Model No.12
Course Specifications (2014-2015)
Theory of Machines

University : Benha university

Faculty : Shoubra Faculty of Engineering

Department offering the program: Mechanical Engineering Department
Department offering the course: Mechanical Engineering Department.

1- Course Data

Course Code: MDP221 **Course Title**: Theory of Machines **Study Year**: Second Year
Specialization: Mechanical Production Engineering
Teaching Hours:
Lecture: 4 Tutorial/ Practical: 2

2- Course Aim

For students undertaking this course, the aims are to:

1. Understand and analysis the relative motion between the various parts of a machine.

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

a- Knowledge and Understanding

On completing this course, students will acquire and understand of:
a.1) Types of mechanisms and its components. (A1)
a.2) The balancing of rotating masses besides gear train and cams profile. (A5)

b- Intellectual Skills

At the end of this course, the students acquiring and understanding of:
b.1) velocity and acceleration mechanisms. (B5)
b.2) Cycloidal teeth and involute teeth. (B2)
b.3) The performance of governors and cams. (B15)

c- Professional Skills

On completing this course, the students are expected to be able to:
c.1) Sketch the velocity and acceleration diagram of the different mechanisms. (C1)
c.2) Solve the problem of gear train, balance of rotating masses, cams and governors.(C10)
c.3) Sketch the cam profile with knife edge, flat or roller follower.(C11)

d- General Skills

At the end of this course, the students will be able to:
d.1) Communicate effectively. (D7)
d.2) Lead and motivate individuals. (D5).
d.3) Effectively manage tasks, time, and resources. (D6)

4- Course Contents

No.	Topics
1	Introduction to theory of machines
2	Mechanisms
3	Velocity diagram
4	Acceleration diagram
5	Velocity and acceleration
6	Cams types
7	Cams profile
8	Toothed gears
9	Gear train-1
10	Gear train-2
11	Balancing of rotating masses-1
12	Balancing of rotating masses-2
13	Governors

5- Teaching and Learning Methods

5.1- Lectures
5.2- Class activity
5.3- Assignments / homework

6- Teaching and Learning Methods of Disables

6.1- Practical training / laboratory
6.2- Seminar / workshop

7- Student Assessment

a- Student Assessment Methods

1	Five Assignments to assess knowledge and intellectual skills
2	Three Quizzes to assess knowledge, intellectual and professional skills
3	Mid-term exam
4	Self- learning report presentation
5	Final exam to assess knowledge, intellectual, professional and general skills.

b- Assessment Schedule

No.	Assessment	Week
1	Assessment	2, 5, 7, 10, 13
2	Quizzes	6, 10, 13.
3	Mid-term exam	8
4	report presentation	11
4	Final exam	16

c- Weighting of Assessments

Assessment	Weight
Mid Term Examination	16 %
Final Term Examination	66 %
Oral Examination	0 %
Practical Examination	0 %
Semester work	11 %
Other types of assessment	7 %
Total	100 %

8- List of References

a- Course Notes

1- prepared by instructor

b- Recommended Books

1- kurmi." Theory of machines", Khana Publisher, 1980.
2- Thomas B. " The theory of machines", 1969
3- Shariff A. " Theory of machines", 1977

Course Coordinator: Assoc. Prof. Dr. Ahmed Mohamed Gaafer

Head of Department: Prof. Dr. Osama Ezzat Abdelatif

Model No.11A

Course Specifications: Theory of Machines

University : Benha university

Faculty : Shoubra Faculty of Engineering

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	Basic Knowledge	Intellectual Skills	Professional Skills	General Skills
1	Introduction to theory of machines	1	a1	b1		
2	Mechanisms	2	a1	b1,b2	c1	d1
3	Velocity diagram	3	1a	b1	c1	
4	Acceleration diagram	4	a1	b1	c1	d2
5	Velocity and acceleration	5	a1,a2	b1,b2	c1,c2	d2,d3
6	Cams	6	a1	b1,b3	c3	d2
7	Cams profile	7	a1	b1,b3	c2,c3	
8	Toothed gears	8	a2	b2	c2	d2
9	Gear train-1	9	a1,a2	b2	c2	
10	Gear train-2	10	a1,a2	b2	c2	
11	Balancing of rotating masses-1	11	a2		c2,c3	d3
12	Balancing of rotating masses-2	12	a2		c2	d3
13	Governors	13	a1,a2	b3		

Course Coordinator: Assoc. Prof. Dr. Ahmed Mohamed Gaafer

Head of Department: Prof. Dr. Osama Ezzat Abdelatif

Matrix of course aims and ILO's

Course Title: Theory of Machines

Code: MDP221 Lecture: 4 Tutorial/ Practical: 2 Total: 6

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

Major or minor element of program: Major

Department offering the program: Mechanical Engineering Department

Department offering the course: Mechanical Engineering Department

Academic year / level: 2014 / 2015 Second Year / Second semester

Date of specifications approval: 2014

Course aims	a	b	c	d
Provide the students with the knowledge and skills for understanding and analyzing the relative motion between the various parts of a machine.	a1 a2	b1 b2 b3	c1 c2 c3	d1 d2 d3

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