

*Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.*

*Academic Program Specification Form For The
Academic*

University: Baghdad University

College: Al-Khwarizmi collage of engineering

Number of Departments in the College:

Date of Form Completion:

Dean 's Name

Date : / /

Signature

Dean 's Assistant For Scientific Affairs

Date : / /

Signature

The College Quality Assurance And University Performance Manager

Date : / /

Signature

Quality Assurance And University Performance Manager

Date : / /

Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programmed Specification provides a concise summary of the main features of the programmed and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programmed.

1. Teaching Institution	University of Baghdad/Al Khwarizmi College of Engineering
2. University Department/Centre	Information and Communication Engineering
3. Programmed Title	Computer network
4. Title of Final Award	BSc degree in Information and Communication Engineering
5. Modes of Attendance offered	Attendance mode
6. Accreditation	Abet
7. Other external influences	
8. Date of production/revision of this specification	2023

9. Aims of the Programmed

The objective of this course is gaining an understanding of the concepts and techniques used to model and implement communications between processes residing on independent host computers. The course examines the conceptual framework for specifying a computer network - the network architecture, and investigates the set of rules and procedures that mediate the exchange of information between two communicating processes.

10. Learning Outcomes, Teaching, Learning and Assessment Methods

1. Knowledge and Understanding

At the completion of the course, students will be able to...

- A1. Understand the OSI Model and different computer network architecture
- A2. Understand the computer Networks operations
- A3. Able to design different computer networks
- A4. Able to use Packet Tracer software
- A5. Understand the Network devices operations
- A6. Understand the advance computer Networks operations

B. The skills goals special to the programmer.

In addition to the measurable student learning outcomes listed above, students enrolled in Computer Networks Course will be required to demonstrate their more in-depth knowledge of the course material by

- B1. Study different Networks in real Life Solving additional, more challenging exam problems and more practice.

Teaching and Learning Methods

Lectures, Presentations, Recitation and Documentations

Assessment methods

Quizzes 10%
Midterm 20%
Seminars 10%
Final 40%

C. Affective and value goals

- C1. Ability to apply knowledge of computer Networks according to market requirements.
- C2. Ability to identify, formulate and solve engineering problems.
- C3. Ability to use different techniques, skills and modern engineering tools necessary for engineering practice.

Teaching and Learning Methods

Lectures, Presentations, Recitation and Documentations

Assessment methods
homework 10% quizzes - 15% midterm -15% final exam +Report - 60%

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. Ability to design any computer Network. D2. Ability to use Packet Tracer D3 Ability to configure different Network devices D4 Ability to troubleshoot different Network problems.
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Teaching and Learning Methods

Lectures, Presentations, Recitation and Documentations
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Assessment Methods

homework 10% quizzes - 15% midterm -15% final exam +Report - 60%

11. Programme Structure	12. Awards and Credits
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Level/Year	Course or Module Code	Course or Module Title	Credit rating	
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3ed		Computer network		Bachelor Degree Requires (3) credits

13. Personal Development Planning

1. provide strong foundation in mathematical, scientific and engineering fundamentals necessary to analyze, formulate and solve engineering problems in the field of Information and Communication Engineering.
2. enhance the skills and experience in defining problems in Information and Communication Engineering design and implement, analyzing the experimental evaluations, and finally making appropriate decisions.

14. Admission criteria.

According to the rules of Ministry of Higher Education and Scientific Research in Iraq.

15. Key sources of information about the programmed

1. Books
2. Trusted Internet sources related to the Program
3. Papers

9. Learning Outcomes, Teaching, Learning and Assessment Method

A- Knowledge and Understanding

At the completion of the course, students will be able to...

- A1. Understand the OSI Model and different computer network architecture
- A2. Understand the computer Networks operations
- A3. Able to design different computer networks
- A4. Able to use Packet Tracer software
- A5. Understand the Network devices operations

A6.. Understand the advance computer Networks operations

B. Subject-specific skills

In addition to the measurable student learning outcomes listed above, students enrolled in Computer Networks Course will be required to demonstrate their more in-depth knowledge of the course material by

B1. Study different Networks in real Life Solving additional, more challenging exam problems and more practice .

Teaching and Learning Methods

Lectures, Presentations, Recitation and Documentations

Assessment methods

Quizzes 10%
Midterm 20%
Seminars 10%
Final 40%

C. Affective and value goals

C1. Ability to apply knowledge of computer Networks according to market requirements.

C2. Ability to identify, formulate and solve engineering problems.

