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Course Title: Decision Support Systems

Course Code: IS-490

Resource Person: Muhammad Shaheryar

Department: **Information Systems**

**HSM Vision**

HSM envisions its success in the sustainable contribution that it will make to the industry, academia and research in public and private sector. HSM will lead by providing professionally competent and ethically conscious human resources engaged in the global and local context to foster socio-economic growth and sustainability for the society.HSM envisages having facultywith high research potential and a deep desire for cutting edge research including collaboration with national and international partners.

**HSM Mission**

Being a research-oriented and student-centric business school, we emphasize research publications in impact journals as well as state-of -the-art learning methodologies.  We will prepare our students to become the future ethical business leaders and the guiding post for the society, while equipping them with the knowledge and skills required by world-class professionals.  We will be the leading choice for organizations seeking highly talented human resource. HSM will foster internationalization with key stakeholders and actively work to exchange best practices with business schools across Pakistan through collaborations, workshops, conferences and other means.

**Program Objectives**

**Course Objective:**

Decision support systems and expert systems and their implementations are examined in this course. This course discusses the manager's responsibilities for problem solving and decision making and about those areas in which computers can be used as tools to gain the insight needed to support selection of decision alternatives..

**Learning Objective:**

Upon completion of this course, the student will be able to:

A. Distinguish among data processing systems, management information systems, and decision support/expert systems.

B. Integrate the major components of decision support systems (DSS) and expert systems (ES), including systems with the following features:

stored data retrievable through a DBMS, management science models operating on the data to produce derived measures supporting managerial decision making, and expert knowledge on how to use available data and management tools under varying levels of uncertainty.

C. Capture decision rules based on knowledge provided by an acknowledged expert and codify those rules as assertions, rules, and ad hoc

procedures.

D. Analyze how information is used to solve problems.

E. Utilize commercial spreadsheet and database integrated packages to develop "what if" simulation models to support the decision-

making process.

F. Describe when/how heuristic expert systems models may be used to complement more analytic decision-making frameworks, such as spreadsheet models.

**Learning Outcomes:**

* Understand what is DSS
* Role of DSS in System Integration
* DSS System Development Life Cycle and Sure step Methodology.
* Different modules of DSS

**Teaching Methodology (List methodologies used –example are given below)**

* Lecture
* Interactive Classes
* Case based teaching
* Class activities
* Applied Projects

**STUDENTS ARE REQUIRED TO READ AND UNDERSTAND ALL ITEMS OUTLINED IN THE PARTICIPANT HANDBOOK**

**Class Policy:-**

* Be On Time

You need to be at class at the assigned time. After 10 minutes past the assigned time, you will be marked absent.

* Mobile Policy

**TURN OFF YOUR MOBILE PHONE!**It is unprofessional to be texting or otherwise.

* Email Policy

**READ YOUR EMAILS!** You are responsible if you miss a deadline because you did not read your email.

Participants should regularly check their university emails accounts regularly and respond accordingly.

* Class Attendance Policy

A minimum of 80% attendance is required for a participant to be eligible to sit in the final examination. Being sick and going to weddingsare absences and will not be counted as present. You have the opportunity to use 6 absences out of 30 classes. Participants with less than 80% of attendance in a course will be given grade ‘F’ (Fail) and will not be allowed to take end term exams. International students who will be leaving for visa during semester should not use any days off except for visa trip. Otherwise they could reach short attendance.

* Withdraw Policy

Students may withdraw from a course till the end of the 12th week of the semester. Consequently, grade W will be awarded to the student which shall have no impact on the calculation of the GPA of the student.A Student withdrawing after the 12th week shall be automatically awarded “F” grade which shall count in the GPA.

