Ministry of Higher Education and Scientific Research
Supervision and Scientific Evaluation Body
Quality Assurance and Academic Accreditation Department
Accreditation Section

Academic Program and Course Description Department of Electronic Technologies and Communications — Cybersecurity Branch —

2026

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Introduction

The educational program is a coordinated and organized package of courses comprising procedures and experiences structured as study units, whose primary purpose is to build and refine the skills of graduates, making them qualified to meet the requirements of the labor market. It is reviewed and evaluated annually through internal or external audit procedures and programs, such as the external examiner program.

The academic program description provides a concise summary of the main features of the program and its courses, indicating the skills to be acquired by students based on the objectives of the academic program. The importance of this description lies in the fact that it represents the cornerstone for obtaining program accreditation, and it is written collectively by the teaching staff under the supervision of the scientific committees in the departments.

This guide, in its second edition, includes a description of the academic program after updating the items and paragraphs of the previous guide in light of the developments of the educational system in Iraq. It encompasses the traditional academic program description (annual and semester systems), in addition to adopting the academic program description circulated under the letter of the Department of Studies No. T/M/2906/3 dated 3/5/2023 regarding programs adopting the Bologna pathway.

In this context, we emphasize the importance of writing academic program and course descriptions to ensure the proper conduct of the educational process.

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Concepts and Terminology

Academic Program Description: Provides a concise summary of the program's vision, mission, and objectives, including a precise description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a concise summary of the most important characteristics of the course and the learning outcomes expected from the student. It is derived from the program description.

Program Vision: An ambitious image of the future of the academic program to be an advanced, inspiring, motivating, realistic, and applicable program.

Program Mission: Clarifies the objectives and activities needed to achieve them concisely, and defines the development paths and directions of the program.

Program Objectives: Statements that describe what the academic program intends to achieve within a specific time period, and are measurable and observable.

Curriculum Structure: All courses/study materials included in the academic program according to the adopted learning system (semester, annual, Bologna pathway), whether requirements of the Ministry, University, College, or Department, with the number of credit units.

Learning Outcomes: A coherent set of knowledge, skills, and values acquired by the student after successfully completing the academic program. Learning outcomes must be specified for each course in a way that achieves the program objectives.

Teaching and Learning Strategies: Strategies used by faculty members to develop student teaching and learning; plans followed to reach learning objectives, describing all classroom and extracurricular activities.

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Academic Program Description Form

University Name:	Al-Furat Al-Awsat Technical University
College / Institute:	Technical Institute – Najaf
Department:	Department of Electronic and Communications Technologies / Cybersecurity Branch
Program Name:	Technical Diploma
Final Degree Title:	Technical Diploma in Cybersecurity Sciences
Study System:	Annual
Description Preparation Date:	2026
File Completion Date:	2 / 5 / 2026

Signature :

Head of Department Name :

Ahmed Fahim Ibrahim

Date :

Signature :

Scientific Associate Name:

Salah Mahdi Saleh

Date : 23/2/2026

Director of the Quality Assurance and University Performance Department:

Dr. Zaid Abdulkareem ALhamidawi

Date: 24/02/2026

Signature:

Approval of the Dean

Prof. Dr. Haider Hassan Abd Hussein

1. Program Vision

The Technical Institute – Najaf aspires, through its educational programs, to provide a technical education system based on the requirements and needs of society and service institutions related to the specialization, in a manner that serves the required civil development.

2. Department Mission

To work toward achieving the goals and aspirations of the department by providing a suitable educational environment and equipping all necessary material and human resources to achieve that. To graduate cohorts capable of serving society by providing scientific, engineering, and technical competence through technical education in accordance with internationally accredited quality standards.

3. Educational Program Objectives

1. Technical Knowledge: Providing basic knowledge in the principles of electronic technologies in general, and computer technologies, communications, and cybersecurity in particular, alongside the knowledge necessary to support mathematics, communication principles, and fundamentals of electronic technology and cybersecurity.

2. Technical Skills: Developing the technical skills necessary for implementing and designing laboratory and field projects. Also developing the ability to formulate projects, solve problems, and develop a practical plan to benefit from technical knowledge and diverse skills.

3. Communication Skills: Developing the ability to organize and present information effectively, whether verbally, in writing, or through graphs and statistics.

