# Department of Electrical and Computer Engineering

## COURSE OUTLINE

**ELEC 350 – Communication Theory and Systems: I**

**Term - FALL 2017** (201709)

**Instructor**

Dr. Hong-Chuan Yang
Phone:(250) 721-8672
E-mail: hy@uvic.ca

**Office Hours**

Days: Wednesdays
Time: 11:30am – 12:30pm or by appointment
Location: EOW 421

**Lectures**

**A**-Section(s): A01/CRN 11242
Days: Monday and Thursday
Time: 10:00 ~ 11:20 am
Location: ELL 167

**Labs** **Location: ELW A309**

| **B**-Section(s): | Days: | Time(s): |
|---|---|---|
| B01/B02 | Tuesdays | 1:00-3:50pm |
| B03/B04 | Wednesdays | 2:00-4:50pm |
| B05/B06 | Thursdays | 12:00-2:50pm |
| B08 | Thursdays | 3:00-5:50pm |

**Required Text**

Title: Principles of Communications, 7th
Author: R. E. Ziemer and W. H. Tranter
Publisher: Wiley
Year: 2015

**Optional Text**

Title:
Author:
Publisher:
Year:

**References:**

S. Haykins and M. Moher, Communication Systems, 5th Ed, Wiley, 2009.
C. R. Johnson, W. A. Sethares, and A. G. Klein, Software Receiver Design, Cambridge, 2011.
R. Yates and D. Goodman, Probability and Stochastic processes, Wiley, 1999.
J. Proakis and M. Salehi, Fundamentals of Communication Systems, Prentice Hall, 2004.

**Assessment:**

| | | | |
|---|---|---|---|
| Assignments: | 10 | % | |
| Labs | 15 | % | |
| Mid-term | 25 | % | Date: TBD |
| Final | 50 | % | |

**Note:** Failure to complete all laboratory requirements will result in a grade of N being awarded for the course.

**Prerequisites:**

ELEC 310 Digital Signal Processing I and ELEC 330 Electronic Circuits I

**Course Homepage:**

http://coursespaces.uvic.ca/: Log in with your University of Victoria Netlink ID and Password.

**Course Objectives**

To introduce various fundamental concepts of electronic communication systems, including principles of amplitude, frequency, and phase modulation; design of modulators and demodulators; link budget analysis; modulation systems in the presence of noise; introduction to elementary digital communications.

**Assignments:**

There will be eight to nine problem sets. The assignments will be due in the drop box in EOW on the due dates. The solutions will be posted on the next day. As such, late assignment will not be accepted. The assignment with the lowest grade will not be counted.

**Labs:**

Lab session starts in the week of September 26. There will be four labs, which are adapted from the labs used last year. Lab manual will be posted on line.

**Exams:**

There will be one midterm exam and one final exam. Both exams will be closed-book and closed-note. Two formulae sheets are allowed for midterm. Four formulae sheets are allowed for the final. The midterm is tentatively scheduled in class on Monday, Oct. 0.

**Syllabus:**

- Overview of communication systems
- Linear modulation
- Angle modulation
- Link budget analysis
- Introduction to digital modulation
- System performance in noise

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.

**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 Secretary to set up an appointment.

**Accommodation of Religious Observance:**
http://web.uvic.ca/calendar2017-09/undergrad/info/regulations/religious-observanc.html#

**Policy on Inclusivity and Diversity:** http://web.uvic.ca/calendar2017-09/general/policies.html

**Standards of Professional Behaviour:** You are advised to read the Faculty of Engineering document Standards for Professional Behaviour, 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.
http://web.uvic.ca/calendar2017-09/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 Resource Centre for Students with a Disability located in the Campus Services Building.
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 have been prepared by the instructor and 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.