King Saud University
College of Computer and Information Sciences
Department of Information Systems

IS 466 – Decision Support System (3-0-1)
Semester I, Academic Year 2019-2020
Section 31352: Meeting Times: Sunday, Tuesday, Thursday (01:00 PM-01:50 PM)

Current Instructor: Dr. Muhammad Shoaib
Department of Information Systems
Room 2042, Extension: 46-98722
Office Hours: Sunday, Tuesday 11:00-12:00, or by appointments
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Course Coordinator: Dr. Muhammad Shoaib

Textbook(s) and/or Other Required Materials:

Primary: John A. Lawrence and Barry A. Pasternack, Applied Management Science: A Computer-Integrated Approach for Decision Making, John Wiley (2nd edition, 2002, ISBN 0-471-39190-5

Supplementary: Jiawei Han Micheline Kamber Jian Pei,"Data Mining: Concepts and Techniques" 3rd edition, Morgan Koufmann Publisher, ISBN: 9780123814791, Published in 2011.

Course Description (catalog):
This course covers the following topics: the decision making process, decision making and support systems, modeling and support, categorization of problem-solving techniques, data management and concepts of the data warehousing, modeling; forecasting models, simulation models and association analysis models, decision support system construction methods, decision tree induction, knowledge-based systems and expert systems, expert system architecture, representation of knowledge, forward and backward chaining, inferences making process, applications of expert systems in decision making.

Pre-requisite: IS 230
Co-requisite: None
Course Type: Elective

Course Learning Outcomes (CLOs):
After completing this course, the students will be able to:

1. Learn DSS's concepts for structure, making, analyzing and modeling
2. Learn how to program using SQL Server Analysis Manager command, processing of OLAP queries and Data Warehousing model and queries
3. Be able to apply knowledge with Decision Analysis, Forecasting
4. Be able to apply knowledge with Decision Tree Induction and Simulation using Monte Carlo Technique

5. Computing and comprehending for the use of Expert System and Association Analysis to help deciders

Student Outcomes (SOs) Covered by Course

Outcome	Student Outcome Description	Coverage
(a)	An ability to apply knowledge of computing and mathematics appropriate to the discipline	√
(b)	An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution	√
(c)	An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs	√
(d)	An ability to function effectively on teams to accomplish a common goal	
(e)	An understanding of professional, ethical, legal, security and social issues and responsibilities	
(f)	An ability to communicate effectively with a range of audiences	
(g)	An ability to analyze the local and global impact of computing on individuals, organizations, and society	
(h)	Recognition of the need for and an ability to engage in continuing professional development	
(i)	An ability to use current techniques, skills, and tools necessary for computing practice.	
(j)	An understanding of processes that support the delivery and management of information systems within a specific application environment.	

Course Learning Outcomes (CLOs) vs. Student Outcomes (SOs)

#	Course Learning Outcomes	Student Outcomes									
		A	B	C	D	E	F	G	H	I	J
1	Learn DSS's concepts for structure, making, analyzing and modeling		X								
2	Learn how to program using SQL Server Analysis Manager command, processing of OLAP queries and Data Warehousing model and queries			X							
3	Be able to apply knowledge with Decision Analysis, Forecasting	X									
4	Be able to apply knowledge with Decision Tree Induction and Simulation using Monte Carlo Technique	X									
5	Computing and comprehending for the use of Expert System and Association Analysis to help deciders	X									

Major Topics covered and schedule in weeks:

No	Topic	Weeks
1	Introduction to decision support system: an overview **Chapter 2 Data Preprocessing (supplementary)**	**1**
2	Data Warehousing and OLAP **Chapter 3 Data Warehouse and OLAP Technology: An Overview (supplementary)**	**3**
3	Decision analysis **Chapter 6 Decision Analysis**	**2**
4	Forecasting techniques **Chapter 7 Forecasting**	**2**
5	Simulation techniques **Chapter 10 Simulation Model**	**2**
6	Decision induction tree, information theory **Chapter 6 Classification and Prediction (supplementary)**	**2**

7	Intelligent decision support systems **Chapter 6 Classification and Prediction (supplementary)**	**1**
8	Association analysis for deciders **Chapter 6 Classification and Prediction (supplementary)**	**1**

No	Item	Course Weight
1	Quizzes (3 quizzes) (for dates, see LMS) **No makeup**	**15%**
2	Midterm Exam [for dates, see LMS]	**25%**
3	DSS Project [**Due on 13th week**]	**15%**
4	Assignments [**Due on 4th, 6th, 8th 10th and 12th week**]	**5%**
5	Final Exam	**40%**
	Total	**100%**

Reading Assignments: Reading assignments serve as an aid to the class lecture topics. They will be assigned in the class and are expected to be completed before the next class. Announced quizzes will be given on reading assignments.

Attending Policy: Attendance will be recorded during each **class and tutorial**. A record of absences is consistently compiled and updated. According the university regulation, if the student has been absent over 25% of the lectures, he will be excluded from the course. Absences for being sick or any other reason does not mean that absence will not be recorded. In case you have missed a midterm exam and have a valid hospital excuse, you must submit it to the faculty within 1 week of the exam date. There are NO makeup for any quiz missed by a student.

Cheating Policy: Students are encouraged to work together and learn from each other. However, cheating in any form on exams, or copying of homework or computer programs will not be tolerated. Any evidence of cheating will result in a failing grade for the course. Plagiarism detection software will be deployed to detect plagiarism activity.

General Policy: Assignments are due at the start of class on the due date. Late assignment will only be accepted in exceptional circumstances. Copying project or assignments results in zero grading and No late project will be accepted. The quizzes may be pop or announced, and may be given at any time during class-time. Finally, all exams are closed book and the final exam will be comprehensive.

Students with Disabilities: If you need assistance under ADA, pleases contact me or call (011)4698722. If you feel you need special accommodations, you should contact me in the first week of the semester or make an appointment to discuss special arrangements required during this course.