University f Halabja

Directorate of Quality Assurance

SUBJECT OUTLINE

Academic Year: 2023-2024

1. Information on the Programme	
Higher education institution	**University of Halabja**
College	**College of Science**
Department	**Computer Science.**
Field of study	**Computer Science**
Cycle of study[1]	**First Cycle**
Specialization/ Study programme	**Computer Science**
Form of education	**Full time**

2. Information on the Discipline			
Discipline Name	**Data Communication**	**Discipline Code**	1010405
ECTS	**6**	**Language**	Kurdish/English
Lecturer (Theory)	**Peshang Hasan Karim**	**Home page**	-
Moodle Course link		**-**	
E-mail:	**Peshang.kareem@uoh.edu.iq**	**Tel**	
Practical/Seminar / laboratory/ project Lecturer	**Peshang Hasan Karim**	**Home page**	-
Moodle Course Link	-	**Google Scholar**	-
E-mail	Peshang.kareem@uoh.edu.iq	**Tel**	-
Study Year	**2**	**Semester**	4th
Assessment type[2]	**Exam**	**Discipline status**	
Content[3]	**PF**	**Mandatory**[4]	MD

3. Prerequisites (if applicable)	
Curriculum-related	-
Skills-related	-

Decipline:	Data Communication			ECTS:	6,00			
Workload		162	Total Contact Hours:			78	Total Self Study	
No. of Weeks	1st Week	2nd Week	3rd Week	4th Week	5th Week	6th Week	7th Week	8th Week
Theoritical	2	2	2	2	2	2	2	2
Practice								
Lab./Tutorial	2	2	2	2	2	2	2	2
Fieldtrips/Visits								
Project	2	2	2	2	2	2	2	2
Curriculum (articles+media+net)								
Curriculum (Books)								
Homework								
Quizzes								
Assignments								
Reports								
Presentation								
Midterm Exam (Thr. + Pr.)		16						
Final Exam (Thr. + Pr.)	4	4	4	4	4	4	4	4

٥. Conditions (if applicable)	
For the Theoretical	The lectures are presented to the students using white board, colorful markers and Data show Students must bring pencil and paper (or Notebook) Students must present 90% of lectures
For the Practical/Lab. /Project	Using computers in computer lab. Students can bring their laptops (Recommended). Students must present 90% of lectures

٦. Cumulated specific competences	
Professional competencies	Recognize the benefits of principles of communications and ways of transferring data between networks. Using communication principles to create fast and resilient networks
Transversal competences	Interpersonal Skills: · Collaboration & Team Building · Leadership · Writing · Managing Change & Uncertainty Management Skills: · Project Management · Risk Management · User Orientation · Decision-Making

7. Discipline objectives (based on the cumulated specific competences)	
General objective	This course is an introduction to data communication. This subject make student to design and manage network using different protocols and principles of data communication. Topics covered include the Signals, bandwidth, transmission media... This course has 13 weeks in both theory and practice, in which students are familiarized with data communication concepts, then implementing them using packet tracer tool. This course gives

	students a perfect base for creating network and configuration of all devices in it.
Specific objectives (Learning Outcomes)	• **General Introduction** • **Data link layer: introduction** • **Data link layer services** • **Transmission medium** • **Physical layer: introduction** • **Signals** • **Bandwidth** • **…**

8. Content		
Theoretical- Number of hours	**Teaching**	**Observation**
First week	**Registration**	2 hours
Second week	Data Link Layer – Introduction Definitions: Data link control, DLC services, framing, Protocols of Data link layer…	2 hours
Third week	Error detection and correction	2 hours
Fourth week	Media Access control Random access Controlled access Channelization	2 hours
Fifth week	Wired LAN: Ethernet	2 hours
Sixth week	Other networks Connecting devices and virtual LANs	2 hours
Seventh week	Wireless LAN	2 hours
Eighth week	Cellular telephony	2 hours
Ninth week	Satellite networks	2 hours
Tens week	Physical layer – Introduction Signals Digital and analog signals Bandwidth	2 hours

	Transmission Impairment	
Eleventh week	Introduction to transmission media wired media	2 hours
Twelfth week	Introduction to transmission media Wireless media	2 hours
Thirteenth week	Security	2 hours

Practical Works– Number of hours	**Teaching**	**Observation**
First week	General Introduction	2 hours
Second week	Introduction to packet tracer	2 hours
Third week	Configuring Initial Switch Settings	2 hours
Fourth week	Configuring Initial Router Settings	2 hours
Fifth week	Dynamic Host Configuration Protocol	2 hours
Sixth week	Virtual LAN in Switch 1	2 hours
Seventh week	Virtual LAN in Switch 2	2 hours
Eighth week	Router Information Protocol (RIP)	2 hours
Ninth week	Open Shortest Path First(OSPF)	2 hours
Tenth week	Port Security	2 hours
Eleventh week	Project	2 hours
Twelfth week	Project	2 hours
Thirteenth week	Project	2 hours

9. Compulsory bibliography

1- **Behrouz A. Forouzan, Data communications and networking, 5th Edition, The McGraw-Hill Companies, Inc., New York, NY 10020. Copyright © 2013**
2- **William Stallings, Data and Computer Communications, 8th Edition, Pearson Education, Inc., Upper Saddle River, NJ 07458.**

Optional bibliography

1-

10. Corroborating the discipline content with the expectations of the epistemic community representatives, of the professional associations and of the relevant employers in the corresponding field
1. As a teacher **2. As an employee in a company or government offices** 3.

11. Assessment			
Type of activity	**Assessment criteria**[2]	**Assessment type**	**Final grade Percentage**
Theoretical	**Written Exam**	**writing examination**	**%45**
Practical/Laboratory	**Oral Exam**	**Seminars , Report& Projects**	**%35**
Activity during semester	**Oral Exam**	**Assignment, Seminars Quiz &Class Activity**	**%20**
Minimum performance standards: Reading English well & Solving precalculus problems (Algebraic Operations) and having an introduction to MATLAB basic commands			

Theoretical Lecturer	**Asst. Lec. ……..**
Practice Lecturer	**Asst. Lec. ……..**

Approved by the Curriculum development Committee

1	
2	
3	
Head of the Department/ Dean	

Notes:

1 Cycle of studies - choose one of the three options: Bachelor «1», Master «2», Ph.D. «3»

2 (Exam: oral examination, written exam), and (Continous Evaluation(CE), portfolio).

3 Discipline status (content) - for the Bachelor level, choose one of the options: FD (fundamental (General) discipline), PF (Preparatory Disciplines in the Field), SD (Specialty Disciplines), CD (Complementary Disciplines), DU (disciplines based on the university's options).

4 Discipline status (compulsoriness) - choose one of the options

– MD (Mandatory discipline),

- OD (optional discipline),

- ED (Elective (Facultative) discipline).

5 Note: 1 ECTS = 27 hours workload; ECTS=WL/27, The first week is registration and introduction to the course.