



Jordan University of Science and Technology
Faculty of Engineering
Electrical Engineering Department

EE586 Power System Protection
First Semester 2019-2020

2013 Course Catalog

3 Credit hours (3 h lectures, R¹). Relay operating principles, Current and voltage transformers, Generator protection, Motor protection, Transformer protection, Busbar protection, Transmission line protection, Computerized protection of power systems.

Textbooks

- 1) Protective Relaying: Principles and Applications, Third edition, J Lewis Blackburn and Thomas J. Domin, CRC Press, 2007.

References

Books

- 1) P. M. Amderson, Power System Protection, McGraw-Hill, 1999.
- 2) C. Christopouls and A. Wright, Electrical Power System Protection, Kluwer Academic Publishers, Second Edition, 1999.

Internet links

<http://www.abb.co.uk/industries/us/9AAC30403751.aspx>
<http://www.electrical4u.com/protection-system-in-power-system/>

Instructor

Instructors Dr. Saher Albatran, Emails: saalbatran@just.edu.jo

Prerequisites

Prerequisites by topic Power System Analysis
Prerequisites by course EE 485
Co-requisites by course -
Prerequisite for -

Topics Covered

Week	Topics	Chapters in Text
1-3	Introduction and Background	Chapters 1, 2, 3, 4, 5, 6
4-5	Distribution System and Line Protection	Chapter 12
6-8	Generator Protection and Monitoring	Chapter 8
9-10	Transformer Protection and Monitoring	Chapter 9
11-12	Reactor and Shunt Capacitor Protection	Chapter 11
13-14	Bus and Breaker-Failure Protection	Chapter 10
15-16	Substation Protection Control and Monitoring.	Chapter 15

¹ Required of all students in the B.Sc. of Electrical Engineering - Power (2013) Program

Evaluation

Assessment Tool	Expected Due Date	Weight
Assignments	Week 3, Week7, Week 11 and Week 15	10%
First Exam	According to the department schedule	25 %
Second Exam	According to the department schedule	25 %
Final Exam	According to the University final examination schedule	40 %

Objectives and Outcomes²

Objectives	Outcomes
1. Introduce the students to principles of power system protection [1,2]	1.1. Understand power system protection principles. [1,2] 1.2. Understand the operation of protection devices. [1,2] 1.3. Understand the relay input sources. [1,2]
2. To understand Distribution System and Line Protection. [1]	2.1. Learn the techniques for analyzing, designing and simulating these converters. [1] 2.2. To introduce students to the applications of dc/ac converters. [1]
3. To understand AC system protection. [1,2]	3.1. Generator Protection and Monitoring [1,2] 3.2. Transformer Protection and Monitoring[1,2]
4. To Understand power system component protection [1]	4.1. Reactor and Shunt Capacitor Protection [1] 4.2. Bus and Breaker-Failure Protection [1]
5. To understand substation protection and monitoring [1]	5.1. Substation Protection Control and Monitoring [1]

Contribution of Course to Meeting the Professional Component

This course trains the students on the theory, methods, equipment and technology used to protect the power system.

Relationship to Program Outcomes (%)

1	2	3	4	5	6	7
90	10					

² Numbers in brackets refer to the Program outcomes