts relating to the field of operating systems and network. 2. Audio visual presentation including some scientific movies for specific topics in operating systems and network. 3. Class sessions where issues relating to operating systems and network will be discussed and explored. 4. Case study. The course will make effective use of case studies to further enhance the students understanding of presented concepts. 5. Reading (Book Chapters, IETF Web Site). 6. In-class tutorials which review the content of each lecture and elaborate on any matters not understood. 7. Debriefing: Usually conducted at the conclusion of a lesson, debriefing allows students to condense and coalesce their knowledge and information as a group or whole class. 8. Hands-on lab experiments to acquire practical skills. 9. Projects/Presentation.	Short quizzes. Project and Oral presentations Written exams (midterm and final)
1.2	Understand virtual memory abstractions in operating systems.		
1.3	Have an understanding of disk organization, file system structure and I/O management		
1.4	Understand computer networks, OSI model and Internet		
1.5	Ability to describe the network related topics and solve related problems		
1.6	Skills to develop network applications based on client-server architecture		
1.7	Ability to use new networking tools for engineering practices.		
2.0	Cognitive Skills		

2.1	Recognize the importance of operating systems and networking.	1. Reading around the systems and network topics, including core materials, materials introduced via lectures and the module website, and any relevant magazine and journal articles; 2. Practical sessions will provide opportunities to explore issues relating to network and systems on the computer. 3. Hands-on labs where students have the opportunity to gain hands-on experience on course topics	Written exams (midterm and final). Reports and oral presentations. Lab projects and assignments Written exams/projects/ reports all require application of the techniques and concepts presented throughout the course.
2.2	Understand modern operating systems and the strengths and weaknesses of the most popular ones.		
2.3	Explain the internal architecture of some network services, protocols and infrastructure		
2.4	Use network and systems tools and software.		
3.0	Interpersonal Skills & Responsibility		
3.1	Work harmoniously with others	In-class discussions with the students. Group projects where the students are divided into small group and are assigned <i>small to medium sized</i> programming projects. Regular critique of performed tasks by team members • Constructive feedback on both content and presentation • Recommended reading: Elements of Style in-class oral presentation of each projects by its team	• Project reports and/or documentation files are required in submitting any software. • Instructor personal observations. • student peer-to-peer assessments
3.2	Evaluate and accept responsibilities		
3.3	Identify methods to use to respond to conflict		
3.4	Work in teams more efficiently		
3.5	Ability to actively collaborate within teams		
3.6	Clearly communicate ideas and solutions of problems to others.		
3.7	Ability to write useful documentation/reports of software projects		
4.0	Communication, Information Technology, Numerical		
4.1	Use of the Network and systems tools and	1. Lab tutorials and hands-on	Homework and

	techniques		
4.2	Presentation skills	exercises to develop the skills needed for using the available tools. 2. Project 3. Survey Study 4. Presentation	assignments involving the use of the systems and network tools .
5.0	Psychomotor		
5.1	N/A		
5.2			

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Quizzes/Homework	3, 6, 9, 12	5%
2	Survey Study	8	15.0%
2	Midterm exam	10	20%
3	Project	13	20%
4	Lab exam	15	20%
4	Final	16	40%

D. Student Support

1. Arrangements for availability of faculty for individual student consultations and academic advice.

- Each instructor is required to allocate at least four office hours per week for consultations and

academic advice.

- TA is available for this programming course.
- Each student is assigned an academic advisor to provide general consultation

E Learning Resources

1. Required Text(s) 1. Operating System Concepts, A. Silberschatz Eight Edition, Wiley, ISBN-13: 978-0470128725 2. Computer Networking: A Top-Down Approach", James Kurose and Keith Ross, 5th edition ISBN: 0136079679, Publisher: Addison-Wesley, 2009.
2. Essential References
3- Recommended Books and Reference Material (Journals, Reports, etc)
4-.Electronic Materials, Web Sites etc • http://www.ietf.org • http://www.acm.org • http://ieeexplore.ieee.org
5- Other learning material such as computer-based programs/CD, professional standards/regulations • Network Programming

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) Lecture room with: * at least 30 seats * A data show projector connected to a PC preferably with Internet connection * sliding board Network Lab (at least 30 seats)
2. Computing resources 30 FreeBSD/Linux/Windows PCs
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

A networking lab with various networking hardware such PCs, printer, projector, routers, switches, hubs and Ethernet cabling. Software such as Linux windows etc.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching End-of-term course/teacher evaluation for is to be completed by students at the end of the semester, evaluating the content of the course, its teaching, the learning, assessment methods.. The monitoring of these students feedback will allows the course quality improvement
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department • Peer Evaluation Procedure • Instructor self-evaluation
3. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution) • Upon student request, his/her work might be remarked by another faculty member within the department.
4 Processes for Improvement of Teaching • (Self , Peer) Review, Identify, Analyse, and Revise
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. - Review and update course content - Update course references - Use students feedback

Faculty or Teaching Staff: _____

Signature: _____ Date Report Completed: _____

Received by: _____ Dean/Department Head: Dr. Skander Turki

Signature: _____ Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

**Systems & Networks Administration
14023203-4**

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	Systems & Networks Administration 14023203-4																						
2. Credit hours	4 credits																						
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																						
4. Name of faculty member responsible for the course	Dr. Hassen Sallay																						
5. Level/year at which this course is offered	3rd year after preparatory / level 7																						
6. Pre-requisites for this course (if any)	14022202-4 Operating systems and networks																						
7. Co-requisites for this course (if any)																							
8. Location if not on main campus: Delivered in the four locations where the Information Systems BSc is given:	- Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																						
9. Mode of Instruction (mark all that apply)	<table border="0"> <tr> <td>a. Traditional classroom</td> <td>☒</td> <td>What percentage?</td> <td> 100% </td> </tr> <tr> <td>b. Blended (traditional and online)</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>c. e-learning</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>d. Correspondence</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>f. Other</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> </table>			a. Traditional classroom	☒	What percentage?	100%	b. Blended (traditional and online)	☐	What percentage?		c. e-learning	☐	What percentage?		d. Correspondence	☐	What percentage?		f. Other	☐	What percentage?	
a. Traditional classroom	☒	What percentage?	100%																				
b. Blended (traditional and online)	☐	What percentage?																					
c. e-learning	☐	What percentage?																					
d. Correspondence	☐	What percentage?																					
f. Other	☐	What percentage?																					
Comments:																							

B Objectives

1. What is the main purpose for this course?

The course introduces student to why the systems and networks are designed the way they are and how they are likely to evolve in the future. The course will expose models and frameworks of systems and network administration. We will draw examples primarily from the Internet. Topics to be covered include the main FCAPS administration areas which are Fault, Configuration, Accounting, Performance and Security areas. We aim that our students will be able handle day-to-day administration, maintenance, and support of computer systems and networks. Therefore the course will introduce student to the skills, methodologies and activities required to administer a computer system which consists of various hardware, software and users within an organizational infrastructure. In particular, students will be introduced to user, device and file system administration, computer and network security, system monitoring, administrative support tools, network, server and client administration.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

Network and System Administration tools evolve every year, the lecturer has to update the content of the course to reflect state-of-the-art design and development tools.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered		
List of Topics	No of Weeks	Contact hours
Introduction to administration areas	2	4
Network and System Management Frameworks	2	4
Systems Management	2	4
Configuration and Maintenance	2	4
Application Level Services	2	4
Network Level Services	2	4
System and Network Security Administration	4	4

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	32		64			96
Credit	60%		40%			4 credits

3. Additional private study/learning hours expected for students per week.	4
--	---

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
--

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The *National Qualification Framework* provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Perform routine administration tasks of server and client systems.	Conventional lectures: The instructor introduces the important concepts of each topic via PowerPoint presentations. The lecture must also contain in-class interaction between the instructor and students and illustrative examples and realistic problems. Lectures can be recorded and put available for students to help them going back to lecture points at home and during revision. Hand-on Labs: The instructor ensures some labs to students to help them understanding the practical issues of the course. Textbook reading assignment: this helps the students to get more advanced knowledge on the topics under study. Class session exercises: Exercises for each topic will help students to learn how to resolve real problems and understand the main concepts. Practical projects on systems and networks administration: practical projects will improve the knowledge of the student with respect to the use and exploitation of related software and output results analysis.	Quizzes (e.g. online quizzes with Umm al Qura online learning system): this helps the students to make a quick revision of the fundamental concepts studied during formal lectures. They may be graded or not. Written exams (midterm and final exams): Exams are the main assessment method to evaluate the understanding of students. Practical project: This is a project concentrates on how to administrate a real system under study. The student must follow a specific steps within a methodology to proceed systems and networks administration. He will use studied techniques and tools to achieve the administration process. Assignments and homework: the instructor should make assignments and homework to students for each lecture before going for a subsequent lecture. Lab exam: the objective of the lab exam is to assess the ability of the student to achieve systems and networks administration tasks correctly.
1.2	Investigate and troubleshoot systems and networks problems.		
1.3	Engage in independent and reflective learning leading to discovering creative and efficient way to administer systems and networks.		
1.4	Master the ability to handle day-to-day administration, maintenance, and support of computer systems and networks.		
2.0	Cognitive Skills		
2.1	Understand the problems and challenges of systems and network administration	Conventional lectures to introduce important concepts through in-class discussions.	Written exams (mid-term and final). Lab exams.
2.2	Compare between various administration framework, techniques and methodologies.	In-class tutorials which review the content of each lecture and elaborate on any matters not understood.	Practical Projects. Quizzes.

