

# JAWAHARLAL NEHRUTECHNOLOGICALUNIVERSITY: KAKINADA

R-16 Syllabus for EEE JNTUK

I Year-II Semester	L	Т	P	C		
1 Tear-11 Semester	0	0	3	2		
<b>APPLIED/ENGINEERING PHYSICS LAB (R161225)</b>						

## Prerequisite Course: Fundamental Concepts of Physics Lab

## **Description and Objectives:**

Training field oriented Engineering graduates to handle instruments and their design methods to improve the accuracy of measurements.

#### **Course Outcomes:**

Upon completion of the course, the student will be able to achieve the following outcomes

COs	Course Outcomes	POs
1	Fundamental understanding of design of an instrument with targeted accuracy for physical measurements.	2
2	Investigate the properties of Thin Films and Light sources.	2
3	Analyse the Elastic nature of materials.	2
4	Understand the phenomenon of Resonance and its effects in Electronic Circuits.	2
5	Gain the Knowledge of electrical properties of Semiconductors.	2
6	Identify the magnetic field behavior.	2

## LIST OF EXPERIMENTS:

- 1. Determination of wavelength of a source-Diffraction Grating-Normal incidence.
- 2. Newton's rings Radius of Curvature of Plano Convex Lens.
- 3. Determination of thickness of a spacer using wedge film and parallel interference fringes.
- 4. Determination of Rigidity modulus of a material- Torsional Pendulum.
- 5. Determination of Acceleration due to Gravity and Radius of Gyration- Compound Pendulum.
- 6. Melde's experiment Transverse and Longitudinal modes.
- 7. Verification of laws of vibrations in stretched strings Sonometer.
- 8. Determination of velocity of sound Volume Resonator.
- 9. L- C- R Series Resonance Circuit.
- 10. Study of I/V Characteristics of Semiconductor diode.
- 11. I/V characteristics of Zener diode.
- 12. Characteristics of Thermistor Temperature Coefficients.
- 13. Magnetic field along the axis of a current carrying coil Stewart and Gee's apparatus.



# JAWAHARLAL NEHRUTECHNOLOGICALUNIVERSITY: KAKINADA KAKINADA–533003, Andhra Pradesh, India R-16 Syllabus for EEE JNTUK

- 14. Energy Band gap of a Semiconductor p n junction.
- 15. Hall Effect in semiconductors.
- 16. Time constant of CR circuit.
- 17. Determination of wavelength of laser source using diffraction grating.
- 18. Determination of Young's modulus by method of single cantilever oscillations.
- 19. Determination of lattice constant lattice dimensions kit.
- 20. Determination of Planck's constant using photocell.
- 21. Determination of surface tension of liquid by capillary rise method.

# **REFERENCE BOOKS**:

- 1. Applied/ Engineering Physics Lab Manual by C.V.Madhusudhan Rao & V.Vasanth Kumar, Scitech publications.
- 2. Applied/Engineering physics Lab Manual by M.Sri Ramarao, Mityanand Choudary & Daruka Prasad, Acme Learning Private Limited.
- 3. Applied/Engineering physics Lab Manual by Dr. Y.APARNA & Dr. K.VENKATESWARARAO, VGS TECHNO SERIES.