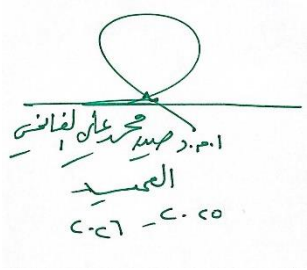
Scientific plan 2025-2026

Dean's approval



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1 Introduction to the Scientific Plan

1.1 Introduction to the scientific plan and its importance

This academic plan is the cornerstone of the academic journey of the College of Computer Science and Information Technology at Warith Al-Anbiya University for the 2025-2026 academic year. It is designed as a comprehensive roadmap aimed at achieving qualitative excellence in the fields of artificial intelligence and cybersecurity. The vision behind this plan stems from a deep commitment to national and international institutional accreditation standards, striving to provide an advanced digital learning environment that integrates rigorous theoretical aspects with practical field applications that reflect the rapid pace of global technological advancements. Our aim is not merely to impart technical knowledge, but to cultivate a generation of specialists capable of developing software solutions and securing the national cyberspace, while upholding the ethical and professional values championed by the university. This ensures that our educational outcomes align with the actual needs of the labor market and the digital transformation strategies in Iraq.

1.2 Its connection to the mission of the university, college, and department

Vision: To be a distinguished and leading scientific institution, both locally and internationally, in the fields of artificial intelligence and cybersecurity.

Mission: To prepare a generation qualified scientifically and practically, and to provide an advanced research environment that integrates knowledge with ethical values derived from the school of Imam Hussein (peace be upon him).

Accreditation: The college is committed to applying national standards for institutional accreditation, and the self-assessment report has demonstrated advanced compliance with these standards.

1.3 Reference Framework (National/International Standards)

This scientific plan, in its design and development of its academic content, is based on local and international reference frameworks that ensure the soundness of educational outcomes and their compatibility with the rapid development in the fields of artificial intelligence and cybersecurity, according to the following axes:

1.4 Scope of the plan (program – department – academic stage)

The scope of this scientific plan is defined by the following levels and organizational frameworks, taking into account the college's founding status and the new expansion in educational pathways:

- **At the program level:** The plan covers the full description of the four-year Bachelor of Science (Artificial Intelligence) and Bachelor of Science (Cybersecurity) programs, ensuring curriculum alignment between the two specializations in core courses.

- **At the level of Study Mode**: The scope of the plan includes both morning and evening studies in both departments, with full commitment to matching the study materials, learning outcomes (ILOs), and assessment methods, to ensure that evening students acquire the same scientific competence and technical skills as morning students.
- **At the level of the academic stage (Current Focus): The** plan, in its procedural aspect for the academic year 2025-2026, focuses on the first stage (morning and evening), in terms of managing study schedules and distributing laboratory resources in accordance with the expected student density in the two periods, while developing a forward-looking plan to accommodate the scientific requirements of the coming stages.
- • At the geographical and societal level: The scope of the plan extends to include enhancing digital skills in Karbala Governorate and neighboring areas by graduating specialized personnel capable of bridging the technological gap in the public and private sectors during the two time periods (morning and evening).

2 Reference Plan and Approved Standards

2.1 Approved Quality and Academic Accreditation Standards:

- **National Standards for Institutional Accreditation (Iraq):** Adherence to the eight pillars issued by the Ministry of Higher Education and Scientific Research, with a focus on the "Curriculum" and "Scientific Research" pillars.
- **Standards of the Council for Programmatical Accreditation in Computing**: Alignment with the national requirements for colleges of computer science and information technology.
- **Standards of ABET (American Accreditation for Engineering and Technology):** Specifically, the standards of the Commission on Computing Accreditation (CAC) to ensure the quality of educational programs and student outcomes.

2.2 National Qualifications Frameworks:

- The Iraqi National Qualifications Framework (IQF): Course levels are defined to ensure students acquire the required cognitive and practical skills at each stage of study, up to the Bachelor's level (Level 6/7 according to the national classification).
- The Bologna Process: The European Credit Transfer and Accumulation System (ECTS) is adopted as the primary reference for calculating course loads (25 credit hours per unit), facilitating the process of degree recognition and academic equivalency.

