

# ELEC ENG 4TK4: Digital Communication Systems

## Course Objectives

To understand the basic structures and fundamental principles of modern digital communication systems, and to learn the commonly used techniques of modulation, source coding, and channel coding. Also, to understand the concepts of information theory, entropy and channel capacity and use them to study communications and coding.

## Course Description

[Course outline](#)

## Course Assessment

- Two projects: each 15%  
[Project 1](#) **Deadline: Nov. 4, 5:30 pm** [Mark of Project 1](#)  
[Project 2](#) **Deadline: Dec. 4, 5:30 pm**
- Tutorial attendance: 7% (It can be switched to the final exam) **Tutorial starts on Thursday, Sept. 26.**  
[Solution of Chapter 1](#)  
[Solution of Chapter 2](#)  
[Solution of Chapter 3](#)  
[Solution of Chapter 4](#)
- Lecture attendance: 8% (It can be switched to the final exam)
- Midterm exam: 0% or 25% (see below) **Tuesday, 7pm-9pm, Oct. 29, Room: ITB 137**  
[Test Sample](#)  
[Formula Sheet](#)  
[Mark of Midterm](#)

- Final Exam: 55% or 30% (see below)

[Test Sample](#)  
[Formula Sheet](#)

25% of the mark is taken as the best of the midterm and exam. The final exam must be written in order to pass the course

## Lecture

**Lecture time and place: Monday, Wednesday and Thursday 5:30pm-6:20pm, ABB-163**

## Office Hours

- Friday, 3:00pm-5:00pm, Room: ITB A220, ext. 27599

## Lecture Notes

- K. M. Wong, *Digital Communications*, Custom Publishing, McMaster University, Fall 2018

## Reference Books

- U. Madhow, *Fundamentals of Digital Communication*, Cambridge University Press, 2008
- R. G. Gallager, *Principals of Digital Communication*, Cambridge University Press, 2008.
- J. M. Wozencraft and I. M. Jacobs, *Principals of Communication Engineering*, Wiley, New York, 1966.
- John G. Proakis, *Digital Communications*, 4th edition, McGraw-Hill, 2001.
- Thomas M. Cover and Joy A. Thomas, *Elements of Information Theory*, Wiley-Interscience Publication

## Teaching Assistant:

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