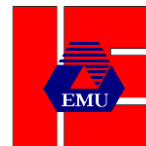




**EASTERN MEDITERRANEAN UNIVERSITY**  
**DEPARTMENT OF INDUSTRIAL ENGINEERING**  
**IENG372/MANE372 INFORMATION SYSTEMS AND TECHNOLOGY**  
**COURSE OUTLINE**



<b>COURSE CODE</b>	IENG372/MANE372	<b>COURSE LEVEL</b>	Third Year
<b>COURSE TITLE</b>	Information Systems and Technology	<b>COURSE TYPE</b>	Area Core
<b>CREDIT VALUE</b>	(3,1,2) 4	<b>ECTS Credit Value</b>	8
<b>PRE-REQUISITE(S)</b>	CMPE110 and MGMT201	<b>CO-REQUISITE(S)</b>	NONE
<b>PREPARED BY</b>	Assoc. Prof. Dr. Orhan KORHAN	<b>SEMESTER / ACADEMIC YEAR</b>	SPRING 2018-19

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<b>COURSE SCHEDULE</b>	Lecture: Tuesday 08:30-10:20 (IE-D203); Thursday 12:30-14:20 (IE-D203); Lab: Wednesday, 14:30-16:20 at IE PC Lab 1 (The lab has separate attendance, quizzes, and final) Office Hour: Tuesday 14:30-15:20			
<b>COURSE WEB LINK</b>	<a href="https://staff.emu.edu.tr/orhankorhan/en">https://staff.emu.edu.tr/orhankorhan/en</a>			

### COURSE DESCRIPTION

The purpose of this course is to teach students the concepts of information technology and the importance of these concepts within the framework of management of organizations and the ability to exploit continuous innovations in order to stay competitive in business. Information Technology. Basic data information concepts. Appropriate theoretical concepts of decision making. Systems Analysis, Structured analysis methodologies. Information systems development methodologies. Database management. Decision support systems. Expert systems.

### COURSE OBJECTIVES

The main objectives of this course are:

1. Information systems and design, alternative approaches to systems development (Prototyping, CASE, JAD, Rapid Application Development, Participatory Design)
2. The sources of software and systems acquisition (outsourcing, off-the-shelf software)
3. Managing the information systems project (initiation, planning, executing, closing down), representing and to schedule project plans (Gantt Chart, Network Diagram)
4. Systems planning and selection, assessing project feasibility (economic, operational, technical, schedule, legal and contractual), internet basics (internet, intranet, extranet, electronic data interchange)
5. Systems requirements, traditional methods (interviewing and listening, observation, business documents), modern methods (JAD, prototyping)
6. Process modeling, data-flow diagramming (DFD) and analysis, logic modeling
7. Conceptual data modeling, entity-relationship modeling (ERD), selecting and generating best alternative strategies
8. Designing forms and reports, interfaces and dialogues
9. Database design, normalization, transforming ERD into relations, physical file and database design, designing fields, designing physical tables
10. Systems implementation and operation. Coding, testing, and installation
11. Developing a database software package (MS Access) for the utilization of real life information systems
12. Working effectively in multidisciplinary teams, making an independent research for real life cases, and writing and presenting a technical report on the results

### COURSE LEARNING OUTCOMES

On successful completion of this course, students are expected to develop **knowledge** and **understanding** of:

1. Fundamentals of Information Systems
2. How to perform system analysis with special emphasis on information systems
3. Designing Logical Models for the processes of information systems
4. Data Flow Diagrams (DFD)
5. Designing Entity Relationship Diagrams for databases

On successful completion of this course, students are expected to develop **their skills** in:

6. Performing systems analysis on any organization for the purpose of either business redesign or information system design
7. Design or redesigning of process rules
8. Logical design of an information flow within an organization
9. Logical design of a database for an Information System

10. Communication with software professionals who will be developing such systems
11. Both written and oral presentation of a team project study

On successful completion of this course, students are expected to develop their appreciation of and respect for **values and attitudes** regarding the issues of:

12. Role and importance of Information Systems within the manufacturing and service systems
13. Acting as an integral part in a team of professionals
14. Importance of systematic approach to problem solving in real life
15. Using suitable technologies to achieve the goals, and the importance of keeping up-to-date with advances in Information Technology
16. Importance of accuracy in estimating requirements of system users so that customers' information requirements are fully satisfied
17. Impact of computer technology in solving Industrial Engineering problems

#### CONTRIBUTION OF THE COURSE TO MEETING THE REQUIREMENTS OF CRITERION 5

Mathematics and Basic Sciences	: 0 %
Engineering Science	: 25 %
Engineering Design	: 50 %
General Education	: 25 %

