



BENHA UNIVERSITY



FACULTY OF ENGINEERING AT SHOUBRA

Model No.12

Course Specifications (2014-2015)

Production Engineering (1)

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: MDP111

Course Title: Production Engineering (1)

Specialization: Mechanical Production Engineering **Study Year:** First year

Teaching Hours: Lecture: 3 Tutorial/Practical: 3 Total:6

2- Course Aim

For students undertaking this course, the aims are to:

1. Identify the basics production processes.
2. Understand the basic principles and processes of several metal cutting machines.
3. Provide students with solid understanding of machining and manufacturing process.

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

a- Knowledge and Understanding

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

- a.1) The concepts, principles and theories of machining processes. (A1)
- a.2) The principles of measurement and inspection related to production engineering. (A3)
- a.3) The techniques used to calculate the machining time of several machining processes. (A5)
- a.4) The current engineering technologies related to machining processes. (A7)

b- Intellectual Skills

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

- b.1) Incorporate the machining process to the cutting forces and the dimension of cutting tool. (B5)
- b.2) Judge the performance of the labors. (B10)
- b.3) Assess the differences between the machining process applying on the material. (B11)
- b.4) Compare between the different types of machines and the different process applying on it. (B11)
- b.5) Create systematic and methodic approaches when dealing with new and advancing technology. (B14)



c- Professional Skills

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

- c.1 Calculate the machining time for process. (C4)
- c.2 Apply the cutting force to calculate the proper cutting tool dimensions. (C9)
- c.3 Practice the measurement and inspection. (C12)

d- General Skills

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

- d.1 Collaborate effectively in the workshop. (D1)
- d.2 Work and participate in workshop. (D2)
- d.3 Communicate effectively. (D3)

4- Course Contents

No.	Topics
1	Principle of measurement and inspection
2	Principle of measurement and inspection
3	Surface roughness
4	Surface roughness
5	Metal cutting, cutting tool material and chip formation, cutting forces, and cutting fluids.
6	Metal cutting, cutting tool material and chip formation, cutting forces, and cutting fluids.
7	Lathe, it is operation, machine elements, spindle, and feed drives.
8	Lathe, it is operation, machine elements, spindle, and feed drives.
9	Machining processes and calculation of machining time.
10	Machining processes and calculation of machining time.
11	Milling processes and milling cutters and operations.
12	Milling processes and milling cutters and operations.
13	Grinding processes and specification of grinding wheel.

5- Teaching and Learning Methods

- 5.1- Lectures
- 5.2- Class activity/Tutorial
- 5.3- Assignments/homework
- 5.4.- Practical training/Workshops

6- Teaching and Learning Methods of Disables

No.

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.



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3. Mid-term exam to assess knowledge, intellectual, professional and general skills.
4. Practical/Oral exam to assess knowledge, intellectual, professional and general skills.
5. Final exam to assess knowledge, intellectual, professional and general skills.

b- Assessment Schedule

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

c- Weighting of Assessments

Assessment	Weight
Mid-Term Examination	10 %
Final-Term Examination	60 %
Oral/Practical Examination	20 %
Semester work	10 %
Other types of assessment	0 %
Total	100 %

8- List of References

a- Course Notes

- 1- Course notes prepared by instructor.

b- Books

1. C. Elanchezhian, B. Vijaya Ramnath, Manufacturing Technology, Part I, 2nd edition, 2006.
2. C. Elanchezhian, B. Vijaya Ramnath, manufacturing Technology, Part II, 2nd edition, 2007.
3. P.N. Rao, Manufacturing technology, Metal cutting.

Course Coordinator: Dr./ Eman Mahmoud Mohamed 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 (1)

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	Principle of measurement and inspection	1	a1, a3	b1, b2	c1	
2	Principle of measurement and	2	a3, a4	b1, b4	c2	d2
3	Surface roughness	3	a4	b5	c1	
4	Surface roughness	4	a3, a4	b1	c2	
5	Metal cutting, cutting tool material and chip formation, cutting forces, and cutting fluids.	5	a2	b1, b2	c2	
6	Metal cutting, cutting tool material and chip formation, cutting forces, and cutting fluids.	6	a2	b1, b4	c3	
7	Lathe, it is operation, machine elements, spindle, and feed drives.	7	a1, a3	b1	c2	d1, d2
8	Lathe, it is operation, machine elements, spindle, and feed drives.	9	a1, a4	b1	c3	d1, d3
9	Machining processes and calculation of machining time.	10	a3, a4	b1	c2	
10	Machining processes and calculation of machining time.	11	a4	b2, b3	c2	
11	Milling processes and milling cutters and operations	12	a2	b2, b4	c3	d3
12	Milling processes and milling cutters and operations	13	a2	b5	c3	d1, d3
13	Grinding processes and specification of grinding wheel.	14	a3	b2		d2

Course Coordinator: Dr. Eman Mahmoud Mohamed Al-Komi

Head of Department: Prof. Dr. Osama Ezzat Abdullatif



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FACULTY OF ENGINEERING AT SHOUBRA

Matrix of course aims and ILO's

Course Title: Production Engineering (1)

Course Code: MDP111

Teaching Hours: Lecture: 3 Tutorial / Practical: 3 Total: 6

Major or minor element of program: Major

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

Department offering the program: Mechanical Engineering Department

Department offering the course: Mechanical Engineering Department.

Academic year / level: First Year / First semester

Date of specifications approval: 2014

Course aims	Basic Knowledge	Intellectual Skills	Professional Skills	General Skills
Identify the basics production processes.	a1, a3	b1		
Understand the basic principles and processes of several metal cutting machines.	a1, a3	b2	c1, c2	d2
Provide students with solid understanding of machining and manufacturing process.	a2, a4	b4	c2	d3

Course Coordinator: Dr. Eman Mahmoud Mohamed Al-Komi

Head of Department: Prof. Dr. Osama Ezzat Abdullatif