	Develop an understanding of the relationship between systems administration and networks management.	Practice labs. The course will also utilize available administration software to further enhance the students understanding of the presented concepts. Hands-on labs where the students will gain hands-on experience in essential course concepts thorough learning how to plan, execute and manage systems and networks which will further deepen their understanding of the presented materials.	Reading assignments from the textbook
	Set up and administrate a real digital environment case.		
	Analyse and interpret data involved in the administration process.		
	Develop a hands-on experience in some of systems and network administration software.		
3.0 Interpersonal Skills & Responsibility			
3.1	N/A		
3.2			
4.0 Communication, Information Technology, Numerical			
4.1	Use some of the available administration free open source software	Lab tutorials and hands-on exercises to develop the skills needed for using the available tools. Project Presentation	Homework and assignments involving the use of administration software Term project presentations. The students should provide a final report that describes all the details of their project work and results interpretations.
4.2	The student should have good programming skills.		
4.3	The student should know how to present results in reports.		
5.0 Psychomotor			
5.1	N/A		

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise,

	evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Lab exams	2	25%
2	Midterm Exam	6	20%
3	Practical Project	10	15%
4	Final	16	40%

D. Student Support

1. Arrangements for availability of faculty for individual student consultations and academic advice.

- Each instructor is required to allocate at least four office hours per week for consultations and academic advice.
- TA is available for this course.
- Each student is assigned an academic advisor to provide general consultation.
- A mailing list for the course can help the instructors to interact with the students.
- The emails of instructors must be available for students for possible contact in case of unavailability during office hours.

E. Learning Resources

1. Required Text(s) slides and lab documentation
The Practice of System and Network Administration, Limoncelli, Hogan and Chalup , Addison Wesley, 2nd Edition, 2007
2. Essential References
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
Mark Burgess, Principles of Network and System Administration, 2nd Edition, 2004
4-.Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations
NTNuggets and similar network admin tutorials

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) Lecture room with at least 30 seats. Optional but useful facilities include: - A data show projector connected to a PC preferably with Internet connection - sliding board
2. Computing resources Linux/Windows lab with the necessary software.
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list) s Lab with 30 PCs

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching

End-of-term course/teacher evaluation for is to be completed by students at the end of the semester, evaluating the content of the course, its teaching, the learning, assessment methods.. The monitoring of these students feedback will allows the course quality improvement. In addition, the instructor should make a self-evaluation by proposing an evaluation form to the students that should filled and returned anonymously to provide a feedback to the positive and negatives points observed during the term.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department • Peer Evaluation Procedure • Instructor self-evaluation
3. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution) • Upon student request, his/her work might be remarked by another faculty member within the department. No regular procedure for verifying standards of student achievement is implemented yet.
4 Processes for Improvement of Teaching The instructor must analyse the feedback from the student he receive from the self-evaluation form and try to adapt the structure/content/organization of the course for better efficiency.
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. • Analysis of student's feedback and identification of weaknesses in the course and in the program to improve them.

Faculty or Teaching Staff: _____

Signature: _____ Date Report Completed: _____

Received by: _____ Dean/Department Head: Dr. Skander Turki

Signature: _____ Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

**Business Process Modeling
14023103-3**

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:			
Business Process Modeling 14023103-3			
2. Credit hours: 3 credits			
3. Program(s) in which the course is offered.			
Information Systems, Bachelor of Science			
4. Name of faculty member responsible for the course: Dr. Skander Turki			
5. Level/year at which this course is offered: 3rd year after preparatory / level 8			
6. Pre-requisites for this course (if any):			
14023102-4 Operations Research			
7. Co-requisites for this course (if any)			
8. Location if not on main campus:			
Delivered in the four locations where the Information Systems BSc is given:			
- Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.			
9. Mode of Instruction (mark all that apply)			
a. Traditional classroom	☒	What percentage?	100%
b. Blended (traditional and online)	☐	What percentage?	
c. e-learning	☐	What percentage?	
d. Correspondence	☐	What percentage?	
f. Other	☐	What percentage?	
Comments:			

B Objectives

1. What is the main purpose for this course?

This course will introduce students to analytical tools that can be used to model, analyse, understand and design business processes. Students will also gain hands-on experience in using simulation software as a tool for analysing business processes.

Outcomes:

At the completion of this unit students will:

Have a thorough understanding of business organisations, their functional structure and the advantage of considering the process oriented view of organisations;

Demonstrate a thorough knowledge of business processes, their structure and how processes fit in to the overall organisation objectives;

Be able to use analytical tools for modeling, analysing, understanding and designing business processes;

Have acquired skills to use simulation software as a tool for analysing business processes;

Be able to report to and advise management on business process design and re-engineering issues

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

An adaptation can be done when reviewing the program.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered		
List of Topics	No of Weeks	Contact hours per week
Business Process Context: Purpose and Process	1	2
Organizational Model of Processes	2	4
Building AS IS Models	2	4
Business Process Measures and Documenting Tasks	2	4
Evaluating and Improving Business Processes	2	4
Queuing Systems and Business Process Design	3	6
Business Process Simulation	2	4
Guest Lecture : A Case of Six Sigma Quality	2	4

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	16		16			32
Credit	32		32			64

3. Additional private study/learning hours expected for students per week.	2
--	---

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
--

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The *National Qualification Framework* provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Master the fundamental principles and concepts and tools in the general area of Business Process modelling and Design	Course lectures, homeworks	QUIZ and online quiz EXAMS
1.2	Demonstrate a thorough knowledge of business processes, their structure and how processes fit in to the overall organization objectives;	Course lectures, homeworks	QUIZ and online quiz EXAMS
2.0	Cognitive Skills		
2.1	Be able to analyse and design business processes;	Lectures: Include use cases. Textbook must illustrate concepts through use cases. Use case Project. Exercises & Home works ,	Quizzes and/or Online Quizzes, Midterm, Final Exam Project assessment.
3.0	Interpersonal Skills & Responsibility		
3.1	N/A		
3.2			
4.0	Communication, Information Technology, Numerical		
4.1	Have acquired skills to use simulation software as a tool for analysing business processes;	Use case project with defence	Project defence assessment.
4.2	Be able to report to and advise management on business process design and re-engineering issues	Use case project with defence	Project defence assessment.
5.0	Psychomotor		
5.1	N/A		
5.2			

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise

Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Midterm Exam	8	20%
2	Quizzes	1 Each 4 weeks	10%
3	Project	15	20%
4	Lab Exam	15	10%
5	Final Exam	Exams week	40%

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

All faculty members are expected to include six weekly office hours. These office hours are displayed in each faculty's schedule and communicated to students.

E. Learning Resources

1. Required Text(s) : Managing Business Process Flows, Principles of Operations Management, Third Edition, Anupindi, Ravi, Sunil Chopra, Sudhakar D. Deshmukh, Jan A. Van Mieghem, and Eitan Zemel, Pearson Prentice Hall, 2012, ISBN-10: 0-13-603637-6

2. Essential References

Business Process Change, A Guide for Business Managers and BPM and Six Sigma Professionals, Second Edition, Paul Harmon, Morgan Kaufmann Publishers, 2007

3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)

- Wisner J D, Stanley L L.. (2008). *Process Management - Creating Value along the supply chain.* () Thomson South-Western Publishing.
- Havey, M. "Essential Business Process Modeling". O'Reilly Media, 2005. ISBN 0596008430.
- Laguna, M., Marklund, J. "Business Process Modeling, Simulation and Design". Prentice Hall, 2004. ISBN 0131099795.
- Scheer, A. W. "ARIS - Business Process Modeling". Springer, 2000. ISBN 3540658351.

4-.Electronic Materials, Web Sites etc

available academic resources and links to Dailymotion YouTube on line courses

5- Other learning material such as computer-based programs/CD, professional standards/regulations
Most lab on computer systems

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats

in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) Lecture room
2. Computing resources Lab for Business Process: ARIS and INNOV8, Scitor Process Modelling Tools : MS Visio, Visual Architect
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching End-of-term course/teacher evaluation for is to be completed by students at the end of the semester, evaluating the content of the course, its teaching, the learning, assessment methods.. The monitoring of these students feedback will allows the course quality improvement
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department - Peer Evaluation Procedure - Instructor self-evaluation
3. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution) Upon student request, his/her work might be remarked by another faculty member within the department.
4 Processes for Improvement of Teaching (Self , Peer) Review, Identify, Analyse, and Revise
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. - Review and update course content - Update course references - Use students feedback

Faculty or Teaching Staff: _____

Signature: _____ Date Report Completed: _____

Received by: _____ Dean/Department Head: Dr. Skander Turki

Signature: _____ Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

**Data Warehousing
14023301-3**

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:			
Data Warehousing 14023301-3			
2. Credit hours 3 credits			
3. Program(s) in which the course is offered. Information Systems, Bachelor of Science			
4. Name of faculty member responsible for the course Dr Mohamed Nour			
5. Level/year at which this course is offered : 3 rd year after preparatory / level 7			
6. Pre-requisites for this course (if any): 14022301-3 Database 1			
7. Co-requisites for this course (if any)			
8. Location if not on main campus: Delivered in the four locations where the Information Systems BSc is given: - Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.			
9. Mode of Instruction (mark all that apply)			
a. Traditional classroom	☒	What percentage?	100%
b. Blended (traditional and online)	☐	What percentage?	
c. e-learning	☐	What percentage?	
d. Correspondence	☐	What percentage?	
f. Other	☐	What percentage?	
Comments:			

