Course Specification

(2025)

1. Basic Information

Course Name (as per regulations)	**Decision Support Systems**
Course Code (as per regulations)	**IS332P**
Department(s) involved in teaching the course	**Mansoura University|Faculty of Computers and Information|Information Systems**

Number of Hours/Credit Points (as per regulations)	**Theory**	**Practical**	**laboratory**	**Total**
	2	**3**	**0**	**5**

Course Type	**Optional**
Academic Level/Year	**Mansoura University|Faculty of Computers and Information|شعبة نظم المعلومات|ثالثة نظم المعلومات**
Academic Program	• بكالوريوس الحاسبات والمعلومات نظم المعلومات
Faculty/Institute	**Mansoura University|Faculty of Computers and Information**
University/Academy	**Mansoura University**
Course Coordinator Name	• **ibrahim mohamed elsayed elhasanony**
Course Description Approval Date	**2025-09-20**
Approval body (attach decision/minutes of department council/competent authority/...)	مجلس القسم

2. Course General Description (brief summary of scientific content)

This course provides in-depth coverage of information systems used for decision support. Models, interactive processes, knowledge-based approaches, and the integration of database systems are described. Interactive computer-based systems are discussed which help decision-makers use data and models to solve semi-structured and unstructured problems.

3. Course Learning Outcomes

Alignment of Course Learning Outcomes with Program Outcomes (Adopted Standards)

Program Outcomes (NARS/ARS) (according to the matrix program specs)		Course Learning Outcomes: Upon completion of the course,the student will be able to:	
Code	**Text**	**Code**	**Text**
A. Knowledge and Understanding			
a1	**Essential facts, concepts, principles and theories relating to computing and information and computer applications as appropriate to the program of study.**	**a1.1**	**Explain the role of data warehousing, OLAP, and Business Intelligence in DSS.**
		a1.2	**Define the core components and architecture of a Decision Support System.**
		a1.3	**Describe the phases of the decision-making process and classify decisions as structured, semi-structured, or unstructured.**
a5	**The extent to which a computer-based system meets the criteria defined for its current use and future development.**	**a5.1**	**Discuss the ethical and legal implications of using automated decision-making systems.**
		a5.2	**Identify the key differences between descriptive, predictive, and prescriptive analytics.**
B. Intellectual Skills			
b11	**Perform comparisons between (methods, techniques...etc).**	**b11.1**	**Formulate a plan for implementing a DSS, considering organizational change management.**
		b11.2	**Analyze a complex business problem to determine the appropriate DSS approach.**
		b11.3	**Differentiate between various predictive models and evaluate their suitability for a given scenario.**
		b11.4	**Design a conceptual model for a data warehouse using a star schema.**
b16	**Solve IS problems with pressing commercial, time, and industrial constraints.**	**b16.1**	**Create a comprehensive framework for assessing the return on investment (ROI) of a DSS.**
		b16.2	**Criticize a DSS design based on principles of usability and effectiveness.**

Program Outcomes (NARS/ARS) (according to the matrix program specs)		Course Learning Outcomes: Upon completion of the course, the student will be able to:	
Code	Text	Code	Text
		b16.3	Justify the selection of specific data mining techniques for knowledge discovery.

C. Professional skills

c9	Use appropriate programming languages, web-based systems and tools, design methodologies, and database systems.	c9.1	Utilize data visualization tools (e.g., Tableau, Power BI) to illustrate key business metrics.
		c9.2	Apply ETL (Extract, Transform, Load) processes to prepare data for analysis.
c19	Maintaining existing information systems.	c19.1	Conduct a presentation that effectively communicates data-driven insights and recommendations.
		c19.2	Implement a basic predictive model using appropriate software (e.g., Excel, Python).

D. General Skills

d4	Use an appropriate mix of tools and aids in preparing and presenting reports for a range of audiences, including management, technical, users, industry or the academic community.	d4.1	Work effectively in a team to design and develop a prototype DSS, demonstrating collaboration and project management skills.
		d4.2	Use information technology tools to retrieve and evaluate credible information for decision-making.
d7	Show the use of general computing facilities.	d7.1	Practice independent learning to explore new features of DSS software and emerging trends in analytics.
		d7.2	Communicate clearly and effectively, both verbally and in writing, to present data and arguments.
		d7.3	Demonstrate time management ability by completing complex assignments and a project within deadlines.
		d7.4	Identify and solve unstructured problems through the application of DSS methodologies.

4. Teaching and Learning Methods

1. Lectures & Discussions
2. Case Studies

Course Weekly Schedule

Academic Week Number	Course Content (Course Topics)	Total Weekly Hours	Expected Learning Hours			
			Theoretical Teaching (Lectures /Groups /Discussion /etc.)	Training (Practical / Clinical / etc.)	Self Learning (Tasks / Assignments / Projects / ...)	Other (Specify)
1	**Introduction to DSS**	**5**	**2**	**3**		
2	**Decision Making Concepts**	**5**	**2**	**3**		
3	**Decision Making Concepts**	**5**	**2**	**3**		
4	**Decision Making Technologies and Environment**	**5**	**2**	**3**		
5	**Model Management**	**5**	**2**	**3**		
6	**Model Management**	**5**	**2**	**3**		
7	**Introduction to Machine Learning in DSS**	**5**	**2**	**3**		
8	**Midterm**	**0**	**0**	**0**		
9	**Training of Classification Models**	**5**	**2**	**3**		
10	**Supervised Learning for DSS**	**5**	**2**	**3**		
11	**Supervised Learning for DSS**	**5**	**2**	**3**		
12	**Automated Decision Systems and Expert Systems**	**5**	**2**	**3**		
13	**Automated Decision Systems and Expert Systems**	**5**	**2**	**3**		
14	**Business Intelligence: Data Warehousing, Data Acquisition, Data Mining, Business Analytics, and Visualization**	**5**	**2**	**3**		
15	**Oral & practical**	**0**	**0**	**0**		
16	**Final**	**0**	**0**	**0**		

5. Student Assessment Methods

No.	Assessment Method	Expected Assessment Timing (Academic Week Number)	Assessment Grades	Percentage of Total Course Grade
1	**Midterm**	**8**	**10**	**10**
2	**Oral**	**15**	**10**	**10**

No.	Assessment Method	Expected Assessment Timing (Academic Week Number)	Assessment Grades	Percentage of Total Course Grade
3	Practical	15	20	20
4	Final	16	60	60

6. Learning Resources and Support Facilities

Learning Sources (Books, scientific references, etc.)	Books	Turban, E., Sharda, R., & Delen, D. (2021). Decision Support and Business Intelligence Systems (11th ed.). Pearson.
	Books	Power, Daniel J. Decision support basics. Business Expert Press, 2009.
	Other (mention)	Lecture Notes
Educational Equipment Supporting teaching and learning	Classrooms	Labs

Name and Signature
Program Coordinator
_____

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Course Coordinator
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Open course specification