Report on

A One-week National Level Faculty Development Program (FDP) on

Remote Lab System for Analog & Digital Experiments

Organized by Academic Staff College

In association with Dept. of ECE, KLEF

From 02nd to 04th May 2019

About the FDP:

A One-week national level Faculty Development Program (FDP) on "Remote Lab System for Analog & Digital Experiments**"** was organized by Academic Staff College in association with Department of ECE, KLEF from **From** 02nd to 04th May 2019 for which ---- faculty and scholars across Andhra Pradesh, --------- participated in the program. The FDP was a jointly organized program by Academic Staff College and in association with Electronic Dept., of KL University. Engineering education is all about "Do Engineering" rather than read and write. But in the conventional engineering education, most of courses are theory based and few laboratory courses students are unable to visualize the concepts. In Electronics engineering course "Do Engineering" is even more essential as most of the courses deal with circuits. The circuit concepts can be better conveyed by faculty and understood by doing experiments along with theory classes. Unfortunately, in the conventional engineering education, in most of the time there is no synchronization between the two. This is due to infrastructure limitations and time constraints. In the present laboratory courses, students get limited time to conduct experiments, they will be satisfied if they get output, students won't think of various analysis that can be performed on the same circuit. As a solution to this, we have developed Remote Lab system using National Instruments products NI ELVIS to conduct Analog Electronic Circuits. Using which user can conduct experiments remotely. Using this remote lab system, 25+ experiments with 120+ variations can be conducted. This remote lab is designed in such that user feel like as though it's being conducted in lab. Many analysis like, time response, Bode plots and spectrum can be performed. In this three day FDP, we provide hands on training on how to build your own Remote Lab system to enhance the teaching & learning process in engineering education.

Objective of the workshop:

To explain the need of and advantages of Remote lab over conventional lab

To understand the Remote lab system developed at SIT

To conduct Analog Electronic experiments with parametric analysis emphasis

To provide Hands-on experience of Remote lab system

To brainstorm on usage of Remote lab for "Experiential learning"

On Day one, the Introduction to Remote lab system developed at SIT Presentation Rectifiers and regulators in Remote lab system Demonstration and Hands-on was done. Lab Reports and evaluation process of Remote lab Rectifiers and regulators Discussion BJT and Opamp amplifier Demonstration and Hands-on practice. On Day two, the Analysis of Amplifiers from the lab reports Discussion S6 11:15 am 1:00 pm Experiments on Wave shaping circuits and analysis Demonstration, Hands on and discussion with experiments on Filter circuits and analysis demonstration, along with the Linear ICs and analysis Demonstration was done. On the third day, the Experiments on Modulation related experiments and analysis Demonstration, Handson and discussion Road map for usage of Remote lab at KLU discussion and the Development of Remote lab system for Digital Electronic experiments Discussion including the Review and feedback Workshop outcomes session was conducted. After the workshop participants were Able to appreciate the analysis of Analog experiments in Remote lab system and also could trace out the use of Remote lab system for Experiential learning and were also Able to think of developing Remote lab for Digital circuits.

Dr. V. Rajesh, Principal, ASC, and Dr. B. Siva Nagaiah Vice-Principal, ASC of KLU had honored the resource person Dr K C Narasimhamurthy, Professor, Dept of TCE,SIT Tumkuru, Bengaluru with shawls and mementos. Mr. V. Venkata Narayana Dept. ECE had coordinated the FDP.