Course Code: Data Management in Decision support
Course Code: DS432

I. Basic Course Information

Major or minor element of program: Major
Department offering the course: Operations Research and Decision Support Department

Academic level: [400 Level]
Semester in which course is offered: First (fall) Semester
Course pre-requisite(s): Database Systems - 1 [IS211]

Credit Hours: 3
Contact Hours Through:

Lecture	Tutorial *	Practical *	Total
2.5	[0	[1.5	4.0

* 1.5 hours for **either** Tutorial or Practical

Approval date of course specification: September 2014

II. Overall Aims of Course

[In many decision support fields the data that is exploited tends to be more and more complex. To take this phenomenon into account, classical architectures of data warehouses or data mining algorithms must be completely studied. Processing and Managing This course deals with important topics such as: complex data warehousing and complex data mining.
Additionally, this course is introducing the recent tools and techniques of data management for decision support systems (DSS) and how they can be used to improve the quality of management decisions. It focuses on the identification, acquisition, analysis, interpretation and application of data management and decision-making strategies within the professional business environment. It provides the students with the essential concepts of Data Mining, Data Warehousing, and Data Marts and how they can be utilized within the decision support context]

III. Program ILOs covered by course

Program Intended Learning Outcomes (By Code)			
Knowledge & Understanding	Intellectual Skills	Professional Skills	General Skills
[K14,K19]	[I9,I10,I11]	[P4,P13,P15,P16]	[G3,G7]

IV. Intended Learning Outcomes of Course (ILOs)

a. Knowledge and Understanding

On completing the course, students should be able to:

K.1 Handle complex data description languages and formats.
K.2 Analyze and evaluate data for use in a business environment**.**
K.3 Acquire the ability to summarize and compare the fundamental concepts and techniques of data management within the decision support systems area.
K.4 Recommend data manipulation and analysis algorithms for management decision making.

b. Intellectual/Cognitive Skills

On completing the course, students should be able to:

I.1 Combine OLAP and data mining for complex data analysis.
I.2 Acquire the experience of how to approach complex data warehouse foundations, design and architectures.
I.3 Get the awareness of the data management role in the real business environment.
I.4 Acquire the ability to insights deeply the DSS in the business society.

c. Practical/Professional Skills

On completing the course, students should be able to:

P.1 Retrieve different data types for further management.
P.2 Master the fundamental data management protocols within the DSS architecture.
P.3 Acquire the experience of how the data management can be utilized as a stand-alone DSS.
P.4 Acquire the ability to get hands-on the link between the data modeling and DSS.

d. General and Transferable Skills

On completing the course, students should be able to:

G.1 Apply On-Line analytical processing, Data Warehousing, Data Mining, and Data Marts along with real DSS.
G.2 Handle complex data either warehousing or mining.

V. Course Matrix Contents

	Main Topics / Chapters	Duration (Weeks)	Course ILOs Covered by Topic (By ILO Code)			
			K & U	I.S.	P.S.	G.S.
1-	Decision Support Systems	1	K1			
2-	Data-Driven Decision Support systems	2	K1,K2		P1	
3-	Multi-dimensional database	2			P1,P2	
4-	On-Line Analytical Processing	2				G1
5-	Data Marts	2	K3		P3	
6-	Data warehousing and DSS	2		I1,I2	P4	G2
7-	Data Mining and DSS	2	K4	I3,I4		G2
	Net Teaching Weeks	**13**				

VI. Course Weekly Detailed Topics / hours / ILOs

Week No.	Sub-Topics	Total Hours	Contact Hours	
			Theoretical Hours	Practical Hours *
1	Decision Support Systems	2.5	2.5	
2	Data-Driven Decision Support systems	4	2.5	1.5
3	Data-Driven Decision Support systems	4	2.5	1.5
4	Multi-dimensional database	4	2.5	1.5
5	Multi-dimensional database	4	2.5	1.5
6	On-Line Analytical Processing	4	2.5	1.5
7	**Midterm Exam**			
8	On-Line Analytical Processing	4	2.5	1.5
9	Data Marts	4	2.5	1.5
10	Data Marts	4	2.5	1.5
11	Data warehousing and DSS	4	2.5	1.5
12	Data warehousing and DSS	4	2.5	1.5
13	Data Mining and DSS	4	2.5	1.5
14	Data Mining and DSS	4	2.5	1.5
15	**Final Exam**			
Total Teaching Hours		**51**	**33**	**18**

*** No Practical/Tutorial during the first week of the semester**

VII. Teaching and Learning Methods

Teaching/Learning Method	Selected Method	Course ILOs Covered by Method (By ILO Code)			
		K & U	Intellectual Skills	Professional Skills	General Skills
Lectures & Seminars	√	K1,K2,K3			
All Tutorials	√		All		All
Computer lab Sessions	√	K4	All		All
Practical lab Work					
Reading Materials					
Web-site Searches					
Research & Reporting					
Problem Solving / Problem-based Learning	√			All	
Projects					
Independent Work	√		All		All
Group Work	√		All		All
Case Studies					
Presentations					
Simulation Analysis					
Others (Specify):					

VIII. Assessment Methods, Schedule and Grade Distribution

Assessment Method	Selected Method	Course ILOs Covered by Method (By ILO Code)				Assessment Weight / Percentage	Week No.
		K & U	I.S.	P.S.	G.S.		
Midterm Exam	√	All	All			15%	7
Final Exam	√	All	All			60%	14
Quizzes	√		All			10%	11
Course Work	√			All		10%	5,8
Report Writing							
Case Study Analysis							
Oral Presentations							
Practical	√				All	5%	13
Group Project							
Individual Project							
Others (Specify):							

IX. List of References

Essential Text Books	• Processing and Managing Complex Data for Decision Support. Edited by J. Darmont and O. Boussaid • Data Mining and Decision Support: Integration and Collaboration (The Springer International Series in Engineering and Computer Science) (Hardcover) by Dunja Mladenic (Editor), Nada Lavrac (Editor), Marko Bohanec (Editor), Steve Moyle (Editor). • Business Intelligence (Paperback) by Efraim Turban (Author), Ramesh Sharda (Author), Jay Aronson (Author), David King (Author) • Decision Support in the Data Warehouse (Data Warehousing Institute Series from Prentice Hall Ptr) (Paperback) by Hugh J. Watson (Author), Paul Gray (Author)
Course notes	• None
Recommended books	• None
Web sites, etc.…	• Free Search and self learning

X. Facilities required for teaching and learning

- Appropriate teaching accomodation
- Computer labs

Course coordinator: Prof. Motaz Khorshid

Head of Department: Prof. Mohamed Mostafa Saleh

Date: September 2014