Model No.12
Course Specifications: Computer Aided Design

University: Benha University
Faculty: Faculty of Engineering at Shoubra
Department offering the program: Mechanical Engineering Department
Department offering the course: Mechanical Engineering Department

1- Course Data

Course Code: MDP342 **Course Title:** Computer Aided Design
Specialization: Mechanical Production Engineering **Course Type:** Elective **Study Year:** Third Year
Teaching Hours: Lecture: 4 Tutorial: 2 Practical: 0 Total: 6

2- Course Aim

For students undertaking this course, the aims are to:

1. Provide students with the basic principles of CAD, and the components CAD systems.
2. Allow students to use AutoCAD software in drafting and designing machine components.

3- Intended Learning Outcomes of Course (ILO's)

a. Knowledge and Understanding Skills: On completing this course, students will be able to demonstrate the knowledge and understanding of:

a.1) Principles of engineering drawing using AutoCAD. (A.2).
a.2) Concepts of CAD. (A.1).
a.3) Principles of mechanical design using computers. (A.4).

b. Intellectual Skills: At the end of this course, the students will be able to:

b.1) Perform analysis of failure using CAD software. (B.4).
b.2) Assess and evaluate the performance of a component using CAD. (B.5).
b.3) Apply the principles of mathematics using finite elements method (B.13).
b.4) Understand the range of application of CAD. (A15).

c. Practical and Professional Skills: On completing this course, the students are expected to be able to:

c.1) Professionally merge the engineering knowledge, understanding, and feedback to improve design, product and/or services (C.2)).
c.2) Use computational facilities to solve the complicated design problems. (C.5).

d. General and Transferable Skills: At the end of this course, the students will be able to:

d.1) Collaborate effectively within multidisciplinary team. (D.1)
d.2) Lead and motivate individuals (D.5)

4- Course Contents

Week no.	Topics
1	Introduction
2	Basic concepts of Mechanical Drawing
3	Engineering drawing in Autocad
4	Assembly Drawing on Autocad
5	Concepts of CAD
6	CAD definitions
7	CAD systems
8	CAD software
9	CAD examples
10	Case study

5- Teaching and Learning Methods

5.1- Lectures
5.2- Practical/Laboratory
5.3- Assignments / homework

6- Teaching and Learning Methods of Disables

- Nothing.

7- Student Assessment

a- Student Assessment Methods

1. Four Assignments to assess knowledge and intellectual skills.
2. Two Quizzes to assess knowledge, intellectual and professional skills.
3. Midterm exam to assess knowledge, intellectual, professional and general skills.
4. Final exam to assess student skills

b- Assessment Schedule

NO.	Assessment	Week
1	Assignments	3-6-9-11
2	Quiz	3,6
3	Midterm exam	8
4	Oral exam	-
5	Final exam	15

c- Weighting of Assessments

Assessment	Weight (%)
Midterm Examination	10
Final Term Examination	66
Oral Examination	0
Practical Examination	14
Semester Work	10
Other Types of Assessment	0
Total	**100**

8- List of References

a- Course Notes : 1- Course notes prepared by instructor

b- Recommended Books

1. Chennakesava R. Alavala, "CAD/CAM: Concepts and Applications", PHI Learning, 2011.
2. P. N. Rao, "CAD/CAM Principles and Applications", 2nd Edition, McGraw Hill, 2004.

Course Coordinator: Dr. Sameh Shawky Habib

Head of Department: Prof. Dr. Osama Ezzat Abdelatif

Model No.11A
Course Specifications: Computer Aided Design

University: Benha University
Faculty: Faculty of Engineering at Shoubra
Department offering the program: Mechanical Engineering Department
Department offering the course: Mechanical Engineering Department

Matrix of Knowledge and Skills of the Course

no.	Topics	Week no.	Knowledge and Understanding Skills	Intellectual Skills	Practical and Professional Skills	General and Transferable Skills
1	Introduction	1	a1		c1	d1
2	Basic concepts of mech drawing	2		b1		d1
3	Engineering drawing in Autocad	3	a1,a2		c2	
4	Assembly Drawing on Autocad	4		b1,b2		d2
5	Concepts of CAD	5	a2			
6	CAD definitions	6	a4	b2,b3	c1,c2	
7	CAD systems	7,8	a2,a3		c2	
8	CAD software	9,10	a4	b1,b2		d2
9	CAD examples	11,12	a3		c2	
10	Case study	13	a1,a2,a3	b1,b2,b3	c1,c2	d1,d2

Course Coordinator: Dr. Sameh Shawky Habib

Head of Department: Prof. Dr. Osama Ezzat Abdelatif

Matrix of Course Aims and ILO's

Course Title: Computer Aided Design

Course Code: MDP342

Teaching Hours: Lecture: 2 Tutorial: 2 Total:4

Major or minor element of program: Major

Program on which the course is given: B.Sc. Mechanical Production Engineering

Department offering the program: Mechanical Engineering Department

Department offering the course: Mechanical Engineering Department

Academic year / level: 2014-2015 Third Year / First Semester

Date of specifications approval: 16/3/2010

Course aims	Basic Knowledge	Intellectual skills	Professional skills	General skills
Provide students with the basic principles of CAD, and the components CAD systems.	a1 a3 a4	b3	c2	d1 d2
Allow students to use AutoCAD software in drafting and designing machine components.	a1 a2	b1 b2	c1 c2	d1

Course Coordinator: Dr. Sameh Shawky Habib

Head of Department: Prof. Dr. Osama Ezzat Abdelatif