University of Mosul / College of Education for Pure Science

Department of Computer Science Guide

Edition 2025

2026-2025

Website: https://uomosul.edu.iq/education/ Email: esp.cs@uomosul.edu.iq

Table of Contents

The College in Brief

The College of Education at the University of Mosul was established in 1975 as the sixth college of the university. It was founded by a group of distinguished educators and professors.

Initially, the college included several departments and branches, among them a Computer Branch. In 2002, this branch was upgraded to an independent department known as the Department of Computer Science.

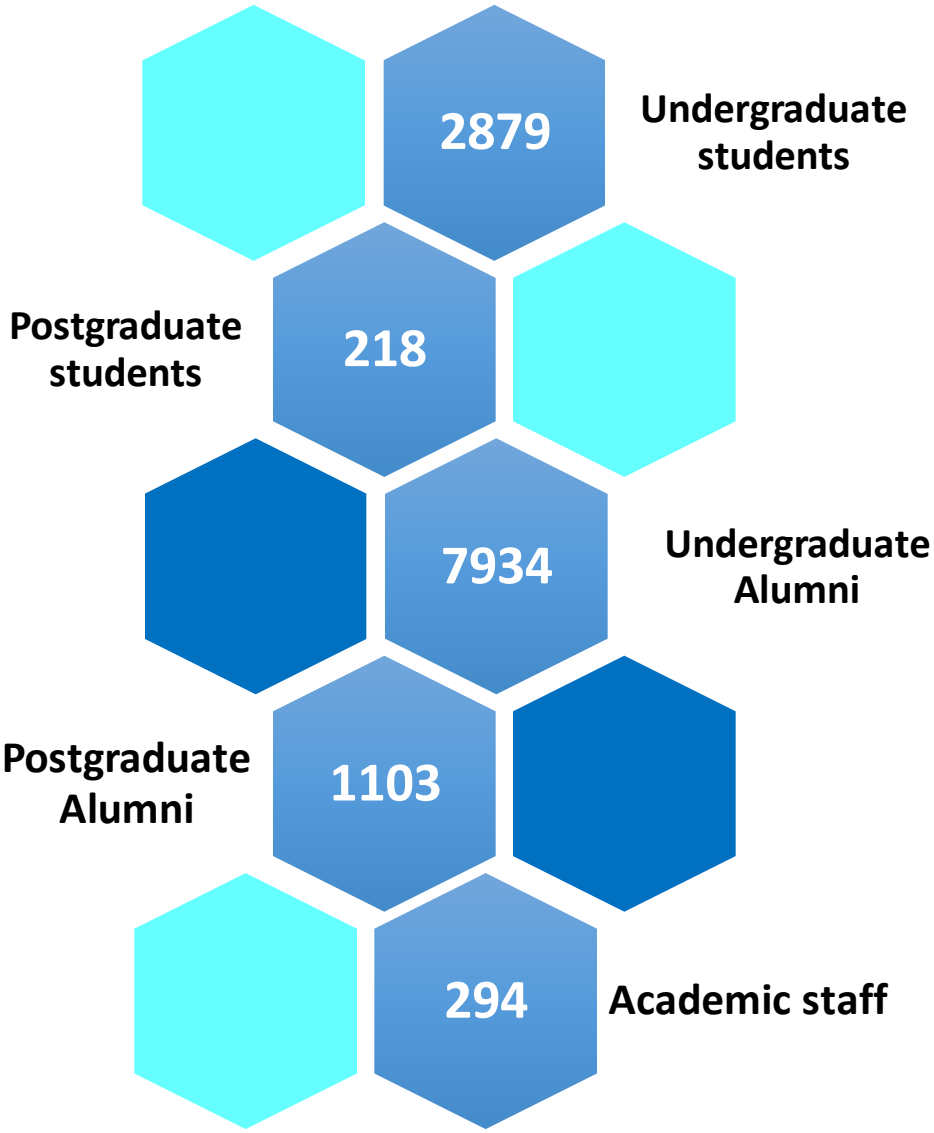
The college retained the name “College of Education” until 2013, when it was divided into two separate colleges:

- The College of Education for Pure Science, which encompasses pure scientific disciplines.
- The College of Education for Humanities, which encompasses disciplines within the field of humanities.

Today, the College of Education for Pure Science continues to enhance its academic programs and scientific laboratories, keeping pace with advancements in modern science and technology. The college comprises five departments: Mathematics, Biology, Chemistry, Physics, and Computer Science.

College of Education for Pure Science

The College in Numbers



College of Education for Pure Science Council

Prof. Dr. Jassim Fatehi Ali
College Dean

Assist. Prof. Dr. Younis Sadee Saeed
Deputy Dean for Administrative Affairs

Assist. Prof. Dr. Azzam S.Y.Aladool
Deputy Dean for Scientific Affairs

Prof. Dr. Yousef Jabbar Ismaeel
specialty: Phycology
Head of Biology Department

Assist. Prof. Dr. Mohammed Hazim Ameen
Specialist: Multimedia
Head of Computer Science Department

Assist. Prof. Dr. Omar Thanoon Ali
specialty: Organic chemistry
Head of Chemistry Department

Assist. Prof. Dr. Ali Abdulqader Bilal
Specialty: Algebra
Head of Mathematics Department

Assist. Prof. Dr. Marwan Hafeedh Younus
specialty: Optical Fiber Sensors
Head of Physics Department

Assist.Prof.Dr. Mohamed abdulrazaq Mohamed
Academics Syndicate representative

Overview

The Department of Computer Science at the College of Education for Pure Science is considered one of the leading departments within the college. It was established in 2002, having previously been part of the Department of Mathematics. Later, it became an independent department and began offering a Bachelor of Education degree in Computer Science.

The department prepares teachers qualified to teach computer science in secondary and high schools. It equips students with strong scientific, technical, and pedagogical skills, enabling them to contribute to the advancement of education and research in society.