B Objectives

1. What is the main purpose for this course? Data warehousing has drawn increasing interest within the software enterprises to gain critical insights of daily business analytic operations. Data warehouse as a tool provides comprehensive analysis of operational data and to identify patterns. This course provides an introduction to fundamental techniques and novel applications of data warehouse. Issues covered by this learning experience include data warehouse fundamentals, planning, business analytics modeling, data warehouse design and implementation. In particular, the role of data warehouse in supporting business intelligence and effective decision making is emphasized through labs, projects and case studies. Further, it involves an in-depth study of various concepts needed to design and develop a data warehouse. This course is designed to expose students to concepts, enabling methods and hands-on usage and problem solving in an integrated way. As one of IS depth electives, it provides a good balance between theory and practice. The participants will explore applications and have great opportunity for hands-on experimentation with data warehousing and reporting tools.
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered		
List of Topics	No of Weeks	Contact hours
Introduction to Data warehousing • Concepts • Operational and informational systems • Decision support systems? • Applications of data warehouse	1	3
Data warehouse architecture • Source systems • Process flow • Extract & load process & load manager • Clean & transform data & warehouse manager • Query manager • Detailed & Summarized information • Backup and archive process • Data staging area & presentation servers	2	6

Data Warehouse Design - ER modeling vs. Dimensional modeling - Online Analytical Processing (OLAP) - ROLAP, MOLAP & HOLAP - Database schema and Dimensional Modeling - Facts - Dimensions - Fact & Dimension Tables - Star, Snowflake & Starflake schemas	2	6
Case Study: Data Warehouse for a Grocery Store	1	3
Advanced dimensional modeling concepts - Surrogate keys - Slowly changing dimensions - Rapidly changing dimensions - Conformed dimensions - Factless fact tables - Minidimensions - Outriggers - Role-playing dimensions	1	3
Multi-dimensional databases (MDDBs)	1	3
Performance enhancing techniques - Partitioning - Aggregation - Materialization of views - Bitmap indexes - Parallel processing	1	3
Case Study: Academic data warehouse	1	3
Data Marts - Architecture - Design - Cost	1	3
Metadata	1	3
Data Warehouse Project Management	1	3
Advanced design issues - Hardware and operation design - Security - Backup and recovery - Capacity planning	1	3
Reporting	1	3
Business Intelligence	1	3

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	48					48
Credit	3					3

3. Additional private study/learning hours expected for students per week.	2
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
--

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The *National Qualification Framework* provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	<u>Know</u> the definition and applications of a data warehouse.	Lectures Case studies	Quizzes and/or Online Quizzes, Midterm, Final Exam
1.2	<u>Know</u> the architecture and processes of a data warehouse.	Lectures Case studies	Quizzes and/or Online Quizzes, Midterm, Final Exam
2.0	Cognitive Skills		
2.1	Understand dimensional modeling and design database schemas for a data warehouse.	Lectures	Quizzes and/or Online Quizzes, Midterm, Final Exam
2.2	<u>Understand</u> dimensional modeling concepts and specific case studies.	Lectures	Quizzes and/or Online Quizzes, Midterm, Final Exam
2.3	<u>Understand</u> and implement various techniques used to reduce the query response time.	Lectures	Quizzes and/or Online Quizzes, Midterm, Final Exam
2.4	<u>Understand</u> the role of data marts in data warehousing.	Lectures	Quizzes and/or Online Quizzes, Midterm, Final Exam
2.5	<u>Understand</u> the data warehouse project management techniques.	Lectures	Quizzes and/or Online Quizzes, Midterm, Final Exam
3.0	Interpersonal Skills & Responsibility		
3.1	<u>Understand</u> the importance of reporting in a data warehouse.	Lectures	Quizzes and/or Online Quizzes, Midterm, Final Exam
3.2	<u>Understand</u> the increasing analytical needs of an organization.	Lectures	Quizzes and/or Online Quizzes,

			Midterm, Final Exam
4.0	Communication, Information Technology, Numerical		
4.1	N/A		
4.2			
5.0	Psychomotor		
5.1	N/A		
5.2			

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Quiz	3, 6, 9, 12, 15	20%
2	Mid term	8	30%
4	Final exam	Exam week	50%

D. Student Support

1. Arrangements for availability of teaching staff for individual student consultations and academic advice.
(include amount of time teaching staff are expected to be available each week)

E Learning Resources

1. Required Text(s)
Kimball R, <i>et al.</i> (2008). <i>The Data Warehouse Toolkit: Practical Techniques for Building Data Warehousing and Business Intelligence Systems</i> . Second Edition, John Wiley.
2. Essential References
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
Reema Thareja, 2009. Data warehousing. Oxford University Press, USA. ISBN: 0195699610.
John Wang, 2005. Encyclopedia of Data Warehousing and Mining. Idea Group.
4- Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.)
2. Computing resources
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching
- Online –any time- feedback electronic form - End of term Feedback
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department
3 Processes for Improvement of Teaching
- Offering training sessions & Workshops - Providing specialized educational journals

4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution) • External Examiners • Marking an exam by a Group of faculty members; each marks a question of the exam for example.
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. • Study and analyse the feedback from students. • Compare the learning outcomes with real students' results and skills they have gained. • Review the course periodically by the curriculum committee to check with ACM requirements and top universities.. • Review the course periodically by the quality assurance unit.

Faculty or Teaching Staff: _____

Signature: _____

Date Report Completed: _____

Received by: _____

Dean/Department Head: Dr. Skander Turki

Signature: _____

Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

**Decision Support Systems
14024104-3**

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	Decision Support Systems 14024104-3																						
2. Credit hours	3 credits																						
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																						
4. Name of faculty member responsible for the course	Dr Skander Turki																						
5. Level/year at which this course is offered	4 th year after preparatory / level 9																						
6. Pre-requisites for this course (if any)	14023102-4 Operations Research																						
7. Co-requisites for this course (if any)																							
8. Location if not on main campus: Delivered in the four locations where the Information Systems BSc is given:	- Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																						
9. Mode of Instruction (mark all that apply)	<table border="0"> <tr> <td>a. Traditional classroom</td> <td>☒</td> <td>What percentage?</td> <td> 100% </td> </tr> <tr> <td>b. Blended (traditional and online)</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>c. e-learning</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>d. Correspondence</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>f. Other</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> </table>			a. Traditional classroom	☒	What percentage?	100%	b. Blended (traditional and online)	☐	What percentage?		c. e-learning	☐	What percentage?		d. Correspondence	☐	What percentage?		f. Other	☐	What percentage?	
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c. e-learning	☐	What percentage?																					
d. Correspondence	☐	What percentage?																					
f. Other	☐	What percentage?																					
Comments:																							

B Objectives

1. What is the main purpose for this course?

This course teaches students the required skills and gives them knowledge of the various decision-making models so that decisions be based on logical and mathematical foundations under different circumstances such as in cases of uncertainty, lack of information or certainty.

It equips students with a mathematical framework on which a set of statistical algorithms is built to help the decision-makers.

It acquaints the students with a variety of decision-making theories such as (the Decision Theory itself, Pragmatic Theory and Players Theory) that can be used in various applications.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered		
List of Topics	No of Weeks	Contact hours
Decision-making criteria and decision tree.	2	6
The Pragmatic Theory	1	3
Players Theory and Pay analysis.	2	6
Model sensitivity analysis.	2	6
Decision model design based on several variables.	1	3
Risk analysis and indecisiveness	2	6
Analysis of decision-making processes for business purposes,	2	6
Case study: Designing and implementing a simple decision support system.	4	12

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	48					48
Credit	3					3

3. Additional private study/learning hours expected for students per week.	2
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
--

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The *National Qualification Framework* provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Understand the decision-making process and criteria for decision-making.	Lectures Problem sets	Quizzes and/or Online Quizzes, Midterm, Final Exam
1.2	To know the methods of risk analysis and sensitivity of models.	Lectures Problem sets	Quizzes and/or Online Quizzes, Midterm, Final Exam
2.0	Cognitive Skills		
2.1	To be able to develop appropriate criteria for decision-making.	Lectures, Problem sets	Quizzes and/or Online Quizzes, Midterm, Final Exam
2.2	To have the necessary skills to analyze problems and design the right solution models.	Lectures, Problem sets	Quizzes and/or Online Quizzes, Midterm, Final Exam
2.3	To be able to take the right decision that is based on the appropriate mathematical model.	Lectures, Problem sets	Quizzes and/or Online Quizzes, Midterm, Final Exam
2.4	To know the principles of applying the various decision theories in certain applications.	Lectures, Problem sets	Quizzes and/or Online Quizzes, Midterm, Final Exam
3.0	Interpersonal Skills & Responsibility		
3.1	N/A		
3.2			
4.0	Communication, Information Technology, Numerical		
4.1	To use the software packages designed to support decision systems.	Problem sets	Problem sets assessment
4.2			
5.0	Psychomotor		
5.1	N/A		
5.2			

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester			
Assess ment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Quiz	3, 6, 9, 12, 15	20%
2	Mid term	8	30%
4	Final exam	Exam week	50%

D. Student Support

1. Arrangements for availability of teaching staff for individual student consultations and academic advice.
(include amount of time teaching staff are expected to be available each week)

E Learning Resources

1. Required Text: [1] Decision Support Systems and Intelligent Systems/ 7th Ed. Efraim Turban and Jay E. Aronson; Prentice-Hall, 2005.
2. Essential References
3. Additional Texts: [2] Decision Support Systems: Myth or Reality, C. Carlson; Elsevier Sciences; March 2004 [3] Java Decision Support Systems and Intelligent Systems/ 6th Ed., Efraim Turban and Jay E. Aronson; Prentice-Hall, 2001 [4] Making Hard Decisions with Decision Tools Suite, Robert T. Clemen and Terry Reilly; Duxbury Press, 2000.. [5] Decision Support Systems in the 21st Century/ 1st, George M. Marakas, Prentice-Hall, 1999.
4-.Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.)
2. Computing resources
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching • Online –any time- feedback electronic form • End of term Feedback
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department
3 Processes for Improvement of Teaching • Offering training sessions & Workshops • Providing specialized educational journals
4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution) • External Examiners • Marking an exam by a Group of faculty members; each marks a question of the exam for example.
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

- Study and analyse the feedback from students.
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- Review the course periodically by the curriculum committee to check with ACM requirements and top universities..
- Review the course periodically by the quality assurance unit.

