**A- Basic Information**

**Course Title**: Communication Networks **Code**: ECE 323

**Lecture**: 3 **Tutorial**: 2 **Practical**: - **Total:** 5

**Program on which the course is given:** B.Sc. ElectricalEngineering (Communications)

**Major or minor element of program:** Major

**Department offering the program:** ElectricalEngineering Department

**Department offering the course:** Electrical Engineering Department

**Academic year / level:** **Third** Year / **Second** Semester

**Date of specifications approval:** 10/5/2006

**B- Professional Information**

**1- Overall aims of course**:

Design Fundamentals of communication networks, Communication Network architecture,

specialized structures in the networks including LAN, MAN and WAN network structure.

**2- Intended learning outcomes of course (ILOs)**

By completion of the course, the student should be able to:

**a- Knowledge and Understanding**

a.4) Principles of design including elements design, process and/or a system related to specific disciplines.

a.5) Methodologies of solving engineering problems, data collection interpretation.

**b- Intellectual Skills**

b.5) Assess and evaluate the characteristics and performance of components, systems and processes.

**c- Professional and Practical Skills**

c.6) Use a wide range of analytical tools, techniques, equipment, and software packages pertaining to the discipline and develop required computer programs.

**d- General and Transferable Skills**

d.1) Collaborate effectively within multidisciplinary team.

d.6) Effectively manage tasks, time, and resources.

**3- Contents**

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| --- | --- | --- | --- | --- | --- |
| **No** | **Topic** | **No. of hours** | **ILOs** | **Teaching / learning methods and strategies** | **Assessment method**  |
| 1 | Introducation to Communication Networks | 5 | a4, a5, b5, c6 | Lectures, Case study, Assignments / homework | Assignments, Quizes, Oral exam  |
| 2 | OSI Model and Communication Network architecture | 5 | a4, a5, b5, c6, d1 | Lectures, Case study, Assignments / homework | Assignments, Quizes, Oral exam  |
| 3 | OSI Model and Communication Network architecture | 5 | a4, a5, b5, c6, d1 | Lectures, Case study, Assignments / homework | Assignments, Quizes, Oral exam  |
| 4 | Application Layer Protocols (HTTP and DNS) | 5 | a4, a5, b5, c6, d1 | Lectures, Case study, Assignments / homework | Assignments, Quizes, Oral exam  |
| 5 | Application Layer Protocols (HTTP and DNS) | 5 | a4, a5, b5, c6, d1 | Lectures, Case study, Assignments / homework | Assignments, Quizes, Oral exam  |
| 6 | Physical Layer, data transmission protocols and techniques | 5 | a4, a5, b5, c6, d1 | Lectures, Case study, Assignments / homework | Assignments, Quizes, Oral exam  |
| 7 | Physical Layer, data transmission protocols and techniques | 5 | a4, a5, b5, c6, d1 | Lectures, Case study, Assignments / homework | Assignments, Quizes, Oral exam  |
| 8 | Mid term exam |
| 9 | Physical Layer, data transmission protocols and techniques | 5 | a4, a5, b5, c6, d1 | Lectures, Case study, Assignments / homework | Assignments, Quizes, Oral exam  |
| 10 | Local Area Networks Technologies | 5 | a4, a5, b5, c6, d1 | Lectures, Case study, Assignments / homework | Assignments, Quizes, Oral exam  |
| 11 | Metro Area Networks Technologies | 5 | a4, a5, b5, c6, d1, d6 | Lectures, Case study, Assignments / homework | Assignments, Quizes, Oral exam  |
| 12 | Metro Area Networks Technologies | 5 | a4, a5, b5, c6, d1, d6 | Lectures, Case study, Assignments / homework | Assignments, Quizes, Oral exam  |
| 13 | Wide Area Networks Technologies | 5 | a4, a5, b5, c6, d1, d6 | Lectures, Case study, Assignments / homework | Assignments, Quizes, Oral exam  |
| 14 | Wide Area Networks Technologies | 5 | a4, a5, b5, c6, d1, d6 | Lectures, Case study, Assignments / homework | Assignments, Quizes, Oral exam  |
| 15 | Final exam |
| 16 |

**4- Teaching and Learning Methods**

Lectures

Practical training / laboratory

Project Assignment

**5- Student Assessment Methods**

Project Assignment to assess knowledge and intellectual skills.

laboratory assignments to assess knowledge, intellectual and professional skills.

Mid-term exam to assess knowledge, intellectual, professional and general skills.

Oral project presentation to assess knowledge and intellectual skills.

Final exam to assess knowledge, intellectual, professional and general skills.

**Assessment Schedule**

Lab Assessment 1 on weeks 2, 5, 9, 11

Project Assessment 2 on weeks 10, 11, 12 and

13

Assessment 3 Mid-term exam on week 8

Assessment 4 Oral Exam on week 14

Assessment 5 Final exam on week 15

**Weighting of Assessments**

20 % Oral Project presentation and Lab

assignments

20% Mid-term examination

60% Final-term examination

100% Total

**6- List of References**

Course notes

 NA

Essential books

Data Communications and Networking, Behrouz A Forouzan

Publisher: McGraw-Hill Science/Engineering/Math; 3 edition

ISBN-10: 0072923547

Recommended books

NA

**7- Facilities required for teaching and learning**

Lecture room equipped with overhead projector

Presentation board, computer and data show

Laboratory

**Course coordinator:** Dr. Adly Tag-Eldeen

**Course instructor:** Dr. Adly Tag-Eldeen

**Head of Department:** Prof. Dr. Mousa Abd-Allah Date: 1/1/2012