The department follows a modern study plan that integrates both theoretical and practical components, keeping pace with ongoing developments in information technology. Its lecturers are specialists in various fields, including Artificial Intelligence, Computer Networks, Multimedia, Image Processing, Information Security, and Educational Technology.

Students who complete the program receive a Bachelor of Education degree in Computer Science. The department continuously updates its curriculum and provides modern laboratories to enhance students' learning experience. It also serves the community by preparing qualified graduates capable of working with emerging technologies and meeting the demands of today's job market.

Moreover, the department plays an important role within the college by supporting its mission to advance science, education, and research in society.

Department of Computer Science –Department of Mathematics –Research Laboratories

Heads of the Department of Computer Science

No.	Head of Department	Academic Year
1	Prof. Dr. Akram Hassan Mahmood	2002-2006
2	Prof. Dr. Kais Ismail Ibraheem	2006-2007
3	Dr. Thamir Abdulhafedh Jarjis	2007-2009
4	Prof. Dr. Kais Ismail Ibraheem	2009-2012
5	Prof. Dr. Israa Mohammed Khudher	2012-2015
6	Dr. Bashir Mohammed Saleh	2015-2017
7	Prof. Dr. Israa Mohammed Khudher	2017-2022
8	Assist. Prof. Dr. Alaa Yaseen Taqa	2022 - 2025
9	Assist. Prof. Dr. Mohammed Hazim Ameen	2025 – Till now

Management of the Department of Computer Science

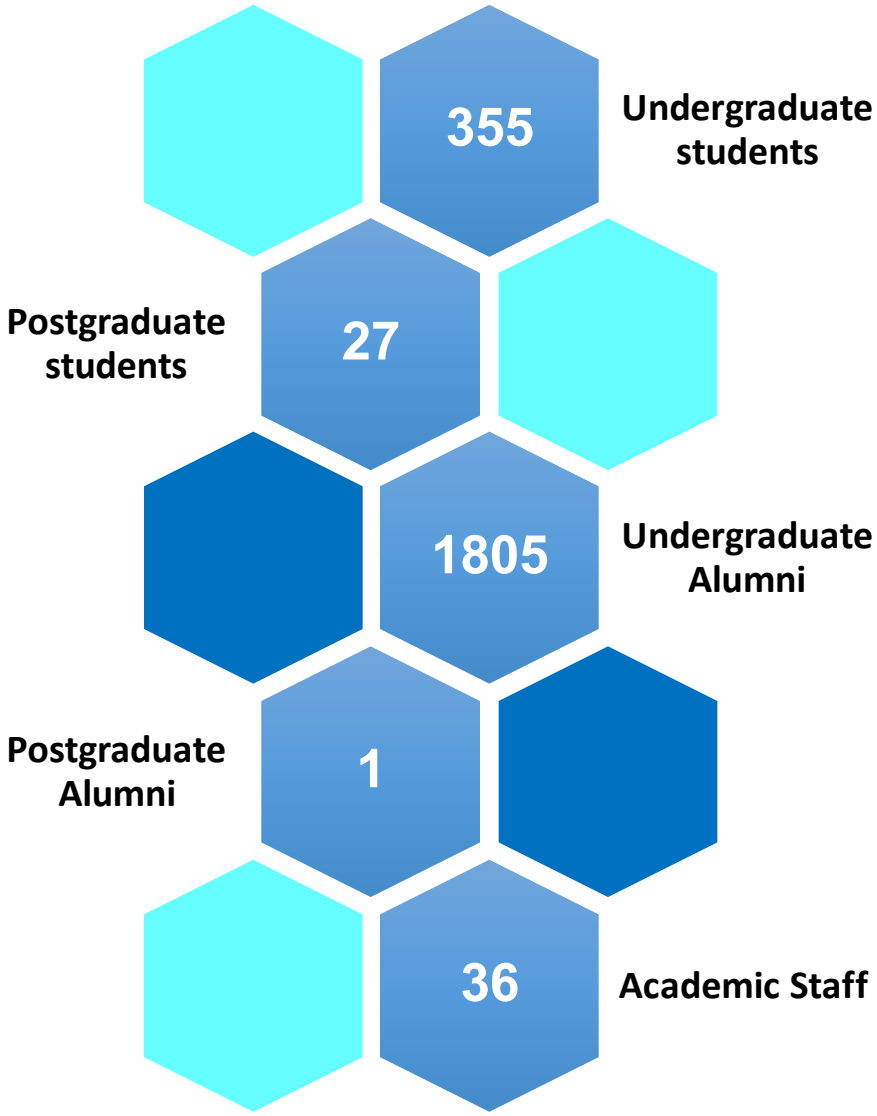
Assist. Prof. Dr. Mohammed Hazim Ameen
Specialist: Multimedia
Head of Computer Science Department

Assist. Prof. Dr. Awos Kh. Ali
Specialist: Computer Networks
Head Assist of Computer Science Department

Department of Computer Science Council

No.		
1	Assist. Prof. Dr. Mohammed Hazim Ameen	Chairman
2	Assist. Prof. Dr. Awos Kh. Ali	Member
3	Prof. Dr. Israa Mohammed Khudher	Member
4	Assist. Prof. Dr. Alaa Yaseen Taqa	Member
5	Dr. Mohammed Khaldoon Altalib	Member
6	Dr. Younis Abbas Younis	Member
7	Assist. Lec. Zaid Fawaz Jarallah	Member

The Department in Numbers



Vision, Mission and Objectives

Vision

The department's vision is to establish a distinguished academic position among comparable institutions by maintaining alignment with the rapid and continuous advancements in information technology and its diverse applications. It is dedicated to enhancing students' scientific knowledge and practical capabilities to produce competent graduates capable of delivering high-quality instruction. Through the effective integration of modern computer technologies, the department aims to advance and refine the educational process across traditional, electronic, and blended learning environments.

