



Program	Engineering
Specialization	Electrical Power Systems
Course Number	20304244
Course Title	Electrical Protection Systems Lab
Credit Hours	1
Theoretical Hours	0
Practical Hours	3



□ **Brief Course Description:**

This Course covers experiments on; fuses , circuit breakers, relays; operation and application of ; electromagnetic relays , electronic relays, differential relays, timers; mechanical ,thermal mercury and electronic timers, contactors.

□ **Course Objectives:**

The student should be able to ;

1. Describe the construction, operation & connection of different types of relays.
2. Describe the construction, operation & connection of circuit breakers & fuses.
3. Describe the construction, operation & connection of timers and contactors.
4. Determine the characteristics of all protection & control devices.
5. Know the requirement of protection systems.



Detailed Course Description:

Lab Number	Unit Name	Unit Content	Time Needed
1.		Experiments of single & three-phase current transformers	
2.		Experiments of summation current transformer	
3		Experiments of single & three – phase voltage transformers	
4		Experiment of electromagnetic overcurrent relay	
5		Experiment of over-voltage & under-voltage relays	
6		Experiment of earth fault relay.	
7		Experiment of directional power relay	
8		Experiment of differential relay	
9		Experiment of circuit breakers	
10		Experiment of fuses	
11		Experiment of uninterruptible supplies	
12		Experiment of timers & contactors	

 Evaluation Strategies:

		Percentage	Date
1. Exams	Reports	30	
	Midterm Exam	20%	
	Final Exam	50%	

 Teaching Methodology:

1. Laboratory

 Textbook:

1. Manuals of each type of relays, circuit breakers, timers & contactors.
2. Manuals of current & voltage transformers.