



BENHA UNIVERSITY



FACULTY OF ENGINEERING AT SHOUBRA

Model No.12
Course Specifications (2014-2015)
Production Engineering (2)

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: MDP121

Course Title: Production Engineering (2)

Specialization: Mechanical Production Engineering

Course Type: Compulsory

Study Year: First year

Teaching Hours: Lecture: 3

Tutorial/ Practical: 2

Total: 5

2- Course Aim

For students undertaking this course, the aims are to:

1. Understand concepts and principles of non-traditional machining.
2. Know the basic principles of machining time for different machining processes.
3. Provide students with the basics of machining operations planning.

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

a- Knowledge and Understanding Skills

On completing this course, students will be able to:

- a.1) Define the characteristics of non-traditional machining processes. (A3)
- a.2) Know the difference between conventional and non-traditional machining technologies. (A2)
- a.3) Identify the machining time for different machining processes. (A1)
- a.4) Identify the basics of operations planning. (A6)

b- Intellectual Skills

At the end of this course, the students will be able to:

- b.1) Think in operation card design. (B3)
- b.2) Judge non-traditional machining parameters. (B9)
- b.3) Calculate the machining time for different machining processes. (B12)
- b.4) Solve problems of process sheets and operation card. (B17)

c- Professional Skills

On completing this course, the students are expected to be able to:

d- General Skills

At the end of this course, the students will be able to:

- d.1) Collaborate effectively within teams in workshops. (D1)
- d.2) Work in stressful environment and within constraints. (D2)
- d.3) Search for information and engage in life-long self-learning. (D7)



4- Course Contents

Week no.	Topics
1	Introduction to Non-traditional machining processes, Electro chemical machining
2	Electro-discharge machining Processes
3	Ultrasonic machining processes
4	Laser machining processes
5	Water machining processes
6	Machining time evaluation-1
7	Mid Term exam
8	Machining time evaluation-2
9	Machining time evaluation-3
10	Preparation of processes sheets -1
11	Preparation of processes sheets -2
12	Operation card
13	Operation card

5- Teaching and Learning Methods

- 5.1- Lectures.
- 5.2- Seminar / workshop.
- 5.3- Class activity.
- 5.4- 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. Four quizzes to assess knowledge, intellectual and professional skills.
3. Mid-term exam to assess knowledge, intellectual and professional skills.
4. Oral Exam to assess knowledge and intellectual skills.
5. Final exam to assess knowledge, intellectual and professional skills.

b- Assessment Schedule

No.	Assessment	Week
1	Assignments	2, 5, 9, 11
2	Quizzes	4, 6, 10, 12
3	Mid-term exam	8
4	Oral exam	14
5	Final exam	15



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c- Weighting of Assessments

Assessment	Weight
Mid-Term Examination	10 %
Final-Term Examination	60 %
Oral Examination	10 %
Practical Examination	10%
Semester work	10 %
Other types of assessment	00 %
Total	100 %

8- List of References

a- Course Notes

1- Course notes prepared by instructor.

b- Books

- C.Elanchezian, B.Vijaya Ramnath, Manufacturing Technology, Part I, 2nd edition, 2006.
- C.Elanchezian, B.Vijaya Ramnath, Manufacturing Technology, Part II, 2nd edition, 2007.

c- Recommended Books

- P.N.Rao, Manufacturing technology, Metal cutting

Course Coordinator: Assoc. Prof. Sameh Shawky Habib - Dr./ Eman Mahmoud M. al Komi

Head of Department: Prof. Dr./ Osama Ezzat Abdullatif



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FACULTY OF ENGINEERING AT SHOUBRA

Model No.11A

Course Specifications: Production Engineering 2

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	Electro chemical machining	1	a1, a2, a3, a4		c1,c2	
2	Electrical discharge machining	2	a3, a4	b1, b2	c2c3	d1,d2
3	Laser machining	3	a1, a3	b4	c3	d1
4	Water Jet machining	4	a2, a4	b4	c3,c4	d2,d3
5	Abrasive Jet machining	5	a2	b3, b4	c1, c2	d3
6	Ultrasonic machining	6	a1,a3	b1, b2	c3, c4	
7	Machining time evaluation-1	7	a1, a3	b1	c5	d1
8	Mid term					
9	Machining time evaluation-2	9	a1, a2	b4	c2,c5	d1
10	Machining time evaluation-3	10	a3, a4	b4		d1,d3
11	Preparation of processes sheets -1	11	a3, a4	b1	c4,c3	d2
12	Preparation of processes sheets -2	12	a3a4	b2	c3	d1, d2
13	Operation card	13	a1,a2	B3,b4	c5,c6	d3
14	Operation card	14	a3,a4	B4,b5	c5,c6	
15	Final exam					

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Matrix of course aims and ILO's

Course Title: Production Engineering (2)

Course Code: MDP121

Teaching Hours: Lecture: 3 Tutorial: 2 Total: 5

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 First Year / Second semester

Date of specifications approval: 2014

Course aims	Basic Knowledge	Intellectual Skills	Professional Skills	General Skills
Understand concepts and principles of non-traditional machining.	a1,a2	b1	c1,c2	d1
Know the basic principles of machining time for different machining processes.	a1,a3	b2, b3	C3,c4	d 2
Provide students with the basics of machining operations planning.	a2,a4	b4	c2	d 3

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