

*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 Programme Specification provides a concise summary of the main features of the programme 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 programme.

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| 1. Teaching Institution | University of Baghdad/Al_Khwarizmi College of Engineering |
| 2. University Department/Centre | Information and Communication Engineering |
| 3. Programme Title | network protocols |
| 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 Programme | |
| The objective of this course is gain 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.

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| Teaching and Learning Methods |
| Lectures, Presentations, Recitation and Documentations |
| Assessment methods |
| <p>homework 10%</p> <p>quizzes - 15%</p> <p>midterm -15%</p> <p>final exam +Report - 60%</p> |

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|---|
| <p>D. General and Transferable 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> |
| Teaching and Learning Methods |
| Lectures, Presentations, Recitation and Documentations |
| Assessment Methods |
| <p>homework 10%</p> <p>quizzes - 15%</p> <p>midterm -15%</p> <p>final exam +Report - 60%</p> |

| 11. Programme Structure | | | | 12. Awards and Credits |
|-------------------------|-----------------------|------------------------|---------------|---|
| Level/Year | Course or Module Code | Course or Module Title | Credit rating | |
| 3ed | | Network protocols | | Bachelor Degree Requires (3) credits |
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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 programme

1. Books

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

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TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course 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 should be cross-referenced with the programme specification.

| | |
|---|---|
| 1. Teaching Institution | |
| 2. University Department/Centre | University of Baghdad/Al_Khwarizmi College of Engineering |
| 3. Course title/code | Computer Network |
| 4. Modes of Attendance offered | attendance mode |
| 5. Semester/Year | 2 nd semester/ 3ed year |
| 6. Number of hours tuition (total) | 45 |
| 7. Date of production/revision of this specification | 2023 |
| University of Baghdad/Al_Khwarizmi College of Engineering | |
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9. Learning Outcomes, Teaching ,Learning and Assessment Methode

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%

D. General and rehabilitative transferred 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.

12. Infrastructure

Required reading:

- CORE TEXTS
- COURSE MATERIALS
- OTHER

Text book 1 : "Data communication and networking by Behrouze Frouzan edition 4th ed.
 Text book 2 : "Data communication and networking by Behrouze Frouzan edition 5th ed.
 CCNA r&s

11. Course Structure

| Week | Hours | ILOs | Unit/Module or Topic Title | Teaching Method | Assessment Method |
|------|-------|---|--------------------------------------|---------------------------|-------------------|
| 1 | 3 | IPv4ADDRESSES 1. Address Space 2. Notations 3. Classful Addressing | Network Layer: Logical Addressing | Classroom with whiteboard | Quizzes |
| 2 | 3 | 3. Classful Addressing | Network Layer: Logical Addressing | Classroom with whiteboard | Quizzes |
| 3 | 3 | 4. Classless Addressing | Network Layer: Logical Addressing | Classroom with whiteboard | Quizzes |

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|----|---|---|---|---------------------------|---------|
| 4 | 3 | Classful Addressing And Classless Addressing Examples | Network Layer: Logical Addressing | Classroom with whiteboard | Quizzes |
| 5 | 3 | Network Address Translation (NAT) IPv6 ADDRESSES 1. Structure 2. Address Space | Network Layer: Logical Addressing | Classroom with whiteboard | Quizzes |
| 6 | 3 | INTERNETWORKING 1. Need for Network Layer 2. Internet as a Datagram Network 3. Internet as a Connectionless Network | Network Layer: Internet Protocol | Classroom with whiteboard | Quizzes |
| 7 | 3 | IPv4 1. Datagram | Network Layer: Internet Protocol | Classroom with whiteboard | Quizzes |
| 8 | 3 | 2. Fragmentation 3. Checksum 4. Options | Network Layer: Internet Protocol | Classroom with whiteboard | Quizzes |
| 9 | 3 | IPv6 protocol 1. Advantages 2. Packet Format | Network Layer: Internet Protocol | Classroom with whiteboard | Quizzes |
| 10 | 3 | 3. Extension Headers protocol TRANSITION FROM IPv4 TO IPv6 1. Dual Stack 1. Tunneling 604 3. Header Translation | Network Layer: Internet Protocol | Classroom with whiteboard | Quizzes |
| 11 | 3 | PROCESS-TO-PROCESS DELIVERY protocol 1. Client/Server Paradigm 2. Multiplexing and DE multiplexing 3. Connectionless Versus Connection-Oriented Service 4. Reliable Versus Unreliable 5. Three Protocols | Process-to-Process Delivery: UDP, TCP. | Classroom with whiteboard | Quizzes |
| 12 | 3 | USER DATAGRAM PROTOCOL (UDP) 1. Well-Known Ports for UDP 2. User Datagram 3. Checksum | Process-to-Process Delivery: UDP, TCP. | Classroom with whiteboard | Quizzes |
| 13 | 3 | TCP protocol 1. TCP Services 2. TCP Features 3. Segment | Process-to-Process Delivery: UDP, TCP. | Classroom with whiteboard | Quizzes |
| 14 | 3 | 4. A TCP Connection protocols 5. Flow Control 6. Error Control 7. Congestion Control | Process-to-Process Delivery: UDP, TCP. | Classroom with whiteboard | Quizzes |
| 15 | 3 | General Review | - | Classroom with whiteboard | Quizzes |

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| 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. |

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| 13. Admissions | |
| Pre-requisites | Fundamentals of Telecommunications, Electromagnetic. |
| Minimum number of students | |
| Maximum number of students | 30 |