

Physical Science (Science)

Required – Year – 9

Prerequisites: None

Course Description

Physical Science begins with a study of the Christian viewpoint of science. This study will be the foundation upon which all courses at Luther are taught. After the Christian foundation has been laid, the remainder of the course will introduce to the student introductory topics in physics and chemistry. Students will also be introduced to various laboratory techniques.

Course Goal

Physical Science is a core course, which sets the base for all other science studies at Luther. The Christian teacher will:

1. Provide basis for understanding the physical sciences as God's marvelous creation.
2. Reinforce the student's understanding of the relationship between science and religion.
3. Introduce the student to basic laboratory equipment.
4. Instill an understanding of laboratory safety.
5. Lead the students to an understanding of the scientific method.
6. Foster learning for students in small group, large group, and individual settings.
7. Lead students to develop observational skills
8. Develop an understanding of the effects of science/technology on our lives.
9. Foster a feeling of familiarity, ease and enjoyment with concepts, process, and content of science.

Course Objectives

Upon completion of Physical Science the student will:

1. Express confidently the different, yet harmonic nature between science and religion
2. Convert measurements within the metric system.
3. Work productively in small and large groups.
4. Work safely in a laboratory setting.
5. Identify basic laboratory equipment
6. Investigate and analyze problems by the scientific method.
7. Identify benefits of science/technology in his/her life.

Course Outline

1. Course Introduction & Philosophy
2. The Nature of Science
3. Motion
4. Forces
5. Energy
6. Work and Machines
7. Thermal Energy
8. Electricity
9. Magnetism and Its Uses
10. Energy Sources
11. Classification of Matter
12. Solids, Liquids, and Gases
13. Properties of Atoms and the Periodic Table
14. Elements and their properties
15. Chemical Bonds

Instructional Strategies

A number of different teaching approaches are used, including:

1. Lecture
2. Cooperative learning activities
3. Laboratory experiences
4. Demonstrations
5. Videos

Grading Methods

1. All assignments are due at the beginning of each class period unless indicated otherwise.
2. Each chapter will consist of
 - a. Lesson worksheets
 - b. Laboratory work and/or other activities
 - c. Quizzes
 - d. Review Day
 - e. Test Day
3. Semester Grades are determined on a straight point system of all homework, quiz, and test assignments.

Student Materials

Students are required to have the following:

1. Physical Science Textbook
2. 3-ring binder
3. Loose leaf paper
4. Scientific calculator
5. Pencil & pen

Classroom Procedures

1. **Tardy** – A student not in the classroom when the bell rings is considered tardy.
2. **Make-up Work** – Students who are absent due to illness will have two days to complete missed assignments (i.e. tests, quizzes, labs, etc.) Students who miss class for appointments or other pre-arranged activities or meetings are expected to complete missed assignments that day. In the event of difficulties, always speak with the instructor.
3. **Behavior** – Students are expected to conduct themselves as sanctified Christians at all times.