Course Syllabus

According to JORDAN National Qualification Framework (JNQF)

Course Name: Network and Servers Programming

Course Number: 06043162

General Course Information:

Course title	Network and Servers Programming
Course number	06043162
Credit hours	3
Education type	Face-to-Face (3 Synchronous hours (theoretical)
Prerequisites/corequisites	Computer Networks (06082140)
Academic Program	Cyber Security
Program code	608
Faculty	Information Technology
Department	Cyber Security
Level of course	3rd year
Academic year /semester	2021-2022 / Second Semester
Awarded qualification	Bachelor (B.Sc.)
Other department(s) involved in teaching the course	None
Language of instruction	English
Date of production/revision	Mar, 15, 2022

Course Coordinator:

Coordinator's name	Dr. Osama Al-Haj Hassan
Office No	4155
Office Phone extension number	2613
Office Hours	10-12 Sun,Tue,Thu , 1-2 Mon, Wed
Email	osama.haj@iu.edu.jo

Other Instructors:

Instructor name	
Office No	
Office Phone extension number	
Office Hours	
Email	

Course Description *(English/Arabic)*:

English	This course teaches different types of Client/Server interactions. Mainly, it is a practical course targeted towards advanced skills. The topics are DB Connectivity, Dynamic web applications using java Spring Boot, Client/Server communication using Sockets and Datagrams programming.
Arabic	يتعلم الطالب في هذه المادة طرق مختلفة لتواصل أجهزة Client و Server. المادة بشكل رئيسي عبارة عن مادة تطبيق عملي والمواضيع المغطاة هي تواصل برنامج جافا مع قاعدة البيانات، بناء مواقع انترنت ديناميكية باستخدام Java Spring Boot، وتواصل أجهزة Client و Server من خلال Sockets و Datagrams

Textbook: *Author(s), Title, Publisher, Edition, Year, Book website.*

java How to Program, Deitel&Deitel, 9rd edition, 2011, Prentice Hall.

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References: *Author(s), Title, Publisher, Edition, Year, Book website.*

1.	Advanced Java networking , D. Steflik, P. Sridharan, 2000, Prentice Hall
2.	Advanced Java 2 Platform How to Program, Deitel&Deitel, 2nd edition, 2001, Prentice Hall.

Course Educational Objectives (CEOs):

1.	Understand how to access a remote database
2.	Learn concepts of dynamic web programming
3.	Grasp the basics of communication between a server and a client

Intended Learning Outcomes (ILO's):

	Subject Intended learning outcomes (ILOs) describe what students are expected to know and be able to do at the end of the course. These outcomes are related to the knowledge, skill and competence that students acquire:	Relationship to CEOs	Contribution to PLOs	Bloom Taxonomy Levels*	Descriptors**
A	**Knowledge and Understanding:**				
A1	Develop code to connect to a remote database using java (JDBC)	1	b	3	S
A2	Develop code to manipulate a remote database using java (JDBC)	1	b	3	S
B	**Intellectual skills:**				
B1	Employ the basics of responsive web design using Bootstrap	2	b	3	S
B2	Identify the concepts of dynamic web programming	2	a	1	K
C	**Subject specific skills:**				
C1	Develop dynamic web pages using Java Spring Boot	2	b	3	S
C2	Define basic concepts of client/server communication	3	a	1	K
D	**Transferable skills:**				
D1	Develop basic client/server communication using java sockets and datagrams	3	f	3	S
D2	Identify the role of databases and network communication in today's real world applications	3	a	1	K

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*Bloom Taxonomy Levels

Level #	1	2	3	4	5	6
Level Name	Knowledge	Comprehension	Application	Analysis	Evaluation	Synthesis

** Descriptor (National Qualification Framework Descriptors): K : Knowledge, S: Skill, C: Competency.

Program Learning Outcome (PLOs):

Program Learning Outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the knowledge, skills, and behaviours that students acquire as they progress through the program. A graduate of the (_____) program will demonstrate:		Descriptors**		
		K	**S**	**C**
a.	Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.	√		
b.	Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.		√	
c.	Communicate effectively in a variety of professional contexts.			√
d.	Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.			√
e.	Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.			√
f.	An ability to analyze and evaluate systems with respect to maintaining operations in the presence of risks and threats. [CY]		√	

