

ELEC 488 – Electrical Power Systems

Term – Spring 2018 (201801)

Instructor

Dr. T. Ilamparithi
Phone: 250 721 8679
E-mail: ilampari@uvic.ca

Office Hours

Day: Wednesdays
Time: 2:30 to 4:30 PM
Location: EOW 407

Course Objectives

- (a) Study in detail about the components constituting electrical power systems
- (b) Analyze electrical power systems under normal operating conditions
- (c) Analyze electrical power systems during contingencies

Learning Outcomes

- (i) Identify the role of various elements of an electrical power system
- (ii) Develop equivalent circuit models of all key components
- (iii) Represent an electrical power system using single line diagram
- (iv) Compute parameters of significance under normal operating conditions
- (v) Analyze the impact of different faults on a power system

Syllabus

Basic concepts of electric power systems illustrating usage of admittance and impedance matrices for load-flow solutions. Three-phase salient and round rotor synchronous machines. Three-phase transformer. Transmission line parameters. Representation and analysis of transmission lines including ABCD parameters. Symmetrical components and sequence networks. Symmetrical faults such as three phase faults. Unsymmetrical faults such as single line to ground, double line and double line to ground faults. (**pre-requisite course: ELEC 370**).

Lecture

A-Section(s): A01 / CRN **21129**

Marker TA – To be announced

Days: Tuesdays, Wednesdays, Fridays

Time: 10:30 AM to 11:20 AM

Location: Engineering & Computer Science (ECS) 108

Required Text

Title: Power System Analysis

Author: John J. Grainger & William D. Stevenson, Jr.

Publisher: McGraw Hill

Edition: 1st Edition

Assessment:

Assignments: 2 x 5 = 10%

Due Dates: 29-Jan-2018 & 9-Mar-2018

Mid-term 2x20 = 40%

Date: 9-Feb-2018 & 16-Mar-2018

Final Exam 1x50 = 50%

Date: To be announced

The final grade obtained from the above marking scheme for the purpose of GPA calculation will be based on the percentage-to-grade point conversion table as listed in the current Undergraduate Calendar.

<https://web.uvic.ca/calendar2018-01/undergrad/info/regulations/grading.html>

There will be no supplemental examination for this course.

Note to students: Students who have issues with the conduct of the course should discuss them with the instructor first. If these discussions do not resolve the issue, then students should feel free to contact the Chair of the Department by email or the Chair's Assistant to set up an appointment.

Accommodation of Religious Observance:

<https://web.uvic.ca/calendar2018-01/undergrad/info/regulations/religious-observanc.html>

Policy on Inclusivity and Diversity:

<https://web.uvic.ca/calendar2018-01/general/policies.html>

Standards of Professional Behavior: You are advised to read the Faculty of Engineering Document Standards for Professional Behavior, which contains important information regarding conduct in courses, labs, and in the general use of facilities. <https://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf>

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult the entry in the current Undergraduate Calendar for the UVic policy on academic integrity.

<https://web.uvic.ca/calendar2018-01/undergrad/info/regulations/academic-integrity.html>

Equality: This course aims to provide equal opportunities and access for all students to enjoy the benefits and privileges of the class and its curriculum and to meet the syllabus requirements. Reasonable and appropriate accommodation will be made available to students with documented disabilities (physical, mental, learning) in order to give them the opportunity to successfully meet the essential requirements of the course. The accommodation will not alter academic standards or learning outcomes, although the student may be allowed to demonstrate knowledge and skills in a different way. It is not necessary for you to reveal your disability and/or confidential medical information to the course instructor. If you believe that you may require accommodation, the course instructor can provide you with information about confidential resources on campus that can assist you in arranging for appropriate accommodation. Alternatively, you may want to contact the Center for Accessible Learning located on campus. The University of Victoria is committed to promoting, providing, and protecting a positive, and supportive and safe learning and working environment for all its members.

Course Lecture Notes: Unless otherwise noted, all course materials supplied to students in this course are intended for use in this course only. These materials are NOT to be re-circulated digitally, whether by email or by uploading or copying to websites, or to others not enrolled in this course. Violation of this policy may in some cases constitute a breach of academic integrity as defined in the UVic Calendar.

Course Evaluation: Towards the end of term, as in all other courses at UVic, you will have the opportunity to complete an anonymous survey regarding your learning experience (CES). The survey is vital to providing feedback to me regarding the course and my teaching, as well as to help the department improve the overall program for students in the future. When it is time for you to complete the survey you will receive an email inviting you to do so. You will need to use your UVic Netlink ID to access the survey, which can be done on your laptop, tablet, or mobile device. I will remind you and provide you with more detailed information nearer the time but please be thinking about this important activity during the course.

Continuous Feedback: I am committed to a memorable learning experience for my students, and I will try my best to help out in whatever way I can. For that I need to receive your input throughout the course. Oral/written/email feedback are all welcome anytime during the term.