Faculty or Teaching Staff: _____

Signature: _____ **Date Report Completed:** _____

Received by: _____ **Dean/Department Head: Dr. Skander Turki**

Signature: _____ **Date: 07-1437 / 04-2016**

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

**Enterprise Resource Planning
14024105-3**

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	Enterprise Resource Planning 14024105-3																						
2. Credit hours	3 credits																						
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																						
4. Name of faculty member responsible for the course	Dr. Skander Turki																						
5. Level/year at which this course is offered	4 th year after preparatory / level 9																						
6. Pre-requisites for this course (if any)	14023103-3 Business Process Modeling																						
7. Co-requisites for this course (if any)																							
8. Location if not on main campus:	Delivered in the four locations where the Information Systems BSc is given: - Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																						
9. Mode of Instruction (mark all that apply)	<table border="0"> <tr> <td>a. Traditional classroom</td> <td>☒</td> <td>What percentage?</td> <td> 100% </td> </tr> <tr> <td>b. Blended (traditional and online)</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>c. e-learning</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>d. Correspondence</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>f. Other</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> </table>			a. Traditional classroom	☒	What percentage?	100%	b. Blended (traditional and online)	☐	What percentage?		c. e-learning	☐	What percentage?		d. Correspondence	☐	What percentage?		f. Other	☐	What percentage?	
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c. e-learning	☐	What percentage?																					
d. Correspondence	☐	What percentage?																					
f. Other	☐	What percentage?																					
Comments:																							

B Objectives

1. What is the main purpose for this course? Enterprise Resource Planning software that integrates all organization's departments automated management processes including product planning, service delivery, finance, accounting, human-resources, marketing, sales, shipping, payment, inventory, etc. During this course, the student will build upon his background in business process modeling to understand how these technical tools can be applied in real enterprise management processes software solutions. A leading ERP solution will be used to give the student highly needed skills from the saudi job market.
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field) An adaptation can be done when reviewing the program.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered		
List of Topics	No of Weeks	Contacthours per week
The development of ERP systems	2	4
Marketing information systems and the sales order process	3	6
Accounting in ERP systems	3	6
Human Resources Processes with ERP	3	6
Process Modelling	1	2
Process Improvement	2	4
ERP Implementation	2	4

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	32		32			64
Credit	80		20			100

3. Additional private study/learning hours expected for students per week.	2
--	---

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
--

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

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Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Master the fundamental principles and concepts and tools of ERP	- Lectures - Labs	Quizzes and/or Online Quizzes, Midterm, Final Exam Lab exam
1.2	Examine systematically the planning mechanisms in an enterprise, and identify all components in an ERP system and the relationships among the components;	- Lectures - Labs	Quizzes and/or Online Quizzes, Midterm, Final Exam Lab exam
1.3	Understand production planning in an ERP system	- Lectures - Labs	Quizzes and/or Online Quizzes, Midterm, Final Exam Lab exam
2.0	Cognitive Skills		
2.1	Develop systematically production plans for an enterprise	- Lectures - Labs	Quizzes and/or Online Quizzes, Midterm, Final Exam Lab exam
2.2	Understand the difficulties of a management system, select a suitable performance measure for different objectives, and apply priority rules to execute actions.	- Lectures - Labs	Quizzes and/or Online Quizzes, Midterm, Final Exam Lab exam
2.3	Ability to design and implement an ERP System	- Lectures - Labs	Quizzes and/or Online Quizzes, Midterm, Final Exam Lab exam
3.0	Interpersonal Skills & Responsibility		
3.1	N/A		
3.2			
4.0	Communication, Information Technology, Numerical		

4.1	Use the SAP ERP solution	Lab sessions	Las assessments
4.2			
5.0	Psychomotor		
5.1	N/A		
5.2			

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester			
Assess ment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Midterm Exam	8	20%
2	Quizzes	Each 4 weeks	20%
3	Seminar Presentation	0	0%
4	Lab Exam	15	20%
5	Final Exam	Exams week	40%

D. Student Support

1. Arrangements for availability of teaching staff for individual student consultations and academic advice.
(include amount of time teaching staff are expected to be available each week)

Office hours and meeting on projects

E Learning Resources

1. Required Text(s) :
1. Concepts in Enterprise Resource Planning, 4th edition, Ellen F. Monk, Bret J. Wagner, ISBN-13: 978-1-111-82040-4, Cengage Learning.
2. Essential References
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
1. Sumner, M. 2005, Enterprise Resource Planning, Pearson Education, Inc.
4-.Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) Lecture room
2. Computing resources SAP labs (SAP academic alliance)
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching End-of-term course/teacher evaluation for is to be completed by students at the end of the semester, evaluating the content of the course, its teaching, the learning, assessment methods.. The monitoring of these students feedback will allows the course quality improvement
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department - Peer Evaluation Procedure - Instructor self-evaluation

3. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution) • Upon student request, his/her work might be remarked by another faculty member within the department.
4 Processes for Improvement of Teaching • (Self , Peer) Review, Identify, Analyse, and Revise
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. - Review and update course content - Update course references - Use students feedback

Faculty or Teaching Staff: _____

Signature: _____

Date Report Completed: _____

Received by: _____

Dean/Department Head: Dr. Skander Turki

Signature: _____

Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

Human-Computer Interaction
14024402-3

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	Human-Computer Interaction 14024402-3																						
2. Credit hours	3 credits																						
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																						
4. Name of faculty member responsible for the course	Dr Skander Turki																						
5. Level/year at which this course is offered	year 4 after preparatory / level 9																						
6. Pre-requisites for this course (if any)	14022301-3 Internet Technologies																						
7. Co-requisites for this course (if any)																							
8. Location if not on main campus: Delivered in the four locations where the Information Systems BSc is given:	- Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																						
9. Mode of Instruction (mark all that apply)	<table border="0"> <tr> <td>a. Traditional classroom</td> <td>☒</td> <td>What percentage?</td> <td> 100% </td> </tr> <tr> <td>b. Blended (traditional and online)</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>c. e-learning</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>d. Correspondence</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>f. Other</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> </table>			a. Traditional classroom	☒	What percentage?	100%	b. Blended (traditional and online)	☐	What percentage?		c. e-learning	☐	What percentage?		d. Correspondence	☐	What percentage?		f. Other	☐	What percentage?	
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c. e-learning	☐	What percentage?																					
d. Correspondence	☐	What percentage?																					
f. Other	☐	What percentage?																					
Comments:																							

B Objectives

1. What is the main purpose for this course? Human-Computer Interaction is an area of study that focuses on user acceptance of interactive-software-intensive systems. In software engineering, user-acceptance testing has been identified as essential testing step along with unit, integration, installation and other testing activities. User resistance to change is also one of the risks that may affect how far a software solution is accepted by end users. Studying HCI is therefore an important in this regard as it gives the software developer the foundations that will allow him to better mitigate these acceptance risks.
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field) An adaptation can be done when reviewing the program.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered		
List of Topics	No of Weeks	Contact hours per week
Introduction to Human-Computer Interaction and to Interaction Design	2	4
<i>Understanding and Conceptualizing Interaction</i>	2	4
<i>Cognitive Aspects</i>	2	4
Social and emotional Interaction	2	4
Interfaces	2	4
Data gathering	2	4
Data analysis, Interpretation and presentation	2	4
Interaction design in practice: Use case	2	4

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	32		32			64
Credit	80		20			100

3. Additional private study/learning hours expected for students per week.	2
--	---

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
--

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The *National Qualification Framework* provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	examine the concept of a human computer interaction and what it means to develop and implement user-centered computer information system;	The course is conducted using lectures and labs. The lectures provide the major theoretical and foundational concepts of HCI. The lab sessions provide the instruction on the course project, exercises, and general discussion.	homework assignments, term project, labs, Quizzes, and exams
1.2	examine techniques for identifying the information and processing user needs of computer information system;		
1.3	use basic modeling tools for representing the analysis and the design of user-centered computer information system;		
1.4	design a system from the specifications including the user interface, and system module structure.		
2.0	Cognitive Skills		
2.1	To be able to analyze the users' requirements and determine the appropriate interface.	Lectures, Labs, Project	- Quizzes and/or Online Quizzes, - Midterm, - Final Exam - Lab exam - Project evaluation
2.2	To be able to analyze alternative methods of interaction with software and to select and improve them.	Lectures, Labs, Project	
3.0	Interpersonal Skills & Responsibility		
3.1	Be able to conduct discussion about design choices within a team	Project defence in teams	Project defence evaluation
4.0	Communication, Information Technology, Numerical		
4.1	Be able to conduct discussion about design choices	Project with project defence	Project defence evaluation
5.0	Psychomotor		
5.1	N/A		
5.2			

