***Course Specifications of:***

***Computer Integrated Production Systems* (*MED507*)**

**Program(s) on which the course is given:** Diploma in Computer Numerical Control Machines

**Compulsory or Elective element of program**: Elective

**Department offering the program:** Mechanical Engineering

**Academic year / Level:** year/ 2014/2015

**Date of specification approval:**2012

1. **Basic Information**

**Title: *Computer Integrated Production Systems* Code: MED 507**

**Credit Hours:3 Lecture: 3**

**Tutorial: Practical: Total:3**

**B- Professional Information**

1. **Overall aims of course:**

This course introduces students to:

1. Analysis and problem‐solving skills are developed through tutorial/problem sheets and small group exercises about the Computer Integrated Production Systems

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1. **Intended learning outcomes of course (ILOs)**

By completion of the course, the student should be able to:

**2.1 Knowledge and understanding**

2.1.1Identify theories, fundamentals and specialized knowledge in computer integrated production Systems.

2.1.2List ethical and legal principles of professional practice in computer integrated production Systems.

2.1.3Describe principles and fundamentals of quality in professional practice in computer integrated production Systems.

2.1.4Explain the effect of professional practice on the environment and work toward its conservation and maintenance.

**2.2 Intellectual skills**

2.2.4 Assess the risks and hazards in professional practices.

2.2.5 Make sound decisions in complex and unpredictable situations.

**2.3 Professional and practical skills**

2.3.2 Prepare professional reports.

**2.4 General and transferable skills**

2.4.1 Communicate effectively using different means.

2.4.2 Use information technology in order to serve the development of professional practice.

2.4.3 Assess him/her self and identify his/her own personal learning needs.

2.4.5 Conduct self learning and continuous education practices.

1. **Contents**

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| --- | --- | --- | --- | --- |
| **No of weeks** | **Topic** | **No. of hours** | **Teaching / learning methods and strategies** | **Assessment method** |
| 1 | Case study | 3 | Lecture,Class activity | - |
| 2 | Case study | 3 | Lecture./Assign, case study | Assignment 1 |
| 3 | Automatic factory programmed from the principle unit | 3 | Lecture, Class activity | Assignment 1 |
| 4 | Automatic factory programmed from the principle unit | 3 | Lecture,Class activity | Assignment 2 |
| 5 | The favorite control for each individual process | 3 | Lecture/Assign. | Assignment 2, Quiz |
| 6 | The favorite control for each individual process | 3 | Lecture,Class activity | Assignment 3 |
| 7 | The favorite control for each individual process | 3 | Lecture,Class activity | Assignment 3, Quiz |
| 8 | **Midterm exam** | | | |
| 9 | The processes of quality monitoring | 3 | Lecture/Assign. | Assignment 4 |
| 10 | The processes of quality monitoring | 3 | Lecture, Class activity | Assignment 4, , Quiz |
| 11 | Inspection and control | 3 | Lecture/Assign. | Assignment 5 |
| 12 | Inspection and control | 3 | Lecture, Class activity | Assignment 5 |
| 13 | Inspection and control | 3 | Lecture, Class activity | Quiz |
| 14 | Inspection and control | 3 | Lecture, Case Study | Oral Exam |
| 15 | **Final exam** | | | |

1. **Course Matrix**

|  |  |  |
| --- | --- | --- |
| **ILO’s code number** | **Teaching/learning methods and strategies** | **Assessment methods and strategies** |
| 2.1.1  2.1.2  2.1.3  2.1.4 | Formal lectures | Individual coursework assignments, quizzes, oral discussions and reports. Midterm and /or final written examination is given. |
| 2.2.1  2.2.2  2.2.3  2.2.4  2.2.5 | Analysis and problem‐solving skills are developed through tutorial/problem sheets and small group exercises.  Research skills are developed through a small subject oriented research project. | Analysis and problem‐solving skills are assessed through oral and written examinations.  Design and research skills are assessed through project write-ups, coursework and project reports. |
| 2.3.1  2.3.2  2.3.3 | Experiments demonstrations, practical work, laboratory visits. | Practical skills are assessed through laboratory experimental write-ups, coursework exercises and reports, project reports and presentations. |
| 2.4.1  2.4.2  2.4.3  2.4.4  2.4.5 | Those skills are not explicitly taught; however, along the course of study the student will acquire those skills to be able to perform his obligations. Attendance of seminars, workshops or conferences will help the student in developing those skills. Presentation by students (either group or individual) will train students for those skills. | Project presentation |

1. **Teaching and Learning Methods**

* Lectures

Practical training / laboratory

Seminar / workshop

* Class activity
* Case study
* Assignments / homework

Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Student Assessment Methods**

* Assignments to assess knowledge and intellectual skills.
* Quiz to assess knowledge, intellectual and professional skills.
* Mid-term exam to assess knowledge, intellectual, professional and general skills.
* Oral exam to assess knowledge and intellectual skills.
* Final exam to assess knowledge, intellectual, professional and general skills.
* Other: Practical exam to assess knowledge, intellectual, professional and general skills.

1. **Assessment schedule**

Assessment 1 Assignments on weeks 2, 3, 4, 5 , 6, 7 ,9, 10, 11, and 12

Assessment 2 Quizzes on weeks 5, 7, 10, and 13

Assessment 3 Mid-term exam on weeks 8

Assessment 3 Oral exam on week 14

Assessment 4 Final exam on week 15

1. **Weighting of Assessments**

Mid-Term Examination 20%

Final-Term Examination 60%

Oral Examination 05%

Practical Examination 05%

Semester Work 10%

Other 00%

Total 100%

1. **List of References**

**9.1 Course Notes**

* Course notes prepared by instructor
* PowerPoint slides.

**9.2 Essential books (Text books)**

* Kalpakjian, Serope; Schmid, Steven (2006), *Manufacturing engineering and technology* (5th ed.), Prentice Hall, p. 1192, ISBN 978-7-302-12535-8.
* Laplante, Phillip A. (2005), *Comprehensive dictionary of electrical engineering* (2nd ed.), CRC Press, p. 136, ISBN 978-0-8493-3086-5.

**9.3Recommended books**

* Saracoglu, B. O. (2006). "Identification of Technology Performance Criteria for CAD/CAM/CAE/CIM/CAL in Shipbuilding Industry".

**9.4Periodical websites**

[**www.c*omputerintegratedproduction.com***](http://www.computerintegratedproduction.com)

1. **Facilities Required for Teaching and learning**

Lecture room equipped with Presentation board, computer and data show

**Course coordinator:**Prof. Dr. Hossam Zakria

**Course instructor: 15.10.2015**

**Head of department:**Prof. Dr. Osama Ezzat Abdellatif