4. Professional Preparation: Providing a broad appreciation of the problems arising in professional practice.

4. Program Accreditation

None

5. External Influences

None

6. Program Structure

Requirement Type	Course Names	Credit Hours	Percentage & Count
Institution Requirements (General)	Baath Party Crimes Human Rights and Democracy Elective 1 (E1) Elective 2 (E2)	2 4 2 2	8% (10 units total)
College Requirements (Supporting)	Engineering Drawing Computer Applications I Computer Applications II Mathematics Maintenance Workshop Electrical Circuits & Measurements Electronics Digital Circuits Laboratory Occupational Safety	6 6 6 4 8 8 8 8 8 2	24% (30 units total)
Department Requirements (Core)	Communication Systems Communication Devices Electronic Circuits Laser Technology Microwaves Computer Networks Microcontroller / PLC Programmable Logic Final Project Internship	8 8 8 8 8 3 3 3 4 —	68% (84 units 13 courses)

7. Program Description

First: First Year Study Subjects

#	Course Name	Type	Theory Hrs	Prac. Hrs	Total Hrs	Units
1	Introduction to Information Systems	Core	2	3	5	5
2	Fundamentals of Programming	Core	2	3	5	5
3	Engineering Drawing	Support	–	4	4	4
4	Fundamentals of Electrical Engineering	Core	2	3	5	5
5	Mathematics 1 (Semester 1)	Core	4	–	4	4
6	Human Rights and Democracy	Support	2	–	2	2
7	Arabic Language 1 (Semester 1)	Support	2	–	2	2
8	Digital Logic Design	Core	2	3	5	5
9	Python for Cybersecurity	Core	2	3	5	5
10	Database Systems	Core	2	3	5	5
11	Linux Fundamentals	Support	2	3	5	5
12	Mathematics 2 (Semester 2)	Support	4	–	4	4
13	Engineering Workshops	Support	–	4	4	4
14	English Language 1	General	1	1	2	2

Second: Second Year Study Subjects

#	Course Name	Type	Theory Hrs	Prac. Hrs	Total Hrs	Units
1	Cybersecurity Fundamentals	Core	2	3	5	5
2	Fundamentals of Cryptography	Core	2	3	5	5
3	Computer Networks	Core	2	3	5	5
4	General Physics	Core	2	2	4	4
5	Final Project 1	Core	–	4	4	4
6	Arabic Language 2	Support	2	–	2	2
7	English Language 2	General	1	1	2	2
8	Advanced Cybersecurity	Core	2	3	5	5
9	Web Penetration Testing	Support	2	3	5	5
10	Network Security	Core	2	3	5	5
11	Ethics for the Information Age	General	3	–	3	3
12	Final Project 2	Core	–	4	4	4
13	Baath Party Crimes	General	2	–	2	2

8. Expected Program Learning Outcomes

A – Knowledge

1. Ability to apply knowledge in mathematics, computers, and fundamentals of electronic technologies.

2. Knowledge of the fundamentals of electrical and electronic circuits, measurement methods, and mathematical analysis.

3. Knowledge of communication fundamentals, modern technologies in communications, and computer networks.

4. Knowledge of occupational safety principles at work sites and their implementation mechanisms.

B – Skills

1. Ability to design and conduct experiments.

2. Ability to operate and maintain devices and equipment.

3. Ability to design and analyze using design and simulation software.

4. Ability to use modern technical methods, skills, and tools necessary for technical work and cybersecurity.

C – Values

1. Learning leadership and teamwork skills.

2. Learning professional ethical conduct and adherence to laws and regulations.

3. Knowledge of instructions and regulations related to environmental protection and sustainable development.

4. Taking responsibility for assigned work, adhering to deadlines, and demonstrating transparency and professionalism.

10. Teaching and Learning Strategies

1. Lecture and Presentation Strategy.
2. Practical Examples Strategy.
3. Discussion Strategy.
4. Practice Retrieval Strategy.

11. Assessment Methods

1. Written Examinations.
2. Practical Laboratory Examinations.
3. Oral Examinations.
4. Weekly Reports.
5. Extracurricular Activities.

12. Teaching Staff

Academic Rank	Specialization	Permanent Staff	Visiting Staff	Special Requirements
Asst. Prof. (PhD)	General / Specific	3	—	—
Lecturer (PhD)	General / Specific	1	4	—
Asst. Lecturer	General / Specific	4	—	—

Orientation of New Faculty Members

New faculty members are assigned practical courses until they gain sufficient competence and training, after which they are assigned theoretical courses. Their performance is evaluated by the department head using established evaluation tools, and the level of student interaction and course delivery is assessed.

Professional Development for Faculty Members

1. Holding training courses and workshops in the field of teaching methods.

2. Holding scientific courses, seminars, and workshops in the field of scientific research and its mechanisms.

3. Holding training courses in the field of educational counseling.

4. Holding courses and workshops in the field of familiarization with functional laws, regulations, and student evaluation methods.

5. Activating the role of continuing education in the department and holding seminars, workshops, and scientific courses in the field of specialization.

13. Admission Criteria

Centralized Admission.

14. Major Sources of Information about the Program

1. Study Materials Curriculum Guide issued by the Curriculum Development Deans Committee.

2. Student Affairs and Centralized Admission Procedures Guide.

3. University Examination Administration Guide.

4. Strategic Plan of the Najaf Technical Institute.

15. Program Development Plan

The educational program objectives are reviewed periodically every three years to update them in line with developments in the workplace. Some faculty members visit work-site samples to observe developments and prepare necessary recommendations for the department, in order to review the educational objectives of the academic program and make necessary changes in accordance with the developments noted in the study prepared by the employer coordination committee, while taking into account that the changes do not deviate from the Institute's vision.

