

FLORIDA STATE COLLEGE AT JACKSONVILLE

FORM 4C: OFFICIAL HIGH SCHOOL COURSE OUTLINE

COURSE NUMBER: AHS 0256  
COURSE TITLE: Earth/Space Science (with lab)  
PREREQUISITE(S): None  
COREQUISITE(S): None  
DEPARTMENT OF EDUCATION NUMBER: 2001310

LABORATORY ACTIVITIES:

Laboratory investigations of selected topics in the content which also include the use of the scientific method, measurement, laboratory apparatus and safety are an integral part of the course.

GRADUATION REQUIREMENT: Science  
CREDIT: 1.0 (High School Credit)  
FACULTY WORKLOAD POINTS: 1.0

MAJOR CONCEPTS/CONTENT:

The purpose of this course is to provide opportunities for the student to develop concepts basic to the earth, its materials, processes, history and environment in space.

The content should include, but not be limited to, formation of the universe and solar system, life cycle of stars, earth-moon system, U.S. manned space program and exploration, formation of igneous, sedimentary and metamorphic rocks, and identification of rocks and minerals, divisions of the earth, formation of landforms, and basic mountain types, fundamental plate tectonics, formation of rivers and water systems, erosion, mass movements, wind, glaciers, hydrologic cycle, oceanography and ocean currents, meteorology and cloud types, weather mapping, soil composition, geologic periods and fossils, and energy resources, renewable/non-renewable.

CATALOG COURSE DESCRIPTION:

This course provides opportunities for the student to develop concepts basic to the earth, its materials, processes, history and environment in space. A laboratory experience is included.

SUGGESTED TEXTS: Perkins. Earth Science Work-A-Text,  
1981. Cambridge. ISBN:0-870-65-788-7.

IMPLEMENTATION DATE: Winter Term, 1993 (932)

## AHS 0256 EARTH/SPACE SCIENCE W/LAB

**CONTENT OUTLINE**

1.0	Problem solving/methods	
1.1	Basic of hypothesis on experiment, interpolate and extrapolate	1.01,1.02 1.03
1.2	Experiment/design, sequence of events, metric measurement technique	1.05,1.06
1.3	Cause and effect, interpretation of data/laboratory experiment	1.07,1.08, 1.09
	1.3.1 Metric measurements in lab	
1.4	Scientific apparatus, equipment process and skills to analyze scientific information	1.10 1.11 1.12
1.5	Findings should be repeatable, and interpretable	1.13,1.14 1.15
1.6	Attire to ensure protection	1.16
2.0	Solar systems/universe	2.02
2.1	Formation of planets/sizes and components	2.03, 2.04
2.2	Compare/contrast formation theories	2.01
3.0	Stars	
3.1	Life history of a main sequence star	3.01
3.2	Celestial bodies	3.03
3.3	Sun's energy/disturbance on sun's surface	3.02
4.0	Earth/Moon	
4.1	Lunar and solar eclipses	4.01
4.2	Tilt of earth's axis	4.02
4.3	Rotation & revolution/celestial bodies	4.03,4.04
4.4	Lab on observation of phases of moon	4.05
5.0	U.S space program	
5.1	Explorer, Apollo, Shuttle	5.01
5.2	Satellites	5.02
5.3	Research/benefits	5.03,5.04
5.4	Instruments	5.05
5.5	Lab on investigating the forces that keep a satellite in orbit	
6.0	Mineral/Rocks	
6.1	Atoms/Elements/Compounds	6.02,6.03
6.2	Elements found in minerals	6.04,6.05
6.3	Sedimentary, metamorphic and igneous rocks	6.01
	6.3.1 Lab on identifying sedimentary rocks	

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**CONTENT OUTLINE** (Continued)

