



2019-2020

Name of the Department/Society: **Department of Physics and Electronics/LUMEN**

Name of the Event 4: Hands on Training program for the Laboratory staff

Date of the Event: June 13 & 17, 2019

A **Hands on Training program for the Laboratory staff** was organized by Department of Physics and Electronics with the financial support of IQAC, Hans Raj College on June 13 & 17, 2019.

The objectives of the training program are:

- *To familiarize the participants with the basics of some of the instruments being used in laboratories.*
- *To provide 'hands on' experience to all the participants.*
- *To give idea of practicals being done in B. Sc. (H) Physics and B. Sc. (P) Physical Sciences.*
- *To motivate participants to work with the minimum amount of infrastructure.*

The summary of the training program:

In the first session of the program, various blocks were taken and length, breadth and height of these blocks were measured by using Vernier callipers. The diameters of wires of different thickness were measured with the help of Screw gauge. Travelling microscope was used to measure diameter of the thin capillary tube and in the last, radius of curvature of lens was determined with the spherometer. After dealing with various instruments used for length measurements, the second part of the session included time measurement by using stop watch like time period of one complete oscillation of a bar pendulum and Kater's pendulum.

The second session started with the explanation of working of CRO (Cathode Ray Oscilloscope) and how it can be used to view wave signals and measure quantities like frequency, amplitude etc. The lab staff was then asked to work on the CRO themselves and measure the frequency of a given signal. After this spectrometer was taken up, which is one of the most important instrument in optics lab. The different parts of spectrometer, adjustment and levelling was explained. They were also explained about Schuster's focussing and how to find Vernier constant. Different light sources which are used in the lab like sodium lamp, mercury lamp, laser and how to view their spectra using prism and grating was discussed. The lab staff was then given the opportunity to work on the spectrometer themselves. In the end how to handle Newton's ring apparatus to study interference was discussed.

The third session had discussion on resistors, their colour coding, series-parallel combination; capacitors, their types- ceramic/electrolytic; various types of diodes and their application areas; introduction to pnp/npn transistors and idea of basic op-amp IC741.



हंसराज कॉलेज
— दिल्ली विश्वविद्यालय —

HANSRAJ COLLEGE
University Of Delhi
NAAC Grade A+ with CGPA 3.62



INTERNAL QUALITY ASSURANCE CELL (IQAC)
&
DEPARTMENT OF PHYSICS AND ELECTRONICS
Hansraj College, University Of Delhi
conducts
**Hands on Training Program for the
Laboratory Staff**
on
June 13 & 17, 2019
Venue : Department of Physics & Electronics

<i>Convener</i> Dr Hema Chutani Assistant Professor Dept. of Physics & Electronics	<i>Coordinator</i> Dr Vijay Rani Rajpal Associate Professor Dept. of Botany
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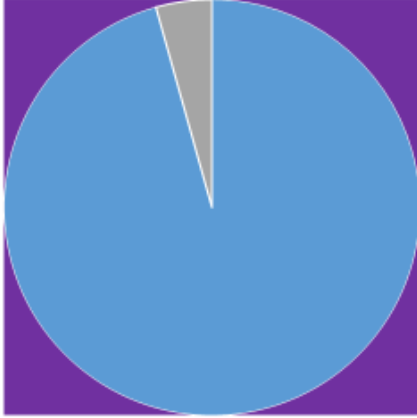


FEEDBACK

The participants were asked to fill the feedback form at the end of the training. The feedback form was designed to get the opinion on all aspects of the workshop like content covered, hands-on activities etc. The pie chart of the feedback of all criterions has been attached which proves that the participants found the training useful and relevant.

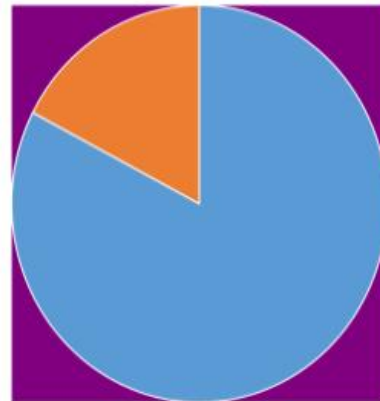


Is the information provided in the training relevant to the staff



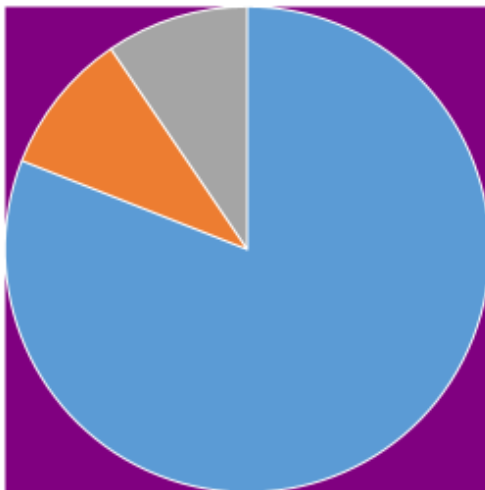
■ Yes ■ No ■ No Comment

Rate how valuable this training was towards the learning



■ Excellent ■ Good ■ Average ■ Fair

Hands on Session



■ A ■ B ■ C ■ D

Course Content



■ A ■ B ■ C ■ D



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RESPONSE OF PARTICIPANTS

The participants really enjoyed and learnt new things through this training program. But they were of the opinion that the duration of the program should be at least of a week and timings should be from 10 am to 4 pm per day.

Hands on training was really a success as the lab staff got familiarized with soldering a wire, drilling, resistance measurement, power supplies, operating CRO, measuring small values etc.

Such training programs should be held after every six months and should be interdisciplinary also.