



JAWAHARLAL NEHRUTECHNOLOGICALUNIVERSITY: KAKINADA

KAKINADA–533003, Andhra Pradesh, India

R-16 Syllabus for ME JNTUK

I Year-II Semester		L	T	P	C
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ENGINEERING/APPLIED PHYSIC LAB (R161222)					

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.
14. Energy Band gap of a Semiconductor p - n junction.
15. Hall Effect in semiconductors.
16. Time constant of CR circuit.



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