6.0	Mineral/Rocks (continued)	
	6.3.2 Lab on identifying metamorphic rocks	
	6.3.3 Lab on identifying igneous rocks	
	6.3.4 Testing Minerals for Hardness	
	6.3.5 Testing Minerals for Specific Gravity	
	6.3.6 Testing Minerals for Streak	
7.0	Earth's Interior	
	7.1 Layers of the earth	7.01
	7.2 Location	7.02
8.0	Formation of land forms/mountain types	
	8.1 Plateaus, valleys, mountain, alluvial fans plains	8.01
	8.2 Characteristics of mountains	8.02
	8.3 Agents of change on earth's surface	8.03,8.04
9.0	Crustal plates/Movements	
	9.1 Earth's interior, core, mantel and crust	9.01
	9.2 Movement of the earth's crust	9.03,9.04
	9.3 Volcano; formation and structure	9.05,9.06
	9.4 Earthquakes; waves, kinds formation	9.05,9.07
	9.5 Continents and ocean basins	9.08,9.09
	9.6 Lab on mapping contour of ocean floor	
10.0	Running Water/River System	
	10.1 Formation/Characteristics of their stages	10.01, 10.02
	10.2 River system alter the landscape	
11.0	Erosion/Results	
	11.1 Agents	11.01
	11.2 Effects	11.02
12.0	Glaciers	
	12.1 Geologic formation	12.01, 12.02
	12.2 Effect of Gleliation world wide	12.03, 12.04
13.0	Water cycle	
	13.1 Factors affecting the cycle	13.01, 13.05
	13.2 Formation fresh water features/ features of Florida hydrology	13.02 13.03
	13.3 Effects of lowering water table/ impact of salt water intrusion and sinkholes	13.04

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**CONTENT OUTLINE** (Continued)

14.0	Ocean Currents	
14.1	Production, location and direction of currents	14.01
14.2	Currents, waves, tides	14.02, 14.03 14.04, 14.05
15.0	Weather, Seasons	
15.1	Types of weather fronts/Processes of condition, convection and radiation	15.01, 15.02 15.05
15.1.1	Lab on observing convection currents	
15.2	Earth's seasons	15.03
15.3	North American wind system	15.04
15.4	Types and causes of storms system and precipitation	15.06 15.07
15.5	Major climates of the earth	15.08
15.6	Safety precautions associated with storms and other weather phenomena	15.09
15.7	Lab on weather elements: Outdoor "guesstimation" exercise	
16.0	Soil	
16.1	Types, constituents and formation of soil	16.01, 16.02
16.1.1	Lab on investigating unequal heating and cooling of land water surfaces.	16.03
16.2	Factors of soil erosion and depletion	16.04
17.0	Geology	17.01
17.1	Geology Eras	17.02
17.2	Fossils	17.03, 17.04
18.0	Earth Resources	
18.1	Fossil fuels	18.01
18.2	Alternative energy sources	18.02
18.3	Natural resources	18.03, 18.04, 18.05
18.4	Renewable/nonrenewable natural resources	18.05
19.0	Topographic and weather maps	
19.1	Interpretation and identification of topographic map and symbols	19.01, 19.02
19.2	Use of weather map, data and conditions to predict weather	19.03 19.04,
19.3	Lab on reading weather maps	19.05

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**CONTENT OUTLINE** (Continued)

20.0 Earth Science interaction with

Technology and Society	
20.1 Satellites	20.01
	20.02
20.2 Ozone layer	20.03
20.3 Soil Management and erosion control	20.04
	20.05
20.4 Pollution, industrialization and use of chemicals	20.07
	20.08
	20.09
20.5 Solar energy	20.06
20.6 Energy resources and use	20.10
20.7 Career opportunities in the earth sciences	20.11

#### LABORATORY COMPONENT

- Lab 1 Metric Measurements
- Lab 2 Identifying Igneous Rocks
- Lab 3 Identifying Sedimentary Rocks
- Lab 4 Identifying Metamorphic Rocks
- Lab 5 Testing Minerals for Hardness
- Lab 6 Testing Minerals for Streak
- Lab 7 Testing Minerals for Specific Gravity
- Lab 8 Contour of Ocean Floor
- Lab 9 Observing Convection Currents
- Lab 10 Investigating the Unequal Heating and Cooling of Land and Water Surfaces
- Lab 11 Reading Weather Maps
- Lab 12 Weather Elements: Outdoor "Guesstimation" Exercise
- Lab 13 Observation of Phases of Moon