

Course Code: PS-1444

Course Title: EXPLORING INTERACTIONS IN SCIENCE, TECHNOLOGY, ENVIRONMENT and SOCIETY (STES) EDUCATION FOR SUSTAINABLE DEVELOPMENT AT THE PRIMARY LEVEL

Rationale:

Science is a way of looking at, and understanding the world around us. Technology is a creative, purposeful activity, aimed at solving practical problems as well as meeting needs and opportunities through the development of products, systems or environments. Society is the understanding of our collective cultural, scientific and social institutions and us. Environment is the natural conditions, e.g. land, air and water, in which we live; the conditions, circumstances, etc. affecting people's lives. Sustainable development is concerned with meeting the needs of the present without compromising the ability of future generation to meet their own needs.

Technology is the application of science; and technological practice takes place within, and is influenced by social contexts and various scientific principles. Societal aspirations and development affect the goals of science and the products of technology. In turn, science and technology have impacts on social, economic and environmental development for sustainability.

An introduction of these links and the concept of sustainable development to children at the primary level is important, as not only do they understand the relevance of science in their daily lives but also create an awareness of the effects of scientific and technological activities on the environment. It is also pertinent that children have an early start in developing the values of good citizenship by assuming responsibility towards sustainable development for a brighter future.

Objectives:

The main objective of this course is to portray the complex interrelationships that link science and technology to society and their impact on the environment, via various thematic studies and interactive teaching and learning activities.

At the end of the course, the participants should be able to:

- show an understanding of the nature and purpose of science education;
- gain an overview of the interactions among science, technology environment and society;
- understand the concept of sustainable development for the well beings of all.
- develop scientific skills and techniques in helping students through the experimental process
using enabling questions and planning sheets;
- use various teaching strategies incorporating ICT to promote lifelong learning in STES;
- assess/evaluate students' learning in STES;

- show appreciation of values, attitudes, interests and motivation in the learning of STES; and
- systematically plan and develop instructional materials and enrichment activities integrating the elements of STES in lessons.

Course Contents:

This course is essentially activity-oriented and will explore issues arising from the interactions of STES, sharing of experiences, planning, development and implementation of science lessons.

The major areas include:

- The nature and purpose, values and attitudes in the study of STES education;
- Concept of sustainable development
- Strategies and practices for sustainable development
- The historical perspectives, scope and process of learning STES
- Understanding the interconnection and interrelationships among the elements of STES
- Integrating the teaching of special thematic issues relevant to STES education for sustainability with interactive teaching and learning strategies:
 - Scientific thinking and scientific (process/ manipulative) skills
 - Project/problem-based learning through contextual approach
 - Critical/creative thinking and decision making skills
 - Active teaching and learning approaches in science (ATLAS)
 - Creating multiple intelligence - inspired learning environment
- Assessment of students' performance;
- Planning, designing, developing and trying out sample lesson plans/activities/ materials with emphasis on the principles of instructional design for STES education; and
 - Applications of ICT and other technological resources in STES education.

Duration: Four weeks

Participants: Primary science teachers or science educators