

# The Hong Kong University of Science and Technology

## UG Course Syllabus

Digital Communications and Wireless Systems

ELEC4110

3 Credits

Pre-requisites: ELEC 2100 OR ELEC 2100H

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### Course Description

The aim of this course is to provide a comprehensive treatment of the theory, analysis, and design of digital communications and introduce advance concepts such as M-ary modulation, signal space concept, wireless communication systems, cellular networks, 5G and beyond. The method of instruction will be through lectures, tutorial and project.

### Assessments:

Assessment Task	Contribution to Overall Course grade (%)
Mid-Term	25%
In-course homework	15%
Group Project	10%
Final examination	50%

### Required Texts and Materials

Lecture notes will be self-contained. The following reference books are optional.

#### Reference Books:

- R. E. Ziemer and W. H. Tranter, "Principles of Communications: Systems, Modulation, and Noise, Houghton Mifflin, 4th Edition, 1995"
- John G. Proakis and M. Salehi, "Communication Systems Engineering, Prentice Hall, 1994"
- Simon Haykin, "Digital Communications, Wiley, 1988"
- R. Kwok, V.K.N. LAU, "Wireless Internet and Mobile Computing: Interoperability and Performance, John Wiley and Sons, 2007"

### Additional Resources

[List any additional resources, such as online platforms, library resources, etc.]