



# Department of Electrical and Computer Engineering

## COURSE OUTLINE

### ELEC 488 – Electrical Power Systems

Term - **SPRING 2015** (201501)

#### Instructor

Dr. Ali Moshref  
Phone: 778-688-7435  
E-mail: [ali.moshref@bba.ca](mailto:ali.moshref@bba.ca)

#### Office Hours

Days: Sat. (Jan. 2015)                      Thurs (Feb-Apr. 2015)  
Time: 12:50 - 1:50 pm                      2:30 - 6:30 pm  
Location: Via Skype or EOW 419

#### Lectures

A-Section(s): A01, A02 / 21117, 21118  
Days: Sat (Jan. 2015)                      Thurs (Feb-Apr. 2015)  
Time: 10:00-12:50 (Sat)                      2:30-5:20 (Thurs)  
Location: MAC D288                      ELL 062

#### Optional Text

Title: Power System analysis and design  
Author: J.D. Glover, M.S. Sarma, T. Overbye  
Publisher: Course Technology  
Year: 2011

#### References: Course Notes

#### Assessment:

Assignments:	20%	
Mid-term	30%	Date:TBD
Final	50%	

The final grade obtained from the above marking scheme will be based on the following percentage-to-grade point conversion:

Passing Grades	Grade Point Value	Percentage for Instructor Use Only	
A+	9	90 – 100	
A	8	85 – 89	
A-	7	80 – 84	
B+	6	77 – 79	
B	5	73 – 76	
B-	4	70 – 72	
C+	3	65 – 69	
C	2	60 – 64	
D	1	50 – 59	
Failing Grades	Grade Point Value	Percentage for Instructor Use Only	Description
E	0	0 - 49	Fail, *Conditional supplemental exam. (For undergraduate courses only)
F	0	0 – 49	Fail, no supplemental.
N	0	0 – 49	Did not write examination, Lab or otherwise complete course requirements by the end of term or session; no supplemental exam.

*\*Assignment of E grade will be at the discretion of the Course Instructor.*

The rules for supplemental examinations are found on page 80 of the current 2014/15 Undergraduate Calendar.

Term in which E Grade Was Obtained	Application Deadline for Supplemental Exam	Supplemental Exam Date
First term of Winter Session (Sept – Dec)	February 28 in the following term	First week of following May
Second term of Winter Session (Jan – Apr)	June 30 in the following term	First week of following September
Summer Session (May – Aug)	October 31 in the following term	First week of following January

Deferred exams will normally be written at the start of the student's next academic term; i.e., approximately 4 months following the deferral of the exam.

## Course Description

1. Course Objectives: The objective of this course is to provide a basic understanding in the planning, design, analysis and operation of electrical power systems.
2. Learning Outcomes: By the end of the course, each student should be able to identify the elements of a power system, model power system components such as transmission lines, synchronous generators, loads, etc. Understand the need for power flow studies, understand the effect of faults in a power system, and appreciate the significance of power system harmonics and transient stability
3. Syllabus: Principles of electric power systems, three-phase salient and round rotor synchronous machines, three-phase transformer, transmission line parameters, admittance model, impedance model, network calculations, power-flow solution, symmetrical components and sequence networks, symmetrical faults, unsymmetrical faults, harmonics calculations. Basics of power systems stability and protection, load frequency control, HVDC transmission, design projects using power system simulator software.

## 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 ECE Chair by email or the ECE Chair's Secretary [eceasst@uvic.ca](mailto:eceasst@uvic.ca) to set up an appointment.*

## Accommodation of Religious Observance

See <http://web.uvic.ca/calendar2014/GI/GUPo.html>

## Policy on Inclusivity and Diversity

See <http://web.uvic.ca/calendar2014/GI/GUPo.html>

## Standards of Professional Behaviour

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

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult

<http://web.uvic.ca/calendar2014/FACS/UnIn/UARe/PoAcl.html> for the UVic policy on academic integrity.