Mission

The department pursues a mission centered on achieving excellence in educational, pedagogical, academic, and research domains by preparing highly qualified graduates capable of serving as educators and programmers who actively contribute to the advancement of educational institutions and the development of governmental sectors. Furthermore, the department is committed to supplying the private sector with proficient and innovative professionals who meet contemporary labor market demands. In pursuit of its goals, the department places strong emphasis on fostering collaboration with other colleges within the University of Mosul, national and international universities, as well as the Ministry of Education and other relevant governmental sectors, thereby ensuring meaningful contributions to community service and the realization of sustainable development objectives.

Objectives

In light of the department's vision and mission, its objectives are categorized as follows:

General Objectives:

1. To cultivate highly qualified educators aligned with contemporary pedagogical methodologies, capable of serving effectively in Iraqi schools at the middle, preparatory, and secondary levels.
2. To develop specialized professionals equipped to contribute across diverse applied domains within various governmental sectors.
3. To foster educational, scientific, and humanitarian awareness within society through seminars, lectures, and continuing education initiatives, thereby promoting active community engagement.
4. To assist in resolving challenges faced by both public and private sectors through collaborative research, consultancy, and coordinated efforts with governmental institutions and ministries.
5. To enhance scientific and research collaboration with universities, governmental bodies, and other relevant institutions.

Specific Objectives:

1. To ensure alignment and integration with the vision, mission, and objectives of the University of Mosul.
2. To advance the completion and implementation of quality assurance processes and academic program accreditation to secure global recognition for both the college and the university.
3. To pursue institutional and programmatic accreditation at regional and international levels, reflecting excellence and competitiveness in higher education.

Quality Education- Department of Computer Science

Quality education, as embodied in the fourth Sustainable Development Goal, extends beyond theoretical instruction or mere examination performance. In the Department of Computer Science, it constitutes a holistic endeavor aimed at constructing a robust knowledge foundation, cultivating practical competencies, and preparing graduates for the demands of both the professional sphere and scientific research. The principal components of quality education within this discipline include:

1. **Comprehensive and Contemporary Academic Content**

   The department's curriculum encompasses a broad spectrum of foundational and applied knowledge, routinely updated to remain at the forefront of technological advancement. Core subjects include algorithms, data structures, operating systems, databases, artificial intelligence, computer networks, and software engineering. Updates ensure integration of cutting-edge topics, such as machine learning, cloud computing, cybersecurity, web application development, and multimedia technologies.

2. **Practical and Applied Learning**

   Emphasizing experiential education, the department engages students in real-world software projects, offering hands-on exposure to development processes and problem-solving techniques. State-of-the-art laboratories equipped with industry-standard tools-including Git, Docker, Linux, and Visual Studio Code-enable students to acquire market-relevant technical skills. Additionally, field training through internships at technology firms immerses students in authentic professional environments, fostering direct engagement with industry challenges.

3. **Cultivation of Critical Thinking and Problem-Solving Skills**

   The curriculum is meticulously designed to enhance analytical and logical reasoning by integrating theoretical knowledge with practical applications. Students are tasked with addressing real-world problems and algorithmic challenges, equipping them with the capacity to analyze complex datasets, devise innovative solutions, and navigate the demands of professional and research contexts.

4. **Highly Competent Academic Staffs**

   The department boasts a cadre of distinguished educators who combine deep academic and research expertise with substantial industry experience. College members employ pedagogically sound methods to elucidate complex concepts in an accessible, interactive manner, thereby facilitating effective comprehension and application of theoretical knowledge.

5. **Stimulating Learning Environment**

   Students benefit from a dynamic and supportive academic environment, characterized by continuous guidance and access to modern educational resources, including e-learning platforms, virtual laboratories, and lecture recordings. Opportunities to participate in research projects, conferences, and competitions further enhance experiential learning while fostering creativity and innovation.

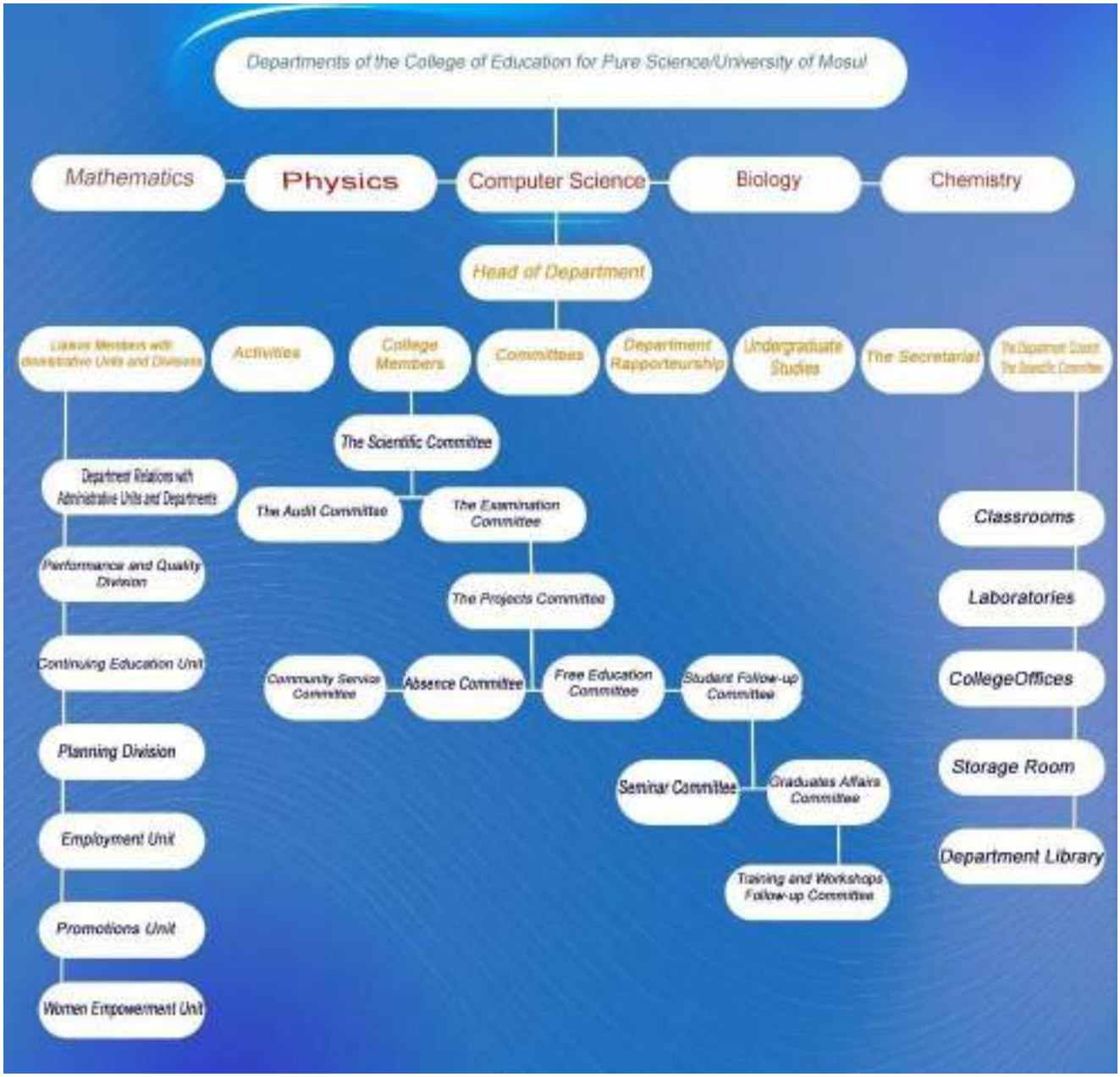
6. **Promotion of Independent Learning**