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs

Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

Assess ment	Assessment task (eg. Essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Quiz	3, 6, 9,12	10%
2	Mid term	8	20%
3	Lab exam	Lab exams week (usually 16 th)	10%
3	Project	15	30%
4	Final exam	Exam week	30%

D. Student Support

1. Arrangements for availability of teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

Office hours and meeting on projects

E Learning Resources

1. Required Text(s) :
Shneiderman, B. and Plaisant, C. (2010) <i>Designing the user interface: Strategies for effective Human-Computer Interaction</i> , 5th Edition. ISBN: 0321537351.
2. Essential References
Rodgers, Y., Sharp, H., Preece, J. (2011). <i>Interaction Design: Beyond Human-Computer Interaction</i> , 3rd ed. Wiley
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
Alan Dix et al, "Human-Computer Interaction," 3rd Edition, 2003, Prentice Hall, ISBN 0130461091
4-Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations
Most lab on computer systems

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.)
Lecture room
2. Computing resources
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching
Online --any time- feedback electronic form

End of term Feedback
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department
3 Processes for Improvement of Teaching - Offering training sessions & Workshops - Providing specialized educational journals
4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution) - External Examiners - Marking an exam by a Group of faculty members; each marks a question of the exam for example.
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. - Study and analyse the feedback from students. - Compare the learning outcomes with real students' results and skills they have gained. - Review the course periodically by the curriculum committee to check with ACM requirements and top universities.. - Review the course periodically by the quality assurance unit.

Faculty or Teaching Staff: _____

Signature: _____ Date Report Completed: _____

Received by: _____ Dean/Department Head: Dr. Skander Turki

Signature: _____ Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

**Information Systems Security
14023204-3**

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	Information Systems Security 14023204-3																						
2. Credit hours	3 credits																						
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																						
4. Name of faculty member responsible for the course	Dr Hassen Sallay																						
5. Level/year at which this course is offered	3 rd year after preparatory year / Level 8																						
6. Pre-requisites for this course (if any)	14022202-3 Operating systems and Networks 14021101-3 Introduction to IS																						
7. Co-requisites for this course (if any)																							
8. Location if not on main campus: Delivered in the four locations where the Information Systems BSc is given:	- Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																						
9. Mode of Instruction (mark all that apply)	<table border="0"> <tr> <td>a. Traditional classroom</td> <td>☒</td> <td>What percentage?</td> <td> 100% </td> </tr> <tr> <td>b. Blended (traditional and online)</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>c. e-learning</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>d. Correspondence</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>f. Other</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> </table>			a. Traditional classroom	☒	What percentage?	100%	b. Blended (traditional and online)	☐	What percentage?		c. e-learning	☐	What percentage?		d. Correspondence	☐	What percentage?		f. Other	☐	What percentage?	
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c. e-learning	☐	What percentage?																					
d. Correspondence	☐	What percentage?																					
f. Other	☐	What percentage?																					
Comments:																							

B Objectives

1. What is the main purpose for this course?

This course provides a comprehensive view of information systems security. Information security concepts are introduced like common attacking techniques, common security policies, basic cryptographic tools, authentication, access control, software security, operating system security, and legal and ethical issues in information systems security.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered

List of Topics	No of Weeks	Contacthours
Information security concepts	3	3
Threats and attacks	3	3
Security requirements and policies	3	3
Cryptography	2	3
Risk management	2	3
Incident management	2	3
Physical security	2	3

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	48					48
Credit	3					3

3. Additional private study/learning hours expected for students per week.	2
--	---

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
--

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

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Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Know the basic principles and practices in information systems security.	Conventional lectures: The instructor introduces the important concepts of each topic via PowerPoint presentations. The lecture must also contain in-class interaction between the instructor and students and illustrative examples and realistic problems. Lectures can be recorded and put available for students to help them going back to lecture points at home and during revision. Hand-on Labs: The instructor ensures some labs to students to help them understanding the practical issues of the course. Textbook reading assignment: this helps the students to get more advanced knowledge on the topics under study. Class session exercises: Exercises for each topic will help students to learn how to resolve real problems and understand the main concepts. Practical projects: practical projects will improve the knowledge of the student with respect to the use and exploitation of course related software and methodologies	There are several way to assess stu this course, which include: Quizzes (e.g. online quizzes with Umm al Qura online learning system): this helps the students to make a quick revision of the fundamental concepts studied during formal lectures. They may be graded or not. Written exams (midterm and final exams): Exams are the main assessment method to evaluate the understanding of students. Assignments and homework: the instructor should make assignments and homework to students for each lecture before going for a subsequent lecture.
1.2	Acquire knowledge in the foundational theory behind information systems security		
2.0	Cognitive Skills		
2.1	understand threats and how to protect an information system	- Conventional lectures to introduce important concepts through in-class discussions. - In-class tutorials which review the content of each lecture and elaborate on any matters not understood.	- Written exams (mid-term and final). - Quizzes. - Reading assignments from the textbook Written exams/case studies all require application of the techniques and concepts presented throughout the course.
2.2			
3.0	Interpersonal Skills & Responsibility		

3.1	The students must learn how to communicate with each other and how to collaborate to achieve a common task. This will prepare them for working as a group, which is important in any professional environment. They must also show ability to write useful documentation/reports of software projects.	Group work of course projects: The students will be asked to work as a group and this enables them to be responsible over the tasks they get assigned. In addition, they will learn how to collaborate together to achieve a common task.	The assessment of interpersonal skills can be assessed during oral presentations of the students in front of the instructor, when they shall explain how to group work has been carried out.
3.2			
4.0	Communication, Information Technology, Numerical		
4.1	N/A		
4.2			
5.0	Psychomotor		
5.1	N/A		
5.2			

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Quizzes	2	10%
2	Midterm Exam	6	20%
3	Case study Project	10	30%
4	Final	16	40%

D. Student Support

1. Arrangements for availability of faculty for individual student consultations and academic advice.

- Each instructor is required to allocate at least four office hours per week for consultations and academic advice.
- Each student is assigned an academic advisor to provide general consultation.
- A mailing list for the course can help the instructors to interact with the students.
- The emails of instructors must be available for students for possible contact in case of unavailability during office hours.

E Learning Resources

1. Required Text(s)
M. E. Whitman and H. J. Mattord, “Principles of Information Security” 4th Edition, Course Technology, ISBN: 1111138214, 2011.
2. Essential References
W. Stallings, “Computer Security: Principles and Practice”, 2nd Edition, Prentice Hall, ISBN: 0132775069, 2011.
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
4- Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) Lecture room with at least 30 seats. Optional but useful facilities include: • A data show projector connected to a PC preferably with Internet connection • sliding board
2. Computing resources
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list) s

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching

End-of-term course/teacher evaluation for is to be completed by students at the end of the semester, evaluating the content of the course, its teaching, the learning, assessment methods.. The monitoring of these students feedback will allows the course quality improvement. In addition, the instructor should make a self-evaluation by proposing an evaluation form to the students that should filled and returned anonymously to provide a feedback to the positive and negatives points observed during the term.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department • Peer Evaluation Procedure • Instructor self-evaluation
3. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution) • Upon student request, his/her work might be remarked by another faculty member within the department. No regular procedure for verifying standards of student achievement is implemented yet.
4 Processes for Improvement of Teaching The instructor must analyse the feedback from the student he receive from the self-evaluation form and try to adapt the structure/content/organization of the course for better efficiency.
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. • Analysis of student's feedback and identification of weaknesses in the course and in the program to improve them.

Faculty or Teaching Staff: _____

Signature: _____ Date Report Completed: _____

Received by: _____ Dean/Department Head: Dr. Skander Turki

Signature: _____ Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

**Course Specification
(CS)**

**IS Project Management
14023701-2**

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	IS Project Management 14023701-2																						
2. Credit hours:	2 credits																						
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																						
4. Name of faculty member responsible for the course:	Dr. Skander Turki																						
5. Level/year at which this course is offered:	Year 3 after preparatory year, level 8																						
6. Pre-requisites for this course (if any):	Software Engineering 1, 14013303-3																						
7. Co-requisites for this course (if any)	None																						
8. Location if not on main campus:	Delivered in the four locations where the Information Systems BSc is given: - Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																						
9. Mode of Instruction (mark all that apply)	<table border="0"> <tr> <td>a. Traditional classroom</td> <td>☒</td> <td>What percentage?</td> <td> 100% </td> </tr> <tr> <td>b. Blended (traditional and online)</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>c. e-learning</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>d. Correspondence</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>f. Other</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> </table>			a. Traditional classroom	☒	What percentage?	100%	b. Blended (traditional and online)	☐	What percentage?		c. e-learning	☐	What percentage?		d. Correspondence	☐	What percentage?		f. Other	☐	What percentage?	
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c. e-learning	☐	What percentage?																					
d. Correspondence	☐	What percentage?																					
f. Other	☐	What percentage?																					
Comments:																							

B Objectives

1. What is the main purpose for this course?

The course exposes students to project management principles and information systems project management practices. The five process groups and nine knowledge areas of the Project Management Institute Body of Knowledge (PMI BOK) are examined in the context of information systems development lifecycle. Methods for managing and optimizing the information system development process are discussed along with techniques for performing each phase of the IS development lifecycle. Portfolio management and the use and application of software project management tools are also introduced.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

