Course Specifications

Institution:	Majmaah University.
Academic Department :	College of Science at Az Zulfi.
Programme :	Department of Computer Science and Information
Course :	**Network Programming (CSI 532)**
Course Coordinator :	Dr.Loai Bani Melhim
Programme Coordinator :	Asoc.Prof.YOSRY AZAAM
Course Specification Approved Date :	24/ 12 / 1435 H

A. Course Identification and General Information

1 - Course title : **Network Programming**	Course Code: **(CSI 532)**
2. Credit hours :	**3 credit hours (2 lecture + 2 lab)**
3 - Program(s) in which the course is offered:	**Computer Science and Information Program**
4 – Course Language :	**English**
5 - Name of faculty member responsible for the course:	**Dr.Loai Bani Melhim**
6 - Level/year at which this course is offered :	**elective**

7 - Pre-requisites for this course (if any) :**CSI 431**

- **Advanced Computer Networks**

8 - Co-requisites for this course (if any) : none

- ....

9 - Location if not on main campus **:**

(College of Science at Az Zulfi)

10 - Mode of Instruction (mark all that apply)

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 is presented mainly inside video lectures of other instructors worldwide. They illustrate the same topics that I introduced in my lectures with a different presentation.

B Objectives

What is the main purpose for this course?

Introduction to various aspects of computer network programming. Fundamental concepts are covered, including host TCP/IP configuration, TCP/IP addressing, socket programming, data presentation issues, the client/server programming model, and HTTP. This course is directed at developing traditional and multithreaded client/server applications in both the TCP/IP and UDP/IP domains. This course also addresses how programs in distributed systems can make use of OS services.

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

1. **Increasing the ability of the students to implement the methods and practices that are**

presented in the course.

2. **Formative exams during the term with a feedback to the students, so these examinations can be used as a method of learning..**
3. **Using group discussion through the internet with course attending students.**
4. **Updating the materials of the course to cover the new topics of the field.**
5. **Help students to develop their 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
Networking Revision	1	3
Java Overview	4	12
Internet Addressing	1	3
Socket programming	3	9
The User Datagram Protocol	3	9
Multithreaded Applications	2	6
Implementing application protocol	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.

5

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

Before the lectures start students are required to study some topics on their own.

The topics to cover:

- What a socket is
- What you can do with a socket
- The difference between TCP/IP, UDP/IP and Multicast sockets
- How servers and clients communicate over sockets
- How to create a simple server
- How to create a simple client
- How to create a multithreaded server

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	the basic concepts associated with network programming	Lectures	Written Exam
1.2	the role of a protocol in controlling the communication between hosts in a network	Lab demonstrations	Homework assignments
1.3	the advantages of multithreaded applications	Case studies	Lab assignments
		Individual presentations	Class Activities
		Team work	Quizzes
		Exercises	
2.0	**Cognitive Skills**		
2.1	distinguish between transport layer protocols	Lectures	Written Exam
2.2	design a new simple protocol	Lab	Homework
2.3	recognize the significance of flexibility, extendibility, simplicity, and efficiency in protocol design and implementation	demonstrations	assignments
		Case studies	Lab assignments
		Individual	Class Activities
		presentations	Quizzes
		Brainstorming	
2.4	....	....	....
2.5	....	....	....
2.6	....	....	....
3.0	**Interpersonal Skills & Responsibility**		
3.1	use Java I/O streams and Java exception handling primitives	Small group	Written Exam
3.2	implement practical network protocols, for clients and servers, using Java networking API	discussion	Homework
		Whole group	assignments
		discussion	Class Activities

		NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
			Brainstorming Presentation	Quizzes
3.3		write multithreaded UDP clients and servers	....	....
3.4		....	....	....
3.5		....	....	....
3.6		....	....	....
4.0	**Communication, Information Technology, Numerical**			
4.1		work in a group to write the specification of a simple protocol	Small group discussion	Written Exam Homework
4.2		work in a group to implement a network program that utilizes the protocol described in D1	Whole group discussion	assignments Lab assignments
4.3		work in a group to implement the protocol described in D1	Brainstorming	Class Activities
4.4		work in a group to demonstrate the aims D1, D2, and D3	Presentation	Quizzes
4.5		....	....	....
4.6		....	....	....
5.0	**Psychomotor**			
5.1		....	....	....
5.2		....	....	....
5.3		....	....	....
5.4		....	....	....
5.5		....	....	....
5.6		....	....	....

5.

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	10%
2	Second written mid-term exam	12	10%
3	Presentation, class activities, and group discussion	Every week	10%
4	Homework assignments	After Every chapter	10%
5	Final lab exam	15	20%

6	Final written exam	16	40%
	Total		100%

D. Student Academic Counseling and Support

Office hours: Sun: 1-3, Mon. 10-1, Wed. 10-12

Office call: Sun. 10-12 and Wed 10-12

Email: l.banimelhim@mu.edu.sa

E. Learning Resources

1. List Required Textbooks :

- Fiach Reid," Network Programming in .NET", Elsevier Digital Press: ISBN: 1-55558-315-6. (2004).

2. List Essential References Materials :

- Bob Quinn, David K. Shute , "Windows Sockets Network Programming: Text", Addison-wesley Advanced Windows Series, Prentice Hall, 2011, ISBN: 0768682320, 9780768682328

3. List Recommended Textbooks and Reference Material :

- An Introduction to Network Programming with Java: Java 7 Compatible Paperback by Jan Graba, ISBN-13: 978-1447152538 ISBN-10: 1447152530 Edition: 3rd ed. 2013.

4. List Electronic Materials :

- http://nptel.ac.in/courses.php?branch=Comp
- http://cs.mcgill.ca/~jpineau/comp424/schedule.html

6. Other learning material :
Video and presentations that available with the instructor

F. Facilities Required

1. Accommodation

- Classrooms and Laboratories, as those that are available at the college of science at AzZulfi.

2. Computing resources

- Smart Board

3. Other resources

- None

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:

- .... Questionnaires (course evaluation) achieved by the students and it is electronically organized by the university.
- Student-faculty management meetings.

2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor :

- Discussion within the staff members teaching the course.
- Departmental internal review of the course.

3 Processes for Improvement of Teaching :

- Periodical departmental revision of methods of teaching.
- Monitoring of teaching activates by senior faculty members.
- Training course

4. Processes for Verifying Standards of Student Achievement

- ....
- ....
- ....

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement :

- Course evaluation
- Exam evaluation
- Improvement plan
- Program Out learning with course out learning
- Out learning from the pre-requisite course

Course Specification Approved
Department Official Meeting No (…..) Date … / …. / ….. H

Course's Coordinator

Name :   Dr.Loai Bani Melhim

Signature :
Date :   24/ 12 / 1435 H

Department Head

Name :   Asoc.Prof.YOSRY AZAAM

Signature :   ....
Date :   …./ … / …… H