Best Practices: 2019-20

Best Practice-I

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.
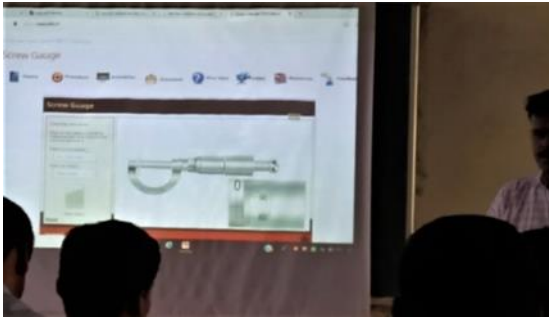
3. **The Context:**

   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 provide 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) since last three years. In this program, students are given power point presentations based on "How to calculate Lest 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. 73 students of B.Sc.-I were participated in this programme.

5. **Evidence of Success:**

   This practice helps students to calculate Lest 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.

Best Practice-II

1. **Title of the Practice:** Social awareness about "Cyber Security & Ethical Hacking.

2. **Objectives of the Practice:**

i) To evaluate the security and identify vulnerabilities in systems, networks or system infrastructure. It includes finding and attempting to exploit any vulnerability to determine whether unauthorized access or other malicious activities are possible.

ii) To aware students with basic knowledge of cyber security & ethical hacking.

3. **The Context:**

Increased Internet penetration for applications such as e-Governance, e-Commerce, e-Banking, digital payments, e-Learning, smart cities, etc. has resulted in an exponential rise in sophisticated attacks on Information Technology (IT) infrastructure. This has lead to Cyber Security as an important aspect to secure our computers and networks. Both government & industry are becoming the victims of cyber criminals, including companies working in security technology. Cyber Security is going to be a much more serious problem in the coming years. Hence, it becomes more important & essential to be aware of the challenges and methods to meet the new age attacks.

4. **The Practice:**

We conduct workshop on Ethical Hacking for the students on 25th Feb 2020. This workshop, is beneficial to aware the students about to protect the confidentiality of data. To preserve the data integrity & to promote the availability of data for authorized users, the experts are given power point presentations and hands on to students. Mr. Prashant Mahajan & Mr. Santosh Tirthpure (Jetking Institute Aurangabad) was the resource person for the workshop. Dr. A. M. Garode was president for the inauguration program & Dr. V.U. Pochhi IQAC-Coordinator was chief guest for inaugural program of ethical hacking workshop. This workshop was successfully completed under the coordination of Dr. A.B. Kadam Convener, Dr. M. E. Jadhav Coordinator, Dr. S. S. Gaikwad Co-Coordinator, Prof. R. A. Bhawar & Prof. M. G. Bhatkar with support of Mr. R. P. Bhatkar & Mr. Sachin Chavan.

5. **Evidence of Success:**

We have received great response for the ethical hacking workshop. Total 112 participants were attended this workshop from different cities with good feedback.

Welcome of Resource Person Mr. Prashant Mahajan.   Dr. A.B. Kadam, Convener address

Participants and organizing committee of Ethical Hacking workshop