**PHY 1014: UNIVERSITY PHYSICAL SCIENCE**

**Syllabus and Course Information (Summer 2015)**

**Department of Engineering and Physics**

**Course Description:**

Physical science means physics, chemistry, Engineering, geology and astronomy. In one it is the science that analyzes the nature and properties of energy and nonliving matter and their interaction. This course is the first step to understanding some of these concepts and their use in the real world; it is mainly Conceptual, with little emphasis in computation.

**Course Prerequisites:** None

**Instructor:** Mohamed Bingabr, Professor of Engineering and Physics

**Office Location:** Howell Hall 221B

**Phone: (**405)974-5718

**Email:** mbingabr@uco.edu

**Course Meeting Time:** MTWR 11:00 am – 12:15 am

**Course Meeting Location:** Howell Hall 201

**Office Hours:** MTWR 10:00 – 11:00 and 1:00 – 2:00, and by appointment.

**Course Objectives:**

The basic aim of this course is to teach you the foundational principles of physical science so that you can

- Better understand the world around you

- Better appreciate the beauty and symmetry of natural laws

More specifically, if you successfully finish the course, you will:

- Be able to explain the meaning of basics concepts of physics, Engineering, chemistry and astronomy.

- See applications of physical science in the world around you.

- Be able to read and understand non-technical scientific literature about topics in physics and chemistry.

- Be able to evaluate arguments about public issues that involve topics in this course.

**Materials and Resources**:

Conceptual Physical Science 5th edition by Hewitt, Suchocki, and Hewitt.

Calculator, Protractor, Ruler, Pencil, Eraser

Scantrons Advantage™ #26720

**Grading:**

The grade you receive will depend entirely on the quality of your own work. You are not in competition with other students: how well you do is determined objectively rather than comparatively. Grades are assigned based on the competence you demonstrate during assessments (tests), homework and Quizzes.

Homework 10%

Attendance 10%

Quizzes 15%

2 Tests 40%

Final Exam 25%

Grade of "I" will not be given as a result of the missed exam.

**ADA Statement:**

The University of Central Oklahoma complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. Students with disabilities who need special accommodations must contact the assistant director of Disability Support Services, Kim Fields, in room 309 of the Nigh University Center, (405) 974-2549. It is the students responsibility to contact the instructor as soon as possible after the DSS has verified the need for accommodations to ensure that such accommodations are implemented in a timely fashion.

**Course Organization:**

Exams will tentatively cover the following material (changes will be announced):

**1. Exam 1: Unit I: Physics:**

- Scientific Measurements.

- Motion in one dimension.

- Projectile and Satellite motion.

- Forces and Newton’s Laws of Motion.

- Momentum and Energy.

**2. Exam 2: Unit II: Engineering:**

- Fluid Mechanics.

- Thermal Energy and Thermodynamics.

- Heat transfer and change of phase.

**3. Final: Unit III: Electricity & Chemistry:**

- Static and Current electricity

- Reflection and Refraction

- Atoms and the periodic table / Elements of Chemistry. (if time permits)

- Atomic Models. (if time permits)

- How Atoms Bond (if time permits)