Continuous review and evaluation of course specifications and students/instructors feedback is planned to continuously improve this course.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
Introduction to project management	1	2
Project Management and Information Technology Context	1	2
The project management process groups. A case study: PROJECT MANAGEMENT INTRANET SITE PROJECT	2	2
Project Integration Management	2	2
Project Scope Management	2	2
Project Time Management	2	2
Project Cost Management	2	2
Project Quality Management	2	2
Project Human Resource Management	1	2
Project Risk Management	1	2

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	16	0	0	0	0	14
Credit	32	0	0	0	0	28

3. Additional private study/learning hours expected for students per week.	2
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
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Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The **National Qualification Framework** provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Acquire a foundation of project management	Lectures	Midterm, Project, Final Exam
1.2	describe complex issues that can arise when managing IS projects	Lectures, Involve students in short discussions about their understanding of the practical cases presented.	Midterm, Project, Final Exam
2.0	Cognitive Skills		
2.1	Research and analyze what factors are important to the successful implementation of IT projects in the context of particular business strategies	Lectures, Involve students in short discussions about their understanding of the practical cases presented.	Midterm, Project, Final Exam
2.2	Develop and justify practical strategies	Lectures, Involve students in short discussions about their understanding of the practical cases presented.	Midterm, Project, Final Exam
3.0	Interpersonal Skills & Responsibility		
3.1	discuss the social and organizational context of IS projects	Lectures, Involve students in short discussions about their understanding of the practical cases presented.	Project
4.0	Communication, Information Technology, Numerical		
4.1	Apply project management using MS-project	Self-learning	Project
5.0	Psychomotor		
5.1	N/A		

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write

Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Midterm	Week 8	30%
2	Project	Week 15	20%
3	Final	Week 17	50%

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

All faculty members are expected to include six weekly office hours. These office hours are displayed in each faculty's schedule and communicated to students.

E. Learning Resources

1. List Required Textbooks
Information Technology Project Management, 7th edition, Kathy Schwalbe, Course Technology Cengage Learning, 2012.

Student Edition:
ISBN-13: 978-1-133-52685-8
ISBN-10: 1-133-52685-3

Instructor's Edition:
ISBN-13: 978-1-133-52687-2
ISBN-10: 1-133-52687-X

2. List Essential References Materials (Journals, Reports, etc.)

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)

4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)

5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)

2. Computing resources (AV, data show, Smart Board, software, etc.)
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching
2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor
3 Processes for Improvement of Teaching
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

Faculty or Teaching Staff: _____

Signature: _____ Date Report Completed: _____

Received by: _____ Dean/Department Head: Dr. Skander Turki

Signature: _____ Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

**Operations Research
14023102-4**

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	Operations Research 14023102-4																						
2. Credit hours	4 credits																						
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																						
4. Name of faculty member responsible for the course	Dr Skander Turki																						
5. Level/year at which this course is offered	3rd year after preparatory/ level 7																						
6. Pre-requisites for this course (if any)	4042301-3 Intro to Statistics & Probability																						
7. Co-requisites for this course (if any)																							
8. Location if not on main campus:	Delivered in the four locations where the Information Systems BSc is given: - Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																						
9. Mode of Instruction (mark all that apply)	<table border="0"> <tr> <td>a. Traditional classroom</td> <td>☒</td> <td>What percentage?</td> <td> 100% </td> </tr> <tr> <td>b. Blended (traditional and online)</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>c. e-learning</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>d. Correspondence</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>f. Other</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> </table>			a. Traditional classroom	☒	What percentage?	100%	b. Blended (traditional and online)	☐	What percentage?		c. e-learning	☐	What percentage?		d. Correspondence	☐	What percentage?		f. Other	☐	What percentage?	
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d. Correspondence	☐	What percentage?																					
f. Other	☐	What percentage?																					
Comments:																							

B Objectives

1. What is the main purpose for this course? - Importance of operations research in decision support systems - Applications of operations research in IT and IT applications - Optimization issues - Techniques for optimization linear and non linear
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered		
List of Topics	No of Weeks	Contacthours per week
optimal policy in design and management: mathematical models.	1	4
Linear programming: The Simplex method,	3	12
two-phase Simplex method, duality, shadow prices.	3	12
Linear integer programming: Gomory's cutting plane methods for pure and mixed linear integer programming	3	12
Search methods; branch and bound algorithms.	2	8
Game theory: two person non-co-operative games.	2	8
Saddle points. Matrix games.	2	8

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	64					64
Credit	4					4

3. Additional private study/learning hours expected for students per week.	4
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
--

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The *National Qualification Framework* provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Understand the application domains of operations research methods.	Lectures based on examples Problem sets	Quizzes and/or Online Quizzes, Midterm, Final Exam
2.0	Cognitive Skills		
2.1	Be able to formulate problems using different operations research techniques	Lectures based on examples Problem sets	Quizzes and/or Online Quizzes, Midterm, Final Exam
2.2	Analyze and solve problems using different operations research techniques		
3.0	Interpersonal Skills & Responsibility		
3.1	N/A		
4.0	Communication, Information Technology, Numerical		
4.1	Apply mathematical and problem solving OR techniques	Lectures based on examples Problem sets	Quizzes and/or Online Quizzes Midterm, Final Exam
5.0	Psychomotor		
5.1	N/A		

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
	demonstrate, show, illustrate, perform, dramatize, employ, manipulate,

Psychomotor	operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct
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Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

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5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Midterm Exam	8	20%
2	Quizzes	Each 4 weeks	20%
3	Problem sets	Each three weeks	10%
5	Final Exam	Exams week	50%

D. Student Support

1. Arrangements for availability of teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

Office hours and meeting on projects

E Learning Resources

1. Required Text(s) : slides and lab documentation
2. Essential References Operations Research: An Introduction, Hamdy Taha Other books that might be available on internet
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List) Books and web sites reading Recommended web site for education resources on operations research http://filebox.vt.edu/users/wfan/resource.html
4- Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations Most lab on computer systems

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) Lecture room
2. Computing resources
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching End-of-term course/teacher evaluation for is to be completed by students at the end of the semester, evaluating the content of the course, its teaching, the learning, assessment methods.. The monitoring of these students feedback will allows the course quality improvement
--

2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department • Peer Evaluation Procedure • Instructor self-evaluation
3. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution) • Upon student request, his/her work might be remarked by another faculty member within the department.
4 Processes for Improvement of Teaching • (Self , Peer) Review, Identify, Analyse, and Revise
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. - Review and update course content - Update course references - Use students feedback

Faculty or Teaching Staff: _____

Signature: _____ Date Report Completed: _____

Received by: _____ Dean/Department Head: Dr. Skander Turki

Signature: _____ Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

**Professional Seminars
14023901-2**

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	Professional Seminars 14023901-2																						
2. Credit hours	2 credits																						
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																						
4. Name of faculty member responsible for the course	Dr Skander Turki																						
5. Level/year at which this course is offered	3rd year / level 8																						
6. Pre-requisites for this course (if any)	Level 6																						
7. Co-requisites for this course (if any)																							
8. Location if not on main campus: Delivered in the four locations where the Information Systems BSc is given:	- Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																						
9. Mode of Instruction (mark all that apply)	<table border="0"> <tr> <td>a. Traditional classroom</td> <td>☒</td> <td>What percentage?</td> <td> 100% </td> </tr> <tr> <td>b. Blended (traditional and online)</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>c. e-learning</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>d. Correspondence</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>f. Other</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> </table>			a. Traditional classroom	☒	What percentage?	100%	b. Blended (traditional and online)	☐	What percentage?		c. e-learning	☐	What percentage?		d. Correspondence	☐	What percentage?		f. Other	☐	What percentage?	
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Comments:																							

B Objectives

1. What is the main purpose for this course?

The professional seminar provides students with an opportunity to integrate their learning experience in information systems through the close study of real-world situations. Through a discussion based seminar, students and their faculty supervisor read about, study and discuss different subjects in IS, becoming essential grounding for students to develop a senior project inspired, informed and connected to that theme.
Invited speakers will be giving talks about real-world applications, projects and experiences.
Subjects should include ethics, health IS, e-government, transport, logistics, administration.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered

List of Topics	No of Weeks	Contact hours
Application 1 : Network administration	2	4
Application 2 : transport	2	4
Application 3 : security	2	4
Application 4 : Public administration	2	4
Application 5 : hospital	2	4
Application 6 : GIS	2	4
Application 7 : Defense	2	4
Application 8 : supply chain management	2	4

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	32					32
Credit	2 credits					2 credits

3. Additional private study/learning hours expected for students per week.	2
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
--

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

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Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Get better understanding of the professional environment and challenges.	Seminars, discussions, reports and presentations by the students.	Assessment of students presentations and reports about seminars
1.2	Acquire a larger view of the opportunities and evolution possibilities.		
2.0	Cognitive Skills		
2.1	Ability to analyze real-world problems	Seminars, involve students in discussions, reports and presentations by the students.	Assessment of students presentations and reports about seminars
2.2	Reflect on the impact of Information Systems in real-world applications		
2.3	Evaluate areas of professional and academic growth and determine what actions are necessary to be part of that area		
3.0	Interpersonal Skills & Responsibility		
3.1	Identify the tools that will be needed to continue the process of being a lifelong learner.	Seminars, discussions, reports and presentations by the students.	Assessment of students presentations and reports about seminars
4.0	Communication, Information Technology, Numerical		
4.1	Ability to work collaboratively with others and communicate effectively	discussions, reports and presentations by the students.	Assessment of students presentations and reports about seminars
5.0	Psychomotor		
5.1	N/A		

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information	demonstrate, calculate, illustrate, interpret, research, question, operate,

Technology, Numerical	appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Report on seminar	Every two weeks	60%
2	Presentations	Two presentation or more according to number of students in the group.	40%

D. Student Support

1. Arrangements for availability of teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

Office hours and meeting

E Learning Resources

1. Required Text(s) : slides and lab documentation
2. Essential References Proposed by the 8 professional engineers giving the seminar
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List) Books and web sites reading
4- Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) Lecture room
2. Computing resources
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching End-of-term course/teacher evaluation for is to be completed by students at the end of the semester, evaluating the content of the course, its teaching, the learning, assessment methods.. The monitoring of these students feedback will allows the course quality improvement
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department - Peer Evaluation Procedure - Instructor self-evaluation
3. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution) Upon student request, his/her work might be remarked by another faculty member within the department.