2.3 Benchmarking with distinguished universities:

To ensure the competitiveness of the educational program, the curriculum (Syllabus) has been aligned with leading academic experiences:

- **Locally:** A benchmarking study was conducted with the computer science curricula at the University of Baghdad and the University of Anbar to ensure the curriculum's alignment with the Iraqi academic context.
- **Internationally:** The curriculum adheres to the joint global recommendations issued by the ACM (Association for Computing Machinery) and IEEE-CS (Computer Society of the Institute of Electrical and Electronics Engineers) regarding computer science and artificial intelligence curricula.
- **Professionally:** The National Institute of Sciences (NIST) framework and SANS standards were adopted in designing the learning outcomes for the cybersecurity department to connect the academic aspects with global digital security requirements.

3 Targeted Learning Outcomes (ILOs)

3.1 Knowledge Outputs

1. To grasp the fundamental mathematical, programming, and logical concepts that underpin the architecture of computing systems.
2. To understand advanced theories in artificial intelligence algorithms, including machine learning, deep learning, and natural language processing.
3. To gain a comprehensive understanding of data security protocols, encryption methods, and standards for protecting networks and systems from cyberattacks.
4. To possess knowledge of laws and regulations related to digital crimes, data ethics, and privacy.

3.2 Skills Outcomes

1. **Technical Skills:** The ability to write competent code in multiple programming languages (such as Python, C++) to develop intelligent solutions and defense systems.
2. **Problem Solving:** Analyzing complex technical problems and designing intelligent computer models capable of decision-making or prediction.
3. **Security and Investigation:** The ability to conduct digital forensics, identify security vulnerabilities in systems, and develop cyber incident response strategies.
4. **Soft Skills:** The ability to work effectively within multidisciplinary technical teams and deliver sound technical reports that reflect laboratory and research findings.

3.3 Outputs of values and professional responsibility

- Adherence to ethical standards in developing artificial intelligence technologies to ensure impartiality and protect human rights.
- Recognition of the legal and professional responsibilities associated with working in cybersecurity and maintaining the confidentiality of national and institutional data.
- Self-embracing the principle of continuous learning to keep pace with the rapid technological advancements in the digital job market.

3.4 Aligning outputs with

Labor market requirements

These outputs were designed to meet the growing need in Iraq and the region for:

Cybersecurity experts: To protect government and banking institutions from digital threats.

Smart systems developers: To support digital transformation in the public and private sectors and improve the efficiency of e-services.

Data analysts: Capable of extracting scientific value from big data to support decision-making.

National Qualifications Framework

Academic Level: The program's outcomes are designed to align with Level 6 of the National Qualifications Framework (Bachelor's level), which requires a deep integration of theoretical knowledge and specialized applied skills.

Competency: The program ensures students progress from the "General Knowledge" level in the first year to the "Professional Independence" level in the fourth year, in accordance with the recommendations of the Iraqi Ministry of Higher Education and Scientific Research and the Bologna Process.

4 Curriculum Structure

4.1 Academic Program Description

The academic program in the College of Computer Science and Information Technology (for the Artificial Intelligence and Cybersecurity departments) offers an advanced four-year educational path. The program aims to equip students with a solid scientific foundation and the necessary practical skills in the fields of intelligent computing and cybersecurity. The program adopts the Bologna Process, which places the student at the center of the educational process, balancing theoretical aspects with intensive laboratory application. Currently, the program includes both morning and evening classes for the first year.

4.2 Number of credit hours

The college adopts the European Credit Transfer and Accumulation System (ECTS) to ensure compliance with international standards:

- Total credits for a Bachelor's degree: 240 ECTS.
- Annual credit distribution: 60 ECTS per academic year, distributed as 30 ECTS per semester.
- Credit value: One ECTS credit is equivalent to approximately 25 hours of student work, including lectures, labs, exams, and self-study.

4.3 Course distribution (compulsory - elective)

Core/Compulsory Courses: These form the backbone of the major (e.g., Fundamentals of Programming, Computer Technology, Mathematics, Introduction to Artificial Intelligence) and comprise approximately 85-90% of the total curriculum.

Elective Courses: These are available to advanced students, allowing them to choose more specialized tracks (e.g., Recommendation Systems, Image Processing).

General University Requirements: These include cultural and linguistic courses (e.g., English Language, Human Rights) and are mandatory for all students.

