



BENHA UNIVERSITY



FACULTY OF ENGINEERING AT SHOUBRA

## COURSE SPECIFICATIONS (2014-2015)

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### Model No.12

### Course Specifications: Design of Machining and Forming Machines

**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:** MDP421

**Course Title:** Design of Machining and Forming Machines

**Specialization:** Mechanical Production Engineering

**Course Type:** Compulsory

**Study Year:** Fourth Year

**Teaching Hours:** Lecture: 2      Tutorial: 3

**Practical:** 0

**Total:** 5

#### 2- Course Aim

**For students undertaking this course, the aims are to:**

- 1- Enhance the student skills and engineering sense of using each machine part design in designing a complete machine.

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

**a. Knowledge and Understanding Skills:** On completing this course, students will acquiring and understanding of :

a.1) The basics of the design of machining and forming machines. (A.1)

a.2) Methodologies of design of machining and forming machines. (A.5)

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

b.1) Apply the basics of machine elements design methodology in designing Machining and Forming Machines. (B.13)

b.2) Use the principles of engineering science in practical design of Machining and Forming Machines. (B.17)

b.3) Choose of suitable manufacturing method considering design requirements. (B.18)

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

c.1) Use computer software to design Machining and Forming Machines. (C.5)

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

d.1) Work in multidisciplinary team. (D.1)

d.2) Acquire entrepreneurial skills (D.8)

**COURSE SPECIFICATIONS (2014-2015)****4- Course Contents**

Week no.	Topics
1	General principles of machine tool design
2	General principles of machine tool design
3	Calculations of machine tool parameters
4	Design of gear box
5	Design of gear box
6	Design of guide ways
7	Design of guide ways
9	Design of spindles
10	Design of spindle supports
11	Design of machine tool frames
12	Shearing and trimming machines
13	Design of rolling machines
14	Design of presses

**5- Teaching and Learning Methods**

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

**6- Teaching and Learning Methods of Disables**

- Nothing.

**7- Student Assessment****a- Student Assessment Methods**

1. Six 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 knowledge, intellectual, professional and general skills.

**b- Assessment Schedule**

NO.	Assessment	Week
1	Assignments	2, 4, 5, 7, 11, 12
2	Quiz	4, 10
3	Midterm exam	8
4	Final exam	15

**c- Weighting of Assessments**

Assessment	Weight (%)
Midterm Examination	20
Final Term Examination	64
Oral Examination	00
Semester Work	16
Other Types of Assessment	00
<b>Total</b>	<b>100</b>



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## **COURSE SPECIFICATIONS (2014-2015)**

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### **8- List of References**

**a- Course Notes:** Course notes prepared by instructor.

#### **b- Recommended Books**

- Machine Tool Design (N K MEHTA) 2005
- Design Principles Of Metal Cutting Machine Tools (F.KOENIGSBERGER) 2007

**Course Coordinator:** Prof. Dr. Tarek Ahmed Fouad Khalifa, Dr. Raof Tawfik

**Head of Department:** Prof. Dr. Osama Ezzat Abdelatif



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FACULTY OF ENGINEERING AT SHOUBRA

**COURSE SPECIFICATIONS (2014-2015)**

**Model No.11A**

**Course Specifications: Design of Machining and Forming Machines**

**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	Basic Knowledge	Intellectual Skills	Professional Skills	General Skills
1	General principles of machine tool design	1	a.1		c1	
2	General principles of machine tool design	2	a.1	b1		
3	Calculations of machine tool parameters	3		b1		
4	Design of gear box	4	a.1		c1	
5	Design of gear box	5	a.1	b2		
6	Design of guide ways	6				
7	Design of guide ways	7				d1
8	Mid-term	8	a.1	b2		
9	Design of spindles	9	a.1	b2	c1	
10	Design of spindle supports	10		b2		d1
11	Design of machine tool frames	11	a.2	b3		
12	Shearing and trimming machines	12	a.2	b3	c1	d2
13	Design of rolling machines	13			c1	
14	Design of presses	14	a.2	b3		
15	Final exam	15		b3		d2

**Course Coordinator:** Prof. Dr. Tarek Ahmed Fouad Khalifa, Dr. Raouf Tawfik

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**COURSE SPECIFICATIONS (2014-2015)**

**Matrix of course aims and ILO's**

**Course Title:** Design of Machining and Forming Machines                      **Code:** MDP421

**Lecture:** 2            **Tutorial/Practical:** 3                      **Total:** 5

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

**Major or minor element of program:** Minor.

**Department offering the program:** Mechanical Engineering Department

**Department offering the course:** Mechanical Engineering Department

**Academic year / level:** Fourth Year / Second semester

**Date of specifications approval:** 2014

Course aims	Basic Knowledge	Intellectual Skills	professional Skills	General Skills
Enhance the student skills and engineering sense of using each machine part design in designing a complete machine.	a.1 ,a.2	b.1,b.2	c.1	d.1, d.2

**Course Coordinator:** Prof. Dr. Tarek Ahmed Fouad Khalifa, Dr. Raof Tawfik

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