Program Skills Map

The table below maps each course to the required program learning outcomes. A = Knowledge, B = Skills, C = Values. ● = learning outcome addressed.

Course Name	Type	Year	A – Knowledge				B – Skills				C – Values			
			A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
Intro to Information Systems	Core	Y1	●	●		●	●	●	●		●			
Digital Logic Design	Core	Y1	●	●		●	●	●	●		●			
Fundamentals of Programming	Core	Y1	●	●			●	●	●		●			
Python for Cybersecurity	Core	Y1	●	●		●	●	●	●		●			
Fundamentals of Elec. Engr.	Core	Y1	●	●	●		●	●			●			
Engineering Workshops	Core	Y1	●	●	●		●	●	●		●	●		
Database Systems	Core	Y1	●	●	●		●	●	●		●	●		
Occupational Safety	Core	Y1				●					●	●	●	
Computer Applications	Support	Y1		●		●	●	●						
Mathematics	Support	Y1	●				●							
Engineering Drawing	Support	Y1	●	●			●	●	●					
English Language 1	General	Y1									●	●	●	
Human Rights	General	Y1									●	●	●	●
Arabic Language 1	General	Y1									●	●	●	●
Cybersecurity Fundamentals	Core	Y2	●	●	●	●	●	●	●	●	●			
Fundamentals of Cryptography	Core	Y2	●	●	●	●	●	●	●	●	●			
Advanced Cybersecurity	Core	Y2	●	●	●	●	●	●	●	●	●			
General Physics	Core	Y2	●	●	●	●	●	●	●	●	●	●		
Web Penetration Testing	Core	Y2	●	●	●	●	●	●	●	●	●	●		
Computer Networks	Core	Y2	●	●	●	●	●	●	●	●	●	●	●	
Network Security	Core	Y2	●	●	●	●	●	●	●	●	●	●		
Final Project	Core	Y2	●	●	●	●	●	●	●	●	●	●	●	●
Professional Ethics	Support	Y2	●	●	●	●	●	●	●	●	●	●		
Ethics for Information Age	Support	Y2	●	●	●	●	●	●	●	●	●	●		
Arabic Language 2	Support	Y2									●	●	●	●
English Language 2	General	Y2												●
Baath Party Crimes	General	Y2												●

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Database Systems

Academic Year / Level	Theory Hours/Week	Practical Hours/Week	Total Hours/Week
Year 1 / Semester 2	2	3	5
Teaching Language	**Course Name (Arabic)**	**Course Name (English)**	
English	Database Systems	Database Systems	

➢ General Course Objective:

The objective of this course is to provide students with a foundational understanding of relational databases and practical skills in using MySQL. By the end of the course, students will be able to design, create, and manage databases, perform basic SQL queries, and apply database concepts to solve real-world problems.

— Theoretical Aspect —

Week	Material Covered
Week 1	Introduction to Databases: Definition, purpose, types, introduction to MySQL.
Week 2	Database Components: Tables, rows, columns, schemas, relational concepts.
Week 3	Creating Databases and Tables in MySQL.
Week 4	Data Types in MySQL: INT, VARCHAR, DATE, etc.
Week 5	Inserting and Viewing Data: INSERT, UPDATE, DELETE, SELECT.
Week 6	Simple Queries: SELECT with WHERE clauses and ORDER BY.
Week 7	Introduction to Relationships: one-to-one, one-to-many, many-to-many.
Week 8	JOINs: Overview and simple examples of INNER JOIN.
Week 9	Aggregating Data: COUNT, SUM, AVG, MIN, MAX.
Week 10	Sorting and Filtering Data using multiple conditions.
Week 11	Normalization Basics: 1NF and 2NF.
Week 12	Indexes and Keys: primary keys, foreign keys, simple indexing.
Week 13	Basic Database Design: designing a simple schema for real-world applications.
Week 14	Review and Practice: all topics with examples and discussions.
Week 15	Final Project Discussion: applying all learned concepts.

— Practical Aspect —

Week	Material Covered
Week 1	Install MySQL Server and Workbench. Create first database.
Week 2	Create tables with different data types. Insert and view simple data.
Week 3	Perform basic CRUD operations: INSERT, UPDATE, DELETE, SELECT.
Week 4	Use WHERE clauses to filter data and ORDER BY to sort.

