

Shri Shivaji Education Society's
Shri Shivaji Science & Arts College, Chikhli, Dist. Buldana.
Department of Physics

Best Practices

(2019-20)

I. Induction program (Bridge Course) for B.Sc. Students

1. Title of the Practice: Induction program (Bridge Course) for B.Sc.-I Students.

2. Objectives of the Practice:

- i) To bridge the educational gap between 10+2 and B.Sc. system.
- ii) To prepare students ready to perform the practical's in the laboratory.
- iii) To facilitate students with basic knowledge and training to calculate least counts of various instruments.

3. The Context:

Students opting for B.Sc. Physics come from various educational backgrounds. They are expected to know some of the basic things e.g. calculation of least count of various instruments, error calculations, significant digits, etc. But, they lack these understandings due to various reasons. In view of this, our department provides students an opportunity to learn the basics of experiments from the beginning. Students are given this course for approximately one month before the starting of actual experiments in the laboratory.

4. The Practice:

We conduct induction program for the newly admitted students to B.Sc. - I (Sem. -I) every year. In this program, students are given power point presentations based on "How to calculate Least Counts of various instruments", "Significant digits", "Error analysis", etc.

After power point presentation, measurements (e.g. Diameter & length of cylinder, breadth & thickness of iron block, Diameter of sphere, thin wire, thickness of glass plate etc.) using Vernier Calliper & Screw Gauge are explained by using simulations on '*Amrita University Virtual Lab*' (A project is an initiative of Ministry of Human Resource Department under National Mission on Education through ICT.) . A hand on training is also arranged for the students. Different modules are prepared in order to bridge the gap between 10+2 system and university education system.

5. Evidence of Success:

This practice helps students to calculate Least Counts of various instruments and Error analysis. When students actually perform experiments in laboratory then most of the students themselves take measurements of dimensions (i.e. breadth & thickness of a beam, radius of a wire etc.) of various objects.

6. Problems Encountered and Resources Required:

- i) Students database regarding their previous educational background are to be collected to implement this practice efficiently.
- ii) Students taking admission late in the college miss this course and separate methodology is to be adopted for such students.