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### ECE 417/517 Software Defined Radio

#### Term – Summer 2018 (201805)

##### Instructor

Dr. Peter Driessen  
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##### Office Hours

Days: Monday  
Time: 11:30  
Location: ELW 402 or EOW 435

#### Course Objectives

- To analyze and design software defined radio systems

#### Learning Outcomes

- Describe software radio systems, including radio frequency, analog-to-digital and digital-to-analog converters, digital upconverters and downconverters, software signal processing
- Analyze the performance of software radio systems
- Select software radio architecture to meet performance goals
- Design, develop and evaluate a software defined radio system

#### Syllabus

Software defined radio architectures. Receiver design: radio frequency, digital signal processing, software. Application to analog and digital communications, cognitive radio, dynamic spectrum access. Implementation of software radio algorithms using GNU Radio, Simulink or other platforms.

Section(s): ECE 417 A01 / CRN 30288  
ECE 517 A01 / CRN 30312

Days: MR  
Time: 10:00-11:20  
Location: Hickman 116 or ELW A309 on dates as announced

#### Required Text

Online notes and online lab manual

#### Optional Text

#### Assessment:

Assignments:	40	%
Test	10	%
Lab Project	50	%

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 Academic Calendar.

Grad: <http://web.uvic.ca/calendar/GRAD/FARe/Grad.html>  
Undergrad: <https://web.uvic.ca/calendar2018-05/undergrad/info/regulations/grading.html>

**There will be no supplemental examination for this course.**

<https://web.uvic.ca/calendar2018-05/undergrad/info/regulations/exams.html#>

**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:**

**Undergrad:** <https://web.uvic.ca/calendar2018-05/undergrad/info/regulations/religious-observanc.html>

**Graduate:** <https://web.uvic.ca/calendar2018-05/grad/registration/Registration.1.16.html>

**Policy on Inclusivity and Diversity:**

<https://web.uvic.ca/calendar2018-05/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.

**Undergrad:** <https://web.uvic.ca/calendar2018-05/undergrad/info/regulations/academic-integrity.html>

**Graduate:** <https://web.uvic.ca/calendar2018-05/grad/academic-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.