   The department encourages autonomy and lifelong learning by instilling habits of self-directed research and continuous skill acquisition. Students are guided to leverage external resources, such as Coursera, Udemy, YouTube, Stack Overflow, and GitHub, ensuring their knowledge remains current and extends beyond the formal curriculum.

7. **Development of Communication and Teamwork Skills**

   Team-based projects, technical report writing, and oral presentations are integral components of the program, nurturing students' collaborative and communication abilities. Emphasis is also placed on language proficiency, particularly English and other soft skills, enabling students to function effectively within multidisciplinary teams in both academic and professional contexts.

The Organizational and Administrative Structure



Academic Staff Members in the Department of Computer Science

No.	Name	Degree	Academic title	Specialization
1	Israa Mohammed Khudher	Ph. D	Professor	Digital Image Processing
2	Mohammed Hazim Ameen Alkawaz	Ph. D	Assistant Professor	Multimedia
3	Awos Khazal Ali	Ph. D	Assistant Professor	Networks
4	Raya Basil Ahmed	Ph. D	Assistant Professor	Multimedia
5	Abdulnasir Younus Ahmad	Ph. D	Assistant Professor	Operating System, Distributed programming
6	Alaa Yaseen Taqa	Ph. D	Assistant Professor	Intelligent Techniques
7	Ali Abdulrazzaq Khudhr AL-ALLAWEE	Ph. D	Assistant Professor	Computer Networks
8	Ibrahim Abdulghany Ibrahim Albaram	Ph. D	Lecturer	Methods of Teaching Mathematics
9	Asmaa Mowafaq Mohammed Alqassab	Ph. D	Lecturer	Information Security
10	Zena Natiq Abdulkader	Ph. D	Lecturer	Natural Language Processing
11	Karam Muayad Abdullah Alnuaymi	Ph. D	Lecturer	Artificial Intelligent
12	Mohammed Khaldoon Altalib	Ph. D	Lecturer	Information Technology
13	Marwan Aldabbagh	Ph. D	Lecturer	Computer Networks
14	Maan Younus abdullah al-fathi	Ph. D	Lecturer	Computer Networks
15	Meaad Mohammed Salih	Ph. D	Lecturer	Computer Vision
16	Hanaa Fathi Mahmood	Ph. D	Lecturer	Artificial Intelligent
17	Yahya Qasim Ibrahim	Ph. D	Lecturer	Artificial Intelligent
18	Younis Abbas Younis	Ph. D	Lecturer	Computer Vision
19	Shaymaa Ahmed Razoqi	Ph. D	Lecturer	Database
20	Nagham tharwat Saeed	M.Sc.	Assistant Professor	Digital Image Processing

21	Yahya Ismail Ibrahem	M.Sc.	Assistant Professor	Digital Image Processing
22	Esraa Abd Alsalam Abd Alkader	M.Sc.	Lecturer	Signal Processing
23	Aghsan Mahmoud Ibrahim	M.Sc.	Lecturer	Mathematical Statistics
24	Eman Fathi Ahmed	M.Sc.	Lecturer	Signal Processing
25	Omar Abdullah Najem Alniemi	M.Sc.	Lecturer	Artificial Intelligence
26	Kanar Muhammad Sami Mustafa	M.Sc.	Lecturer	Digital Image Processing
27	ALLA SAAD AHMED	M.Sc.	Lecturer	Computational Mathematics
28	Manar Abdulkareem Al-Abaji	M.Sc.	Lecturer	Digital Image Processing
29	Raghad hazim hamid	M.Sc.	Assistant Lecturer	Image Processing
30	Zaid Fawaz Jarallah	M.Sc.	Assistant Lecturer	Computer Network
31	Senan Adel Alhasan	M.Sc.	Assistant Lecturer	Software Engineering
32	Hala Moayad Sheet	MTCS	Assistant Lecturer	Methods of Teaching Computer Science
33	Huda Basim Hamid Aldabbagh	M.Sc.	Assistant Lecturer	Computer Engineering
34	Rahma Talal Sultan	MS Bio	Assistant Lecturer	Methods of Teaching Biology
35	Ammar Adil Ahmed	M.Sc.	Assistant Lecturer	Computer Science
36	Ihab Yassin Mahmood Al-Jubour	M.Sc.	Assistant Lecturer	Computer Science

Department Responsibilities Description

Head of Department Responsibilities:

The Head of the Department holds overall responsibility for the management of the department's academic, administrative, and financial operations, in addition to overseeing student affairs. This role includes formulating the department's strategic plan and ensuring its effective implementation, managing academic and research activities, monitoring student attendance, and supervising both theoretical and practical examinations.