4 Processes for Improvement of Teaching
(Self , Peer) Review, Identify, Analyse, and Revise
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.
- Review and update course content - Update course references - Use students feedback

Faculty or Teaching Staff: _____

Signature: _____ Date Report Completed: _____

Received by: _____ Dean/Department Head: Dr. Skander Turki

Signature: _____ Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

Training
14023902-2

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	Training 14023902-2																						
2. Credit hours	2 credits																						
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																						
4. Name of faculty member responsible for the course	Dr Hassan Sallay																						
5. Level/year at which this course is offered	Year 3 after preparatory, summer term																						
6. Pre-requisites for this course (if any)	14023901-2 Professional Seminars																						
7. Co-requisites for this course (if any)																							
8. Location if not on main campus: Delivered in the four locations where the Information Systems BSc is given:	- Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																						
9. Mode of Instruction (mark all that apply)	<table border="0"> <tr> <td>a. Traditional classroom</td> <td>☒</td> <td>What percentage?</td> <td> 100% </td> </tr> <tr> <td>b. Blended (traditional and online)</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>c. e-learning</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>d. Correspondence</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>f. Other</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> </table>			a. Traditional classroom	☒	What percentage?	100%	b. Blended (traditional and online)	☐	What percentage?		c. e-learning	☐	What percentage?		d. Correspondence	☐	What percentage?		f. Other	☐	What percentage?	
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c. e-learning	☐	What percentage?																					
d. Correspondence	☐	What percentage?																					
f. Other	☐	What percentage?																					
Comments:																							

B Objectives

1. What is the main purpose for this course?

This training experience is intended to complement the student's academic plan of study and help prepare him for his future role as a professional engineer. The prospective employer should provide the summer training office in the faculty of the training plan for approval before registration. The training period is 45 days. The faculty assigns an academic staff as an on field supervisor to visit and evaluate the students in the training venues. To assess the student, student is required to submit a report showing his summer training experience and the knowledge gained. The summer training office in the faculty carries out the rubrics assessment based on training report, employer evaluation and on field supervisor evaluation.

The subject of training must be related to the activities of a software or IS developer, designer or database, server, cloud, ERP administrator or any other advanced tasks.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

An adaptation can be done when reviewing the program.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered		
List of Topics	No of Weeks	Contact hours per week
N/A		

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours				45 days		45 days
Credit				2 credits		2 credits

3. Additional private study/learning hours expected for students per week.	0
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
--

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The **National Qualification Framework** provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Ability to associate the knowledge acquired during the student's academic plan of study to real-world-problems.	N/A	Field supervisor report Academic mentor report Student report and presentation
1.2	Explore the enterprise environment, needs, and limitations.		
2.0	Cognitive Skills		
2.1	Ability to identify requirements for an appropriate and efficient solution of a real-world-problem in the presence of different technical limitations.	N/A	Field supervisor report Academic mentor report Student report and presentation
2.2	Ability to identify clear view of objectives and constraints and work effectively.		
2.3	Ability to accommodate with existing solutions in response to change in needs or limitations.		
3.0	Interpersonal Skills & Responsibility		
3.1	Having the independence sense by acquiring new techniques with minimal supervision.	N/A	Field supervisor report Academic mentor report Student report and presentation
3.2	Learning professional and ethical responsibility		
4.0	Communication, Information Technology, Numerical		
4.1	Ability to communicate with many people in the practical field.	N/A	Field supervisor report Student report and presentation
5.0	Psychomotor		
5.1	N/A		

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict,

	justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Field supervisor report evaluation	Final	40%
2	Student report	Final	40%
3	Student presentation	Final	20%

D. Student Support

1. Arrangements for availability of teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

E Learning Resources

1. Required Text(s) :

None
2. Essential References
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
4-.Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.)
2. Computing resources
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching N/A
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department N/A
3 Processes for Improvement of Teaching N/A
3. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution) Upon student request, his/her work might be remarked by another faculty member within the department.
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. N/A

Faculty or Teaching Staff: _____

Signature: _____ Date Report Completed: _____

Received by: _____ Dean/Department Head: Dr. Skander Turki

Signature: _____ Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

Quality & Standards

14024205-3

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	Quality & Standards	14024205-3																				
2. Credit hours	3 credits																					
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																					
4. Name of faculty member responsible for the course	Dr Hassan Sallay																					
5. Level/year at which this course is offered	4th year after prep / level 10																					
6. Pre-requisites for this course (if any)	14023204-3 Information Systems Security																					
7. Co-requisites for this course (if any)																						
8. Location if not on main campus: Delivered in the four locations where the Information Systems BSc is given:	- Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																					
9. Mode of Instruction (mark all that apply)	<table border="0"> <tr> <td>a. Traditional classroom</td> <td>☒</td> <td>What percentage?</td> <td> 100% </td> </tr> <tr> <td>b. Blended (traditional and online)</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>c. e-learning</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>d. Correspondence</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>f. Other</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> </table>		a. Traditional classroom	☒	What percentage?	100%	b. Blended (traditional and online)	☐	What percentage?		c. e-learning	☐	What percentage?		d. Correspondence	☐	What percentage?		f. Other	☐	What percentage?	
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d. Correspondence	☐	What percentage?																				
f. Other	☐	What percentage?																				
Comments:																						

B Objectives

1. What is the main purpose for this course? Students are introduced to the concept of quality and to the concept of standard. They will be studying examples of quality standards related to networks, IT and software development. They will learn how to apply quality measure and quality indicators and how to customize existing standards through use cases and projects.
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered		
List of Topics	No of Weeks	Contact hours
Introduction to quality measure	2	6
Case study	2	6
Standards	4	12
Projects search	3	9
Applying quality indicators	2	6
Case study for a specific standards	3	9

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	48					48
Credit	3 credits					3 credits

3. Additional private study/learning hours expected for students per week.	3
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
--

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The *National Qualification Framework* provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Understand the concept of quality	Conventional lectures: The instructor introduces the important concepts of each topic via PowerPoint presentations. The lecture must also contain in-class interaction between the instructor and students and illustrative examples and realistic problems. Lectures can be recorded and put available for students to help them going back to lecture points at home and during revision. Textbook reading assignment: this helps the students to get more advanced knowledge on the topics under study. Class session exercises: Exercises for each topic will help students to learn how to resolve real problems and understand the main concepts. Practical projects: practical projects will improve the knowledge of the student with respect to the use and exploitation of course related software and methodologies	Quizzes (e.g. online quizzes with Umm al Qura online learning system): this helps the students to make a quick revision of the fundamental concepts studied during formal lectures. They may be graded or not. Written exams (midterm and final exams): Exams are the main assessment method to evaluate the understanding of students. Practical project: This is a project aiming to assure quality to a real system under study. The student must follow a specific steps within a standard methodology to apply the standards. Assignments and homework: the instructor should make assignments and homework to students for each lecture before going for a subsequent lecture.
1.2	Understand the concept of standard		
1.3	Apply quality measure and quality indicators		
1.4	Customize to existing standards		
2.0	Cognitive Skills		
2.1	Understand the difference between standards.	Conventional lectures to introduce important concepts through in-class discussions.	Written exams (mid-term and final). Quizzes. Reading assignments from the textbook Written exams/case studies all require application of the techniques and concepts presented throughout the course.
2.2	Understand the problems with the deployment of standards.	In-class tutorials which review the content of each lecture and elaborate on any matters not understood.	
2.3	Understand how standards improve quality	Case Study: the student will have the opportunity to apply standards on case study from scratch which will further deepen their understanding of the presented materials.	
2.4	Audit, validate and verify quality in real study case.		
2.5	Develop an experience in		

	standards deployment.		
3.0	Interpersonal Skills & Responsibility		
3.1	how to communicate with each other and how to collaborate to achieve a common task.	Group work of course projects: The students will be asked to work as a group and this enables them to be responsible over the tasks they get assigned. In addition, they will learn how to collaborate together to achieve a common task.	The assessment of interpersonal skills can be assessed during oral presentations of the students in front of the instructor, when they shall explain how to group work has been carried out.
3.2	work as a group.		
4.0	Communication, Information Technology, Numerical		
4.1	They must also show ability to write useful documentation/reports of software projects.	In class exercises to develop the skills needed for using the available free tools such that Free ISO27k Toolkit Case study and Project Presentation	Homework and assignments involving the use of the quality related software Term project presentations. The students should provide a final report that describes all the details of their project work and results interpretations.
4.2	Use some of the available standards software and free open source auditing software		
4.3	The student should know how to write and present standards auditing reports		
5.0	Psychomotor		
5.1	N/A		

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble,

	experiment, and reconstruct
--	-----------------------------

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Quizzes	2	10%
2	Midterm Exam	8	20%
3	Case study Project	10	30%
4	Final	Final exams week	40%

D. Student Support

1. Arrangements for availability of faculty for individual student consultations and academic advice.

- Each instructor is required to allocate at least four office hours per week for consultations and academic advice.
- Each student is assigned an academic advisor to provide general consultation.
- A mailing list for the course can help the instructors to interact with the students.
- The emails of instructors must be available for students for possible contact in case of unavailability during office hours.