* Moodle

UMT –LMS (Moodle) is an Open Source Course Management System (CMS), also known as a learning Management System (LMS). Participants should regularly visit the course website on MOODLE Course Management system, and fully benefit from its capabilities. If you are facing any problem using moodle, visit <http://oit.umt.edu.pk/moodle>. For further query send your queries to [moodle@umt.edu.pk](mailto:moodle@umt.edu.pk)

* Harassment Policy

Sexual or any other harassment is prohibited and is constituted as punishable offence. Sexual or any other harassment of any participant will not be tolerated. All actions categorized as sexual or any other harassment when done physically or verbally would also be considered as sexual harassment when done using electronic media such as computers, mobiles, internet, emails etc.

* Use of Unfair Means/Honesty Policy

Any participant found using unfair means or assisting another participant during a class test/quiz, assignments or examination would be liable to disciplinary action.

* Plagiarism Policy  
    
  All students are required to attach a “Turnitin” report on every assignment, big or small. Any student who attempts to bypass “Turnitin” will receive “F” grade which will count towards the CGPA. The participants submit the plagiarism report to the resource person with every assignment, report, project, thesis etc. If student attempts to cheat “Turnitin”, he/she will receive a second “F” that will count towards the CGPA. There are special rules on plagiarism for final reports etc. all outlined in your handbook.
* Communication of Results

The results of quizzes, midterms and assignments are communicated to the participants during the semester and answer books are returned to them. It is the responsibility of the course instructor to keep the participants informed about his/her progress during the semester. The course instructor will inform a participant at least one week before the final examination related to his or her performance in the course.

**Course Outline**

Course code: Course title: Decision Support Systems

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| --- | --- |
| Program | BBIS |
| Credit Hours | 3 |
| Duration | 15 Weeks |
| Prerequisites (If any) | N/A |
| Resource Person  Name and Email | Muhammad Shaheryar  Muhammad.shaheryar@umt.edu.pk |
| Counseling Timing  (Room# 1N1 R#7 ) | **Tuesday:** 12:30 – 3:30  **Wednesdays:** 9:00 – 11:00  **Thursday:** 11:00 – 2:00 |

**Chairman/Director Program signature………………………………….Date……………………..**

**Dean’s signature………………………… ………………….Date………………………………………….**

**Grade Evaluation Criteria**

Following is the criteria for the distribution of marks to evaluate final grade in a semester.

**Marks Evaluation Marks in percentage**

Quizzes 15%

Assignments 15%

Mid Term 25%

Attendance & Class Participation 5%

Term Project and Presentation 40%

Total 100%

**COURSE OUTLINE:**

A. Review of Systems Principles

1. Characteristics and elements of systems

thought

2. The general systems model

3. Explore communication systems

4. Differentiate between data processing

systems, management information systems,

and decision support systems

B. Methods of Decision Making and Problem Solving

1. Elements of problem solving process

2. Problems versus systems

3. Structured, unstructured, and semi-

structured problems

4. The systems approach and its relationship

to the scientific approach

C. Decision Support Systems (DSS)

1. Development of DSS

2. Relationship to data processing and database

systems

3. DSS development and implementation

4. DSS features and capabilities

5. DSS in the information center

D. Expert Systems Overview

1. Expert behavior in decision-making

situations

2. Knowledge capture

3. Expert systems development process

E. Hands-on Experience with a Rule-based Expert

System Software Package

1. Build a minimal expert system

2. Apply and modify the system

F. Knowledge Acquisition and Meta-Knowledge

1. Editing (supplementing, correcting,

deleting) knowledge

2. Multiple levels of knowledge representation

3. Multiple levels of control and search

procedures

G. Spreadsheet Facilities

1. Modeling with a spreadsheet

2. Hands-on use of a spreadsheet for business

decision-making

3. Spreadsheet in the information center

H. Manipulation of Models as a decision-making

procedure

1. Effects of data manipulation to support

decisions in pricing, production, cash flow,

and new product evaluation models

2. Proficiency in utilizing expert system,

spreadsheet, database, graphic and

statistical software for "what if" analyses

I. Building Management Models

1. Picking a model type

2. Validation of models

3. Management models and expert systems in the

information center