



Phys 3606L	PHYSICS LAB-VI	(CR2)
Courses	Phys 3701	

### Objectives

To enable students in performing experiments related to advanced topics in electronics and semiconductor physics.

### Syllabus

(a) To construct a power supply by using Bridge rectifier and study its output without and with a capacitor filter, (b) Design a full-wave rectifier and study its output with a  $\pi$ -filter, (c) Design a regulated power supply using Zener diode and study its regulation. To construct clipper and clamping circuits and study the output waveshapes. Design differentiator and integrator circuits and study output waveshapes. Design a CE amplifier and study its frequency response. Determine its low- and upper-limit frequencies and also the bandwidth. Design an emitter amplifier and determine its input and output impedance. Design an RC phase-shift oscillator and determine its frequency by Lissajous figures. Design an astable multivibrator and determine its frequency. To construct from discrete components OR, AND, NOT, NAND, NOR Circuits and verify their truth tables.

(At least six experiments must be performed by individual department of affiliated colleges covering all subject areas of the lab course.)

### Recommended Books

1. *Physics laboratory experiments* by Jerry D. Wilson, Cengage Learning (2014)
2. *General Physics Laboratory I Experiments* by Kapila Clara Castoldi, Kendall Hunt, 2015
3. *Physics Lab Experiments* by Matthew French, Mercury Learning & Information, (2016)
4. *Experiments And Demonstrations In Physics: Bar-ilan Physics Laboratory* by Kraftmakher Yaakov, World Scientific (2014).