

**Aurora's Degree & PG College
Chikkadpally, Hyderabad -500020**



**Report
On
Linear Circuit Design and Development Work shop
(In collaboration with PGP Electronics Ltd)**

NAME OF THE EVENT	Work shop on the eve of National Science day
FACULTY INCHARGE	Dr Radhika Rani L
DEPARTMENT	Physics and Electronics
DATE	28 TH FEB, 2019
VENUE	Physics Labs, Aurora Degree and PG College
TARGET AUDIENCE	B.Sc M.Ecs and M.P.Cs First year students
OBJECTIVE:	<ul style="list-style-type: none">➤ The workshop provides more practical knowledge to the students in designing electrical circuits.➤ In this workshop students designed “Automatic night light.➤ In this session students were taught assembling and the soldering of components on PCB board.➤ Testing the boards individually and integrate them
OUTCOME	<ul style="list-style-type: none">➤ Transform theoretical knowledge into practical applications➤ Confidence in designing a circuit and testing it➤ Improves the subject knowledge and boost confidence.➤ Career guidance(both job and academic knowledge)
<u>PHOTOGRAPH</u>	The photograph section contains two side-by-side images. The left image shows a group of students gathered around a table, focused on their work with electronic components. The right image shows a wider view of the workshop, with several students working at tables in a well-lit room, some using tools like soldering irons.

Introduction: The Work Shop is planned on the eve of National Science day for students of B.Sc., first year with electronics or physics as their optional subjects. It is designed such that students learn subject in detail apart from their regular curriculum. The work shop provides more practical knowledge to the students in designing electrical circuits.

Brief about the program:

On the eve of National science day the Department of Physics and electronics organized a workshop on “Linear Circuit Design and Development” in collaboration with PGP Electronics Ltd. on 28th February 2019. Total 69 students of MECS and MPCS 1st year were participated in the work shop. The main objective of this workshop was to provide more practical knowledge to the students in designing electronic circuits.

Workshop began with Inaugural function by Prof. K. Venu Gopal Reddy, Retd. Professor, Osmania University, delivered the Lecture on recent trends in Electronics. He focused on the importance of bio sensors, robotics used in electronics research. Theory sessions were followed by hands on Sessions on designing Liner circuit. In this workshop students designed a unit called “Automatic night light.

Program Schedule:

Session 1: Theory session on “Basic components “

Session 2: Designing a Circuit

Session 3: Assembling the components on General PCB board

Session 4: Soldering of components

Session 5: Testing the Circuit

The students learn the following

Introduction to Basic components:

Resistors, Semi-Conductors, Diodes, Color Coding of resistors, Rectifiers, Filters and Transistors

Applications of various components

Designing a Circuit using basic components

Designing a Circuit:

In this workshop students designed a unit called “Automatic night light. This unit operates on mains and battery. The light is switched ON automatically during dusk and is turned off at dawn. The battery provides back up power in the event of mains loss.

Session 1

Introduction

- Statement of Problem
- Task Assignment

Session 2

In depth design analysis

- Design of circuit using theoretical knowledge
- AC Voltage review
- DC Voltage review
- Transformer
- Types of rectifier
- Choosing the correct rectifier
- Design of Filter

Session 3

In depth design analysis Continued

- Switch design
- AC vs DC - analysis
- Design of driver for the switch

Circuit Design:

The student learn the following

Power supply design, Transformer, Design of charge controller circuit, LED driver circuit, sensor circuit, Delay circuit

Soldering:

In this session students were taught the soldering of components on PCB board.

Testing:

Assembling and soldering all the components.

Testing the boards individually and integrate them.

Precautions:

Care should be taken while connecting the transformer.

- While interconnecting one circuit to other make sure that power is switched OFF.
- Don't touch the relay at the soldering side at it is connected to AC mains.
- Turn on the device only after getting clearance from one of the supervisor.

Outcome:

- Transform theoretical knowledge into practical applications
- Confidence in designing a circuit and testing it
- Improves the subject knowledge and boost confidence.
- Career guidance(both job and academic knowledge)
- Student will receive certificate along with individual kit

Budget:

Amount given to PGP electronics	26,000/-
Honorarium for Guest	2000/-
Banner	500/-
Boutique	300/-
Tea	400/-
Burnol ointment	70/-
Snacks	1510/-
Lunch for instructors	1000/-
Cab for guest	520
Paper plates and glasses	200/-
Total amount spent	32,500/-
Total amount received from students	$500 \times 69 = 34,500$
Amount left	2000/-