APRL 108 – Protective Relaying FALL 2012
Syllabus

Instructor: Adalberto Baca-Chavez
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Group Discussion: 4:30 – 9:00 PM on Thursday

Textbook: Power Engineers, 10th printing September (2010) Protective Relaying ISBN 0-9724152-0-3
Altuve Ferrer, Hector and Schweitzer III, Edmund (2010) Modern Solutions for Protection, Control, and Monitoring Electric Power Systems

RECOMMENDED PREPARATION, if any: High school Trigonometry and Algebra

The structure of the class will consist of group discussions where we will explore current topics from a technical and application point of view.

Laboratory or hands on exercises will be done using the Doble protective relay test set, protective relays, current & voltage transformers as well as discrete meters.

Student Learning Outcomes (SLOs):
Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:
1. Demonstrate knowledge manual testing and calibrating substation equipment, including voltage testing on equipment feeder, transformer and transmission line relays, as well as circuit breaker relays.
2. Describe various tests that need to be conducted on protective relays, such as overcurrent, overload and voltage relays, directional and line relays, as well as ground and testing equipment.
3. Describe different types of protection schemes and their use. Including, but not limited to POTT, PUTT, DTT, DCB & DCUB schemes

INSTITUTIONAL LEARNING OUTCOMES (ISILOs):

1. Communication Skills
2. Critical Thinking Skills
3. Personal Responsibility
4. Information Literacy
5. Global Awareness

Grading Criteria

Course must be taken on a "letter-grade" (LG) basis only.

Grading Policy:	Attendance and participation =	3%
	Homework =	2%
	Test 1 =	20%
	Test 2 =	25%
	Final =	50%
		= 100% Total

All grades are calculated by using the standard scale of:

A= 100-90% ***B =89-80%*** ***C= 79-70%***

D = 69-60% **F** = 59% and below

WEEK #	DATE:	CORE CONTENT
		RULES AND REGULATIONS
Week 1:	8/23/2012	"Developing & Conduction Tailgate Sessions" & "IID's Procedures for Hazardous waste"
Week 2:	8/30/2012	Types of Relays for Generation Protection- Overview of functions and use of relays for generation application
Week 3:	9/6/2012	Types of Relays for Transmission Protection – Overview of functions and use of relays for transmission applications
Week 4:	9/13/2012	Test 1
Week 5:	9/20/2012	Types of Relays for Transformers and Substation Bus Protection – Overview of functions and use of relays for substations
Week 6:	9/27/2012	Test Equipment for Relay Protection – Introduction to Doble and Pulsar relay protection test equipment – Three-Phase Testing
Week 7:	10/4/2012	Relay Protection – Testing Relays – Advanced Relays (lab)
Week 8:	10/11/2012	Storage Batteries - Care & Maintenance of T8 – Lecture & Field Study
Week 9:	10/18/2012	Test 2
Week 10:	10/25/2012	"IID Communication Systems," as applied to relay protection: Transfer Trip, RAS, POTT, PUTT, DTT, DCB, DCUB Pilot Wire and Direct Transfer Trip protection
Week 11:	11/1/2012	"IID Communication Systems," (Fiber-Optics, Microwave, RFL Equipment for System Protection) Lecture & Field Study
Week 12:	11/8/2012	"Emergency Generators & Disaster Recovery," – Lecture & Field Study - Review Midterm and Examination
Week 13:	11/15/2012	"Electrical Shock," (Safety Dept.)
Week 14:	11/22/2012	Holiday
Week 15:	11/29/2012	Substation Communications and Protocols
Week 16:	12/6/2012	FINAL