Week 5	Explore aggregate functions (SUM, AVG, COUNT) and GROUP BY.
Week 6	Create relationships using primary and foreign keys.
Week 7	Practice INNER JOIN to combine data from related tables.
Week 8	Design a simple database schema (library or online store).
Week 9	Create a normalized database design (1NF and 2NF).
Week 10	Add constraints: NOT NULL, UNIQUE, PRIMARY KEY.
Week 11	Create and use basic indexes for faster queries.
Week 12	Start a mini project (student records or product inventory).
Week 13	Continue project: insert sample data and test JOINs and queries.
Week 14	Finalize project: document structure and prepare example queries.
Week 15	Present project, explaining design and demonstrating queries.

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Digital Logic Design

Academic Year / Level	Theory Hours/Week	Practical Hours/Week	Total Hours/Week
Year 1 / Semester 2	2	3	5
Teaching Language	**Course Name (Arabic)**	**Course Name (English)**	
English	الرقمي المنطقي التصميم	Digital Logic Design	

➢ General Course Objective:

The main objective is to introduce students to the principles of digital logic design and how to apply these principles in designing and building digital circuits, using logic gates, Karnaugh maps, and other logical tools.

— Theoretical Aspect —

Week	Material Covered
Week 1	Number systems: decimal, binary, octal — conversions and operations.
Week 2	Number systems: hexadecimal, BCD — conversions and operations.
Week 3	Number systems: excess-3, gray code — conversions, operations, complements.
Week 4	Logic gates: AND, OR, NOT.
Week 5	Logic gates: NAND, NOR, XOR, XNOR.
Week 6	Logic simplification: Boolean theorem.
Week 7	Logic simplification: De Morgan's theorem.
Week 8	Karnaugh maps: 2-variable and 3-variable.
Week 9	Karnaugh maps: 4-variable (SOP, POS, don't care).
Week 10	Arithmetic operations: adder, parallel binary adder.
Week 11	Arithmetic operations: subtractor, adder-subtractor circuit.
Week 12	Arithmetic operations: decoder, encoder.
Week 13	Arithmetic operations: multiplexer, demultiplexer.
Week 14	Flip-flop types and operation.
Week 15	Synchronous and asynchronous counters.

— Practical Aspect —

Week	Material Covered
Week 1	Lab 1: Logic gates — NOT, AND, OR.
Week 2	Lab 2: Logic gates — NOR, NAND.
Week 3	Lab 3: Logic gates — XOR, XNOR.
Week 4	Lab 4: Boolean theorem.
Week 5	Lab 5: De Morgan's law.

Week 6	Lab 6: Karnaugh map.
Week 7	Lab 7: SOP.
Week 8	Lab 8: POS, don't care.
Week 9	Combinational circuits: half adder, full adder.
Week 10	Combinational circuits: half subtractor, full subtractor.
Week 11	Decoder and encoder circuits.
Week 12	Multiplexer and demultiplexer circuits.
Week 13	Flip-flop latch.
Week 14	Counters.
Week 15	Final-term exams.

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Computer Networks

Academic Year / Level	Theory Hours/Week	Practical Hours/Week	Total Hours/Week
Year 2 / Semester 1	2	3	5
Teaching Language	**Course Name (Arabic)**	**Course Name (English)**	
English	الحاسوب شبكات	Computer Networks	

➢ General Course Objective:

Introduce the fundamental concepts of computer networks, including protocols, IP addressing, network devices, and topology. This course builds the foundation for understanding secure networking.

— Theoretical Aspect —

Week	Material Covered
Week 1	Introduction to Networking.
Week 2	Overview of LAN, WAN, MAN with Real-Life Examples.
Week 3	OSI Model vs. TCP/IP Model.
Week 4	IP Addressing and Subnetting.
Week 5	Ethernet and Cabling Standards.
Week 6	Switching Basics.
Week 7	Routing Basics.
Week 8	Network Protocols.
Week 9	Mid-term Exams.
Week 10	DHCP and DNS.
Week 11	MAC Addressing and ARP.
Week 12	Wireless Networking, WPA and WPA2.
Week 13	Routing Protocols: RIP, OSPF.
Week 14	Network Monitoring.
Week 15	Final Review and Assessment.

— Practical Aspect —

Week	Material Covered
Week 1	Set up a simple home network using a router and connect multiple devices.
Week 2	Create diagrams of LAN, WAN, and MAN networks using real-world scenarios.
Week 3	Use Wireshark to capture packets and identify OSI/TCP/IP layer information.
Week 4	Practice subnetting exercises and configure IP addresses on network devices.
Week 5	Identify Cat5e, Cat6, and fiber optic cables; test connectivity between devices.

Week 6	Set up VLANs and configure switch ports in a lab environment.
Week 7	Configure static routes on routers to connect different subnets.
Week 8	Analyze protocols (HTTP, FTP, ICMP) using Wireshark packet captures.
Week 9	Mid-term Exams.
Week 10	Set up a DNS server and DHCP server to assign IPs dynamically.
Week 11	Use arp command to map IP addresses to MAC addresses and observe ARP tables.
Week 12	Configure a secure Wi-Fi network using WPA2 and capture handshake packets.
Week 13	Configure dynamic routing with RIP and OSPF on Cisco routers or simulators.
Week 14	Use tools like NetFlow, SNMP, or Wireshark to monitor network traffic.
Week 15	Final report.

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Network Security

Academic Year / Level	Theory Hours/Week	Practical Hours/Week	Total Hours/Week
Year 2 / Semester 2	2	3	5
Teaching Language	**Course Name (Arabic)**	**Course Name (English)**	
English	الشبكات أمن	Network Security	

➢ General Course Objective:

Equip students with knowledge about securing networks through access control, firewalls, encryption, and intrusion detection.

— Theoretical Aspect —

Week	Material Covered
Week 1	Network Security Basics.
Week 2	Common Network Attacks: DoS, MITM.
Week 3	Firewall Configuration.
Week 4	VPNs and Tunneling.
Weeks 5–6	Intrusion Detection Systems (IDS) and Intrusion Prevention Systems (IPS).
Week 7	Network Vulnerability Scanning.
Week 8	Wireless Network Security.
Week 9	Mid-term Exams.
Week 10	Access Control Lists (ACL).
Week 11	DDoS Protection.
Week 12	Network Encryption.
Week 13	Network Security Monitoring.
Week 14	Log Analysis.
Week 15	Final Review and Assessment.

— Practical Aspect —

Week	Material Covered
Week 1	Explore Security Concepts.
Week 2	Simulate a DoS and MITM attack using Hping3 and Ettercap.
Week 3	Configure a firewall (iptables or pfSense) to block unauthorized access.
Week 4	Set up a VPN using OpenVPN or WireGuard and test secure data tunneling.
Weeks 5–6	Install and configure an IDS/IPS (e.g., Snort) and monitor alerts.
Week 7	Perform vulnerability scanning using Nmap and Nessus.

Week 8	Set up a secure Wi-Fi network using WPA2 and test for vulnerabilities.
Week 9	Mid-term Exams.
Week 10	Configure ACLs on routers and switches to control access.
Week 11	Configure DDoS mitigation tools and monitor network traffic.
Week 12	Set up encrypted communications (TLS/SSL) and analyze certificates using OpenSSL.
Week 13	Use Wireshark and Suricata to monitor network traffic for security events.
Week 14	Collect and analyze logs from firewalls and IDS to identify suspicious activities.
Week 15	Practical Security Lab.

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Ethics for the Information Age

Academic Year / Level	Theory Hours/Week	Practical Hours/Week	Total Hours/Week
Year 2 / Semester 2	3	0	3
Teaching Language	**Course Name (Arabic)**	**Course Name (English)**	
English	المعلومات عصر اخلاقيات	Ethics for the Information Age	

➢ General Course Objective:

The main strategy adopted in delivering this module is to encourage students participation in the exercises while refining and expanding their critical thinking skills, through classes, interactive tutorials, and sampling activities.

— Theoretical Aspect —

Week	Material Covered
Week 1	Introduction to Computing.
Week 2	Introduction to Ethics.
Week 3	Networked Communication.
Week 4	Internet Interaction.
Week 5	Impact of Social Media and Online Advertisement.
Week 6	Children and Inappropriate Contents.
Week 7	Intellectual Property.
Week 8	Mid-Term Exam.
Week 9	Trademark, Patents, and Copyright.
Week 10	Protection for Software.
Week 11	Open Source Software.
Week 12	Information Privacy.
Week 13	Information Disclosures.
Week 14	Computer and Network Security.
Week 15	Cyber Crime and Cyber Attacks.

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English Language 1

Academic Year / Level	Theory Hours/Week	Practical Hours/Week	Total Hours/Week
Year 1 / Semester 2	2	0	2
Teaching Language	**Course Name (Arabic)**	**Course Name (English)**	
English	اللغة الإنكليزية 1	English Language	

➢ General Course Objective:

To introduce students at a beginner level to the English language, with a focus on building vocabulary, acquiring basic language structures, and developing listening and speaking skills through interactive activities and basic conversation practice.

— Theoretical Aspect —

Week	Material Covered
Week 1	Unit 1: Hello – Am/are/is, my/your; 'This is' – practice in context.
Week 2	Unit 2: Your World – He/she/they, his/her; Questions.
Week 3	Unit 3: All About You.
Week 4	Unit 4: Family and Friends – Possessive adjectives, possessive 's, has/have.
Week 5	Unit 5: The Way I Live – Present simple (I/you/we/they), a/an, adjective + noun.
Week 6	Unit 6: Every Day – Present simple (he/she), questions and negatives, adverbs of frequency.
Week 7	Unit 7: My Favorites – Question words, pronouns, this and that.
Week 8	Unit 8: Where I Live – There is/are, prepositions.
Week 9	Unit 9: Times Past – Was/were born, past simple – irregular verbs.
Week 10	Unit 10: We Had a Great Time! – Past simple (regular & irregular), negatives, ago.
Week 11	Unit 11: I Can Do That – Can/can't, adverbs, requests.
Week 12	Unit 12: Please and Thank You – I'd like, some/any, like/would like.
Week 13	Unit 13: Here and Now – Present continuous vs. present simple.
Week 14	Unit 14: It's Time to Go! – Future plans, revision: writing email and informational letter.

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English Language 2

Academic Year / Level	Theory Hours/Week	Practical Hours/Week	Total Hours/Week
Year 2 / Semester 1	2	0	2
Teaching Language	**Course Name (Arabic)**	**Course Name (English)**	
English	اللغة الإنكليزية 2	English Language 2	

➢ General Course Objective:

Enhance reading comprehension through texts, provide basic writing skills including sentence formation and paragraph writing, and equip learners with practical language skills for everyday life situations.

— Theoretical Aspect —

Week	Material Covered
Week 1	Unit 1: Getting to Know You – Tenses, questions, question words.
Week 2	Unit 2: The Way We Live – Present simple, continuous, have/have got.
Week 3	Unit 3: It All Went Wrong – Past simple, past continuous.
Week 4	Unit 4: Let's Go Shopping – much/many, some/any, articles, a few/a little.
Week 5	Unit 5: What Do You Want to Do – Verb patterns, future intentions, going to/will.
Week 6	Unit 6: Tell Me! What's It Like? – Comparative and superlative adjectives.
Week 7	Unit 7: Fame – Present perfect and past simple, for and since, tense revision.
Week 8	Unit 8: Do's and Don'ts – Have (got) to, should, must.
Week 9	Unit 9: Going Places – Time and conditional clauses, what if...?
Week 10	Unit 10: Scared to Death – Verb patterns, infinitives.
Week 11	Unit 11: Things That Changed the World – Passives.
Week 12	Unit 12: Dreams and Reality – Second conditional, might.
Week 13	Unit 13: Earning a Living – Present perfect continuous vs. simple.
Week 14	Unit 14: Family Ties – Present perfect and past perfect, reported statements.
Week 15	Unit 15: Revision.

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Arabic Language 1

Academic Year / Level	Theory Hours/Week	Practical Hours/Week	Total Hours/Week
Year 1 / Semester 1	2	0	2
Teaching Language	**Course Name (Arabic)**	**Course Name (English)**	
Arabic	اللغة العربية 1	Arabic Language 1	

➢ General Course Objective:

Enable students to master Arabic language skills at several levels — grammatical, stylistic, and written. Develop listening and reading skills and equip students with the ability to express themselves in formal Arabic, supporting reading, research, and academic writing.

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Week	Material Covered
Week 1	Introduction to common language errors – ta' marbuta, ta' maftuha, long ta'.
Week 2	Rules for writing extended and short alif – solar and lunar letters.
Week 3	Dad and dha letters (common confusion in Arabic writing).
Week 4	Writing the hamza (glottal stop) in its various forms.
Week 5	Punctuation marks.
Week 6	The noun and the verb – distinguishing between them.
Week 7	Objects (maf'ulat) in Arabic grammar.
Week 8	Numbers in Arabic grammar.
Weeks 9–10	Applications – common language errors.
Week 11	Nun and tanwin – meanings of prepositions (huruf al-jarr).
Week 12	Formal aspects of administrative correspondence.
Weeks 13–14	Language of administrative correspondence.
Week 15	Samples of administrative communications.

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Arabic Language 2

Academic Year / Level	Theory Hours/Week	Practical Hours/Week	Total Hours/Week
Year 2 / Semester 2	2	0	2
Teaching Language	**Course Name (Arabic)**	**Course Name (English)**	
Arabic	اللغة العربية 2	Arabic Language 2	

➢ General Course Objective:

Students will develop accuracy of observation and the ability to distinguish between correct and incorrect language. They will understand word structure and develop positive attitudes and values toward the Arabic language as linked to religion and Arab heritage.

— Theoretical Aspect —

Week	Material Covered
Week 1	Quranic expression: grammatical structure and rhetorical influence. Reference: 'Al-Ta'bir Al-Qur'ani' by Dr. Fadil Al-Samarra'i.
Week 2	The poet Badr Shakir Al-Sayyab.
Week 3	Primary grammatical case markers: damma, fatha, kasra; Secondary: waw, alif, ya'.
Weeks 4–5	The nominal sentence: mubtada' and khabar – types of each.
Week 6	Inna and its sisters.
Week 7	Difference between inna and anna.
Week 8	Kana and its sisters.
Week 9	The five verbs (af'al al-khamsa).
Week 10	Common language errors – Part 2.
Week 11	Linguistic information: synonyms, antonyms, grammatical equivalences.
Week 12	The dual form and its grammatical declension.
Weeks 13–14	Types of plurals: sound masculine, sound feminine, broken plural.
Week 15	Grammar engineering – Arabic grammar rules as a learning chart; language corrections.

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Engineering Workshops

Academic Year / Level	Theory Hours/Week	Practical Hours/Week	Total Hours/Week
Year 1 / Semester 2	0	4	4
Teaching Language	**Course Name (Arabic)**	**Course Name (English)**	
English	الهندسية الورش	Engineering Workshops	

➢ General Course Objective:

The aim is to enable students to acquire the skills and knowledge necessary to deal with electrical and electronic systems and devices, including fault diagnosis, repair, and maintenance. Students learn to read engineering schematics and use various tools safely.

— Practical Aspect —

Week	Material Covered
Week 1	Industrial safety in electrical workshops; protection from electric shock; identification of tools; using a multimeter to measure wire gauges.
Week 2	Types of soldering irons and spot welding; correct usage techniques; introduction to electrical transformers and their magnetic circuits.
Week 3	Electrical circuits and transformer operation; opening transformers; measuring wire diameters of primary and secondary windings.
Week 4	Types of electrical motors (single-phase and three-phase); shaded-pole motor example; electrical wiring types (surface and concealed).
Week 5	Parallel connection of two lamps with switch and socket; drawing wiring diagram; LED circuit; replacing lamp with LED.
Week 6	Staircase lamp circuit (two-way switch); drawing wiring diagram and practical application.
Week 7	Introduction to electrical relays: types, uses, thermal overload relays, time-delay relays.
Week 8	Operating a single-phase motor using contactor and push button; reversing motor direction using relays and time delay.
Week 9	Mid-semester exam.
Week 10	Electronic components: battery, connector, diode, button, switch, rotary switch.
Week 11	Electronic components: diode, transistor, transformer.
Week 12	Using breadboard and Vero board; building circuits on both.
Week 13	Electronic components: resistors, inductors, capacitors; exercises: single lamp; two lamps parallel; staircase lamp circuit.
Week 14	Preparation week before final exam.
Week 15	Final exam.

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Crimes of the Baath Party Regime

Academic Year / Level	Theory Hours/Week	Practical Hours/Week	Total Hours/Week
Year 2 / Semester 2	2	0	2
Teaching Language	**Course Name (Arabic)**	**Course Name (English)**	
Arabic	البعث نظام جرائم	Baath Party Crimes	

➢ General Course Objective:

There is a necessity to adhere to ethical principles in teaching this subject. The knowledge it contains must be conveyed to current and future generations because it concerns a period in Iraqi history characterized by human rights violations, crimes against humanity, mass graves, and genocides.

— Theoretical Aspect —

Week	Material Covered
Week 1	Crimes of the Baath regime per the Iraqi High Criminal Court Law 2005; definition and classification of crimes.
Week 2	Categories of crimes; Baath regime crimes documented by the Court Law 2005.
Week 3	Types of international crimes.
Week 4	Rulings issued by the High Criminal Court.
Week 5	Psychological and social crimes and their effects; major Baath regime violations.
Week 6	Mechanisms of psychological crimes.
Week 7	Effects of psychological crimes; social crimes.
Week 8	Militarization of society; the Baath regime's stance on religion.
Week 9	Violations of Iraqi laws; forms of human rights violations.
Week 10	Political and military violations; prisons and detention centers.
Week 11	Environmental crimes: war and radiation pollution, landmine explosions.
Week 12	Destruction of cities and villages (scorched-earth policy).
Week 13	Draining the marshes; uprooting palm groves, trees, and crops.
Week 14	Mass grave crimes; events of genocidal mass graves committed by the Baath regime.
Week 15	Chronological classification of mass graves in Iraq (1963–2003).

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Mathematics 1

Academic Year / Level	Theory Hours/Week	Practical Hours/Week	Total Hours/Week
Year 1 / Semester 1	4	0	4
Teaching Language	**Course Name (Arabic)**	**Course Name (English)**	
English	رياضيات 1	Mathematics 1	

➢ General Course Objective:

This module focuses on encouraging students to participate in activities and developing their critical thinking skills through lectures, tutorials, discussions, and graded exercises.

— Theoretical Aspect —

Week	Material Covered
Week 1	Line and Circle Equation.
Week 2	Functions: Domain, Range, Odd, Even, Types.
Week 3	The Limit and Continuity of a Function: Laws, At Infinity, Special Limits, Continuity Conditions.
Week 4	Differentiation: Definition as limit, Differentiation Rules, Function-Derivative Table.
Week 5	Differentiation Methods: Implicit, Logarithmic, The Chain Rule.
Week 6	Applications of Differentiation: Curve Sketching, L'Hospital's Rule.
Week 7	Applications of Differentiation: Taylor and Maclaurin Series.
Week 8	Midterm Exam + Introduction to Indefinite Integrals.
Week 9	Integration Methods: u-substitution, By parts.
Week 10	Integration Methods: Trigonometric Functions, Trigonometric substitution.
Week 11	Integration Methods: Rational Functions by Partial Fractions.
Week 12	Integration Methods: Functions Involving Roots and Quadratics.
Week 13	Definite Integral and Applications: Area Under a Curve, Arc Length, Average Value.
Week 14	Definite Integral and Applications: Areas Between Two Curves.
Week 15	Preparatory week before the Final Exam.

