



BENHA UNIVERSITY



FACULTY OF ENGINEERING AT SHOUBRA

**COURSE SPECIFICATIONS (2014-2015)**

**Model No.12**

**Course Specifications: Subjective Research**

**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:** MDP323

**Course Title:** Subjective Research

**Specialization:** Mechanical Production Engineering

**Course Type:** Compulsory

**Study Year:**

Third Year

**Teaching Hours:** Lecture: 2

Tutorial:2

Practical: 0

**Total:** 4

**2- Course Aim**

For students undertaking this course, the aims are to:

- 1- Identify the different types of product development & value engineering.
- 2- Identify the different types of cost elements in the manufacturing systems.
- 3- Understand the concepts and principles of the cost estimation and analysis.
- 4- Understand the basic principles of the process planning.

**3- Intended Learning Outcomes of Course (ILOS)**

**a- Knowledge and Understanding**

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

- a- 1 - Methodologies of solving engineering problems in the product development. (A5)
- a- 2 - Quality assurance systems (ISO 9001), HSE (Health, Safety, Environmental) requirements in the product development. (A6)
- a- 3 - Business and management principles related to the value engineering. (A7)

**b- Intellectual Skills**

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

- b- 1 - Choose appropriate mathematical and computer-based methods for modeling and analyzing the cost estimation and analysis problems. (B1)
- b- 2 - Analyze appropriate solutions for product cost reduction approach based on analytical thinking. (B2)
- b- 3 - Assess and evaluate the characteristics of quality function deployment and improvement. (B5)

**c- Professional Skills**

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

- c- 1 - Apply knowledge of mathematics and cost estimation practice to analyze self-study cases. (C1)
- c- 2 - Use a wide range of analytical tools, techniques, and software packages pertaining to the quality management. (C6)
- c- 3 - Apply safe systems at work and observe the appropriate steps to manage risks. (C8)

**COURSE SPECIFICATIONS (2014-2015)****d- General Skills**

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

- d- 1 - Collaborate effectively within multidisciplinary team.(D1)
- d- 2 - Work in stressful environment and within constraints.(D2)
- d- 3 - Communicate effectively.(D3)

**4- Course Contents**

No.	Topics
1	Product development
2	Value engineering
3	Cost Estimation
4	Cost Analysis
5	Cost Breakdown Structure
6	Value Analysis
7	Cost Reduction Approach
8	Midterm exam
9	Quality Function Deployment
10	Quality Improvement
11	Report Outline
12	Case Studies-1 (self-study)
13	Case Studies-2 (self-study)
14	Oral Exam
15	Final exam

**5- Teaching and Learning Methods**

- 5.1 Lectures
- 5.2 Tutorial
- 5.3 Class activity
- 5.4 Case study

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

- Nothing.

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

1. Five 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. Oral exam to assess the presentation skills
5. Final exam to assess knowledge, intellectual, professional and general skills.

**b- Assessment Schedule**

NO.	Assessment	Week
1	Assignments	3, 5, 7, 10, 11
2	Quiz	4, 9
3	Midterm exam	8
4	Oral exam	-
5	Final exam	15



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**c- Weighting of Assessments**

Assessment	Weight (%)
Midterm Examination	10
Final Term Examination	60
Oral Examination	20
Semester Work	10
Other Types of Assessment	-
<b>Total</b>	<b>100</b>

**8- List of References**

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

**b- Recommended Books**

1. B. Kumar, "Industrial Engineering & Management", Khana Pub., 2004
2. Philip, F. "Cost analysis & Estimating for Engineering Management", Pearson Prentic, 2004.
3. E. Paul "Engineering Economy", Macmillan, 1990
4. Max Kurtz, "Hand Book of Engineering Economics", MacGrawHill, 1984.
5. W.J.Fabrycky, "Applied Operations Research & Management Science", Prentice-Hall,1987.

**Course Coordinator:** Prof. Dr. Attia Hussein Jumaa

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



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وحدة ضمان الجودة



FACULTY OF ENGINEERING AT SHOUBRA

**COURSE SPECIFICATIONS (2014-2015)**

**Model No.11A**

**Course Specifications: Subjective Research**

**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	Product development	1	a1		c1	d1
2	Value engineering	2		b1		d3
3	Cost Estimation	3	a2		c2	
4	Cost Analysis	4		b2		
5	Cost Breakdown Structure	5			c3	d3
6	Value Analysis	6	a1	b3		
7	Cost Reduction Approach	7				d2
8	Midterm exam	8				
9	Quality Function Deployment	9		b3		d3
10	Quality Improvement	10			c2	
11	Report Outline	11	a3			d2
12	Case Studies-1 (self-study)	12		b3	c1	
13	Case Studies-2 (self-study)	13	a1			d1

**Course Coordinator:** Prof. Dr. Attia Hussein Jumaa

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**FACULTY OF ENGINEERING AT SHOUBRA**

**COURSE SPECIFICATIONS (2014-2015)**

**Matrix of Course Aims and ILO's**

**Course Title:** Subjective Research

**Course Code:** MDP323

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

**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 / Second semester

**Date of specifications approval:** 2014

Course aims	Basic Knowledge	Intellectual Skills	Professional Skills	General Skills
1. Identify the different types of product development & value engineering.	a1, a3	b1		d1
2. Identify the different types of cost elements in the manufacturing systems.	a1, a3	b2	c1, c2	d1, d2
3. Understand the concepts and principles of the cost estimation and analysis.	a2		c2	d3
4. Understand the basic principles of the process planning.	a2	a1, a3	c1, c3	d2

**Course Coordinator:** Prof. Dr. Attia Hussein Jumaa

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