The Head of Department is also tasked with fostering and maintaining the department's internal and external relationships, ensuring the provision of educational, research, administrative, and financial resources, with a strong emphasis on quality enhancement and the improvement of academic outcomes. This position involves periodic curriculum review, submission of updated proposals to the faculty committee, and the organization of specialized lectures delivered by external experts for both undergraduate and postgraduate students.

Furthermore, the Head monitors faculty performance and adherence to professional responsibilities, prepares regular reports on departmental activities, reviews research submissions for tenure and promotion, identifies staffing needs across academic, technical, and administrative domains, proposes annual admission plans, and oversees course allocation. Regular engagement with students, including consultations to gather feedback and address challenges, is also a key component of this role.

Department coordinator Responsibilities:

The Department Coordinator supports the Head of Department in the organization and management of departmental affairs, including monitoring daily student attendance and overseeing the provision of necessary classroom resources. The coordinator is also responsible for preparing class and examination schedules, as well as submitting administrative requests pertaining to the department's academic operations, following approval from the Head of Department and the Dean.

Department Council:

The Department Council assists the Head of Department in supervising the educational process and monitoring overall performance within the department. It oversees the implementation of the academic plan and the professional development of teaching, educational, and administrative staff, ensuring that the department's objectives are achieved and academic standards are continually enhanced.

Scientific Committee:

The Scientific Committee collaborates with the Head of Department in making informed academic decisions related to curriculum design and development, reviewing promotion applications for teaching staff, and monitoring research activities and scientific publications.

Postgraduate Studies Committee:

The Postgraduate Studies Committee is responsible for managing all matters pertaining to postgraduate students. Its duties include establishing admission examination committees, forming student defense panels, reviewing requests for extensions, appointing supervisors for postgraduate research, and organizing and monitoring training courses and seminars for master's students.

Quality Assurance Committee:

The Quality Assurance Committee is tasked with promoting a culture of quality and overseeing its application across all departmental activities to enhance educational outcomes. It supervises academic and program evaluation and accreditation processes and supports continuous quality improvement initiatives. Key responsibilities include preparing comprehensive descriptions and reports of the department's academic programs and courses, collecting and analyzing relevant departmental statistics, and undertaking any additional tasks aimed at advancing quality assurance and enhancement.

Examination Committee:

The Examination Committee oversees all aspects of mid-term and final examinations. Its responsibilities include scheduling invigilators and assigning them to examination rooms, receiving examination materials and results from faculty members, and organizing these while maintaining strict confidentiality. The Committee also conducts statistical analyses of results, determines pass and fail rates, and coordinates exams for students retaking courses.

Additional duties include documenting and archiving examination questions and grades, monitoring attendance of faculty and students, evaluating exam content in accordance with regulations, recording grades and student data electronically, and calculating student rankings across all academic levels.

Audit Committee:

The Audit Committee works in close coordination with the Examination Committee during the examination period and the announcement of grades. Its members are responsible for verifying the accuracy of grades submitted by department members and ensuring their consistency with the grades recorded on official grade sheets. The committee also reviews examination grades prior to their release to students and confirms the accuracy of the order and ranking of graduating students.

Graduation Projects Committee:

The Graduation Projects Committee is responsible for collecting project proposals from department members, organizing and presenting them to students and facilitating project selection based on predetermined criteria. The Committee oversees the implementation process, ensuring that projects progress according to schedule. It also coordinates the formation of discussion committees for project defenses ensures that evaluation scores are recorded and documented accurately and consistently.

Continuing Education, Workshops and Seminars Committee:

This Committee oversees the planning and implementation of continuing education programs, workshops, and seminars organized by the department's academic staff for collage members, as well as undergraduate and postgraduate students. It is also responsible for maintaining systematic electronic and paper archives of all activities and ensuring that related administrative procedures and documentation are completed in an accurate and organized manner.

Academic and Psychological Guidance Committee:

The Academic and Psychological Guidance Committee meets with students to identify the academic and personal challenges they encounter. This is achieved through organizing advisory workshops that address issues related to academic life and social well-being. The committee is also responsible for preparing detailed reports on these activities and the concerns raised by students.

Practicum Committee:

The Practicum Committee is responsible for coordinating the practical training of final year students within the Directorate of Education. Its duties include preparing official correspondence for student placements, monitoring training progress, collecting reports from students upon completion of their practicum, and evaluating daily teaching plans. The Committee also assigns students to partner schools, oversees the implementation of the practicum, prepares the necessary administrative documentation, and facilitates applied research projects aligned with the needs of partner schools. Additionally, it issues administrative orders related to supervision and post-training evaluation. Student performance is assessed through three evaluation forms completed respectively by the school principal, the cooperating teacher, and the training supervisor.

Department Media Committee:

The Media Committee is responsible for documenting and publicizing the department's academic and social activities. It covers events through photography and the preparation of descriptive reports and announcements, which are subsequently published on the college's official website to strengthen communication and highlight the department's academic and community engagement.

Schedules Committee:

Committee members prepare lecture timetables for undergraduate and postgraduate studies for both semesters of each year and work to resolve any conflicts that may arise during scheduling.

