

Appendix A – Course Syllabi

Basic and Applied Science Courses – BA

BA113 – Physics (1)

Hour: Lecture: 2 Hrs. Tutorial: 2 Hrs. Credit: 3.

Coordinator: Ahmed Akel

Text Book:

Hans C. Ohanian and John T. Markert, *Physics for engineers and scientists*, W.W. Norton & Co.; latest edition.

Specific course information:

- This course consists of four parts static electricity, electric current, magnetism and light.
- Prerequisite: none
- Designation: Required

Specific goals for the course:

- An ability to apply knowledge of mathematics, science, and engineering.
- An ability to design and conduct experiments, analyze and interpret data.
- An ability to identify, formulate, and solve engineering problems.
- Recognition of the need for, and an ability to engage in life-long learning.

Course instruction outcomes:

- The students will gain good knowledge about the nature and the existence of static electricity, the interaction between different type of charges and the electric field types generated by these charges.
- The students will be able to distinguish between the static electricity and the electric current through the application of ohm's law and gives the student basic information about the structure of simple electric circuit.
- The students will have a good background about the theory of magnetism and electromagnetic Induction.

Student outcomes:

A, B, G, I

Topics Covered:

Introduction to static electricity and Coulomb's law - Introduction to static electricity and coulomb's law - Electric field. - Electric potential. – Capacitors - Electric current, ohm's law resistors in series and parallel - Kirchhoff's rule - Introduction to theory of magnetism and different applications - Electromagnetic induction - Optics and waves (nature of light, properties of light waves) - Young's double slit 'polarization of light waves.

Course / credit hours	Math & Basic Sciences	Engineering Topics	General Education
Physics (BA113)/3	3		