4.4 Study plan by levels and semesters

No	اسم المقرر (باللغة العربية)	Module Name	Type	وحدات ECTS
1	تقنيات الحاسوب	Computer Technology	Basic	5
2	أساسيات البرمجة	Programming Basics	Basic	8
3	مقدمة في الذكاء الاصطناعي	Intro to AI	Basic	6
4	الرياضيات	Mathematics	Sand	5
5	اللغة الإنجليزية I	English Language I	Requirement	4
6	الديمقراطية وحقوق الإنسان	Democracy & Human Rights	Requirement	2
	The total	unis 30		

5 Course Descriptions

5.1 Course Name and Code

5.1.1 Cybersecurity Section

Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Module Type
One	1	Cys101	Data Security Principles	مبادىء امنية البيانات	C
	2	CSIT501	Calculus I	رياضيات 1	B
	3	Cys102	Programming Fundamentals I	اساسيات برمجة1	C
	4	CSIT502	Digital Logic	المنطق الرقمي	B
	5	Cys103	Computer Organization	تركيب الحاسوب	C
	6	UOK101	Arabic Language I	لغة عربية 1	S
Two	1	Cys104	Cysersecurity Principles	مبادىء الامن السيبراني	C
	2	CSIT503	Calculus II	رياضيات 2	B
	3	CSIT504	Discrete Structure	هياكل متقطعة	B
	4	Cys105	Programming Fundamentals II	اساسيات برمجة 2	C
	5	UOK102	English Language I	اللغة الانكليزية 1	S
	6	UOK103	Human Rights and Democracy	حقوق انسان و ديمقراطية	S

5.1.2 Artificial Intelligence Section

Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Module Type
One	1	AIDC113	Data Security Principles	مبادىء امنية البيانات	C
	2	AIDC112	Calculus I	رياضيات 1	B
	3	AIDC111	ogramming Fundamentals	اساسيات برمجة1	C
	4	CCIT060	Digital Logic	المنطق الرقمي	B
	5	UOA003	Computer Organization	تركيب الحاسوب	C
	6	UOA005	Arabic Language I	لغة عربية 1	S
Two	1	CCIT061	Cysersecurity Principles	مبادىء الامن السيبراني	C
	2	AIDC123	Calculus II	رياضيات 2	B
	3	AIDC124	Discrete Structure	هياكل متقطعة	B
	4	AIDC125	ogramming Fundamentals	اساسيات برمجة 2	C
	5	UOA001	English Language I	اللغة الانكليزية 1	S
	6	UOA006	man Rights and Democra	حقوق انسان و ديمقراطية	S

5.2 Educational Objectives

1. To provide students with the fundamental concepts of programming logic and how to build algorithms.
2. To enable students to use modern programming languages (such as C++ or Python) to solve technical problems.
3. To build a solid foundation that prepares students for advanced courses such as "Structured Programming" and "Data Structures."

5.3 Course Learning Outcomes

Knowledge: Understanding data types, logical operations, and control structures.

Skills: The ability to write and debug code and translate theoretical solutions into executable programs.

Application: Designing simple programs that process user input and produce accurate output based on sound programming logic.

5.4 Detailed Scientific Content

Week	Theoretical content	Practical application (laboratory)
2-1	Introduction to Programming Languages and IDEs.	Setting up the work environment and writing the first program (Hello World).
4-3	Variables, Data Types, and Arithmetic Operations.	Exercises in data entry and mathematical processing.
7-5	If-Else and Switch Case Statements.	Building decision-making programs (e.g., a grading system).
10-8	For, While, and Do-While Loops.	Solving repetition and mathematical sum problems programmatically.
13-11	One-Dimensional Arrays.	Storing and searching data in arrays.
15-14	Functions and Value Passing.	Dividing the program into smaller functional units.

5.5 Teaching and Learning Strategies

Interactive lectures: Explaining theoretical concepts using presentations.

Lab-based learning: Direct practical application of each theoretical concept for 4 hours per week.

Peer learning: Solving programming problems in small student groups within the lab.

5.6 Assessment and Measurement Methods

- Formative Assessment (40%): Includes quizzes, weekly lab reports, and class participation.
- Midterm Exam (20%): A comprehensive theoretical and practical exam covering the first semester's topics.
- Final Exam (40%): A comprehensive exam focusing on programming skills and solving complex problems.

