

## Teaching of General Science

Course Code-EDUC-6414

Credit Hours: 3(3+0)

### Course Description:

Science has become an essential and integral part of our life. Without the knowledge of basic principles, concepts, theories, and laws of science one cannot understand and explain a number of daily-life processes and many phenomena which one observes and experiences in one's life. Hence a basic knowledge about the fundamentals of science has become a necessity of everyone. Furthermore, science is not only a knowledge rather it is an attitude towards nature I a way of thinking as well as a way of life. Keeping this in view, science has been given the status of a compulsory subject in any education system in the form of "general science". So it is being taught even to the students of arts, literature, and social sciences. It is due to this large scale demand of science teaching that we need a large number of science teachers. These science teachers must be equipped with in-depth knowledge with full understanding and well-developed skills to communicate (teach) the concepts, principles, theories, and laws of science at the elementary and secondary levels.

### Learning Outcomes:

After completion of this course learner would be able to:

- Understand and apply the concepts of science in daily life.
- Develop scientific thinking and scientific attitude among their students
- Plan, organize and teach a lesson on a given topic of science in the light of theory and research in science education
- Understand recent trends and issues in methods and techniques of teaching science at elementary and secondary level
- Comprehend and teach theories , Laws and principles of science effectively upto secondary level
- Understand and apply the scientific method in daily life
- Understand and apply various methods and techniques for teaching concepts of science
- Develop scientific thinking and scientific attitude among their students
- Select an appropriate method or technique for teaching a given topic of science by developing and arranging necessary materials and conditions
- Plan organize and teach a lesson on a given topic of science in the light of theories and research in science education
- Understand recent trends and issues in methods and techniques of teaching science at elementary and secondary levels

### Outline

#### 1. Introduction & history of Science:

- 1.1. Nature, scope and importance of science education
- 1.2. Scientific Method
- 1.3. Branches of science
- 1.4. Science and society
- 1.5. Important scientist
- 1.6. Islam and science

#### 2. Use of A.V-aids in teaching general science

- 2.1. Planning lessons
- 2.2. Activities in science classrooms
- 2.3. Imparting instruction

**3. Different methods used in the teaching of general science ( A detailed study of the nature, scope procedures, merits, demerits and application of the following methods and techniques)**

- 3.1.** Expository method
- 3.2.** Laboratorial or practical method
- 3.3.** Logical puzzles
- 3.4.** Demonstration
- 3.5.** Discussion method
- 3.6.** Problem solving method
- 3.7.** Project method
- 3.8.** Modeling
- 3.9.** Discovery and inquiry method
- 3.10.** Modular instruction
- 3.11.** Activity base

**4. New Trends in Science Teaching**

- 4.1.** CAI and ICT
- 4.2.** Science technology and society
- 4.3.** Science technology and literacy
- 4.4.** New trends in teaching of General Science at Elementary and Secondary level

**5. Laboratory Skills**

*Recommended Texts:*

- 1. Gilbert, J. K., & Justi, R. (2016). *Modelling-based teaching in science education* (Vol. 9). Switzerland: Springer International Publishing
- 2. Textbook Board. (2018). *General science for Class VIII*. Lahore: Textbook Board

*Suggested Readings:*

- 1. Higher Education Commission. (2012). *Methods of teaching*. Pakistan: Higher Education Commission (HEC)
- 2. Singh, Y.K. (2017). *Teaching of General Science*. New Dehli: APH Publishing Corporation

*Web-based Resources:*

Sabaq Foundation Trust 2012-2017. General Science Book for Class 9-10.

<http://www.sabaq.pk/book-page.php?b=p&c=9-10&s=gs>

<http://elearn.punjab.gov.pk/>

[http://www.nativeaccess.com/teachers/links\\_general\\_science.html](http://www.nativeaccess.com/teachers/links_general_science.html)

<http://www.reachoutmichigan.org/funexperiments/quick/alphalist.html>

<http://www.teachingideas.co.uk/science/contents.htm>

<http://www.teachscienceandmath.com/tag/general-science-misconceptions/>

<http://science.sciencemag.org/content/56/1451/433>

<http://www.edu-nova.com/teaching-techniques-for-science-teachers.html>

[http://ddceutkal.ac.in/Syllabus/MA\\_Education/Education\\_Paper\\_5\\_SCIENCE.pdf](http://ddceutkal.ac.in/Syllabus/MA_Education/Education_Paper_5_SCIENCE.pdf)

<https://www.nap.edu/read/5287/chapter/3>