Syrian Arab Republic		الجمهورية العربية السورية
Ministry of Higher Education		وزارة التعليم العالــــي
Syrian Virtual University		الجامعة الافتراضية السورية

Course Description: Decision Support Systems (DSS)

1- Basic Information:

Course Name	Decision Support Systems
Course ID	SS
Contact Hours (Registered Sessions)	16
Contact Hours (Synchronized Sessions)	16
Mid Term Exam	-
Exam	75 min
Registered Sessions Work Load	16
Synchronized Session Work Load	16
Credit Hours	3

2- Pre-Requisites:

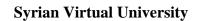| Course	ID
Operational Research	OR

3- Course General Objectives:

The general objectives of this course are to develop an understanding of the key technical and managerial issues in the effective development and use of decision support systems in organisations. The course introduces data warehousing and data mining and explains their role in the decision making process. This course covers the basic concepts and types in decision support systems, along with some of the underlying mathematical modelling techniques that provide DSS with a problem solving capability.

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4- Intended Learning Outcomes (ILO):

Upon successfully completing this course, a student will be able to do the following:

Code	Intended Learning Outcomes
ILO1	Explain basic concepts , types and methods of decision making
ILO2	Explain concept and types of decision support systems
ILO3	Explain concepts and types of databases and data warehouses with examples
ILO4	Explain concept and types of data-driven decision support system
ILO5	Definition of model-driven DSS, and identify model-driven DSS components
ILO6	Modelling and solution of managerial decisions with Spreadsheets (such as Microsoft Excel)
ILO7	Explain concept and types of knowledge-driven decision support system
ILO8	Discuss Recent topics in decision support system
ILO9	Describe process of building decision support systems

5- **Course Syllabus** (16hours of total synchronized sessions;16 hours of total Recorded Sessions)

- **RS:** Recorded Sessions**; SS:** Synchronized Sessions**;**

ILO	Course Syllabus	RS	SS	Type	Additional Notes
ILO1	Introduction to decision making: • Basic concepts in decision making • Types of decisions • Decision making methods • Steps of decision making process • A brief history of DSSs	2	2	☐ Exercises ☒ Assignments ☐ Seminars ☐ Projects ☐ Practices ☐ Others	
ILO2	Concepts and types of DSSs: • Concept of traditional and modern DSS • Decision support resources • Types of decision support system (Data-driven DSS, model-driven DSS,	1.3	1.3	☐ Exercises ☒ Assignments ☐ Seminars ☐ Projects ☐ Practices	

	Knowledge-driven DSS, Communications-driven, Document-driven DSS)			☐ Others
ILO3	Databases and data warehouses**:** • Concepts of databases • Types of databases • Data warehouses and data marts • Multi-dimensional database • Banking data warehouse	1.3	1.3	☐ Exercises ☒ Assignments ☐ Seminars ☐ Projects ☐ Practices ☐ Others
ILO4	Data-driven decision support system: • Management reporting systems (MRS) • Advanced MRS • Executive information system (EIS) • Advanced EIS • Dashboards	2	2	☐ Exercises ☒ Assignments ☐ Seminars ☐ Projects ☐ Practices ☐ Others
ILO5	Model-driven decision support system: • Concepts of model-driven DSS • Component of model-driven DSS (Database management system, model base management system, dialogue management system) • What-if and sensitive-analysis	1.3	1.3	☐ Exercises ☒ Assignments ☐ Seminars ☐ Projects ☐ Practices ☐ Others
ILO6	Managerial decision modeling: • Modelling and solution of linear programming • Modelling and solution of nonlinear Programming • Modelling and solution of decision theory problems • Trend-line fitting and forecasting	3	3	☒ Exercises ☒ Assignments ☐ Seminars ☐ Projects ☐ Practices ☐ Others
ILO7	Knowledge-driven DSS: • Concept of knowledge-driven DSS • Expert system • Components of expert system • Intelligent agent • Types of agents in artificial intelligence • Practical application of intelligent agents	1.3	1.3	☐ Exercises ☒ Assignments ☐ Seminars ☐ Projects ☐ Practices ☐ Others

ILO8	Recent topics in DSS: • Intelligent decision support system • Self-evolving DSS • Data mining and knowledge discovery • Visual data mining	1.3	1.3	☐ Exercises ☒ Assignments ☐ Seminars ☐ Projects ☐ Practices ☐ Others
ILO9	Building decision support systems: • Getting start • System analysis • Conceptual design • System design • Realize system	1.3	1.3	☐ Exercises ☒ Assignments ☐ Seminars ☐ Projects ☐ Practices ☐ Others

6- Assessment Criteria (Related to ILOs)

ISC	Interactive Synchronized Collaboration		Ex	Exams		Rpt	Reports
PF2F	Presentations and Face-to-Face Assessments		PW	Practice Work			

ILO Code	ILO	Intended Results	Assessment Type				
			ISC	PW	Ex	PF2F	Rpt
ILO1	Explain basic concepts and methods of decision making, and types of decisions		☒		☒		☒
ILO2	Explain concept and types of decision support systems		☒		☒		☒
ILO3	Explain concept and types of databases and data warehouses with examples		☒		☒		☒
ILO4	Explain concept and types of data-driven decision support system		☒		☒		☒
ILO5	Definition of model-driven DSS, and identify model-driven DSS components		☒		☒		☒
ILO6	Modelling and solution of managerial decisions with Spreadsheets (such as Microsoft Excel)		☒	☒	☒		
ILO7	Explain concept and types of knowledge-driven decision support system		☒		☒		☒
ILO8	Discuss Recent topics in decision support system		☒		☒		☒
ILO9	Describe process of building decision support systems		☒		☒		☒

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7-Practice Tools:

Tool Name	Description
Spreadsheet, such as Microsoft Excel	Modelling and solution of Linear and Nonlinear Programming, decision theory problems, and Trend-line fitting and forecasting

8-Main References

- Awad Souliman , Decision Support Systems (Prototype-eBook), Virtual University, 2017
- Shams Alden, Abdelah S.A, Decision Support Systems (E-Book), Virtual University, 2008

9-Additional References

- Turban, Aronson, Liang -Decision Support Systems and Intelligent Systems, 7ed, Prentice-Hall, 2005
- Vicki L. Sauter, Decision support systems for business intelligence, 2ed, John Wiley & Sons, Inc, 2010
- Laudon, Kenneth C. and Laudon, Jane P., Management Information Systems: Managing the Digital Firm 13th Ed., Pearson/Prentice-Hall, New Jersey, 2014
- James A. O'Brien , George M. Marakas ,Management Information System 10ed, McGraw-Hill Companies, Inc, 2011
- Ramanathan Sugumaran, John DeGroote Spatial Decision Support Systems- Principles & Practices, Taylor and Francis Group, LLC ,2011
- Turban, Efraim, Translation into Arabic by sroor sroor, Management Support Systems (Decision Support Systems and Expert Systems, dar-almrreekh, 2000.
- Awad Souliman, Management Information Systems (E-Book), Virtual University, 2009