Learning resources and references

Textbook: C++ How to Program (Deitel & Deitel) or Starting Out with Python (Tony Gaddis).

Supporting Resources: Global software platforms such as W3Schools and GeeksforGeeks.

Programming Environment: Visual Studio Code or Code::Blocks.

6 Aligning the scientific plan

6.1 Aligning courses with program learning outcomes

The college employs a rigorous methodology to ensure that each course directly contributes to achieving the program's final learning outcomes (PLOs). The courses in the first phase (such as programming fundamentals, mathematics, and an introduction to artificial intelligence) are designed to form the knowledge and skills foundation that serves the strategic objectives of the artificial intelligence and cybersecurity departments, ensuring the integration of theoretical knowledge with practical application.

6.2 Alignment Matrix (CLO–PLO Matrix)

The college uses an "alignment matrix" as a planning and standardization tool to link course learning outcomes (CLOs) with program learning outcomes (PLOs). This matrix illustrates the role each course plays in developing student skills, as follows:

- Direct contribution: Specialized courses (such as programming) cover the learning outcomes of technical and analytical skills.
- Supporting contribution: General courses (such as English language and human rights) cover the learning outcomes of values, responsibility, and soft skills.
- Verification: Student assessment results in courses are used as statistical evidence of the program's success in achieving its overall objectives.

6.3 Aligning teaching and assessment methods with learning outcomes

To ensure the effectiveness of the educational process, teaching and assessment methods are chosen based on the type of desired outcome:

- **For cognitive outcomes:** Interactive lectures and brainstorming sessions are used, and these are assessed through written and oral exams.
- **For skills-based outcomes**: Project-based learning strategies and practical labs are used, and these are assessed through practical tests and rubrics that measure programming proficiency.
- **For values-based outcomes**: Discussion groups and group work are used, and these are assessed by monitoring professional conduct and adherence to ethical standards in handling data and systems.

7 Teaching and learning strategies

The college adopts modern student-centered learning strategies that aim to shift the student's role from passive recipient to active participant in knowledge production, in line with institutional accreditation requirements..

7.1 Modern Teaching Methods

Interactive lecturing: Integrating quick response tools (such as electronic voting) during explanations to break the ice and ensure students grasp complex software and security concepts.

Simulations: Using virtual environments to simulate network penetration or train AI models before their software implementation.

Brainstorming: Applying this method in logic design and programming labs to devise innovative algorithms for problem-solving.

7.2 Active Learning

Peer teaching: Encouraging students with strong programming skills to explain concepts to their peers under instructor supervision, fostering confidence and leadership skills.

Group discussions: Allocating time for discussions on the ethical challenges of artificial intelligence (AI ethics) and its societal impact.

Problem-based learning: Introducing a programming "Challenge of the Week" in the first phase and recognizing the students who submit the most effective solutions.

7.3 E-learning and blended learning

Learning Management System (LMS): Using the university platform to upload video lectures, supporting resources, and homework assignments.

Flipped Classroom: Providing students with theoretical content (video or text) before the lecture, so that live session time is dedicated to practical application and solving challenging programming problems.

Synchronous and Asynchronous Learning: Balancing live sessions with self-directed learning via recommended global platforms (such as Coursera or GeeksforGeeks).

7.4 Research-based and project-based learning

Course Projects: Students (even in the first stage) are required to submit a mini software project at the end of each semester that combines the outputs of different courses (for example: a simple data management program using programming basics).

Connecting research to real-world applications: Encouraging students to research technological solutions to real-world problems faced by organizations, such as "personal data security systems."

Annual competition: Holding an annual exhibition of outstanding student projects to foster a spirit of innovation and technological entrepreneurship.

8 Assessment and Measurement Methods

The college's assessment system is based on the Bologna Process philosophy, which links the grade to the extent to which learning outcomes are achieved and the actual effort made by the student during the semester.

8.1 Grade distribution structure (60/40)

The final grade for the course is distributed according to the following division to ensure fairness and measure continuity:

Formative Assessment - 60%: This includes activities that take place during the semester (quizzes, reports, assignments, laboratory projects).

Summative Assessment - 40%: This consists of the comprehensive final exam for the scientific subject.

8.2 Approved types of assessment tools

The mid-term exam is designed as a summative assessment tool, administered in the eighth week. It aims to evaluate higher-order thinking skills, including understanding and analysis of the course's core concepts and theories, and to ensure a solid foundation of knowledge before moving on to more advanced topics.

