

Course Content

1. Introduction to Communication systems

- a) Description of generic communication system
- b) terminology

2. Signal Analysis

- a) Frequency Domain vs Time Domain
- b) Fourier analysis
- c) Bandwidth of non-sinusoidal waveforms
- d) Spectrum Analyzer operation

3. Noise

- a) Types/sources of noise
- b) Thermal noise
- c) distortion
- d) sensitivity
- e) SINAD sensitivity

4. AM Transmitters

- a) The AM waveform
- b) Modulation index
- c) AM modulator
- d) Mixing and frequency tuning
- e) VHF/UHF transmitter design
- f) RF power amplifiers

5. AM Receivers

- a) Tuned radio frequency receiver (TRF)
- b) Tuned Receiver
- c) Superheterodyne Receivers
- d) AM Detectors
- e) Oscillators
- f) Tuned circuits
- g) Mixing and frequency tuning

6. SSB

- a) advantages disadvantages
- b) Transmitters and Receivers block diagram

7. FM and PM

- a) Basic Principles of FM and PM
- b) FM signal characteristics
- c) Transmitters and Receivers

8. Transmission Lines

- a) Types of transmission lines
- b) Characteristic Impedance
- c) SWR
- d) Impedance matching
- e) Cable termination
- f) TDR

9. Antenna Systems

- a) Antennas for VHF, UHF and wireless LAN
- b) Radiation Pattern
- c) EM wave propagation

- d) Range calculations
- e) Field strength measurement

10. Digital Radio Communications

- a) Applications
- b) OOK, FSK, BPSK, MPAM
- c) Constellation diagrams
- d) Multiplexing
- e) Wireless data links
- f) Error detection
- g) Digital modulation Techniques
- h) Spread Spectrum-DSSS, FHSS
- i) IEEE 802 techniques

Holidays

- Feb 15 - 19 Family Day/ Reading Break (Mon-Fri) – College Closed (Week 6)
- Apr 2 Good Friday - College Closed
- Apr 5 Easter Monday - College Closed

Basis of Student Assessment (Weighting)

Quizzes	10%	Expect 3
Labs	15%	Weekly
Midterm	25%	One
Assignments	15%	Weekly
Final Exam	35%	One

- For a passing grade the student must achieve a passing grade (50%) for both the lab and theory portions of the course.
- Lab attendance and satisfactory completion of every lab is mandatory. Lab demonstration and write-ups are to be completed and submitted to D2L by the due date. Late submissions may be subject to a deduction of up to 100%.
- Assignments will be questions based on weekly material and submitted to the appropriate drop box on Camosun D2L. Late submissions may be subject to a deduction of up to 100%.
- There will be one midterm test given around the middle of the term.
- The final exam will be given during the exam week at the end of the semester. A minimum mark of 50% on the final is required to pass the course.

Grading System

(If any changes are made to this part, then the Approved Course description must also be changed and sent through the approval process.)

(Mark with "X" in box below to show appropriate approved grading system – see last page of this template.)

Standard Grading System (GPA)

Competency Based Grading System

Recommended Materials or Services to Assist Students to Succeed Throughout the Course

LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College Calendar, Student Services or the College web site at <http://www.camosun.bc.ca>

STUDENT CONDUCT POLICY

There is a Student Conduct Policy. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, Registration, and on the College web site in the Policy Section.
<http://www.camosun.bc.ca/policies/policies.html>

A. **GRADING SYSTEMS** <http://www.camosun.bc.ca/policies/policies.php>

The following two grading systems are used at Camosun College:

1. **Standard Grading System (GPA)**

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D		1
0-49	F	Minimum level has not been achieved.	0

2. **Competency Based Grading System (Non GPA)**

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

Grade	Description
COM	The student has met the goals, criteria, or competencies established for this course, practicum or field placement.
DST	The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement.
NC	The student has not met the goals, criteria or competencies established for this course, practicum or field placement.

B. **Temporary Grades**

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at <http://www.camosun.bc.ca/policies/E-1.5.pdf> for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	<i>In progress:</i> A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
CW	<i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.