Philadelphia University
Faculty of Engineering
Mechanical Engineering Department
First semester, 2010/2009

Course Syllabus

Course Title: Engineering Measurements	**Course code: (620351)**
Course Level: 3	
Lecture Time:11:10-12:10 حثم	**Credit hours:3**

Academic Staff Specifics

Name	Rank	Office Number and Location	Office Hours	E-mail Address
Dr. Fayiz Abu Khadra	**Assistant Prof.**	**Mechanical Eng Building, 61209**	12:00-13:00 Monday Wednesday	fkhadra@philadelphia.edu.jo

Course module description:

To introduce the students to the basic knowledge of experimental methods and measurements techniques.

Course module objectives:

- Understand the fundamentals concepts of measurements technique.
- Understand the basics of uncertainty and statistical analysis
- Apply the basics of experimental data analysis
- Understand the basics of electrical measurements and electrical devices
- Use measurements device of temperature, pressure, flow, force and strain

Course/ module components

- **Books (title , author (s), publisher, year of publication)**
- **Experimental Methods for Engineers, J.P Holman 7th ed.**

Support material (s) (vcs, acs, etc).

- **Study guide :** Lectures and solving problems in classroom and solving home works
- **Homework and laboratory guide (s) if (applicable).**

Teaching methods:

Lectures, tutorials, and problem solving,

Learning outcomes:

- Knowledge and understanding
  The basic knowledge of experimental methods and measurements techniques.

- Communication skills (personal and academic).

- Practical and subject specific skills (Transferable Skills).

The use of computer as a tool in the design process of mechanical parts

Assessment instruments

- 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	**1000**

Documentation and academic honesty

- Documentation style (with illustrative examples)
  Use the following style of references
  Caps R, Heinemann U, Ehrmanntraut M, Fricke J. Evacuated insulation panels filled with pyrogenic silica powders: properties and applications. High Temp-High Press 2001; 33:151–6.

- Protection by copyright

- Avoiding plagiarism.

Course/module academic calendar

week	Basic and support material to be covered	Homework/reports and their due dates
(1)	Introduction	
(2)	Basics concepts	
(3)	Basics concepts	
(4)	Analysis of Experiments data	
(5)	Analysis of Experiments data	
(6) **First examination**	Analysis of Experiments data	
(7)	Basic electrical measurements and sensing devices	
(8)	Basic electrical measurements and sensing devices	
(9)	Pressure measurements	
(10)	Pressure measurements	
(11)	Flow measurements	
12	Flow measurements	
Second examination	26-12-2009	
(13)	Temperature Measurements	
(14)	Temperature Measurements	
(15)	Force and strain measurements	
(16) **Final Examination**		

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

Northrop, R.B., "Introduction to Instrumentation and measurements," CRC Press, Boca Raton, FL, 1997.

Journals

Websites

www.mece.ualberta.ca/tutorials/ansys/