Quizzes are used as a formative assessment tool, administered either unexpectedly or periodically, to promote continuous learning, track students' progress in understanding the syllabus, and provide immediate feedback to address any knowledge gaps.

8.3 Evaluation Criteria (Rubrics)

To ensure transparency, the college is committed to using rubrics to evaluate non-traditional tasks (such as software projects), where the rubrics include:

Technical accuracy: Does the program function correctly?

Code efficiency: Resource consumption and execution speed.

Logic and algorithm: The quality of logical reasoning in solving the problem.

8.4 Feedback and Ensuring Transparency

Rapid Results: Students are informed of their continuous assessment results promptly to adjust their academic progress before the final exam.

Right to Appeal: The college provides a formal mechanism for grade review and appeals through its online feedback portal, ensuring adherence to quality standards and institutional accreditation.

Credit Hours (ECTS): Assessment is linked to workload; credits are awarded only to students who achieve the minimum required learning outcomes in the SLBS curriculum.

9 Scientific research and innovation (if any)

The College of Computer Science and Information Technology has placed scientific research and innovation among its strategic priorities since its founding year, adopting a proactive vision aimed at creating a stimulating environment for rigorous scientific research, according to the following axes:

9.1 Integrating scientific research into the curriculum

Developing Inquiry Skills: First-year students will be introduced to the fundamentals of scientific research through the "Academic English" and "Introduction to Artificial Intelligence" courses, where they will be assigned term papers on recent technological developments.

Access to Global Resources: Students and faculty will be provided with access to global digital libraries and research repositories to enhance their reading and critical analysis skills in published research.

9.2 Graduation Projects (Future Vision)

Proactive Planning: Although there are no current graduating students, the college is working on a "Graduation Projects Guide" that focuses on practical applications in artificial intelligence and cybersecurity, to be ready when students reach their fourth year.

First-Year Projects: The college is adopting the "mini-semester projects" approach in programming and artificial intelligence courses to train students on the research systems development lifecycle from an early stage.

9.3 Encouraging innovation and entrepreneurship

Ideas Incubator: Establishing a "Digital Innovation" unit within the college to discover and nurture programming talent among first-year students and connect them with the university's Entrepreneurship Center.

Programming Competitions: Holding internal hackathons that encourage students to develop innovative software solutions with an entrepreneurial vision, thus contributing to building their innovative character.

9.4 Linking research to societal issues

- **Community Digital Transformation Plan**: Based on the self-assessment report, the college is committed to directing the future interests of its faculty and student research toward solving real-world problems, such as:
- Artificial intelligence solutions for managing the millions of visitors to the holy city of Karbala.
- Cybersecurity awareness programs for government institutions and the local community.
- Research Partnerships: Coordination will begin with service departments in the province to identify technological gaps that could serve as topics for faculty research and future graduation projects.

10 Practical training and field application

The college believes that technical skills in the fields of artificial intelligence and cybersecurity are only completed through field practice; therefore, the college has developed a phased plan that begins with preparing first-year students to engage in the real work environment.

10.1 Cooperative or Field Training

- **Current Pathway**: In its initial phase, the college employs "parallel developmental training," which aims to bridge the gap between theoretical curricula and industrial applications through specialized workshops and intensive courses held in collaboration with strategic partners.
- **Future Pathway**: Preparations are underway to organize a "mandatory field training" (internship) that will be implemented in advanced stages according to the Bologna Process standards.

10.2 Supervision and Evaluation Mechanisms

Dual Supervision: An academic supervisor from the college is assigned to monitor student attendance and participation in training workshops, in coordination with specialized trainers from partner companies.

Skills Assessment: Assessment is based on (participation certificates, performance reports, and practical evaluation of skills acquired during workshops). These activities are included under "extracurricular activities" and contribute to the student's CV.

10.3 Training Providers

The college is currently working on activating memoranda of understanding and technical cooperation agreements with major telecommunications and technology companies in Iraq, including:

- IraqCell: For training on network architecture and data management.
- Asiacell: To conduct workshops on modern communication technologies and cybersecurity for large systems.

National Technical Institutions: To introduce students to the mechanisms of digital transformation in government institutions.

