Physics I Course Specifications

Faculty: Computer and Informatics

Department: Computer Science

Program(s) on which the course is given :   Bachelor in Computer and Information Sciences

Major or Minor element of programs	:	All majors
Department offering the program	:	Computer Science
Department offering the course	:	Basic Sciences
Academic year / Level	:	1st Year / B.Sc.
Date of specification approval	:	8/10/2009

A. Basic Information

Title: Physics I   **Code:** BSC 125

Lectures: 4 hrs/week   **Tutorial: 3** hrs/week   **Practical: 2** hrs/week

Credit Hours: ---   **Total:** 9 hrs/week

B. Professional Information

1. **Overall Aims of Course:**

    The aim of the course is to enable students to learn about the physical universe and the physical laws of motion that explain its behavior. Upon completion of this course, students will be able to understand, analyze, and apply of the concepts of the physical phenomena of motion in its different forms including work and energy concepts.

2. **Intended Learning Outcomes of Course (ILOs):**

a. **Knowledge and Understanding:**

a1- Understanding of the laws of motion including linear, circular and vibrational motion.
a2- State the concepts of work and energy.
a3- Explain the Oscillatory motion, wave motion and sound waves.
a4- Interpreting and analyzing data qualitatively and/or quantitatively.
a5- Show a critical understanding of the physical, electronic, architecture principles underlying hardware design.

b. **Intellectual Skills:**

b1- Criticize analytical ability in communicating an understanding of the laws of motion.
b2- Interpret ways in which mathematics is be applied in motion dynamics.
b3- Formulate the basic concepts of motion in dynamical systems.
b4- Restrict solution methodologies upon their results.
b5- Establish criteria, and verify solutions.
b6- Inferring up on the problem conditions.

c. **Professional and Practical Skills:**

c1- Perform scientific experiments
c2- Use scientific visualization packages to visualize complex scientific data sets.

d. **General and Transferable Skills:**

d1- Discuss the universal phenomena and understand them.
d2- Able to work effectively as a member of a learning group.
d3- Solve practical problems in course projects.
d4- Use current technology in laboratories.

e. **Attitude:**

e1- A knowledge and respect of ethics and ethical standards in relation to a major area of study.
e2- Relationship Emphasis a successful with other students.
e3- Learn how to make relation with other, and the limit of this relation.
e4- Know the culture of other peoples.

كلية الحاسبات و المعلومات

3. **Contents:**

Topic	No. of hours	Lecture	Tutorial/Practical
Introduction	2	1	5
Dimensional analysis	2	1	5
Measurements	2	1	5
Motion in one dimension	4	2	10
Rotational motion	6	3	12
Applications	2	1	4
Work,, Energy and Potential motion	8	4	16
Laws of gravity	4	2	8
Wave motion	8	4	16
Oscillatory motion	8	4	16