

## **COURSE PROFICIENCY OUTLINE**

### **EARTH-SPACE SCIENCE - 383**

General Studies 5 Credits

#### Purpose

Earth-Space Science - 383 is offered as a first course to high school pupils who need continued reinforcement in reading, mathematics and science learning skills. Using a systems approach, this course introduces the four branches of Earth Science: Astronomy, Oceanography, Geology and Meteorology, while integrating physical science topics related to Earth Science. Classroom laboratory investigations, collecting, cataloging and interpreting data and drawing conclusions form an important portion of the course work.

#### I. Student Outcomes 5.1, 5.2, 5.8, 5.9, 5.10

A. Students will demonstrate an understanding of the basic words, facts, ideas and applications of the course content.

B. Students will demonstrate the ability to use science in making specific decisions.

C. Students will demonstrate an understanding of physical and biological interrelationships.

D. Students will improve their competencies in study and learning skills, reading and writing and listening skills, and in basic science critical thinking and investigative skills.

#### II. Content 5.1, 5.2, 5.3, 5.4, 5.6, 5.7, 5.8, 5.9, 5.10

##### A. The earth - an introduction

1. Basic measurement skills, metrics, calculations, density

2. Basic map skills

3. Basic building blocks of the earth

4. Rocks and minerals, soils and sand

##### B. Weather, climate and our atmosphere

1. Air and its movement, winds and sand dunes

2. Weather and weather prediction

3. Climate, seasons

##### C. Water on the earth and in the oceans

1. Ocean currents and our shoreline

2. Ocean resources

3. Rivers and their changes

4. Ground water and environmental concerns

5. Glaciers and their effects

##### D. The land and its changes

1. Erosion

2. Motions inside the earth, plate tectonics

3. Earthquakes and volcanoes

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4. Landforms and their changes
5. Topographic map skills and interpretation
6. Overview of the earth's history
- E. Resources, energy and our environment
  1. Renewable and nonrenewable resources
  2. Energy resources and alternate energy sources, the sun and its effects on us
3. Conservation of resources and energy
4. Local environmental concerns, water, seashore, bay and ocean
- F. The universe
  1. Stars and motion
  2. The solar system and motion
  3. The moon, its motion and effects on the earth
  4. Space exploration
- G. Career development, science-related careers and opportunities
  1. General principles of career education - attitudes, work habits and competencies.
  2. Information related to careers utilizing science understandings and applications, including careers using science and technology in basic employment positions that the students enrolled in this course can aspire to reach.

### III. Activities and Materials

- A. Text - Concepts and Challenges in Earth Science
- B. Classwork
  1. Lectures, discussions, and audio-visual aids, and regular tests and quizzes will be utilized.
  2. Basic skills such as reading, writing, simple arithmetic, listening and thinking will be stressed.
- C. Laboratory and demonstration activities - developing a safety attitude
  1. Measurement and manipulative activities
  2. Studies of basic science ideas, skills and applications to earth-space science
  3. Studies of maps, basic map interpretation, sample topography, rocks and minerals
  4. Studies and interpretation of charts, tables and other graphics
- D. Assignments - to be carefully checked and reviewed by the teacher and students and to include stress on the skills of reading, writing, outlining, and science organization thinking.
  1. Readings - text and other sources
  2. Written answers to questions
  3. Laboratory, demonstration and other reports utilizing varying techniques
  4. Science study-learning assignments commensurate with the non-college preparatory level of instruction expected in this course.

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### II. Evaluation

A. Students will bring needed materials to class and be ready to work for the full class period.

B. Students will complete classwork and homework learning assignments, laboratory work and reports on time, and make up missed work as specified by the teacher.

C. Students will demonstrate a level of proficiency commensurate with the homogeneous group expectations for this course. The evaluation of student outcomes shall consist of tests, quizzes, written assignments and reports, lab reports, and the teacher's regular observations of student involvement and achievement in classroom and laboratory activities.

D. Students will take a comprehensive final examination. This exam will count as 20% of the final grade.

E. The final grade represents the teacher's professional judgment of the student's performance and all of the aforementioned activities and/or requirements are included in the evaluative process.

Teachers in every discipline will include opportunities wherein students will reinforce writing skills through homework assignments, classwork activities, and special assignments (reports) if required, by writing in complete sentences, using correct spelling and punctuation.

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