



Course Specification

Simulation System

Course Specifications

Program(s) in which the course is given:	Industrial Engineering
Major or minor element of programs:	N/A
Department offering the program:	Industrial Engineering
Department offering the course:	Industrial Engineering
Academic year / Level:	2009/2010 / Level 3

Date of specification approval:

A- Basic Information

Title: Simulation System

Code: IND 301

Credit Hours: 3

Lecture: 3

Exercises: 2

Total:.....

B- Professional Information

1- Overall aims of the course

To model & Simulate Mechanical System & Solved by computer.

2- Intended learning outcomes of the course (ILOs)

a. Knowledge and understanding

To understand & able to model mechanical Systems & simulated using matlab package to solved.

b. Intellectual skills

Analysis Creative thinking Problem solving

c. Professional and practical skills

Managing Engineering design
 Computer program Ability to diagnose
 Ability to identify the problem
 Ability to estimate cost Other

d. General and transferable skills

Computing Communication
 Management Working in group
 Use of technological tools

3- Contents

Topic	No. of hours	Lecture	Tutorial/ Practical
Overview of dynamic systems	3	1	2
Introduction to modeling and simulation	6	2	4
Models & formulations for Engineering	6	2	4
Systems, solutions, & the differential Equations	6	2	4
Typical input, System similarity	6	2	4
Modeling of Mechanical Systems	6	2	4
Translational, Rotational, Spring, Dampers	6	2	4
Combined System, D'Alembert principles	6	2	4
Lagrange's Equation	6	2	4
Matlab package	6	2	4
Total	45	15	30

4- Teaching and learning methods

- | | |
|--|--|
| <input checked="" type="checkbox"/> Information collection | <input checked="" type="checkbox"/> Discussions |
| <input checked="" type="checkbox"/> Research assignment | <input type="checkbox"/> Field visit |
| <input checked="" type="checkbox"/> Lecture | <input checked="" type="checkbox"/> Practical training / lab |
| <input checked="" type="checkbox"/> Class activities | <input checked="" type="checkbox"/> Case study |

5- Student assessment methods

Class attendance and participation
 Homework assignments
 First midterm exam
 Final exam

Assessment schedule

Homework assignments weeks 3, 5, 7, 9, 11
 First midterm exam week 8
 Final exam

Weighting of assessments

Final 40 %
 7th week Exam 30 %
 12th week Exam 20 %
 Class attendance and participation 5 %
 Homework assignments 5 %

6- List of references

6.1 Course notes

6.2 Essential books

- **Modeling & Simulation of Dynamic Systems, Rober L. woods, & Kent L. Lawrence, Prentice Hall, Upper Saddle River**

6.3 Recommended books

•

7- Facilities required for teaching and learning

Computer Lab - Data Show - Overhead Projector

Course Coordinator: Prof. Dr. Fayek AbdRaboh

Program Coordinator: Prof. Dr. Attia Gomaa

General Supervisor & Vice Dean: Prof. Dr. Abdallah Saad

Date: 01 / 06 / 2010