** Descriptors according to the national qualifications framework (K: knowledge, S: skill, C: Competency)

Weekly Schedule *(please choose the type of teaching)*

☑ **Face to Face**

☐ **Hybrid** *(**2 Lectures** Face – To - Face **+1 Lecture** Asynchronous)*

☐ **Hybrid (1 Lectures** Face – To - Face **+1 Lecture** Asynchronous)*

☐ **Online** *(**2 Lectures** Synchronous **+1 lecture Asynchronous**)*

Week	First Lecture (Synchronous)	Second Lecture (Synchronous)	Third Lecture (Synchronous)	Ach. ILOs	Ach. PLOs	Descriptors **
1	Building MySQL databases using user friendly tools such as Navicat	Learn what information about the database is need to access a remote database	More examples about working with phpMyAdmin and MySQL database	A1	b	S
2	Introduction to Java Database Connectivity (JDBC).	Explain the need for a driver as a mediator between	Learn how to execute select command on a	A2	b	S

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		java program and database	database using JDBC			
3	Learn how to execute select, insert command on a database using JDBC	Learn how to execute update, delete commands on a database using JDBC	Learn how to navigate through a resultset	D2	a	K
4	Explain the difference between old and modern web design	Explain the importance of responsive web design	Review of basic html and css concepts	B1	b	S
5	Learn the basics of using Twitter Bootstrap	Learn Bootstrap grid system	Learn basic Bootstrap components and learn basic Bootstrap classes	B1	b	S
6	Explain the difference between static and dynamic web programming	Introduction to Java Spring Boot	Simple example of java Spring Boot	B2	a	K
7	Explaining Main Application Class	Examples Controller Class	More examples of controller class	D2	a	K
8	Explain Annotations, @responseView, ModelAndView	Web Forms	Html input types	D2	a	K
9	Get and Post requests	Examples on Get and Post requests	Forwarding vs Redirection	C1	b	S
10	Session Tracking	Examples on Session Tracking	Cookies	C1	b	S
11	Examples on cookies	Executing code on application startup	Understanding jdbcTemplate	C1	b	S
12	Use jdbcTemplate to execute sql commands	Annotations for validation	Display validation messages within html page	D2	a	K
13	Introduction to client/server communicatio	Connection oriented communication background	Connectionless oriented communication background	D2	a	K
14	Sockets vs Datagrams	Using sockets for client/server communication	Examples on Sockets	D1	f	S
15	Using datagrams for client/server communication	Examples on Datagrams	Revision	D2	a	K

* **K: Knowledge, S: Skills, C: Competency**

Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:
▪ Lectures

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Course Policies:

A- Attendance policies:

    The maximum allowed absences is 15% of the lectures.

B- Absences from exams and handing in assignments on time:

    Midterm exam can be retaken based on approval of excuse by the instructor's discretion.

    Not handing assignment on time will incur penalties.

C- Academic Health and safety procedures

D- Honesty policy regarding cheating, plagiarism, and misbehaviour:

    Cheating, plagiarism, misbehaviour will result in zero grade and further disciplinary actions may be taken.

E- Grading policy:

- All homework is to be posted online through the e-learning system.
- Exams will be marked within 72 hours and the marked exam papers will be handed to the students.
- Online Activities (Course Videos, Practice labs, Discussion Forums, Quizzes) **20%**
- Midterm **30%**
- Final Exam **50%**

F- Available university services that support achievement in the course: **E-Learning Platform, Labs, Library.**

Required equipment:

- Computer Lab, XAMPP, Eclipse, Internet Connectivity

Assessment Tools implemented in the course:

- Final Exam
- Midterm Exam
- Homework

Responsible Persons and their Signatures:

Course Coordinator	Dr. Osama Al-Haj Hassan	Completed Date	15 / 3 / 2022
		Signature	

Received by (Department Head)		Received Date	/ /
		Signature	

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