COURSE SPECIFICATIONS

University: Benha University	Faculty: High Institute of Technology

Course specifications
Course Description

Programs take this course through their curricula
- Degree of Engineering and Technology in Mechanical Engineering (Production and Power)

Departments offering these programs
- Mechanical Engineering

Academic year / Level:
- Fifth year

Date of specification approval:
- 2008 G.

A- Basic Information

Title: Advanced Manufacturing	Code: M 581
Credit Hours: 3	Lecture: 1
Tutorial: 2	Practical: 4
Total: 7

B- Professional Information

1 - Overall aims of course
- Use computing techniques for integrated manufacturing system
- Manipulate manufacturing with computers
- Learn principles of computer controlling of machining
- Learn programming ladder techniques
- Learn Robotic industrial applications

2- Intended learning outcomes of course (ILOs)
- Using computers for controlling manufacturing
- Use programming to manipulate signal processes
- Learn computer applications for controlling processes
a. Knowledge and understanding:
   a.1 Know the professional use of computer interfacing in workshop
   a.2 Familiarization with computer controlled processes
   a.3 Know ladder programming techniques

b. Intellectual skills
   b.1 Using computers for controlling industrial applications.
   b.2 Composing interfacing with machines and make suitable programs to accomplish it.
   b.3 Use simulation systems to making sure of the correctness of the programmed interfacing.

c- Professional and practical skills
   c.1 Making simple and efficient connections for controlling purposes
   c.2 Making simple and efficient connections for monitoring purposes
   c.3 Develop real experience working skills

d- General and transferable skills
   d.1 Gain enough experience to decide on CIM systems
   d.2 Familiarization with commercially used CIM systems
   d.3 Develop stand alone programmed and pieces of codes for future use

3- Contents

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<td>Electrochemical Machining (ECM)</td>
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<td>Laser Industrial Applications (Cutting, Welding, Heat treatment)</td>
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<td>Combinations of various processes</td>
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4– Teaching and learning methods

4.1-Direct instruction
4.2-Supervised tutoring
4.3-Computers laboratory
4.4-Project advising
4.5-Project and report

5- Student assessment methods

5.1 Class work grading to assess knowledge and intellectual skills
5.2 Quizzes to assess understanding and professional skills
5.3 MidTerm to assess intellectual and transferable skills
5.4 Project Report to assess intellectual and transferable skills
5.5 Final Exam to assess intellectual and transferable skills

Assessment schedule

Assessment  CW     every week
Assessment 2 Quizzes twice or thee time
Assessment 3 Mid Term end of the term
Assessment 4 Mini project end of the term
Assessment 5 Final Exam end of the term

Weighting of assessments

Mid-term examination 10  
Final-term examination 60  
Oral examination 10  
Semester work 10  
Report 10  
Total 100

6- List of references

- Course notes
6.2- Essential books (text books)
   - Lecture Notes

6.3- Recommended books
   - Same books

6.4- Periodicals, Web sites, … etc
   - http://engg.kau.edu.sa/~el-assal

7- Facilities required for teaching and learning
   Possible E-Learning

Course coordinator: Prof. Dr. Ahmed El-Assal
Head of Department:
Date: 30 / 6 / 2009