



BENHA UNIVERSITY



FACULTY OF ENGINEERING AT SHOUBRA

COURSE SPECIFICATIONS (2014-2015)

Model No.12

Course Specifications: Die 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: MDP352

Course Title: Die 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. Design of sheet metal dies (such as blanking and piercing dies).
2. Studying the necessary principles die materials heat treatment.
3. Draw detailed drawings of stamps (Assembly and working drawings).

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

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

- a.1) The heat treatment of die materials (A.3).
- a.2) Principles of design of the punch and die (A.4).
- a.3) Types of forming die designs (A.6).
- a.4) The main procedures of die designs (A.13).
- a.5) The constraints that they will face while designing of the die (A.14).
- a.6) New techniques in die design (A.18).

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

- b.1) Choose the technique for determining the dimension of a die and punch required (B.2).
- b.2) Use the engineering knowledge in designing the dies. (B.3).
- b.3) Choose the suitable manufacturing method considering design requirements (B.18).

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

- c.1) Apply knowledge of design procedures in die design (C.1).
- c.2) Draw the full details of stamps (C.2).
- c.3) Use AutoCAD for performing engineering drawings (C.5).
- c.4) Prepare engineering drawings. (C.13).
- c.5) Prepare the process plan and time chart for manufacturing (C.19).

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

- d.1) Work within teams (D.1).
- d.2) Successfully manage tasks and time (D.6).



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4- Course Contents

Week no.	Topics
1	Introduction to the course
2	Press tool operations and elements of press tools.
3	Classification of presses & design parameters in press tool design.
4	Design of sheet metal working dies -1.
5	Design of sheet metal working dies -2.
6	Design of sheet metal working dies -3.
7	Design of sheet metal working dies -4.
8	Forging and dies casting dies -1
9	Forging and dies casting dies -2
10	Forging and dies casting dies -3
11	Forging and dies casting dies -4
12	Heat treatment of die materials -1.
13	Heat treatment of die materials -2.

5- Teaching and Learning Methods

- 5.1 Lectures
- 5.2 Tutorials
- 5.3 Class activity
- 5.4 Assignments/homework
- 5.5 Seminar / workshop

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. Three 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	3,6,9,11
2	Quiz	4,7,10
3	Midterm exam	8
4	Oral exam	-
5	Final exam	15

c- Weighting of Assessments

Assessment	Weight (%)
Midterm Examination	20
Final Term Examination	67
Oral Examination	0
Semester Work	8
Other Types of Assessment	5
Total	100



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8- List of References

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

b- Recommended Books

- 1- Die design Handbook, Forging practice, Heat treatment of metals
- 2-Die Design Fundamentals .3td edition. Vukota Boljanovic

Course Coordinator: Prof. Dr. Ibrahim Mousa Ibrahim

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: Die 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 to the course	1	a1		c1	
2	Press tool operations and elements of press tools.	2	a2	b1		d1
3	Classification of presses & design parameters in press tool	3	a4		c1	
4	Design of sheet metal working dies -1.	4		b2		d2
5	Design of sheet metal working dies -2.	5	a1		c2	
6	Design of sheet metal working dies -3.	6	a5	b3		
7	Design of sheet metal working dies -4.	7		b2		d1
8	Forging and dies casting dies -1	9	a6		c3	
9	Forging and dies casting dies -2	10		b1		
10	Forging and dies casting dies -3	11	a4, a5		c4	
11	Forging and dies casting dies -4	12		b1, b2	c4	d2
12	Heat treatment of die materials -1.	13	a3		c5	
13	Heat treatment of die materials -2.	14		b3		

Course Coordinator: Prof. Dr. Ibrahim Mousa Ibrahim

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COURSE SPECIFICATIONS (2014-2015)

Matrix of Course Aims and ILO's

Course Title: Die Design

Course Code: MDP352

Teaching Hours: Lecture: 4 Tutorial: 2 Total: 6

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: 2014

Course aims	Basic Knowledge	Intellectual skills	Professional skills	General skills
Design of sheet metal dies (such as blanking and piercing dies).	a1, a3, a5	b1, b3	c1, c3, c5	d1
Studying the necessary principles die materials heat treatment	a1, a2, a4, a5, a6	b2, b3	c1, c2, c4, c5	d2
Draw detailed drawings of stamps (Assembly and working drawings).	a2, a5	b1, b2	c1, c4	d1, d2

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