Kurdistan Region - Iraq
Cihan University –Sulaymaniyah
Collage of Science
Department of Computer Science

إقليم كوردستان – العراق
جامعة جيهان – السليمانية
كلية العلوم
قسم علوم الحاسوب

Program Curriculum (2024-2025)

Bachelor's level -Honors Bachelor Degree in Computer Science

Inspired by Bologna Process

Collage of Science
Department of computer science
Cihan University Sulaimaniya

Network Administration (CUE31034)

1. Information on the Programme

1.1. Higher Education Institution	*Cihan University Sulaimaniya*
1.2. College	*Science*
1.3. Department	*Computer Science*
1.4. Field of Study	***Network Administration***
1.5. Cycle of Study[1]	*1*
1.6. Specialization/ Study Programme	*Computer Science*
1.7. Form of Education	*Full Time*

2. Information on the Discipline

2.1. Discipline Name	*Computer Networking administration*
2.2. Code	*CUE31034*
2.3. Language:	*English*
2.4. (Theory) Lecturer **E-mail:** **Tel:** **Webpage, Google Classroom**	*Assistant Professor Dr.Lway Faisal Abdulrazak* ***lway.faisal@sulicihan.edu.krd*** *009647700616304* ***https://uni.sulicihan.edu.krd/qa/profile.php?id=64***
2.5. Practical/Seminar/ Laboratory/ Project Lecturer **e-mail:** **Tel:** **Webpage, Google Classroom**	*Assistant Professor Dr.Lway Faisal Abdulrazak* ***lway.faisal@sulicihan.edu.krd*** *009647700616304* ***https://uni.sulicihan.edu.krd/qa/profile.php?id=64***

3. Total estimated time (Teaching Hours per Semester)

Total Contact Hours:	**52**
Total Self Study Hours:	**83**
Total No. Hours:	**135**
ECTS:	**5.00**

No. of Weeks	Contact Hours					Self-Study					
	Theoretical	Practical	Lab.	Project	Visit	Quiz	Reading	Assignment	Report	Midterm Exam.	Final Exam.
1st Week (Registration)	-	-	-	-	-	-	-	-	-	-	-
2nd Week	2	2					2			10	20
3rd Week	2	2					2		4		
4th Week	2	2					2				
5th Week	2	2					2	2			
6th Week	2	2					2		4		
7th Week	2	2					2				
8th Week	2	2					2			10	
9th Week	2	2				2	2		4		
10th Week	2	2					2				
11th Week	2	2					2				
12th Week	2	2					2				
13th Week	2	2					2		1		
14th Week	2	2					2				
15th Week (Final Exam.)		-	-	-	-	-	-	-	-	-	-
16th Week (Final Exam.)	-	-	-	-	-	-	-	-	-	-	-
TOTAL	**26**	**26**	**0**	**0**	**0**	**2**	**26**	**2**	**13**	**20**	**20**

4. Prerequisites (if applicable)

4.1 Curriculum-Related	*Computer Networks*
4.2 Skills-Related	*Computer Networking + Packet tracer lab*

5. Conditions (if applicable)

5.1. For the Theoretical	1. *Read and comprehend the textbook material.* 2. *Attend all the classes and take notes on class discussions.* 3. *Actively participate in class discussions and activities.* 4. *Submit all the assignments and the project on time.* 5. *Pass tests and quizzes.*

5.2. For the Practical	*All students are normally required to attend the Lab; take part in lectures through applying the exercises on the computer or as quizzes, and to implement projects.*

6. Cumulated Specific Competences

Professional Competencies	• *The professional competencies for network administration include configuring and managing network devices, ensuring network security, troubleshooting network issues, designing network architectures, documenting network configurations, staying updated on emerging technologies, communicating effectively, and embracing continuous learning.*
Transversal competences	• *The transversal competencies for network administration include critical thinking, problem-solving, adaptability, collaboration, and effective communication across diverse stakeholders.*

7. Discipline Objectives (Based on the cumulated specific Competences)

7.1. General Objective	• *The general objective of networking administration is to equip students with the knowledge, skills, and competencies needed to effectively design, configure, manage, and secure computer networks in organizations. The subject aims to develop professionals who can ensure network reliability, performance, and security, while also troubleshooting network issues and adapting to emerging technologies and industry trends.*

8. Content

Week	***8.1. Theoretical-Number of Hours***	***Teaching methods***	***Observation***
1	Registration		
2	Understanding the role of network administration in organizations Overview of network infrastructure components and protocols Introduction to network administration tools and software	lecture	***1 lecture = 2 hours***
3	Network design principles and best practices Planning and implementing network topology Network scalability and performance considerations	lecture,	***1 lecture = 2 hours***
4	Configuring network devices (routers, switches, firewalls) Network monitoring and management tools Troubleshooting network connectivity issues	lecture	***1 lecture = 2 hours***

5	Understanding network security threats and vulnerabilities Implementing network security measures (firewalls, access control, encryption) Network security auditing and risk assessment	lecture	***1 lecture = 2 hours***
6	TCP/IP protocols and addressing DNS (Domain Name System) and DHCP (Dynamic Host Configuration Protocol) Configuring network services (HTTP, FTP, SMTP)	lecture	***1 lecture = 2 hours***
7	Introduction to network virtualization technologies Implementing virtual networks using software-defined networking (SDN) Cloud networking and integration with virtualized environments	lecture	***1 lecture = 2 hours***
8	Wireless networking standards and protocols Configuring and securing wireless networks Mobile device management and integration with the network	lecture	***1 lecture = 2 hours***
9	Implementing network backup strategies and solutions Planning and testing network disaster recovery procedures Ensuring business continuity in network administration	lecture	***1 lecture = 2 hours***
10	Network troubleshooting methodologies and tools Analyzing network performance issues Implementing Quality of Service (QoS) for network optimization	Lecture,	***1 lecture = 2 hours***
11	Conducting network audits and security assessments Compliance standards and regulations (e.g., GDPR, HIPAA) Network monitoring for compliance and threat detection		
12	Automating network tasks using scripts and tools Introduction to SDN concepts and architectures Implementing network automation and SDN technologies	lecture	***1 lecture = 2 hours***
13	Documenting network configurations, policies, and procedures Creating network diagrams and documentation templates	lecture	***1 lecture = 2 hours***

	Reporting on network performance and security incidents		
14	Exploring emerging technologies in networking (e.g., IoT, 5G) Understanding the impact of AI and machine learning in network administration Future trends and challenges in network administration	lecture	***1 lecture = 2 hours***

9. Assessment

Type of Activity	*9.1. Assessment Criteria*[2]	*9.2. Assessment Type*	*9.3. Percentage of the final Grade*
9.4. Theoretical	Mid-term (20%)	Exam	***%30***
9.5. Practical/ Seminar/Laboratory	Final-Exam (30%) mid 15% and final 15%	Exam	***%40***
9.6. Activity during Semester	Quizzes (10%) + Assignment (10%)	Exam	***%30***
			Minimum performance Standards:

Theoretical Lecturer	***Dr.Lway Faisal***
Practice Lecturer	***Dr.Lway Faisal***

	Approved by the Curriculum development Committee:
1	*Asst. Prof. Dr. Lway Faisal Abdulrazak*
2	*Asst. Prof. Dr. Kusay Faisal Abdulrazak.*
3	*Dr.*Essen Bakir Khanber
Head of the Department/ Dean	Essen Bakir KhanberDr.