| Course Type | Course Code | Name of the Course | L | T | P | Credits |
|---|---|---|---|---|---|---|
| DP | NEEC513 | Advanced Power System Protection Lab | 0 | 0 | 3 | 1.5 |

**Course Objective**

- The objective of this lab is to introduce postgraduate students to the practical aspects of advanced power system protection.

**Learning Outcomes**

Upon successful completion of this course, students will develop:

- an ability to deal with the advanced power system protection techniques.
- an idea about the working of advanced power system protection tools.

| Unit No. | Topics to be Covered | Contact Hours | Learning Outcome |
|---|---|---|---|
| 1 | Experiments on digital distance relay | 2x4 | Students will learn working of digital distance relay for transmission line protection |
| 2 | Experiments on digital differential relay | 2x4 | Students will learn working of digital differential relay for equipment protection |
| 3 | Experiments on digital overcurrent and directional overcurrent relays | 2x4 | Students will learn working of overcurrent and directional overcurrent relays for distribution line protection |
| 4 | Experiments on phasor measurement unit (PMU) | 2x3 | Students will learn working of PMUs and their applications in power system |
| 5 | Experiments on earth fault, under voltage and over voltage relays | 2x3 | Students will learn working of earth fault, under voltage and over voltage relays and their applications in power system |
| 6 | Practice and review | 6 | ------- |
| | **Total Contact Hours** | **42** | |

**Text Books:**


1. S. H. Horowitz and A. G. Phadke, *Power System Relaying*, 4th Edition, Wiley, 2014.
2. A G Phadke and J. Thorp *'Computer Relaying for Power Systems'*, 2nd Edition, Wiley, 2009.


**Reference Books:**


1. A T Johns and S Kalman *'Digital Protection for Power Systems'*, IET, 1997.
2. A. G. Phadke and J. S. Thorp, *Synchronized Phasor Measurements and Their Applications*. New York: Springer, 2008.