Archiving Committee:

The committee is responsible for archiving and documenting all scientific and research activities electronically, including seminars, seminars, training courses, and workshops. All details related to these events, such as the topics discussed, the names of participants, the venues, and their dates, are recorded with the aim of creating a comprehensive and organized database. The Committee also prepares monthly, semi-annual and annual statistics for these activities to provide accurate reports that are used in future planning and decision-making. Electronic archiving facilitates access to and retrieval of data when needed, enhancing organization and efficiency within the department.

Student Affairs Committee:

The committee is responsible for welcoming and registering new students at the beginning of every academic year, as well as recording student attendance for all academic stages. It also follows up on student cases during the academic year, including transfers, hosting and deferrals, and prepares lists of students for all stages and sort them according to classrooms.

Free Education Committee:

The committee is responsible for organizing the distribution and receipt of textbooks for students at all stages, as well as coordinating with the relevant authorities to ensure that the latest editions of textbooks are provided.

Bologna Process Committee:

The Bologna Process Committee is responsible for preparing the course titles for the first and second semesters at each academic level, defining their credit units, and organizing the courses into eight modules according to the requirements of the university, college, and department, in coordination with the Scientific Committee. The committee also proposes necessary measures to ensure the successful implementation of the Bologna Process within the department. Additionally, it conducts workshops on how to use the electronic system one of the Bologna Process requirements and trains department members accordingly. The committee also participates in workshops related to the Bologna Process to exchange knowledge and experiences with other colleges that have previously implemented this system.

Inventory Committee:

The committee is responsible for preparing statistical reports on the inventory of materials available in classrooms, laboratories, and offices, as well as the inventory of stored materials. It also reviews damaged or consumed items and disposes of them in accordance with the approved regulations.

The Role of the Department of Computer Science in Achieving Sustainable Development Goals (SDGs)

Goal 1: No Poverty:

1. The department adopts a social solidarity system with the aim of helping needy students and employees, according to the needs of each individual, in order to promote a spirit of cooperation and human solidarity within the department.
2. The department works to support and implement university programmers aimed at reducing poverty by encouraging community and volunteer initiatives, organizing activities that contribute to raising awareness of sustainable development issues, and participating in projects aimed at empowering individuals academically and professionally, thereby contributing to improving living standards and supporting low-income groups.
3. Department members contribute to the development of local policies aimed at alleviating poverty in all its dimensions by participating in community committees and initiatives and providing academic studies and consultations that support decision-makers in adopting comprehensive development plans that address the economic, social and educational aspects of poverty.

Goal 2: Zero Hunger:

1. The department organizes group breakfasts for students in the internal departments to promote a spirit of camaraderie and social solidarity and to support human relations between students and teaching staff.
2. The department distributes special support vouchers to needy students to help them meet their basic needs and alleviate their financial burdens, as part of its humanitarian and social initiatives.
3. The department supports orphanages for children (Dar Al-Yatama for Al-Baraem and Al-Zuhur) and homes for the disabled and elderly by providing the necessary assistance and contributing to improving their living conditions, thereby promoting social responsibility and humanitarian values within the academic community.

Goal 3: Good Health and Well-being:

1. Smoking is prohibited within the department's in order to protect the health of students and teaching staff and to promote a clean and safe learning environment.
2. The department encourages students to comply with vaccination and immunisation requirements in order to protect their personal health and promote public health within the educational environment.
3. The department displays health and social awareness posters within its building in order to promote health and social awareness among students and teaching staff.
4. The department organizes awareness programmes aimed at combating drugs, including lectures, workshops and awareness campaigns, to promote awareness among students about the dangers of drugs and their impact on health and society.
5. The department implements various programmes aimed at improving public health and encouraging physical activity and sports among students and staff members by organizing workshops, awareness campaigns, and regular sports activities within the university community.

Goal 4: Quality Education:

1. The department keeps pace with recent developments in teaching methods and techniques and continuously strives to develop its curricula in line with scientific and technological advances, with the aim of raising the efficiency of the educational process and improving the quality of academic outputs.
2. The department relies on the dissemination and application of e-learning and distance learning systems, with the aim of keeping pace with modern technological developments and providing a flexible learning environment that contributes to enhancing self-learning and improving the quality of education.
3. The department organizes lectures, seminars and technical workshops aimed at achieving the goals of quality education by developing the skills of students and staff members and promoting the use of modern technologies in the educational process.

4. The department aims to provide students with advanced skills in information and communication technology, thereby enhancing their practical and scientific abilities and qualifying them to integrate efficiently into the labour market and keep pace with its modern requirements.
5. The department has been updated and equipped with facilities for people with special needs, including pathways that facilitate entry and exit, as well as accessible toilets and washrooms equipped to meet their needs, ensuring an inclusive and accessible learning environment for all.
6. Providing department members with opportunities for academic study outside Iraq, in addition to supporting them in post-doctoral programmes and research fellowships, with the aim of developing their academic capabilities and enhancing their research expertise, which contributes to raising the academic level of the department and the university.

Goal 5: Gender Equality:

1. Organizing discussion lectures in the department aimed at raising the scientific level and promoting equal academic participation, thereby contributing to reducing gender disparities and achieving an inclusive and supportive learning environment for all.
2. Treating student's at all academic levels with complete objectivity and impartiality when conducting assessments, to ensure fairness and transparency in measuring academic performance and motivating students to develop their academic abilities.
3. Achieving gender equality among members in the Department of Computer Science, thereby promoting a fair and supportive work environment that contributes to the achievement of the department's goals and the development of its academic and scientific performance.

Goal 6: Clean Water and Sanitation:

1. The department ensures that detergents and sanitizers are continuously available in bathrooms and toilets to guarantee a healthy and clean environment and maintain the safety of students and staff.
2. The department works to install drinking water filtration and purification systems, in addition to providing bottled drinking water, especially during the summer and exam periods, to ensure the availability of clean and healthy water for students and staff members.

