

NIRMA UNIVERSITY
Institute of Technology
B. Tech. in Electrical Engineering
Semester – VI

L	T	P	C
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Course Code	2EE603
Course Title	Electronic System Design Laboratory

Course Outcomes (COs):

At the end of the course, students will be able to-

1. understand practical design aspects of components used in power electronic converters
2. investigate the various output waveforms with necessary troubleshooting
3. design and fabricate hardware for various applications

A minimum of 05 experiments based on following topics (but not limited to) will be conducted in this course:

- Design, fabrication, and testing of IC based linear power supply
- Design, fabrication, and testing of dead-band circuit for inverter
- Design, fabrication, and testing of gate driver circuit integrated
- Study of different pulse width modulation (PWM) schemes
- Design, fabrication, and testing of IC based sinusoidal PWM scheme for an inverter
- Design, fabrication, and testing of a switched mode power converter (non-isolated dc-dc converter)
- PWM generation using micro controller
- Contactless tachometer
- Toque sensing for induction motor

Suggested Readings:

1. Muhammad H. Rashid: Power Electronics: Circuits, Devices and Applications, Pearson Education, New Delhi.
2. L Umanand: Power Electronics - Essentials & Applications, Wiley India.
3. Abraham Pressman, Switching Power Supply Design, McGraw Hill Professional.
4. David A. Bell, Operational Amplifiers and Linear ICs, Oxford University Press.
5. Datasheets of various ICs.
6. Technical documents related to various microcontrollers and development boards.

L = Lecture, T = Tutorial, P = Practical, C = Credit

w.e.f. academic year 2020-21 and onwards