



**Philadelphia University**  
**Faculty of Information Technology**  
**Department of MIS**  
**First semester, 2007/2008**

**Module Syllabus**

<b>Module Title: Decision Support System</b>	<b>Module code: 732373</b>
<b>Module Level:4</b>	<b>Module prerequisite (s) and/or co requisite (s): 731332, 732361</b>
<b>Lecture Time: 09:45-11:00</b>	<b>Credit hours:3</b>

**Academic Staff**

**Specifics**

<b>Name</b>	<b>Rank</b>	<b>Office Number and Location</b>	<b>Office Hours</b>	<b>E-mail Address</b>
<b>Dr. Fadi Fayez</b>	<b>Assistant Prof.</b>	<b>330, IT</b>	<b>2:30-16:00 (Sun+Tues+Thurs) 11:15-12:15 (Mon+Wed)</b>	<b>ffayez@philadelphia.edu.jo</b>

**Module description:**

This module tends to give the student the concepts and applications of the decision support system, including type of decisions, type of decision makers, modeling decisions, decisions within organizations, rule based expert systems, and simulation as a DSS application. This module also covers practical issues in DSS such as using Integer and Linear Programming as applications of modeling and solving choices and uncertainties of real world decision problems.

**Module objectives:**

1. To provide students with the main concepts of Decision Support System (DSS) and management sciences
2. To study the components of DSS and the main players who participate in the decision process
3. To study management science models especially linear and integer programming, network and decision tree
4. To explain key areas contributing to DSS such as knowledge acquisition, expert system and knowledge base systems
5. To study group decision support and groupware technologies within organisations

**Module Components**

• **Text Books (title , author (s), publisher, year of publication)**

Title: Decision support systems in the 21<sup>st</sup> Century.

Author: George M. Marakas,

Publisher: 2<sup>nd</sup> edition, Pearson Education, 2003

- **Support material (s) (vcs, acs, etc).**
- **Study guide (s) (if applicable)**
- **Homework and laboratory guide (s) if (applicable).**

### **Teaching methods:**

*Duration:* 16 weeks in first semester, 48 hours in total

*Lectures:* 35 hours, 2 per week

*Optional Tutorials/Lectures:* 13 hours, (average 1 per week)

*Assignments:* 9 Assignments

### **Learning outcomes:**

- **Knowledge and understanding**
  - The student should be able to identify the role of information systems in DSSs.
  - The students should be able to explain the role of managers and individuals in the process of deriving decisions within IT organizations.
- **Cognitive skills (thinking and analysis).**
  - The students should be able to design and formulate management problems using DSSs models.
  - The students should be able to apply linear and integer programming techniques for scheduling and optimization problems that require decision making using MSEXCEL.
- **Communication skills (personal and academic).**
  - The student should be able to present different ideas about information retrieval applications where he/s can demonstrate that in group work or within the class discussions.
  - The student should be able to demonstrate his/her assignments/ project in an oral presentation within the class room where the module leader and students can ask different questions related to the student's assignment.
- **Practical and subject specific skills (Transferable Skills).**
  - The students should be able to utilize statistical tools, and AI techniques especially knowledge base and expert system techniques related to DSSs.
  - The student should be able to demonstrate his ability to design computer-based decision support systems and design appropriate solutions for different problems.

### **Assessment instruments**

- Short reports and/ or presentations, and/ or Short research projects
- Quizzes.
- Home works: **Two home works during the semester (short projects)**
- Final examination: **50 marks**

<b><u>Allocation of Marks</u></b>	
<b>Assessment Instruments</b>	<b>Mark</b>
First examination	<b>15%</b>
Second examination	<b>15%</b>
Final examination: 50 marks	<b>50%</b>
Reports, research projects, Quizzes, Home works, Projects	<b>20%</b>
Total	<b>100%</b>

## **Documentation and academic honesty**

Submit your home work covered with a sheet containing your name, number, course title and number, and type and number of the home work (e.g. tutorial, assignment).

Any completed homework must be handed in to my office by 15:00 on the due date. After the deadline “zero” will be awarded. You must keep a duplicate copy of your work because it may be needed while the original is being marked.