Goal 7: Affordable and Clean Energy:

1. The department conducts graduation research for bachelor's students focusing on clean and renewable energy, with the aim of guiding students towards sustainable innovation and contributing to the achievement of environmental development and sustainable energy goals.
2. The department organizes workshops aimed at encouraging students and staff members to use clean energy sources and raising awareness of the importance of environmental sustainability and renewable energy applications in daily and academic life.

Goal 9: Industry, Innovation and Infrastructure:

1. The department works to qualify highly competent graduates in computer science, programming, and data analysis, thereby enhancing their ability to serve the industrial and technological sectors.
2. The department organizes workshops and training programmes aimed at enhancing innovation and technical problem-solving skills.
3. The department develops scientific research in the fields of artificial intelligence, machine learning, and the Internet of Things, with a view to applying it in the industrial and service sectors.

Goal 10: Reduce inequalities:

1. The department works to distribute students equally among academic departments, taking into account the balance between males and females, sects, religions and minorities, with the aim of achieving justice and inclusiveness and promoting a diverse and integrated educational environment.
2. The department encourages students and employees to commit to wearing appropriate and modest clothing and proper dress, to enhance discipline and a civilized appearance within the department's educational environment.

Goal 11: Sustainable cities and communities:

1. The department organizes awareness courses and lectures for the community, schools and institutions, with the aim of educating and alerting people to cybercrimes, such as cyber extortion and others, to promote digital security awareness and protect individuals and society from cyber risks.
2. The department takes a number of procedures to facilitate access to scientific libraries for students and staff members, ensuring easy access to academic sources and references, supporting scientific research and developing cognitive skills.

Goal 12: Responsible consumption and production:

1. The department is responsible for preparing waste bins, sorting waste according to type, and disposing of it in a safe and proper manner, thereby ensuring the preservation of the environment and promoting cleanliness within the department's building.

Goal 13: Climate action:

1. The department participates in afforestation campaigns inside and outside the university, with the aim of improving the environment, contributing to calming the atmosphere inside the city and enhancing green spaces.

Goal 16: Peace, justice and strong institutions:

1. Department members actively contribute and participate in activities organized by community organizations, which aim to promote the values of peace and justice in society.
2. The department organizes awareness lectures aimed at combating corruption and bribery, to promote the values of integrity and transparency among students, staff members, and the academic community.

Goal 17: Establish partnerships to achieve the goals:

1. The department cooperates with the Nineveh Education Directorate to ensure the graduation of qualified students who contribute effectively to society, by working as skilled teachers in schools and transferring the acquired knowledge and skills to students.

Allocate containers for waste recycling

Allocating parking for people with special needs at the entrance to the department

Allocating a corridor for people with special needs at the entrance to the department

Allocating seats for people with special needs in laboratories and classrooms

University of Mosul / College of Education for Pure Science/ Department of Computer Science

(Semester System – Undergraduate Studies) for The Academic Year 2025-2026

First Stage					
Credit	Practical	Theoretical	Code	Subjects Name	No
6	2	2	EDCO26F101	Logic Design	1
6	2	2	EDCO26F102	Structured Programming	2
4	_	2	EDCO26F104	Mathematics	3
6	2	2	EDCO26F103	Computer Organization	4
4	_	2	EDCO26F105	Discrete Structures	5
2	_	1	EDCO26F107	Fundamentals of Education	6
4	_	2	EDCO26F106	Developmental and Educational Psychology	7
2	_	1	EDCO26F108	Arabic Language	8
2	_	1	EDCO26F110	English Language	9
2	_	1	EDCO26F109	Democracy and Human Right	10
38	6	16		Total	

University of Mosul / College of Education for Pure Science/ Department of Computer Science

(Semester System – Undergraduate Studies) for The Academic Year 2025-2026

Second Stage					
Credit	Practical	Theoretical	Code	Subjects Name	No
6	2	2	EDCO26F201	Microprocessors	1
4	2	1	EDCO26F202	Numerical Analysis	2
6	2	2	EDCO26F203	Data Structure and Algorithms	3
6	2	2	EDCO26F204	Object Oriented Programming	4
6	2	2	EDCO26F205	Database	5
4	_	2	EDCO26F206	Computational Theory	6
4	2	1	EDCO26F207	Curriculum and School Books	7
4	_	2	EDCO26F208	Leadership and Educational Administration	8
Satisfactory	_	1	EDCO26F209	Teaching Thinking	9
2	_	1	EDCO26F210	English Language	10
2	_	1	EDCO26F211	Ba'ath Regime Crimes in Iraq	11

2	_	1	EDCO26F212	Arabic Language	12
54	10	22		Total	

University of Mosul / College of Education for Pure Science/ Department of Computer Science

(Semester System – Undergraduate Studies) for The Academic Year 2025-2026

Third Stage					
Credit	Practical	Theoretical	Code	Subjects Name	No
6	2	2	EDCO26F301	Artificial Intelligence	1
6	2	2	EDCO26F302	Computer Graphics	2
6	2	2	EDCO26F303	Compilers	3
6	2	2	EDCO26F304	Visual Programming	4
4	_	2	EDCO25F305	Software Engineering	5
4	_	2	EDCO26F306	Computer Architecture	6
4	2	1	EDCO26F307	Teaching Methods	7
4	_	2	EDCO26F308	Counseling and Psychological Health	8

40	**10**	**15**		**Total**	

University of Mosul / College of Education for Pure Science/ Department of Computer Science

(Semester System – Undergraduate Studies) for The Academic Year 2025-2026

Fourth Stage					
Credit	Practical	Theoretical	Code	Subjects Name	NO
6	2	2	EDCO26F401	Web Design (Elective-1)	1
6	2	2	EDCO26F402	Operating Systems	2
6	2	2	EDCO26F403	Computer Networks	3
6	2	2	EDCO26F404	Data Security	4
4	_	2	EDCO26F405	Internet of Things (Elective-2)	5
4	_	2	EDCO26F406	Measurement and Evaluation	6
4	2	1	EDCO26F407	Practical Education	7
2	_	2	EDCO26F408	Research Project	8
38	10	15		Total	