C3. Ability to use different techniques, skills and modern engineering tools necessary for engineering practice

Teaching and Learning Methods
Lectures, Presentations, Recitation and Documentations
Assessment methods
Quizzes 10% Midterm 20% Seminars 10% Final 40%

<p>D. General and rehabilitative transferred skills(other skills relevant to employability and personal development)</p> <p>D1. Ability to design any computer Network.</p> <p>D2. Ability to use Packet Tracer</p> <p>D3 Ability to configure different Network devices</p> <p>D4 Ability to troubleshoot different Network problems.</p>
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11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	3	Explore the Network 1. Globally Connected Data 2. LANs, WANs 3. The Network as a Platform 4. Distributed Processing 5. Network Criteria 6. Physical Structures 7. Network Models 8. Categories of Networks 9. The Changing Network Environment	Data Communication and Networking Introduction	Classroom with whiteboard	Quizzes
2	3	THE INTERNET 1. A Brief History 2. The Internet Today PROTOCOLS AND STANDARDS 3. Protocols 4. Standards 5. Standards Organizations	Data Communication and Networking Introduction	Classroom with whiteboard	Quizzes

		6. Internet Standards			
3	3	LAYERED TASKS 1. Sender, Receiver, and Carrier 2. Hierarchy 3. THE OSI MODEL 4. Layered Architecture 5. Peer-to-Peer Processes 6. Encapsulation	Network Models	Classroom with whiteboard	Quizzes
4	3	LAYERS IN THE OSI MODEL 1. Physical Layer 2. Data Link Layer 3. Network Layer 4. Transport Layer 5. Session Layer 6. Presentation Layer 7. Application Layer 8. Summary of Layers	Network Models	Classroom with whiteboard	Quizzes
5	3	TCP/IP PROTOCOL SUITE 1. Physical and Data Link Layers 2. Network Layer 3. Transport Layer 4. Application Layer ADDRESSING 1. Physical Addresses 2. Logical Addresses 3. Port Addresses 4. Specific Addresses	Network Models	Classroom with whiteboard	Quizzes
6	3	GUIDED MEDIA 1. Twisted-Pair Cable 2. Coaxial Cable Fiber-Optic Cable UNGUIDED MEDIA: WIRELESS 1. Radio Waves 2. Microwaves 3. Infrared	Transmission Media	Classroom with whiteboard	Quizzes
7	3	CIRCUIT-SWITCHED NETWORKS 1. Three Phases 2. Efficiency 3. Delay 4. Circuit-Switched Technology in Telephone Networks DATAGRAM NETWORKS 1. Routing Table 2. Efficiency 3. Delay 4. Datagram Networks in the Internet	Switching	Classroom with whiteboard	Quizzes
8	3	VIRTUAL-CIRCUIT NETWORKS 1. Addressing 2. Three Phases 3. Efficiency 3. Delay in Virtual-Circuit Networks 4. Circuit-Switched Technology in WANs STRUCTURE OF A SWITCH 1. Structure of Circuit Switches 2. Structure of Packet Switches	Switching	Classroom with whiteboard	Quizzes
9	3	CONNECTING DEVICES 1. Passive Hubs 2. Repeaters 3. Active Hubs 4. Bridges	Connecting LANs, Backbone Networks, and Virtual LANs	Classroom with whiteboard	Quizzes

		5. Two-Layer Switches 6. Routers			
10	3	7. Three-Layer Switches 8. Gateway BACKBONE NETWORKS 1. Bus Backbone 2. Star Backbone 3. Connecting Remote LANs	Connecting LANs, Backbone Networks, and Virtual LANs	Classroom with whiteboard	Quizzes
11	3	VIRTUAL LANs 1. Membership 2. Configuration 3. Communication Between Switches 4. IEEE Standard 5. Advantages Review Questions	Connecting LANs, Backbone Networks, and Virtual LANs	Classroom with whiteboard	Quizzes
12	3	INTRODUCTION 1 Nodes and Links 2 Services 3 Two Categories of Links 4 Two Sublayers LINK-LAYER ADDRESSING .1 Three Types of addresses	Data-Link Layer	Classroom with whiteboard	Quizzes
13	3	2 Address Resolution Protocol (ARP) 3 An Example of Communication	Data-Link Layer	Classroom with whiteboard	Quizzes
14	3	IPv4ADDRESSES 1. Address Space 2. Notations 3. Classful Addressing	Network Layer: Logical Addressing	Classroom with whiteboard	Quizzes
15	3	3. Classful Addressing	Network Layer: Logical Addressing	Classroom with whiteboard	Quizzes

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Text book 1 : "Data communication and networking by Behrouze Frouzan edition 4 th ed. Text book 2 : "Data communication and networking by Behrouze Frouzan edition 5 th ed. CCNA r&s
Special requirements (include for example workshops, periodicals, IT software, websites)	Putty Packet tracer v6.3.
Community-based facilities (include for example, guest Lectures , internship , field studies)	Summer training, Scientific visits.

13. Admissions	
Pre-requisites	Fundamentals of Telecommunications, Electromagnetic.
Minimum number of students	

Maximum number of students	30
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