10.4 Training Outcomes

The field training at this stage aims to achieve the following outcomes:

Career Awareness: Understanding the nature of work in major technology companies and identifying future career paths.

Applied Skills: Acquiring initial practical skills in network maintenance, cloud computing, and working with large databases.

Communication Skills: Enhancing the student's ability to work within professional technical teams and adhere to a professional work environment.

11 11 Faculty members and scientific and research output

11.1 Faculty Members

No	Instructor's Name	Scientific title	Certificate	Position
1	Hayder Mohammed Ali Ali Kadim	Assistant Professor Doctor	PhD – University of Utara (UTARA)	Dean
2	Mohsin Hasan Hussein	Assistant Professor Doctor	University of Babylon	Faculty
3	Ahsan Ahmed Mohammed Lahmood	Assistant Professor Doctor	PhD – Babylon	Faculty
4	Muhannad Kamel Abdul Hamid Makki	Assistant Professor Doctor	PhD – Communications Engineering Technology / Communications Engineering	Faculty (External Lecturer)

5	Ali karem abdul raheem	Lecturer Doctor	MSc – University of Babylon	Head of Cybersecurity Department
6	Maky H.Abdulraheem	Lecturer Doctor	PhD – Uttar Pradesh / Malaysia (UUM)	Faculty
7	Mahmood Jasim Khalsan Hadi	Lecturer Doctor	PhD – University of Northampton – United Kingdom	Faculty (External Lecturer)
8	Abdul Kareem Zuwain Mohammed Hamzah	Lecturer Doctor	PhD – Institute of Informatics	Faculty (External Lecturer)
9	Ali Abed Hussein Aziz Altalbi	Lecturer Doctor	PhD – University of Technology	Faculty (External Lecturer)
10	Hussein Zaki Jassim Mohammed	Lecturer	MSc – Babylon	Faculty (External Lecturer)
11	Nabeel Sadeq Abdulabbas Alsharafa	Assistant Lecturer	MSc – University of Mazandaran	Head of Information Technology Department
12	Ali Abdul Hussein Ibrahim Ramadan	Assistant Lecturer	MSc – Islamic Azad University	Faculty
13	Karrar Sadiq Mohsen Jawad	Assistant Lecturer	MSc – Babylon	Faculty
14	Ali Mahmoud Ali Assi	Assistant Lecturer	MSc – University of Information Technology and Communications – Baghdad	Head of Artificial Intelligence Department
15	Elaf Ali Sfoog Sweif	Assistant Lecturer	MSc – Tikrit University	Faculty

11.2 Faculty Research

ت	اسم الباحث	اسم البحث
1	Hayder Mohammed Ali Ali Kadim	Enhancing Embodied Cognition and Manipulation Capabilities in Humanoid Robots Through Multi-Sensor Fusion and Deep Evolutionary Optimization
		Reinforcement Learning Driven Congestion and Power Control in Artificial Intelligence Enabled Wireless Sensor Networks for Healthcare Wearables
		Federated Vision Transformer with Differential Privacy for Multi-Institution Medical Imaging Diagnosis
2	Hussein Zaki Jassim Mohammed	Secure Data Transmission and Real-Time Optimization in Smart Industrial Networks Blockchain and Machine Learning
		Prognosis of Stroke Prediction Model Using Optimized Deep Learning on Multi-Modal Radiomics

12 Learning Resources and Infrastructure

The college utilizes all its material and technical resources to provide a smart learning environment that supports specialized fields in artificial intelligence and cybersecurity. These resources include the following:

12.1 Halls and Laboratories

Smart Classrooms: The classrooms are equipped with the latest educational technologies, including smart boards and advanced display systems, facilitating interactive teaching and the integration of multimedia into lectures.

Specialized Labs: The college boasts computer labs equipped with high-specification devices that meet the requirements for training artificial intelligence models and conducting cyber penetration tests, along with access to original, licensed software.

12.2 Libraries and Databases

The central and branch libraries: The college provides a rich physical library containing a diverse collection of modern scientific books, theses, and dissertations in computer science, serving as a valuable resource for students and researchers.

The digital library: Equipped with computers and high-speed internet access, the library allows students to navigate the digital world and access global research repositories, keeping them abreast of the latest technological advancements and innovations in the field of computing.