E Learning Resources

1. Required Text(s)
1. Sari Stern Greene: <i>Security Policies and Procedures</i> , Pearson Prentice Hall, 2006
2. Essential References
1. GALIN, D. <i>Software Quality Assurance</i> . Essex, England: Pearson Addison Wesley, 2004.
2. TIAN, J. <i>Software quality engineering</i> . New Jersey, USA: IEEE Computer Society, Wiley – Interscience, 2005.
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
4-.Electronic Materials, Web Sites etc
Course website: http://www.uqu.edu/ccis/ise/1402 410/
5- Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) Lecture room with at least 30 seats. Optional but useful facilities include: - A data show projector connected to a PC preferably with Internet connection - sliding board
2. Computing resources
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list) s

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching
End-of-term course/teacher evaluation for is to be completed by students at the end of the semester, evaluating the content of the course, its teaching, the learning, assessment methods.. The monitoring of these students feedback will allows the course quality improvement. In

addition, the instructor should make a self-evaluation by proposing an evaluation form to the students that should filled and returned anonymously to provide a feedback to the positive and negatives points observed during the term.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department • Peer Evaluation Procedure • Instructor self-evaluation
3. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution) • Upon student request, his/her work might be remarked by another faculty member within the department. No regular procedure for verifying standards of student achievement is implemented yet.
4 Processes for Improvement of Teaching The instructor must analyse the feedback from the student he receive from the self-evaluation form and try to adapt the structure/content/organization of the course for better efficiency.
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. • Analysis of student's feedback and identification of weaknesses in the course and in the program to improve them.

Faculty or Teaching Staff: _____

Signature: _____ Date Report Completed: _____

Received by: _____ Dean/Department Head: Dr. Skander Turki

Signature: _____ Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

**Graduation Project 1
14024903-3**

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	Graduation Project 1 14024903-3																						
2. Credit hours	3 credits																						
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																						
4. Name of faculty member responsible for the course	Dr Hassan Sallay																						
5. Level/year at which this course is offered	4 th year after preparatory / 9 th level																						
6. Pre-requisites for this course (if any)	14013303-3 Software Engineering I																						
7. Co-requisites for this course (if any)																							
8. Location if not on main campus: Delivered in the four locations where the Information Systems BSc is given:	- Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																						
9. Mode of Instruction (mark all that apply)	<table border="0"> <tr> <td>a. Traditional classroom</td> <td>☒</td> <td>What percentage?</td> <td> 100% </td> </tr> <tr> <td>b. Blended (traditional and online)</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>c. e-learning</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>d. Correspondence</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>f. Other</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> </table>			a. Traditional classroom	☒	What percentage?	100%	b. Blended (traditional and online)	☐	What percentage?		c. e-learning	☐	What percentage?		d. Correspondence	☐	What percentage?		f. Other	☐	What percentage?	
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c. e-learning	☐	What percentage?																					
d. Correspondence	☐	What percentage?																					
f. Other	☐	What percentage?																					
Comments:																							

B Objectives

1. What is the main purpose for this course?

This course is a real-life like experience where students team up to solve a real-world information systems problem by applying agile software engineering approaches. The output of this course is a prototype with a partial implementation that shows the feasibility and the benefits of their future complete solution.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

An adaptation can be done when reviewing the program.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered

List of Topics	No of Weeks	Contact hours per week
Choose problem	1	3
Agile prototype development	15	45

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	48					48
Credit	3					3

3. Additional private study/learning hours expected for students per week.	8
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
--

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The *National Qualification Framework* provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Ability to apply knowledge of mathematics, computing, science, and engineering appropriate to the discipline.	- Team Project - Include Personal work - Weekly briefing with supervisor	Assessment of Project
1.2			
2.0	Cognitive Skills		
2.1	Ability to analyse a problem, and identify and define the computing requirements appropriate to its solution.	- Team Project - Include Personal work - Weekly briefing with supervisor	- Assessment of Project - Assessment of project defence
2.2	Ability to design, implement and evaluate a computer-based system, process, component or program to meet desired goal.	- Team Project - Include Personal work - Weekly briefing with supervisor	- Assessment of Project - Assessment of project defence
2.3	Apply mathematical foundations, algorithmic principles, and computer science theory in the modelling and design of computer based systems in a way that demonstrates comprehension of the trade-offs involved in design choices.	- Team Project - Include Personal work - Weekly briefing with supervisor	- Assessment of Project - Assessment of project defence
2.4	Ability to apply design and development principles in the construction of software systems of varying complexity.	- Team Project - Include Personal work - Weekly briefing with supervisor	- Assessment of Project - Assessment of project defence
3.0	Interpersonal Skills & Responsibility		
3.1	Ability to function effectively on teams to accomplish a common goal.	- Team Project - Include Personal work - Weekly briefing with supervisor	Assessment of project defence
3.2	Recognition of the need for, and an ability to engage continuing professional development.	- Team Project - Include Personal work - Weekly briefing with supervisor	Assessment of project defence
4.0	Communication, Information Technology, Numerical		

4.1	Ability to communicate effectively.	- Team Project - Include Personal work - Weekly briefing with supervisor	- Assessment of project defence - Assessment of project report
4.2	Ability to use the current techniques, skills, and tools necessary for computing practice	- Team Project - Include Personal work - Weekly briefing with supervisor	- Assessment of project defence - Assessment of project report
5.0	Psychomotor		
5.1	N/A		
5.2			

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	Project Demonstration	15	20%
2	Project Report	15	30%
3	Project Defense	16	50%

D. Student Support

1. Arrangements for availability of teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

Office hours

E Learning Resources

1. Required Text(s) : None
2. Essential References
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
4- Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.) Projects Lab
2. Computing resources One PC with minimum core i5 and 4G RAM for each group.
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching End-of-term course/teacher evaluation for is to be completed by students at the end of the semester, evaluating the organization and assessment methods.. The monitoring of these students feedback will allows the course quality improvement
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department N/A
3. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution) Upon student request, his/her work might be remarked by another faculty member within the department.
4 Processes for Improvement of Teaching (Self , Peer) Review, Identify, Analyse, and Revise

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

- Update project outcomes and organization
- Use students feedback

Faculty or Teaching Staff: _____

Signature: _____

Date Report Completed: _____

Received by: _____

Dean/Department Head: Dr. Skander Turki

Signature: _____

Date: 07-1437 / 04-2016

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specification

**Graduation Project 2
14024904-3**

Course Specification

Institution	Umm Al Qura University	Date of Report: 07-1437 / 04-2016
College/Department	College of Computers and Information Systems Information Systems Department	

A. Course Identification and General Information

1. Course title and code:	Graduation Project 2 14024904-3																						
2. Credit hours	3 credits																						
3. Program(s) in which the course is offered.	Information Systems, Bachelor of Science																						
4. Name of faculty member responsible for the course	Dr Hassan Sallay																						
5. Level/year at which this course is offered	4 th year/10 th level																						
6. Pre-requisites for this course (if any)	Graduation Project 1 14024903-3 Software Engineering II 14013304-3																						
7. Co-requisites for this course (if any)																							
8. Location if not on main campus: Delivered in the four locations where the Information Systems BSc is given:	- Al Abidiyya main campus boys section, - Al Zahir main campus girls section, - Al Qunfuda Boys section, - Al Qunfuda Girls section.																						
9. Mode of Instruction (mark all that apply)	<table border="0"> <tr> <td>a. Traditional classroom</td> <td>☒</td> <td>What percentage?</td> <td> 100% </td> </tr> <tr> <td>b. Blended (traditional and online)</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>c. e-learning</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>d. Correspondence</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> <tr> <td>f. Other</td> <td>☐</td> <td>What percentage?</td> <td> </td> </tr> </table>			a. Traditional classroom	☒	What percentage?	100%	b. Blended (traditional and online)	☐	What percentage?		c. e-learning	☐	What percentage?		d. Correspondence	☐	What percentage?		f. Other	☐	What percentage?	
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Comments:																							

B Objectives

1. What is the main purpose for this course?

This course is a real-life like experience where students team up to solve a real-world information systems problem by applying agile software engineering approaches. The output of the graduation project 1 is completed to obtain a ready to deploy solution.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

An adaptation can be done when reviewing the program.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1 Topics to be Covered		
List of Topics	No of Weeks	Contact hours per week
Agile prototype development	16	48

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours				48		48
Credit				3		3

3. Additional private study/learning hours expected for students per week.	8
--	---

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy
--

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The *National Qualification Framework* provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

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Signature: _____ Date Report Completed: _____

Received by: _____ Dean/Department Head: Dr. Skander Turki

Signature: _____ Date: 07-1437 / 04-2016