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Mathematics 2

Academic Year / Level	Theory Hours/Week	Practical Hours/Week	Total Hours/Week
Year 1 / Semester 2	4	0	4
Teaching Language	**Course Name (Arabic)**	**Course Name (English)**	
English	رياضيات 2	Mathematics 2	

➢ General Course Objective:

This module focuses on encouraging students to participate in activities and developing their critical thinking skills through lectures, tutorials, discussions, and graded exercises.

— Theoretical Aspect —

Week	Material Covered
Week 1	Vectors: Definition, notation, magnitude, unit vector, direction, operations.
Week 2	Vectors: Dot product, cross product, orthogonal and orthonormal vectors.
Week 3	Matrices: Matrix, diagonal, triangular, symmetric, square matrix, transpose.
Week 4	Matrices: Operations — addition, subtraction, scalar multiplication, multiplication.
Week 5	Matrices: Determinant, inverse (nonsingular).
Week 6	System of Linear Equations: Linear equations, solution, matrix equations.
Week 7	System of Linear Equations: Row operations, row-echelon form, rank, augmented matrix.
Week 8	Midterm Exam + System of Linear Equations: Gaussian elimination.
Week 9	System of Linear Equations: Gauss–Jordan elimination, solving systems with inverses.
Week 10	System of Linear Equations: Cramer's Rule.
Week 11	Vector Spaces: Linear combinations of vectors, span.
Week 12	Vector Spaces: Linear dependence and independence, basis and dimension, rank.
Week 13	Vector Spaces: Linear transformations.
Week 14	Diagonalization: Polynomials of matrices, characteristic polynomial, Cayley–Hamilton theorem.
Week 15	Diagonalization: Eigenvalues and eigenvectors, diagonalizing matrices.
Week 16	Preparatory week before the Final Exam.

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General Physics

Academic Year / Level	Theory Hours/Week	Practical Hours/Week	Total Hours/Week
Year 2 / Semester 1	2	3	5
Teaching Language	**Course Name (Arabic)**	**Course Name (English)**	
English	العامة الفيزياء	General Physics	

➢ General Course Objective:

To provide a beneficial educational experience through studies in experimental and practical physics, developing capabilities and skills related to the study and practice of science, fostering attitudes of accuracy and objectivity, and stimulating interest in the local and global environment.

— Theoretical Aspect —

Week	Material Covered
Week 1	Physical Quantities, Units and Measurement: Dimensions, Dimensional Analysis, Conversion of Units.
Week 2	Kinematics and Dynamics: Displacement, Velocity, Acceleration, Freely Falling Objects, Collisions, Projectile Motion.
Week 3	Mass, Weight and Density: Definitions, units and laws; Specific gravity.
Week 4	Turning Effect of Forces: Moment of a Force, Principle of Momentum, Conditions of Equilibrium.
Week 5	Pressure, Energy, Work, and Power: Definitions, units and laws; Pressure in Liquids, Kinetic and Potential Energy.
Week 6	Motion Along a Straight Line: Displacement, Time, Average Velocity, Average Speed.
Week 7	Motion in Two or Three Dimensions: Position and Velocity Vectors, Acceleration Vector, Projectile Motion.
Week 8	Newton's Laws of Motion: First, Second, and Third Laws.
Week 9	Mid-Term Exam.
Week 10	General Wave Properties: Mechanical waves, transverse, longitudinal, surface waves; measuring a wave.
Week 11	Light: Definition, properties, and applications.
Week 12	Electromagnetic Spectrum: Definition, types, detecting waves from space, energy in EM waves.
Week 13	Sound and Hearing: Speed of sound, frequency, wavelength, sound intensity, hearing mechanism.
Week 14	Magnetism: Source of magnetism, universal characteristics, Earth's magnetic poles, types.
Week 15	Electromagnetism: Faraday's Law, EMF in a moving conductor, energy stored in a magnetic field.

— Practical Aspect —

Week	Material Covered
Week 1	Experiment 1: Dynamics – Force, Newton's Three Laws, and Friction.
Week 2	Experiment 2: Investigating the Laws of Motion with a Simple Pendulum.
Week 3	Experiment 3: Tuning Fork.

Week 4	Experiment 4: Equilibrium of a Rigid Body.
Week 5	Experiment 5: Determining Hooke's Law.
Week 6	Experiment 6: Verifying Newton's Third Law with Colliding Objects.
Week 7	Experiment 7: Investigating Wave Properties – Wavelength, Frequency, and Speed.
Week 8	Experiment 8: Refraction of Light in Different Media.