#### RELATIONSHIP OF COURSE TO STUDENT OUTCOMES

Student Outcomes	Level of Contribution		
	Moderate	High	NO
(a) an ability to apply knowledge of mathematics, science and engineering	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) an ability to design and conduct experiments, as well as to analyze and interpret data	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(d) an ability to function on multi-disciplinary teams	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(e) an ability to identify, formulate, and solve engineering problems	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(f) an understanding of professional and ethical responsibility	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(g) an ability to communicate effectively	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(i) a recognition of the need for, and an ability to engage in life-long learning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(j) a knowledge of contemporary issues	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### GRADING CRITERIA

**Exams:** All examinations will be based on lectures, tutorials, labs, assigned readings, project study or other work. To pass these exams students will need to have studied the material well in advance in order to understand the concepts, procedures and techniques. To discourage last minute cramming, the instructor and the assistants will not answer any questions from students on the day of an examination. Exam results will be announced on the notice boards as soon as the exam papers have been evaluated. Descriptions of these examinations are as follows:

**Quizzes:** There will be three quizzes that will be announced in advance. They will be of closed-book/closed-notes type but all required material will be supplied. A separate lab quiz will be scheduled based on the material/software provided at the lab sessions throughout the semester.

**Midterm Exam:** There will be one open-book/closed-notes midterm examination that covers all the material up to the date of the examination. The midterm exam may consist of two sections: discussion questions and problems. It will be scheduled for a day in the designated mid-term exams week.

**Final Exam:** The final examination will be an open-book exam which will cover all the material studied throughout the semester and has the same structure as in the midterm examination. It will also be used to determine letter grades. Like the midterm exam, the final exam will be scheduled for a day in the designated final exams week.

**Make-up Exam:** **No make-up examination will be given to students who miss quizzes, and whose attendance is below 70%.** Make-up examination will only be offered (at the end of the semester) to students who missed the **final or midterm exam** and provided adequate documentations for the reason for their absence **within three working days at the latest after the examination date.** A student's illness will **only** be accepted as a valid excuse if it is supported by a written report of a physician from the Health Center of the EMU.

**Re-sit Exam:** Re-sit examination is considered as Final Exam and will include Final Exam topics. Re-sit examination will be offered to the students who fall into the following categories: students who have gained letter grades **D-** or **F** (but not NG), and the students who received an academic warning or who are on unsatisfactory or probational status.

**Term Project:** Students should form groups of **3 students** (exactly, otherwise you should submit a valid excuse in written form) who may be in different class groups, should submit a single project report. The topic for the project will be selected by the project group among the list of topics provided by the instructor. Unfortunately, a penalty for late submissions will be applied if the project report is not submitted on the due date.

**Note:** The students need a calculator so they should bring their calculators to all lecture/tutorial/lab/exam hours.

## RELATIONSHIP WITH OTHER COURSES

It is a synthesis course of all the previously taken departmental courses and also a preparation for the graduation project course (IENG492 Manufacturing and Service Systems Design).

## LEARNING / TEACHING METHOD

Teaching will be based on enabling the students to understand the concepts and procedures in each topic section and to be able to apply them. To do this the course will be organized into two modules: Lectures and Tutorials/Laboratory sessions. Sometimes four hours of class in a week will be used for lectures according to the perceived need. On the other hand, sometimes 2 hours of class in a week will be organized for lectures, 1 or 2 hours for Tutorials and/or Laboratory sessions.

**Lectures:** In lectures the instructor will attempt to summarize and explain only selected important concepts and points as clearly as possible. To be familiar with the material presented in lectures and participate in class discussions, students are expected to read the material covered in the previous lectures prior to the class meeting. Students will then find the lectures more interesting, and will benefit from the discussion if they come well prepared.

**Tutorials:** In addition to the regular lectures, there will be tutorial sessions conducted in the classroom by the assistants, according to the perceived need. In these hours the assistants will do extra example problems. Obviously, the best tutorials are those that meet the learning needs of students. The people who best understand your learning needs are you. Please contact the assistants regarding what you would like to see in the tutorials. Tutorial content will then be determined, and the tutorial date will be announced accordingly.

**Laboratory Work:** Throughout the semester, there will be several laboratory sessions, which will be conducted by the assistants, to do various computer exercises that require the use of MS Access available in the laboratory. Laboratory sessions will always be held in the Department's PC Labs and their dates announced in advance. If you have any problem in these sessions please try to resolve your problem with the assistants first.

**Office Hours:** The students' timetables will be a base for determining appropriate time slots with zero clash (or minimum number of clashes) as much as possible. If students have difficulty in understanding any material after they have tried their best, they should consult their assistants and instructor during their office hours only. However, if you wish to meet the instructor outside of their office hours, please call him by phone or send an e-mail first to make an appointment.

