

Course specification of

Production Engineering M 161

University: Benha

Faculty: Higher Institute of Technology

Programme on which the course is given	All Engineering Programmes
Major or minor element of programme	N.A
Department offering the programme	All Engineering Departments
Department offering the course	Mechanical Engineering
Academic year / level	First year/First semester
Date of specification approval	

A- Basic Information

Title:	Production Engineering	Code:	M 161	Credit Hours:	N.A
		Lecture:	2	Tutorial:	
		Practical:		Total:	2

B- Professional Information

1- Overall aims of course

By the end of the course the students will be able to:

- Demonstrate knowledge and understanding of different branches of production engineering, i.e Manufacturing Technology, Industrial Engineering and Quality Control
- Classify Engineering Materials and properties
- Know the technology of Iron and Steel production
- Evaluate the applicability of particular materials for specific design requirements
- Know and understand the basic manufacturing processes and select the appropriate process to produce various products

2- Intended Learning outcomes of course (ILOs)

a- Knowledge and understanding

- a1- Know and understand the activities of each branch of Production Engineering
- a2- Classify Engineering materials and define the main properties
- a3- Understand the basic manufacturing processes
- a4- Evaluate the parameters affecting the manufacturing process
- a5- Calculate production costs

b- Intellectual skills

- b1- Differentiate between different activities in production engineering
- b2- Assign proper material for certain product
- b3- Suggest a suitable manufacturing process to produce certain product
- b4- Suggest alternative solutions according to different constrains

c- Professional and practical skills

- c1- Identify each production engineering activity branch
- c2- Analyze the product cost factors
- c3- Identify each manufacturing process type

d- General and transferable skills

- d1- Present the technical report in oral seminar
- d2- Present the manufacturing process in a written reports

3- Contents

Topic	No. Of Hours	Lecture	Tutorial Practical
Introduction and classification, Industrial Engineering (The role of production engineer, Production system, Production types, Types of industries)	2		
Industrial Engineering (Factory planning, Production planning and control, Organization for production, Manufacturing costs)	۲		
Engineering materials (Composition Structure Properties Production and Applications)	2		
Quality Control (Specifications and Standards, Dimensioning, Tolerances and fits, Metrology	2		
Casting technology	۳		
Powder metallurgy	۲		
Metal forming technology	۳		
Plastic processing	۲		
Joining technology	۴		
Metal removal technology , Turning, drilling, milling, shaping and planning, broaching, sawing, grinding	2		
Turning technology, machining parameters, machining time, cutting tools, tool life	4		
Non-conventional manufacturing processes	۲		
Total	30		

4- Teaching and learning methods

- 41- Class Lecture

5- Student assessment methods

- 51- Written final exam
- 52- Written simple quiz
- 53- Report to assess written presentation skills

Assessment schedule

Assessment 1	Simple Quiz	Weekly
Assessment 2	Report	Week 4
Assessment 3	Report	Week 8
Assessment 4	Report	Week 12
Mid term exam		Week 8
Final exam		Week 15

Weighting of assessments

Mid term Exam	15	%
Quiz average	10	%
Reports	15	%
Final exam	60	%
Total	100	%

6- List of references

6.1 Course Notes

Elhakeem A. ; Production Engineering , 1990
Kasem A. ; Production Engineering , 1998

6.2 Essential books (Text books) Institute Bibliotheca

6.3 Recommended books Institute Bibliotheca

6.4 Periodicals, Web sites,...etc Computer facilities

7- Facilities required for teaching and learning

- **Appropriate teaching class accommodations; data show, presentation board and white board**

Course Coordinator:

Prof. Dr. Abdelmoty M. Elhakeem

Head of Department:

Dr. Sameh A. Nada

Date: