| UNIT | SKILLS | TYPE OF ASSESSMENT USED |
|---|---|---|
| **Unit 1**<br><br>Measuring the Earth | • Calculate circumference using eratosthenes equation<br>• Determine position using latitude and longitude<br>• Calculate rate of change in a field using gradient equation<br>• Interpret selected properties of Earth's atmosphere in ESRT*<br>• Analyze and interpret a topographic map | • Written lab reports<br>• Lab performance using maps<br>• Tests:<br>- multiple choice<br>- short answer |
| **Unit 2**<br><br>Rocks and Minerals | • To identify minerals using their physical properties<br>• To identify sedimentary, metamorphic and igneous rocks using their physical properties<br>• Interpret scheme for igneous, sedimentary and metamorphic rock identification in ESRT<br>• Interpret rock cycle diagram in ESRT | • Written lab reports<br>• Rock and mineral identification lab<br>• Practical test<br>• Projects (mineral and rock process of formation) |
| **Unit 3**<br><br>The Dynamic Crust | • Identify and label Earth's interior<br>• Analyze the mechanics of plate tectonics<br>• Describe the effects of plate boundaries on earthquake and volcano locations on surface<br>• Analyze a seismogram<br>• Read a P & S wave graph and locate distance and time traveled<br>• Locate epicenter<br>• Calculate origin time<br>• Interpret tectonic plate in ESRT<br>• Use earthquake P & S wave travel time graph in ESRT<br>• Interpret properties of interior diagram in ESRT | • Written lab reports<br>• Lab performance using a seismogram<br>• Tests:<br>- multiple choice<br>- short answer<br>- graphs<br>• Projects:<br>- earthquake and volcano mechanisms |

| UNIT | SKILLS | TYPE OF ASSESSMENT USED |
|---|---|---|
| **Unit 4**<br><br>Surface Processes and Landscapes | • Label the water cycle<br>• Describe the weathering process and development of soil<br>• Label the soil layers<br>• Make distinction between sediment appearance and agent of erosion<br>• Interpret relationship of transported particle size to water velocity diagram in ESRT<br>• Diagram depositional formations based on shape, density, and size of particle and location of deposition<br>• Describe the differences between landscape regions and the factors that affected development<br>• Interpret generalized landscape regions of NYS map in ESRT. Be able to use it with generalized Bedrock Geology of NYS map in ESRT<br>• Describe glacial history of NYS<br>• Label erosional landscape features of a glacier<br>• Label depositional features of a glacier | • Written lab report<br>• Lab performance<br>• Tests:<br>- multiple choice<br>- short answer |
| **Unit 5**<br><br>Earth's History | • Arrange rocks layers in proper sequence based on principle of horizontality superposition and cross-cutting<br>• Label similar rock layers using index fossils<br>• Locate an unconformity in a rock sequence and discuss what it means<br>• Interpret Geologic History of NYS at a Glance Chart in ESRT<br>• Determine the age of a rock based on radioactive data | • Written lab reports<br>• Lab performance<br>• Tests:<br>- multiple choice<br>- short answer |

| UNIT | SKILLS | TYPE OF ASSESSMENT USED |
|---|---|---|
| **Unit 6**<br><br>Meteorology | • Calculate relative humidity using DPT and RH charts in ESRT<br>• Label and draw isotherms and isobars on weather map<br>• Draw pressure systems and fronts on weather map<br>• Label the atmospheric variables around a station model<br>• Forecast the weather for a specific area after looking at a weather map<br>• Track a hurricane when given data<br>• Interpret electromagnetic spectrum<br>• Describe energy and the interaction with the earth<br>• Calculate amount of heat lost and gained using amount of heat gained or lost equation in ESRT<br>• Calculate amount of heat needed to change phase using heat of fusion and vaporization equation in ESRT<br>• Calculate cloud base level using lapse rate diagram in ESRT | • Written lab reports<br>• Lab performance<br>• Tests:<br>- multiple choice<br>- short answer |
| **Unit 7**<br><br>Water Cycle and Climate | • Describe intensity, duration of insolation for a particular latitude<br>• Label and describe the greenhouse effect<br>• Interpret a water budget graph to analyze deficit, surplus, recharge and usage<br>• Describe the factors influencing climate | • Tests |

| UNIT | SKILLS | TYPE OF ASSESSMENT USED |
|---|---|---|
| **Unit 8**<br><br>Earth in Space | • Position of the sun at four different dates during year<br>• Calculate eccentricity<br>• Interpret diagram showing gravitation forces of Kepler's 2nd Law<br>• Calculate Law of Gravitation using Newton's Equation<br>• Label a diagram of moon phases, eclipses and tides<br>• Label geocentric and heliocentric model<br>• Describe Foucault Pend and coriolors effect | • Tests<br>• Lab performance<br>• Written lab |

*ESRT = Earth Science Reference Table