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| **King Saud University**  **College of Applied Studies and Community Service**  **Natural Science and Engineering Program** |  |

**Data Transmission and Digital Communications**

**205NET**

2nd Semester 1439/1440

**Instructor:** Nour Alhariqi

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**Office Hours:** SUN –TUS -WED

**Credit Hours:** 3 hours (3 Lecture + 1Tutorial)

**Pre-requisites:** MATH111

**Course Description (catalog)**

Introduction to communication systems; Network architecture and the OSI reference model; Transmission media; Transmission Impairments; Data encoding; Data Synchronization; Data Link Control; Multiplexing; Spread Spectrum.

**Course Learning Outcomes**

This course requires the student to demonstrate the following:

1. Understand the OSI model for computer networks protocols.
2. Learn the fundamentals of data transmission principles: time and frequency representation of signals, relation between data rate and channel bandwidth, and transmission impairments.
3. Identify the characteristics of the various transmission media.
4. Be able to identify and characterize the various data encoding techniques, and assimilate their design principles.
5. Learn the principles and operation of synchronous and asynchronous transmissions.
6. Understand the principles of error detection and control.
7. Learn the operation and architecture of the various multiplexing techniques, and be able to design simple data multiplexing systems.
8. Modeling and designing various spread spectrum digital communication systems such as: frequency hopping and direct sequence.

**Grading Policy:**

Four midterms ( mid1, mid2, mid3, and mid4) each 12-13% 🡪 total 50% Dates

Homework 10%

Final Exam 40%

**Class Rules:**

* Please print lecture notes.
* Homework submitted as a hardcopy, if you absent send it by email then hands it out next day.
  + No late homework will be accepted + Cheating 🡪 0
* Attendance is very important. Late will be considered absent.
* If you miss one of the major exams you will be not excused unless the instructor accepts your formal medical report and it will cover both Mids.