

Syllabus

Please be careful:

- All worked out problems/examples and relevant exercises are included in the syllabus.
- The syllabus given here may be included in either part of the final examination.

Detailed Syllabus:

1. **Book:** Modern Digital and Analog Communication Systems, **International** Fourth Edition by B.P. Lathi and Zhi Ding

Chapter 1: Introduction

Sections: 1.1 - 1.6

Chapter 2: Signals and signal space

Sections: 2.1, 2.2, 2.3, 2.7

Examples: 2.3, 2.4, 2.5

Problems in Exercise: 2.1-3, 2.1-4, 2.1-5, 2.1-6, 2.1-8, 2.3-1, 2.3-2, 2.3-3, 2.3-6, 2.3-7, 2.7-1, 2.7-2, 2.7-3, 2.7-4, 2.7-5, 2.7-6.

Chapter 3: Analysis and transmission of signals

Sections: 3.1, 3.2, 3.3, 3.4, 3.5, 3.7.1

Examples: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12, 3.13, 3.14, 3.16

Problems in Exercise: 3.1-1, 3.1-2, 3.1-3, 3.1-4, 3.1-5, 3.1-6, 3.1-7, 3.1-8, 3.2-1, 3.2-2, 3.2-3, 3.2-4, 3.2-5, 3.3-1, 3.3-2, 3.3-3, 3.3-4, 3.3-5, 3.3-6, 3.3-7, 3.3-8, 3.3-10, 3.4-1

Chapter 6: Sampling and Analog-to-digital conversion

Sections: 6.1 : 6.1.1, 6.1.2, 6.1.3, 6.1.5, 6.2, 6.3, 6.4, 6.5, 6.7 (up to the first paragraph ended with “the nature of the signal” on page 298)

Examples: 6.1, 6.2, 6.3

Problems in Exercise: 6.1-1, 6.1-2, 6.1-3, 6.1-4, 6.1-5, 6.1-8, 6.2-1, 6.2-2, 6.2-3, 6.2-4, 6.2-5, 6.2-6, 6.2-8, 6.2-9, 6.2-10, 6.4-1, 6.4-2, 6.4-3.

2. **Book:** An Introduction to Analog and Digital Communications, 2nd edition by S. Haykin and M. Moher

Chapter 2: Fourier Representation of Signals and Systems

Sections: 2.1 - 2.6

Examples: 2.1-2.11

3. **Book:** Data Communications and Networking, 5th Edition by Behrouz A Forouzan

Chapter 4: Digital Transmission

Section: 4.1 Digital-To-Digital Conversion (pages. 96-114)

4. **Class Lectures:** all lecture slides