ISRA UNIVERSITY

Course Syllabus
According to JORDAN National Qualification Framework (JNQF)

Course Name: Virtual Reality

Course Number: 06024153

General Course Information:

Course title	**Virtual Reality**
Course number	**06024153**
Credit hours	**3**
Education type	**[Online (Synchronous, Asynchronous)], [Hybrid (Face-to-Face, Online (Synchronous, Asynchronous)], OR [Face-to-Face]**
Prerequisites/corequisites	**2D Graphics and Animation (602381)**
Academic Program	**Computer Science**
Program code	**602**
Faculty	**Faculty of Information Technology**
Department	**Computer Science**
Level of course	**3**
Academic year /semester	**2021/2022**
Awarded qualification	**3**
Other department(s) involved in teaching the course	**3**
Language of instruction	**English**
Date of production/revision	**2018**

Course Coordinator:

Coordinator's name	**Coordinator's Name: Dr. Yousef Sharrab**
Office No	**Office No.: 4104**
Office Phone extension number	**Office Phone: 2495**
Office Hours	**Office Hours:** [13:00_14:00] Sun Tue Thu
Email	**Email: sharrab@iu.edu.jo**

Other Instructors:

Instructor name	
Office No	
Office Phone extension number	
Office Hours	
Email	

Course Description *(English/Arabic)*:

English	Describe the concepts **of virtual** reality technology. **,**Describe **the concepts of Augmented** reality **technology.** **,**Explain the development *process* of uittuol reality applications. Reorganize the **potential of** virtual reality applications in education Design a geometry oboeʿs in virtual environments
Arabic	

QUALITY ASSURANCE
ISRA UNIVERSITY

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

Text Book: *Author(s),* kiffe, *Publisher, Edition, Year, Book websiie.*

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

1.- Computer Networking : Principles, Protocols and Practice second edition 2017 2.- Tanenbaum, Andrew S., 1944- Computer networks / Andrew S. Tanenbaum, David J. Wetherall. 5th ed ISBN-13: 978-0-13-212695-3 3.- Computer networking : a top-down approach / James F. Kurose, Keith W. Ross.—6th ed. Copyright O 2013 ISBN-13: 978-0-13-285620-1

Course Educational Objectives (CEOs):

1.	Introduce the concepts of data visualization including both the principles and techniques
2.	Describe categories of data visualization, graph types, and role of perception
3.	Explain the concept of collecting data and datasets, data cleaning, and data pre-processing
4.	Explain data manipulation, analysis, and mining data
5.	

Intended Learning Outcomes (ILO's):

		Relationship to CEOs	Contribution to PLOs	Bloom Taxonomy Levels*	Descriptors**
A	**Knowledge**	**and**			**Understanding:**
A1	Identify, examine; and develop software that reflects fundamental techniques for the design and deployment of VR experiences.	**1,2**	**a**	**1**	**K**
A2	Describe how VR systems work.	**3**	**a**	**2**	**K**
A3	Choose, develop, explain, and defend the use of particular desi ns for VR ex evidences.	**3,4**	**b**	**2,3**	**S**
B	**Intellectual skills:**				
B1	Evaluate the VR/AR4 techniques	**4**	**b**	**4**	**S**
C	**Subject specific skills:**				
C1	Identify and examine state-of-the-art VR design problems and solutions from the industry and academia.	**4**	**b**	**4**	**S**
D	**Transferable skills:**				
D1	Develop virtual reality applications with the Virtues Walkthrough program.	**1,2**	**b**	**5**	**S**

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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.

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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**
1.	Analyse a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.	✓		
2.	Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.		✓	
3.	Communicate effectively in a variety of professional contexts.			✓
4.	Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.			✓
5.	Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.			✓
6.	Apply computer science theory and software development fundamentals to produce computing-based solutions. [CS]		✓	

** 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 (...................)	Second Lecture (..........................)	Third Lecture (.......................... ......)	Ach. ILOs	Ach. PLOs	Descriptors **
1	Introduction to Virtual Reality from Historical perspective	**Information Visualization**	-Why is Visualization Important? -Visualization Aims	A1,a2	2	s
2	Introduction to Augmented Reality from Historical perspective	- Visualization and Vision -Data Visualization -Data Presentation	-Visualization in the Data Analysis Process -Skills in Data Visualization -Charts Vs Diagrams	A1,b1,c1	2	K,s,c
3	Human Perception	**-Dataset**	-Excel (*practical-1*)	A1,b1,d1	4	K,s,c
4	Introduction to 3DUnity	-Normalization -Segmentation **- Sampling**	-Sub-setting & expanding -Dimension reduction	A1,c1	4	K,c

5	Mid Term Exam	**-Aggregation & summarization**	- Smoothing -Filtering	C1,b1	5	S,c
6	Introduction to 3DUnity Introduction to 3DUnity	-Multidimensional Data Visualization, -Geospatial Data Visualization	-Visualization, -Hierarchical Data Visualization **-Network Data Visualization**	B1,d1	2	S,
7						

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

Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:
- **Lecture Notes**
- **Class activities**

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:

- **PC / Laptop**
- **Internet Connection**
- **Access to the IU E-Learning Platform at: https://elearn.iu.edu.jo/**
- **E-learning plan Training**

Assessment Tools implemented in the course:

- **Final Exam**
- **Midterm Exam**
- **Quizzes**
- **Homework**
- Integrative Projects.

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- o Written Reports.
- o Class participation
- Discussion

Responsible Persons and their Signatures:

Course Coordinator	Dr. Yousef Shrrab	Completed Date	10/ 3 / 2022
		Signature	*Sharrab*

Received by (Department Head)		Received Date	/ /
		Signature	