
ECE 514 – Design and Analysis of Computer Networks
Fall 2018 (201809) – CRN A01: 11023, CRN A02: 11024

Instructor

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Office Hours

Days: Mon-Fri
Time: Email or phone first
Location: EOW 433

Course Objectives

The goal of the course is to introduce the fundamental concepts, mathematical tools and techniques, and how to apply them to solve practical problems in computer communication networks. The course is appropriate for both undergraduate students and graduate students.

Learning Outcomes

1. Understand fundamental probability theory
2. Understand random processes
3. Understand and develop discrete-time Markov chains
4. Analyze queueing system performance
5. Analyze main communication and networking protocols

Syllabus

Chapter	Topic
1	Probability
2	Random processes
3	Markov chains
4	Markov chains at equilibrium
7	Queuing analysis
8	Modelling traffic flow control
9	Modelling error control flow
10	Modelling medium access control protocols
11	Modelling IEEE-802.11 (WiFi) Protocol
15	Modelling network traffic

Lectures

Days: Mon, Thu
Time: 2:30 – 3:50
Location: COR B135

Required Text

Textbook: Analysis of Computer Networks, Second Edition, F. Gebali, Springer 2015

Assessment

Activity	ECE 514
Assignments	0%
Quizz	10%
Mid term	30% Date: Oct 12
Project	10%
Final	50%
Total	100%

Note:

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/calendar2018-09/grad/academic-regulations/grading.html>

Accommodation of Religious Observance

<https://web.uvic.ca/calendar2018-09/grad/registration/Registration.1.16.html>

Policy on Inclusivity and Diversity

<https://web.uvic.ca/calendar2018-09/general/policies.html>

Standards of Professional Behaviour

You are advised to read the Faculty of Engineering document Standards for Professional Behaviour in current Undergraduate Calendar, 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/calendar2018-09/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.

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.