**Course Description**

**The Department of Science Level of Students: M. 1**

**Subject Code: SC20202 Subject: Universal Science 2**

**Number of Credit: 1.0 Time: 40 Periods**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Learning Outcomes**

1. Explain what an element is
2. Classify element based on physical state, chemical nature and radioactive nature
3. Explain the meaning and properties of elements compounds and mixture.
4. Differentiate between compound , mixture and pure substances
5. Classify matters using mixture or size of particles as the basis and explain the properties of matter in each category
6. Describe atoms and molecules
7. State the physical properties of pure substances
8. Explain properties and phase change of matters using the model of particle  
   configurationof matters
9. Explain the atomic and molecular structures of matter
10. Describe the nature of heat
11. Explain what thermal equilibrium is
12. Describe the effects of heat
13. Explain about heat balance and effects of heat on expansion of substances and apply the knowledge to use in real-life situation
14. Define temperature and explain how it is measured
15. Describe the mechanisms of heat transfer and apply the knowledge to use
16. Explain about thermal absorption and thermal emission through radiationand apply the knowledge to use
17. Describe the atmosphere and explain compositions and division of atmospheric layers covering the Earth’s surface.
18. Explain relationship between temperature, humidity, air pressure and altitude affecting weather phenomena
19. Describe the different kinds of storms
20. Describe how weather is forecast and interpret data from weather forecasting
21. Describe the factors that affect climate and explain effects of weather on living of creatures and environment
22. Describe the phenomena that cause climate change and discuss the occurrences of weather phenomena affecting human.
23. Investigate, analyze, and explain environmental factors and human actions affecting

the change of global temperature, ozone hole, and acid rain.

1. Investigate, analyze, and explain effects of global warming, ozone hole, and acid rain

on creatures and environment.

1. Pose questions that specify the important point or variable for investigation, or study topics of interest inclusively and reliably.
2. Set hypothesis that can be tested and plan different methods for examination.
3. Choose both quantitative and qualitative techniques for examinations providing

reliable results and security using proper materials and equipment.

1. Collect data and create both quantitative and qualitative information.
2. Analyze and evaluate the correspondence of evidences and conclusion both

supporting and contrasting hypothesis and errors of data from the examination.

1. Create the models or patterns explaining or showing the results of the examination.
2. Create questions leading to the examination of related issues and apply the

knowledge to the new situations or explain the understandable concept, process, and result of the projects to other people.

1. Record and explain the results from observation, exploration, and investigation. Examine and search for more information from various sources for reliable information and accept the change from ideas discovered if there is new data or arguments against the existing ideas.
2. Exhibit works, write reports, and/or explain the understandable concept, process,

and results of the projects to other people.

**Learning Content**

Study foundation science on the topics of chemical elements , element and compound, atom

and molecule , classifying element, pure substance and mixture, atomic structure, chemical bonds, the molecular structure of matter temperature and heat , the nature of heat, thermal equilibrium, effect of heat, temperature and its measurement, heat transfer the atmosphere , air pressure and altitude, the layers of the atmosphere, the types of storms, weather forecasting, factors affecting climate and climate change

Use the process of establishing knowledge and understanding, scientific process, and skills which are observation, data investigation, and discussion to create knowledge, ideas, understanding, ability to communicate the knowledge, decision-making ability, and problem-solving ability, and get students involved in learning process by participating in various activities suitable for their learning levels, and apply the knowledge to real-life situations with responsibility, honesty, disciplines, creativity, efforts, and scientific mind.