## ASSIGNMENTS

Besides the textbook material, there will be some reading assignments, which will support the lectures. For any type of examination, students are also responsible from studying all assigned readings, even if they might not be discussed in class.

## METHOD OF ASSESSMENT

Although the student's overall grade will be based on the general assessment of the instructor, the following percentages may give an idea about the relative importance of various assessment tools.

Attendance and Participation	5%
Quizzes	15%
Midterm Examination	20%
Final Examination	25%
Lab Related Material	
Term Project Final Report & Presentation	25%
Access Tutorial Grade (Lab Midterm & Lab Final)	10%
<hr/> TOTAL	<hr/> 100%

Note that the instructor reserves the right to modify these percentages in case he finds it necessary. Letter grade equivalents of numerical performances will be announced by the Registrar's Office after the last day for the submission of letter grades.

**NG (Nil-grade):**     **Conditions that lead to NG (Nil-grade):**

1. Not attending the **Final Exam** or its **Make-up Exam** without a valid excuse.
2. Not attending the **Mid-term Exam** without a valid excuse.
3. Not submitting the **Term Project**.
4. Not attending the **Project Presentation**.

5. Not attending any one of the **Lab Exams without a valid excuse.**
6. **Having an attendance to lectures/tutorials/labs less than 70%.**

**Objections:** Any form of document concerning work that is to be used by the instructor as the basis of grading will be shown to the student upon request, **within a week following the announcement of the grade.** The objection to any grade must be made to the assistants within that period. If, after an exam has been graded, you think an error was made in grading or you have questions about the grading of the material, please examine the exam solutions first, and then write your questions or comments on a separate sheet of paper and turn this paper to the assistants.

## ATTENDANCE AND NG GRADE

Attendance will be taken every Lecture/Tutorial/Lab session. Note that EMU regulations allow instructors to give a grade of **NG** (Nil Grade) to a student whose absenteeism is more than 30% of the Lecture/Tutorial/Lab hours and/or who do not complete sufficient work that are included in the assessment of the course.

## TEXTBOOK/S

Students must have the following textbook:

- Valacich, Joseph, Joey George, and Jeff Hoffer, “Essentials of System Analysis and Design”: Pearson Higher Education International Version, 5/E, 2012

**Lecture Notes:** Students are expected to make their own notes. Lecture notes and/or overheads used in class will not be made available for copying. Material presented in class taken from other than the textbook will be made available on the web page of the course (refer to <http://www.ie.emu.edu.tr> ).

## EXTENDED READING LIST

Note that aside from these books, EMU Library has quite a good collection of books on the intermediate and advanced levels in the related fields of industrial engineering discipline.

## TOPICS COVERED and COURSE SCHEDULE

WEEK	TOPICS
1	Introduction to the course. (Read Chaps. 1&2)
2	Modern System Analyst (Players); Information System Building Blocks; System Development (Read Chap. 3)
3	Systems Analysis; (Read Chap 4)
4	Requirements Discovery (Read Chap. 5)
5	Process Modeling (Read Chap. 6)
6	Output Data Flow Diagrams (DFD) (Read Chap. 6)
7	<b>Mid Term Exam Week</b>
8	Data Modeling (Read Chap. 7)
9	Data Modeling; (Read Chap. 7)
10	Data Modeling & Database Design; (Read Chaps 7&9)
11	Database Design; (Read Chap 9)
12	Human Interface (Read Chap 8 &10)
13	Human Interface (Read Chap 8 &10)
14	<b>Project Team Presentations</b>
15	<b>Final Exam Week</b>
16	<b>Final Exam Week</b>

Class Schedule	Tutorial Schedule	Laboratory Schedule	Presentation
4 hours of lecture per week by the instructor	Tutorials will be scheduled before mid-term and final exams	2 hours lab per week by the course assistant on every Friday	20 minutes for each group at the end of the semester

## ACADEMIC HONESTY, PLAGIARISM & CHEATING

This is intentionally failing to give credit to sources used in writing regardless of whether they are published or unpublished. Plagiarism (which also includes any kind of cheating in exams) is a disciplinary offence and will be dealt with accordingly. According to university by laws cheating and plagiarism are serious offences punishable with disciplinary action ranging from simple failure from the exam or project/report, to more serious action (suspension from the university for up to one semester). Disciplinary action is written in student records and may appear in student transcripts. Any act not suitable for a university student will not be tolerated and may lead to formal disciplinary action. Example of this are: getting someone else to take the examinations for you, misrepresentation of your own answer sheet as another’s work, cheating, knowingly assisting other students to cheat, abusing the tolerance or breaking the discipline of the class.

**PLEASE KEEP THIS COURSE OUTLINE FOR FUTURE REFERENCE AS IT CONTAINS IMPORTANT INFORMATION!!!**