Course Specifications

Institution:	College of Science at Az Zulfi
Academic Department :	Department of Computer Science and Information
Programme :	Computer Science and Information Program
Course :	Computer Networks
Course Coordinator :	Dr. Yaser Abdalla
Programme Coordinator :	Associate Prof. Yosry Azzam
Course Specification Approved Date :	22 / 12 / 1435 H

A. Course Identification and General Information

1 - Course title : Computer Networks	Course Code: CSI 322

2. Credit hours : (3 Credit Hours) (2 Lecture+2 Laboratory)

3 - Program(s) in which the course is offered: Computer Science & Information

4 – Course Language : English

5 - Name of faculty member responsible for the course: Dr. Yaser Abdalla

6 - Level/year at which this course is offered : 6th Level

7 - Pre-requisites for this course (if any) :
- CSI 313

8 - Co-requisites for this course (if any) :
- N/A

9 - Location if not on main campus :
(College of Science at Az Zulfi)

10 - Mode of Instruction (mark all that apply)

Mode			What percentage?	
A - Traditional classroom	√		What percentage?	80 %
B - Blended (traditional and online)	√		What percentage?	10 %
D - e-learning			What percentage?	…. %
E - Correspondence			What percentage?	…. %
F - Other	√		What percentage?	10 %

Comments :

One-tenth of the course contents are covered through the video lectures of other instructors available online. They pertain to the same topics that I discuss in my lectures but with a different presentation.

B Objectives

What is the main purpose for this course?

The purpose of this course is to introduce computer networks fundamentals, that includes:

- Introduction to computer networks and the Internet. Protocol layers and the OSI model. Application layer: HTTP, FTP, SMTP, POP3, DNS and peer-to-peer applications. Transport layer: UDP, TCP and congestion control. Network layer: virtual circuits, routers, IP protocols, addressing, sub netting, and routing algorithms. Link layer: error detection and correction, multiple access, MAC addressing, switches, ARP, Ethernet, PPP, local area networks and wide area networks.

Briefly describe any plans for developing and improving the course that are

being implemented :

1. Encouraging using modern technology in presenting teaching course
2. Updating the study material of the course in order to incorporate the new research in the field.
3. Use online resources and animations to help students to enhance knowledge about the topics that are presented in the course.

C. Course Description

1. Topics to be covered

List of Topics	No. of Weeks	Contact Hours
Introduction to Computer Networks & the Internet	1	3
OSI model layers- fundamentals and protocols	2	6
Application Layer: Web, FTP, email, DNS and P2P	2	6
TCP model and protocols: UDP, TCP, Congestion Control	2	6
LAN topologies.	2	6
Network Layer: Routing Algorithms	2	6
Link Layer: Errors, Multiple Access, IP addressing, subnetting, and Switching	2	6

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	30	....	30	....	....	60
Credit	30	....	15	....	....	45

3. Additional private study/learning hours expected for students per week.

<div style="border:1px solid black; display:inline-block; padding:10px;">**5 hours**</div>

The private self-study of my student is crucial for this course. It includes:

- Reading carefully the topics in the textbook or reference book,
- Browsing the websites concerned with the course,
- Solving the exercises that are assigned in each chapter,
- Discussing the course topics with the instructor in his office hours,
- Watching the online video lectures of other instructors who have presented related topics worldwide.

The total workload of the student in this course is then: 60 + 5 * 15 = 135 work hours.

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Students will develop an understanding of the core concepts of computer network and network protocols such as OSI and TCP/IP	Lectures Lab demonstrations Case studies Individual presentations	Written Exam Homework assignments Class Activities Quizzes
1.2	Explain the technology infrastructure and network requirements for local LAN.		
2.0	**Cognitive Skills**		
2.1	Select, configure, and operate the principal components of Internet and network infrastructure and tools, safely and effectively.	Lectures Lab demonstrations Case studies Individual presentations Brainstorming	Written Exam Homework assignments Class Activities Quizzes
2.2	Implement computer network infrastructures.		
3.0	**Interpersonal Skills & Responsibility**		
3.1	Work in a group and learn time management.	Small group discussions. Whole group discussions. Brainstorming. Presentations.	Written Exam Homework assignments Class Activities Quizzes
4.0	**Communication, Information Technology, Numerical**		
4.1	Communicate with teacher, ask questions, solve	Small group	Written Exam

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
	problems, and use computers.	discussions. Whole group discussions. Brainstorming. Presentations.	Homework assignments Class Activities Quizzes
4.2	Use Information technology and computer skills to gather information about a selected topic.		
4.3	Ask questions during the lecture, learn to work in groups, and communicate with each other and with the teacher through email. Also periodically visit the sites recommended.		
5.0	**Psychomotor**		
5.1	N/A		

5. Schedule of Assessment Tasks for Students During the Semester:

	Assessment task	Week Due	Proportion of Total Assessment
1	First written mid-term exam	6	20%
2	Second written mid-term exam	12	20%
3	Presentation, class activities, lab activity, and group discussion	Every week	10%
4	Homework assignments	After every chapter	10%
6	Final written exam	16	40%
	Total		100%

D. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

1. A total of 6 office hours per week in the lecturer schedule in order to facilitate the student.

2. Contacting students using e-mail, mobile, office telephone and website.

E. Learning Resources

1. List Required Textbooks :

- Computer Networks 5th Ed. Andrew S. Tanenbaum, Pearson Prentice Hall, 2010

2. List Essential References Materials :

Data and Computer Communication 9th Ed., William Stallings. Pearson Prentice Hall, 2011.

3. List Recommended Textbooks and Reference Material :

4. List Electronic Materials :

- https://www.coursera.org/

5. Other learning material :

- Video and presentations that are available with the instructor

F. Facilities Required

1. Accommodation
- Classrooms and, Library, as those are available at the college of science at Az-Zulfi

2. Computing resources
- Smart Board

3. Other resources
- None

G. Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:
- Analysis of students' results.
- Observation during class work.
- Students' evaluations.
- Colleagues' evaluations.
- Evaluation questionnaire filled by the students.
- Interview a sample of students enrolled in the course to take their opinions.

2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor :
- Self-assessment.
- External evaluation.
- Periodic review of course (the Commission of study plans).

3 Processes for Improvement of Teaching :
- Taking into account the recommendations yielded from the internal review of the course.
- Guidelines pertaining the teaching of the course provided by the study plans commission.
- Department Guidelines pertaining the performance of the faculty by direct observation.
- Training and development.
- Workshops to improve the educational process.

4. Processes for Verifying Standards of Student Achievement

- Reviewing instructor's assessment strategy
- Designing assessments which allow students to demonstrate their achievement of the learning outcomes
- Common assessment tasks
- Assessing group work

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement :
- Comparison of the course to its counterparts offered in similar departments.
- Periodic revision of course description by faculty member.
- Periodic revision of course description by the study plans and schedules

commission.
- Update learning resources related to the course to ensure that the course is kept up with developments in the field.
- Make use of the statistical results of course evaluation made by students to improve and develop the course.
- Giving the opportunity for students to express their opinions about what is taught and receive suggestions and study their effectiveness.

Course Specification Approved

Department Official Meeting No (6) Date 22 / 12 / 1435 H

Course's Coordinator	**Department Head**
Name : Dr. Yaser Abdalla	*Name :* Associate Prof. Yosry Azzam
Signature :	*Signature :* Yosry Azzam
Date : …./ … / …… H	*Date :* …./ … / …… H