

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: University of Baghdad
College : AlKhwarizmi College of Engineering
Number Of Departments In The College :
Date Of Form Completion : October, 2021

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.

1. Teaching Institution	University of Baghdad/Al_Khwarizmi College of Engineering
2. University Department/Centre	Information and Communication Engineering
3. Programme Title	Antenna Theory
4. Title of Final Award	BSc degree in Information and Communication Engineering
5. Modes of Attendance offered	Attendance is according to the university rules in 2023-2024 (Full-Time)
6. Accreditation	Abet
7. Other external influences	
8. Date of production/revision of this specification	2023
9. Aims of the Programme	
Students will be introduced to antennas, their principle of operation, analysis and their applications.	

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A- Knowledge and Understanding

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

A1. Demonstrate the knowledge and understanding of the fundamental concepts, principles and theories underpinning antenna design and theory in addition to principles of wave propagation with core knowledge in: Maxwell's equations, antennas and radiating system.

A2. understand process design and use integrated approaches to solve complex problems;

A3 demonstrate achievement of a subject knowledge, particularly via seminars,

A4. Review of modern applications in this field

B. Subject-specific skills

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

B1. Solving additional, more challenging exam problems.

B2. Identify appropriate design and governance problems and formulate clear objectives using analytical data.

B3. Develop design briefs with clarity graphically and/or in written specifications

Teaching and Learning Methods

Lectures, Presentations, Recitation and Documentations

Assessment methods

homework 10%

quizzes+ oral exam - 20%

midterm -10%

final exam - 60%

C. Affective and value goals

C1. To introduce the basic mathematical concepts related to antenna theory.

C2. To impart knowledge on the concepts of antenna theory and design.

C3. To impart knowledge on the concepts of antenna arrays.

C4. To impart knowledge on the concepts of types of antennas.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. Ability to design and conduct experiments.

D2. Ability to design a system, component or process to meet desired needs

Teaching and Learning Methods

Lectures, Presentations, Recitation and Documentations

Assessment Methods

homework 10%

quizzes+ oral exam - 20%
 midterm -10%
 final exam - 60%

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
2 nd		Antenna theory		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.
3. enhance their skills and embrace new Information and Communication Engineering Technologies through self-directed professional development and post-graduate training or education.

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.

9. Learning Outcomes, Teaching ,Learning and Assessment Methode

B- Knowledge and Understanding

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

A1. Demonstrate the knowledge and understanding of the fundamental concepts, principles and theories underpinning antenna design and theory in addition to principles of wave propagation with core knowledge in: Maxwell's equations, antennas and radiating system.

A2. understand process design and use integrated approaches to solve complex problems;

· A3 demonstrate achievement of a subject knowledge, particularly via seminars,

· A4. Review of modern applications in this field

B. Subject-specific skills

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

B1. Solving additional, more challenging exam problems.

B2. Identify appropriate design and governance problems and formulate clear objectives using analytical data.

B3. Develop design briefs with clarity graphically and/or in written specifications;

Teaching and Learning Methods

Lectures, Presentations, Recitation and Documentations

Assessment methods

homework 10%

quizzes+ oral exam - 20%

midterm -10%

final exam - 60%

C. Affective and value goals

C1. To introduce the basic mathematical concepts related to antenna theory.

C2. To impart knowledge on the concepts of antenna theory and design.

C3. To impart knowledge on the concepts of antenna arrays.

C4. To impart knowledge on the concepts of types of antennas.

Teaching and Learning Methods

Assessment methods

homework 10%

quizzes+ oral exam - 20%

midterm -10%

final exam - 60%

D. General and rehabilitative transferred skills(other skills relevant to employability and personal development)

D1. Ability to design and conduct experiments.

D2. Ability to design a system, component or process to meet desired needs

D3 Ability to understand the design of different types of antennas.

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
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1	3	Identify basic antenna parameter	Fundamentals of Antennas	Classroom whiteboard	with	Quizzes
2	3	Identify basic antenna parameter	Fundamentals of Antennas	Classroom whiteboard	with	Quizzes
3	3	Identify basic antenna parameter	Fundamentals of Antennas	Classroom whiteboard	with	Quizzes
4	3	Design and analyze wire and aperture antennas	Point Sources	Classroom whiteboard	with	Quizzes
5	3	Design and analyze wire and aperture antennas	Point Sources	Classroom whiteboard	with	Quizzes
6	3	Design and analyze wire and aperture antennas	The Electric Dipole & Thin Linear Antennas	Classroom whiteboard	with	Quizzes
7	3	Design and analyze wire and aperture antennas	The Electric Dipole & Thin Linear Antennas	Classroom whiteboard	with	Quizzes
8	3	Design and analyze wire and aperture antennas	The Loop Antenna	Classroom whiteboard	with	Quizzes
9	3	Design and analyze antenna arrays	Antenna arrays	Classroom whiteboard	with	Quizzes
10	3	Design and analyze antenna arrays	Antenna arrays	Classroom whiteboard	with	Quizzes
11	3	Identify the common antenna types	Some Common Antenna Types	Classroom whiteboard	with	Quizzes
12	3	Identify the common	Some Common Antenna Types	Classroom whiteboard	with	Quizzes

		antenna types			
13	3	Identify the common antenna types	Some Common Antenna Types	Classroom whiteboard	with Quizzes
14	3	Analyze wireless transmit-receive systems	Antennas in communication systems.	Classroom whiteboard	with Quizzes
15	3	Smart Antenna	Concept and benefits of smart antennas, Fixed weight beamforming basics, Adaptive beamforming	Classroom whiteboard	with Quizzes

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Text book 1 : "Engineering Electromagnetics " W.H. Hayt , J. A. Buck. Text book 2 : "Electromagnetic waves and radiation system", E. C. Jordan and Balman.
Special requirements (include for example workshops, periodicals, IT software, websites)	Nil.
Community-based facilities (include for example, guest Lectures , internship , field studies)	Summer training, Scientific visits.