Course Specifications

Course Title:	Distributed System
Course Code:	**IT 421**
Program:	**B.Sc. Information Technology(Cybersecurity)**
Department:	**Computer Science &Information**
College:	**College of Science Al Zulfi**
Institution:	**Majmaah University**

Table of Contents

A. Course Identification

1. Credit hours:
2. Course type **a.** University ☐ College ☐ Department ■ Others ☐ **b.** Required ■ Elective ☐
3. Level/year at which this course is offered: 8
4. Pre-requisites for this course (if any)**:** Computer Organization and Architecture (ICS 222)
5. Co-requisites for this course (if any)**:** **NIL**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	48	80 %
2	**Blended**	6	10 %
3	**E-learning**	6	10 %
4	**Correspondence**		
5	**Other**		

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture**	30
2	**Laboratory/Studio**	20
3	**Tutorial**	10
4	**Others** (specify)	
	Total	60
Other Learning Hours*		
1	**Study**	20
2	**Assignments**	15
3	**Library**	10
4	**Projects/Research Essays/Theses**	5
5	**Others** (specify)	
	Total	50

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description:

The course specifically covers fundamentals distributed system examples of Distributed Systems, Common Characteristics, Basic Design Issues, Distributed System Models, Networking and Internetworking in distributed system, Interprocess Communication, Remote invocation, Indirect Communication, and Security issues and Internet applications with case studies.

2. Course Main Objective

Students will learn different concepts to design distributed system models and transform them into real distributed system. The objective of this class is to emphasize the importance of distributed system, and to prepare students to understand and design the distributed system.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge:**	
1.1	Understand the fundamental aspects of distributed system processing, taxonomies of distributed systems, and performance measures for distributed systems.	a3
1.2		
1.3		
1...		
2	**Skills :**	
2.1	Attempt to generate new ideas and innovations using different types of communication methods.	b2
2.2	Able to understand and write efficient distributed application programs.	b3
2.3		
2...		
3	**Competence:**	
3.1	Apply derived knowledge using internet and other sources of library reference materials.	c1
3...		

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to Distributed System.	8
2	Distributed System Models	8
3	Networking , Internetworking and their issues	12
4	Types of networks, Protocol Layers, and Routing.	12
5	Remote method invocation, Direct and Indirect Communications.	8
6	Security issues and Internet applications with case studies.	12
Total		60

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge**		
1.1	Identify and apply concepts of Distributed System	Lectures, Group discussion, Case studies, Individual presentations on different topics.	Quiz , Mid Exam , Assignment, Final Exam, Individual demonstrations.
1.2			

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
…			
2.0	**Skills**		
2.1	Analyze a problem and form a plan on how to work towards a solution.	Lectures, Individual presentations & Brainstorming exercises	Quiz , Mid Exam , Assignment, Final Exam, Individual demonstrations.
2.2	Make realistic plans, taking other possibilities, limitations and time consume into consideration.	Lectures, Individual presentations & Brainstorming exercises	Quiz , Mid Exam , Assignment, Final Exam, Individual demonstrations.
2.3	Collect and analyze various types of information, and possess a healthy, critical attitude towards these sources.	Lectures, Individual presentations & Brainstorming exercises	Quiz , Mid Exam , Assignment, Final Exam, Individual demonstrations.
2.4	Express own reflections and attitudes in regard to the area of research.	Lectures, Individual presentations & Brainstorming exercises	Quiz , Mid Exam , Assignment, Final Exam, Individual demonstrations.
…			
3.0	**Competence**		
3.1	The program will help develop your academic curiosity and give you understanding and respect for scientific values such as openness, precision, reliability and the importance of distinguishing between knowledge and opinions.	Brainstorming Presentations	Quiz , Mid Exam , Assignment, Final Exam, Individual demonstrations.
3.2			
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quizzes		10 %
2	Mid Exams		30 %
3	Assignments		10 %
4	Group Discussion, Presentation		10 %
5	Final Exam		40 %
6			
7			
8			

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Distributed Systems: Concepts and Design
Essential References Materials	Fundamentals of Digital Forensics by Joakim Kävrestad
Electronic Materials	Distributed Systems: Principles and Paradigms
Other Learning Materials	Videos and presentations are available with instructor

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms and Labs as those that are available at college of science Az Zulfi
Technology Resources (AV, data show, Smart Board, software, etc.)	Smart Board and required software
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	N/A

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	
Reference No.	
Date	