Course Specification

Program on which the course is given:  IT Diploma
Department offering the program:  Computer Science
Department offering the course:  Computer Science

A- Basic Information

Title  Data Communications
Lecture  Three  Hours /Week
Code:  CS552

B- Professional Information

1- Overall Aims of Course:
The student should be able to know data transmission concepts, types and sources of data, transmission media. Also, the student should be able to understand encoding and multiplexing techniques.

2- Intended Learning Outcomes of Course:
   a) Knowledge and Understandings:
      At the end of the course, the student should be able to:
      a1- Develop Communication model
      a2- Design Protocol architecture
      a3- Model Data transmission
      a4- Use transmission media
   b) Intellectual Skills:
      At the end of the course, the student should be able to:
      b1- Develop Encoding techniques
      b2- Detect Error detection and correction.
      b3- Design Error and flow Control.
      b4- Use Multiplexing
   c) Professional and Practical Skills:
      At the end of the course, the student should be able to:
      c1- Understand cables types.
      c2- Construct network cables.
   d) General and Transferable Skills:
      At the end of the course, the student will be able to:
d1-Work effectively as a part of a team to apply skills gained throughout the course to build and configure a complex network
d2-Discussion of various types of transmission media.

e) Attitude:
At the end of the course, the student will be able to:
e1- Enhance self-study abilities.
e2- Enhance team-work skills.

3- Course Content:

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<td>▪ A Communications Model</td>
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<td>▪ Data Communications</td>
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<td>▪ Line-of-Sight Transmission</td>
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<td><strong>Signal Encoding Techniques</strong></td>
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Digital Data Communication Techniques
- Asynchronous and Synchronous Transmission
- Types of Errors
- Error Detection
- Error Correction
- Line Configurations

Data Link Control
- Flow Control
- Error Control
- High-Level Data Link Control (HDLC)

Multiplexing
- Frequency-Division Multiplexing
- Synchronous Time-Division Multiplexing
- Statistical Time-Division Multiplexing
- Asymmetric Digital Subscriber Line
- xDSL

4- Teaching and Learning Methods:
- Lectures
- Tutorials and seminars

5- Assessment:
a) Student Assessment Methods:
   - Final written exam

b) Assessment Schedule and Weighting:
   - Final written exam (100%)

6- List of Recommended Textbooks:
- "Data and computer communications" William Stallings.
7- Facilities Required for Teaching and Learning:
   a) Vital Facilities:
      - Computer lab supported by basic software and programs.
      - Data show device.

   b) Lecturing Facilities:
      - Overhead Projector, Data show device.

8- Attitudes:
   At the end of the course, the students are expected to:
   1- Have a positive attitude towards the aim of the course.
   2- Be satisfied with the important points of the course contents.

Course lecturer /Coordinator:

Head of the Department: Prof. Dr. Hamed Nassar.