For the research report, you are required to write a report similar to a research paper. It should include:

- **Abstract:** It describes the main synopsis of your paper.
- **Introduction:** It provides background information necessary to understand the research and getting readers interested in your subject. The introduction is where you put your problem in context and is likely where the bulk of your sources will appear.
- **Methods (Algorithms and Implementation):** Describe your methods here. Summarize the algorithms generally, highlight features relevant to your project, and refer readers to your references for further details.
- **Results and Discussion (Benchmarking and Analysis):** This section is the most important part of your paper. It is here that you demonstrate the work you have accomplished on this project and explain its significance. The quality of your analysis will impact your final grade more than any other component on the paper. You should therefore plan to spend the bulk of your project time not just gathering data, but determining what it ultimately means and deciding how best to showcase these findings.
- **Conclusion:** The conclusion should give your reader the points to “take home” from your paper. It should state clearly what your results demonstrate about the problem you were tackling in the paper. It should also generalize your findings, putting them into a useful context that can be built upon. All generalizations should be supported by your data, however; the discussion should prove these points, so that when the reader gets to the conclusion, the statements are logical and seem self-evident.
- **Bibliography:** Refer to any reference that you used in your assignment. Citations in the body of the paper should refer to a bibliography at the end of the paper.

### **• Protection by Copyright**

1. Coursework, reports, and essays submitted for assessment must be your own work, unless in the case of group projects a joint effort is expected and is indicated as such.
2. Use of quotations or data from the work of others is entirely acceptable, and is often very valuable provided that the source of the quotation or data is given. Failure to provide a source or put quotation marks around material that is taken from elsewhere gives the appearance that the comments are ostensibly your own. When quoting word-for-word from the work of another person quotation marks or indenting (setting the quotation in from the margin) must be used and the source of the quoted material must be acknowledged.
3. Sources of quotations used should be listed in full in a bibliography at the end of your piece of work.

### **• Avoiding Plagiarism.**

1. Unacknowledged direct copying from the work of another person, or the close paraphrasing of somebody else's work, is called plagiarism and is a serious offence, equated with cheating in examinations. This applies to copying both from other students' work and from published sources such as books, reports or journal articles.

2. Paraphrasing, when the original statement is still identifiable and has no acknowledgement, is plagiarism. A close paraphrase of another person's work must have an acknowledgement to the source. It is not acceptable for you to put together unacknowledged passages from the same or from different sources linking these together with a few words or sentences of your own and changing a few words from the original text: this is regarded as over-dependence on other sources, which is a form of plagiarism.
3. Direct quotations from an earlier piece of your own work, if not attributed, suggest that your work is original, when in fact it is not. The direct copying of one's own writings qualifies as plagiarism if the fact that the work has been or is to be presented elsewhere is not acknowledged.
4. Plagiarism is a serious offence and will always result in imposition of a penalty. In deciding upon the penalty the Department will take into account factors such as the year of study, the extent and proportion of the work that has been plagiarized, and the apparent intent of the student. The penalties that can be imposed range from a minimum of a zero mark for the work (without allowing resubmission) through caution to disciplinary measures (such as suspension or expulsion).

### **Course/module academic calendar**

<b>week</b>	<b>Basic and support material to be covered</b>	<b>Homework/reports and their due dates</b>
(1)	General Introduction of DSSs	
(2)	DSS process and components	
(3)	Decision and decision makers	
(4)	Decision Theory and simple models	
(5)	Decision in organisations.	
(6)	Modelling decision process.	
(7)	Group decision support and groupware technologies 1 <sup>st</sup> exam	
(8)	Introduction to management science models	
(9)	Introduction to linear and integer programming models	
(10)	Application to linear and integer programming	
(11)	Introduction to Simulation	
(12)	Discrete Event Simulation as a DSS application	
(13)	Introduction to Intelligent Systems	
(14)	Rule based Expert Systems	
(15)	Review	
(16)	Final exam.	

### **Expected workload:**

**On average students need to spend 3 hours of study and preparation for each 50-minute lecture/tutorial.**

### **Attendance policy:**

**Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.**

### **Module references**

**Books**

1. John A. Lawrence, Jr and Barry A. Pasternack, Applied Management Science. 2<sup>nd</sup> Edition, John Wiley & sons Inc. (2002)

**Journals****Websites**