

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:	<ul style="list-style-type: none"> - 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	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="100%"/>
b. Blended (traditional and online)	<input type="checkbox"/>	What percentage?	<input type="text"/>
c. e-learning	<input type="checkbox"/>	What percentage?	<input type="text"/>
d. Correspondence	<input type="checkbox"/>	What percentage?	<input type="text"/>
f. Other	<input type="checkbox"/>	What percentage?	<input type="text"/>
Comments:			

B Objectives

<p>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.</p>
<p>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)</p>

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
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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	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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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) <ul style="list-style-type: none"> • 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**