



## Course Specification

### Inspection, Quality Control & Assurance

#### Course Specifications

Program(s) in which the course is given:	Industrial Engineering
Major or minor element of programs:	N/A
Department offering the program:	Industrial Engineering
Department offering the course:	Industrial Engineering
Academic year / Level:	2009/2010 / Level 2

Date of specification approval:

#### A- Basic Information

Title: Inspection, Quality Control & Assurance

Code: IND 303

Credit Hours:

Lecture: 2

Exercises: 2

Total: 4

#### B- Professional Information

##### 1- Overall aims of the course:

This course is designed to give students an ability to quality control & quality management principles, quality decision making, quality quantitative techniques, and the computer applications in quality management.

##### 2- Intended learning outcomes of the course (ILOs)

###### a. Knowledge and understanding

Quality Improvement Philosophies; Modeling Process Quality, Statistical Process Control, Control Charts for Variables and Attributes, Short Production Runs, Multivariate Quality Control, Auto Correlation, Engineering Process Control, Economic Design of Charts, Fill Control, Pre-control, Adaptive Schemes, Process Capability, Specifications and Tolerances, Gage Capability Studies, Acceptance Sampling by Attributes and Variables, International Quality Standards.

###### b. Intellectual skills

Analysis

Creative thinking

Problem solving

###### c. Professional and practical skills

Managing

Computer program

Ability to identify the problem

Ability to estimate cost

Engineering design

Ability to diagnose

Other

###### d. General and transferable skills

Computing

Management

Use of technological tools

Communication

Working in group

### 3- Contents

Topic	No. of hours	Lecture	Tutorial/ Practical
Quality Overview	4	2	2
Evolution of Quality	4	2	2
Quality Control	4	2	2
Quality Assurance & ISO 9000	4	2	2
Total Quality Management	4	2	2
Statistical Process Control (SPC)	4	2	2
TQM Tools	4	2	2
Root Cause Analysis & FMEA	4	2	2
Visual Control (5 S) & Poka-Yoke & Jidoka	4	2	2
Ford & Toyota Production Systems	4	2	2
Taguchi Technique & QFD Overview	4	2	2
Six Sigma & Lean Production Overview	4	2	2
Just In Time Overview	4	2	2
Supply Chain Overview	4	2	2
Kaizen Programs Overview	4	2	2
<b>Total</b>	<b>60</b>	<b>30</b>	<b>30</b>

#### 4- Teaching and learning methods

- |   |   |
|---|---|
| <input type="checkbox"/> Information collection         | <input checked="" type="checkbox"/> Discussions   |
| <input checked="" type="checkbox"/> Research assignment | <input type="checkbox"/> Field visit              |
| <input checked="" type="checkbox"/> Lecture             | <input type="checkbox"/> Practical training / lab |
| <input checked="" type="checkbox"/> Class activities    | <input checked="" type="checkbox"/> Case study    |

#### 5- Student assessment methods

- Class attendance and participation
- Homework assignments
- First midterm exam
- Final exam

#### Assessment schedule

- |                      |                      |
|----------------------|----------------------|
| Homework assignments | weeks 3, 5, 7, 9, 11 |
| First midterm exam   | weeks 7 & 12         |
| Final exam           | week 15              |

#### Weighting of assessments

- |                                    |      |
|------------------------------------|------|
| Final                              | 40 % |
| 7 <sup>th</sup> week Exam          | 30 % |
| 12 <sup>th</sup> week Exam         | 20 % |
| Class attendance and participation | 5 %  |
| Homework assignments               | 5 %  |

#### 6- List of references

##### 6.1 Course notes

##### 6.2 Essential books

- B. Kumar, "Industrial Engineering & Management", Khana Pub., 2004
- Eugenel Grant, "Statistical Quality control , McGraw –Hill,1996.

##### 6.3 Recommended books

- Robert H.Todd,"Fundamentals Principle of Manufacturing Process", Industrial Process, 1994

#### 7- Facilities required for teaching and learning

- Computer Lab
- Data Show & Overhead Projector

**Course Coordinator:** Prof. Dr. Attia Gomaa

**Program Coordinator:** Prof. Dr. Attia Gomaa

**General Supervisor & Vice Dean:** Prof. Dr. Abdallh Saad

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