Philadelphia University
Faculty of Engineering
Department of Mechanical Engineering
First Semester, 2010/2011

Course Syllabus

Course Title: CAD/CAM	**Course code: 640581**
Course Level: 5	**Course prerequisite (s) and/or co requisite (s):** **Programmable logic control (640475)**
	Credit hours: 3

Course description:

To introduce the students with the fundamentals of: Computer aided Design and Computer Aided Manufacturing.

Course objectives: At completing this course the student should:

- Understand the basic concept of computer aided design.
- Programming CNC with different programming languages.

Course components

- **Books (title , author (s), publisher, year of publication)**

  Introduction to CNC, Games Valentino, 4th edition.

Teaching methods:

- 2 Lectures a week
- 1-2 Appointments for tutorials and discussion after each chapter

Learning outcomes:

- Knowledge and understanding

  The student should be able to understand the basic concept of computer aided design and programming CNC machines.
- Cognitive skills (thinking and analysis).

The students should link the concepts that they are learning with the real applications by giving live examples where the subject concepts are applied.

- Communication skills (personal and academic).

Assessment instruments

- Short reports and/ or presentations, and/ or Short research projects
- Quizzes.
- Home works
- Final examination: 50 marks

Allocation of Marks	
Assessment Instruments	**Mark**
First examination	**20**
Second examination	**20**
Final examination: 50 marks	**50**
Reports, research projects, Quizzes, Home works, Projects	**10**
Total	**100**

Documentation and academic honesty

- Documentation style (with illustrative examples)

Students will be given the key solution after each exam to compare with their answers as well as the marking scheme. If any has an objection then the supervisor should consider it based on the key solution and the marking scheme. If the student has extra marks then he it should be added to him

- Avoiding plagiarism.
  The university has strict rules about plagiarism and it will be considered where it is necessary.

Course/module academic calendar

week	**Basic and support material to be covered**	**Homework/reports and their due dates**
(1)	Introduction	
(2)	Fundamental of CAD systems	
(3)	Fundamental of CAM systems	
(4)	Introduction to CNC machines	
(5)	Tooling for hole milling and lathe machines	**Quiz at the end of the chapter.**
(6) First examination	Tooling for hole milling and lathe machines	
(7)	Word address programming and hole operations programs	**Quiz at the end of the chapter.**
(8)	Programming linear profile	
(9)	Programming contouring profile	**Quiz**

(10)	Programming with tool diameter compensation	**Quiz at the end of the chapter.**
(11) Second examination	Programming with tool diameter compensation	
(12)	subprograms	**Quiz at the end of the chapter.**
(13)	CNC lathe programming	**Small related project.**
(14)	CNC lathe programming	
(15)	Introduction to master CAM, GIBBS CAM and CAD/CAM station	
(16) Final Examination	Introduction to master CAM, GIBBS CAM and CAD/CAM station	

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Module references

Books

1. CAD/CAM: Computer Aided Design and Manufacturing by Groover, Prentice Hall.
2. Understanding CAD\CAM by Bowman, Howard Co.
3. Computer Aided Manufacturing by Ssu-Pin Wang.
4. CAD\CAM by Taylor, Addison Wesley.