12.3 Electronic Education Systems

The Moodle system: The college uses the Moodle system as its primary learning management platform, through which:

- Sharing lectures and academic resources between instructors and students.
- Monitoring academic activities, submitting assignments, and conducting online exams.
- Promoting ongoing communication and fulfilling the requirements of blended learning according to the Bologna Process.

12.4 Academic support for students

Development Workshops: The college is committed to holding regular workshops aimed at developing students' programming and technical skills and preparing them for the job **market.**

Academic Advising: Providing an advising system to monitor students' academic progress, especially in their first year, to help them choose minors and understand the ECTS (Electronic Credit Transfer System) system.

Feedback Portal: Enabling students to submit suggestions regarding infrastructure and the development of educational services through a dedicated online portal, to ensure continuous improvement and quality.

13 Mechanisms for reviewing and updating the scientific plan

The College of Computer Science and Information Technology recognizes that stagnation in scientific and technical plans means regression; therefore, the college adopts a dynamic lifecycle to develop its scientific plan in a way that ensures the quality of outputs and achieves institutional accreditation standards.

13.1 Review Periodicity

Annual Review: A comprehensive review of the academic plan is conducted at the end of each academic year by the departmental academic committee to assess the achievement of the set objectives and the curriculum's alignment with technological advancements (such as updated programming language versions or cybersecurity tools).

Phased Updates: As the college is in its establishment phase, the implementation plan is updated before the start of each semester for the first phase, with proactive planning for the requirements of the second phase.

13.2 Stakeholder views (students, graduates, labor market)

Student Feedback Survey: The satisfaction of first-year students with the academic content and teaching methods is measured periodically through the online feedback portal. This data is then used as input for development.

Labor Market and Employers: Activating communication channels with partner companies (such as Asiacell and Iraqcell) to conduct an annual field study (as outlined in the improvement plan) to develop a roadmap for the educational process that aligns with the needs of the digital economy.

Graduates: (Future Vision) Establishing a graduate database now is essential to enable graduates to participate in evaluating the academic plan immediately upon the graduation of the first cohort.

13.3 Evaluation and Accreditation Results

Self-Assessment Reports: The results of the 2025-2026 self-assessment report are the primary driver for revising the academic plan, addressing identified weaknesses and transforming them into development goals.

Institutional Accreditation Committees: Adherence to the recommendations of external audit committees and the National Council for Program Accreditation in updating the ECTS credit structure.

13.4 Continuous improvement (based on the improvement plan)

The "Improvement Plan for the College of Computer Science" is the implementation component of this axis, whereby the college commits to:

Updating the strategic matrices: to include technology entrepreneurship and the digital economy.

Innovation Incubator: Transforming student projects into research and applied models (as outlined in paragraph 7 of the Improvement Plan).

Safe Digital Community: Integrating community service initiatives into students' academic activities to enhance their practical skills.

Success Indicators: The effectiveness of the modernization is measured through clear Key Performance Indicators (KPIs), such as the percentage of modern teaching methods implemented, which the college aims to reach over 90%.

14 Academic Performance Indicators

The college adopts a set of quantitative and qualitative indicators to measure the efficiency of implementing the scientific plan, focusing in this foundational stage on the following objectives:

14.1 Success and graduation rates

Success Rates: Success rates in the first-year midterm and final exams are monitored, with a target of at least 80% in specialized courses (Programming and Artificial Intelligence).

Graduation Rates: Given that the college is in its first year, a "Retention Rate" is currently in place to ensure all first-year students successfully progress to the second year without dropping out.

14.2 Student and Graduate Satisfaction

Student Satisfaction: This is measured periodically through official electronic surveys covering curriculum, faculty performance, and educational services, with a target of at least 85% satisfaction.

Graduate Satisfaction: This indicator is considered "future-oriented" and will be implemented upon the graduation of the first cohort through surveys that measure the extent to which they have benefited from their studies in their professional lives.

14.3 Aligning the Plan with the Labor Market

Alignment is measured by the number of partnerships and joint activities with the private sector (such as workshops with telecommunications companies) and the extent to which skills required in the Iraqi market are incorporated into the elective and practical curriculum.

14.4 Achieving Learning Outcomes

Measurement is conducted using a mapping matrix that links students' scores on practical tests with the learning outcomes outlined in the course, to ensure that students have actually acquired the targeted programming and technical skills in the first phase.