## Brief Course Description

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| Course number: ECE 380 | Course name: Communication Networks |
| لغة تدريس المقرر : English | Pre-requisites: ECE 371, ECE**204** |
| Credit hours:  4 ( 3+ 2 + 0) | Course level:  Eighth  Level - Fourth   Year |

## Course Description                                   وصف المقرر :

Review of basic digital communications and probability theory. Network architectures. OSI Model and TCP/IP model. Physical layer protocols and digital transmission fundamentals. Data link layer protocols. Network layer protocols. Medium access control protocols. Packet switching and circuit switching. Routing techniques in packet switching networks. Security protocols. Emerging high-speed networks.

## Course objectives                                   أهداف المقرر :

✓  To describe the current layered architecture and its purposes.
✓  To explain data link/MAC layer functions and describe the current standards and applications.
✓  To explain network and transport layer functions and describe routing algorithms and TCP/IP protocols.
✓  To highlight security measures in Telecommunication networks.

## Course Outcomes                                   مخرجات التعليم:

Upon completing the course, the student should be able to:

• Understand the architecture of communication networks and layered network model.
•  Identify and describe the OSI model layers and their protocols.
•  Understand and differentiate packet switching and circuit switching.
• Identify the routing strategies and their link to network topology.
• Apply course knowledge to implement networking principles.

## Textbook and references                     الكتاب المقرر والمراجع المساندة:

| Book | Authors | Publisher | Publication year |
|---|---|---|---|
| *Communication Networks: Fundamental Concepts and Key Architectures* (textbook) | Alberto Leon-Garcia, Indra Widjaja | McGraw-Hill | 2004 |
| Data and Computer Communications (can be a textbook) | Stallings, W. | Prentice Hall | 2013 |
| Computer networking: a top-down approach | James Kurose, Keith Ross. | Pearson | 2009 |
| *Data Communication and Networking* | Behrouz .A, Forouzan | McGraw-Hill | 2013 |
| *Computer Networks* | Tanenbaum A. and Wetherell D. J. | Prentice Hall | 2010 |