University of Mosul / College of Education for Pure Science/ Department of Computer Science

(1st Course - Postgraduate Studies – Master's Degree) For The Academic Year 2025-2026

Code	Credit	Subjects Name	No
EDCOP25F501	3	Advanced Artificial Intelligence	1
EDCOP25F502	3	Advance Computer Networks	2
EDCOP25F503	2	Digital Image Processing	3
EDCOP25F504	3	Information Security	4
EDCOP25F505	2	Soft Computing	5
EDCOP25F506	0	English	6
13	Total		

University of Mosul / College Education of Pure Science / Department of Computer Science

(2nd Course - Postgraduate Studies – Master's Degree) For The Academic Year 2025-2026

Code	Credit	Subjects Name	No
EDCOP25M507	3	Advanced Operating System	1
EDCOP25M508	2	Data Mining	2
EDCOP25M509	2	Distributed Database	3
EDCOP25M510	2	Teaching Methods	4
EDCOP25M511	2	Research Methodology	5
EDCOP25M512	2 Elective	Computer Vision	6
		Pattern Recognition	
EDCOP25M513	2	Mobile Computing	7
15		Total	

Research Directions of the Department of Computer Science

The Department of Computer Science within the College of education for Pure Science provides extensive facilities supporting a wide range of research domains, including computer networks, cybersecurity, image processing, and multimedia systems. The department's diverse research directions have fostered significant opportunities for students and scholars to engage in contemporary and advanced fields of study, aligning academic inquiry with the evolving needs of both local and global markets. The main research areas endorsed by the Department of Computer Science include the following:

Artificial Intelligence and Computer Vision:

Both artificial intelligence (AI) and computer vision focus on the development of intelligent systems capable of interpreting and analyzing data—particularly visual information—to make decisions or perform tasks that emulate human capabilities. The integration of these fields enables the creation of advanced applications with transformative potential across a wide range of domains, including autonomous driving, healthcare, manufacturing, smart agriculture, and augmented and virtual reality environments.

Multimedia:

The utilization of multimedia in research serves as a critical tool for enhancing data collection, analysis, and the presentation of results in a more interactive and comprehensible manner. Key applications include the simulation of models and processes through virtual and augmented reality, visual data analysis, the facilitation of scientific communication, and the effective dissemination of research outcomes. Additionally, multimedia plays a significant role in supporting educational and training initiatives by providing dynamic and engaging learning experiences.

Computer Networks and Information Security:

The fields of computer networks and information security represent two interrelated dimensions of information technology. Computer networks focus on the design, construction, and management of networks, encompassing data transmission, network devices, and infrastructure administration. In parallel, information security addresses the protection and encryption of data, access and permission management, and the analysis of security incidents. Robust network performance and secure data transmission are inherently interdependent;

effective networks require strong security measures, while data protection relies on an understanding of how information flows. Consequently, researchers in these domains collaborate to ensure both high-speed communication and comprehensive data security.

Digital Image Processing:

Digital image processing is concerned with enhancing image quality and preparing images for subsequent analysis, including tasks such as noise reduction, brightness and contrast adjustment, and edge detection. Image analysis involves extracting fundamental features from images, including edges, angles, and homogeneous regions, which form the basis for higher-level computational interpretations.

Operating System and Calculator Architecture:

This field focuses on understanding the internal functioning of computers, encompassing resource management and the execution of commands from hardware to software. It is closely interconnected with other areas of computer science and provides the foundational knowledge necessary for comprehending the complete operation of computing systems.

Programming:

Programming constitutes the foundational pillar of all disciplines within the Department of Computer Science, underpinning both theoretical exploration and practical implementation. In domains such as image processing and computer vision, advanced programming skills are essential for developing models, including facial recognition systems. In networking and information security, programming enables the creation of network simulators and the implementation of intrusion detection systems. Thus, programming serves not merely as a tool but as the essential language through which researchers translate conceptual ideas into executable, testable models. Every research direction within the department relies on programming to transform theoretical concepts into practical applications that can be evaluated, refined, and optimized.

Computer Science Department Laboratories

- Artificial Intelligence Lab - Code: LGE00564
- Postgraduate Lab - Code: LGE00109
- Programming Lab - Code: LGE00841
- Database Lab - Code: LGE00177
- Multimedia Lab - Code: LGE00512
- Computer Networks Lab - Code: LGE00306

The Department of Computer Science comprises a series of specialized laboratories for both undergraduate and postgraduate students, which play a vital role in strengthening the practical component of the educational program. These laboratories include the Artificial Intelligence Laboratory, Graduate Laboratory, Programming Laboratory, Multimedia Laboratory, Computer Networks Laboratory, and Database Laboratory.

These facilities help students apply theoretical knowledge through hands-on practice and are supervised by academic members with extensive academic and professional expertise. All computers and equipment are regularly maintained to ensure a modern and effective learning environment that fosters both academic achievement and technical proficiency.

1. Artificial Intelligence Lab LGE00564:

The Artificial Intelligence Laboratory is a sophisticated educational and research facility dedicated to the development and application of artificial intelligence technologies, including machine learning, natural language processing, and computer vision. The laboratory provides specialized software and tools for data analysis and the training of intelligent models, enabling students and researchers to implement algorithms in practice. This hands-on experience fosters innovation and advances expertise in technology and digital transformation.

Device image	Device name in English
	DCP-L2540DW
	digital projector BenQ

	**LG interactive screen 86**

2. Postgraduate Laboratory LGE00109:

The Postgraduate Laboratory is a specialized academic facility designed for master's and doctoral students, with the aim of advancing scientific and applied research within their areas of specialization. The laboratory is equipped with the latest tools, advanced software, and dedicated spaces for individual and collaborative work. It supports the development of students' skills in conducting experiments, analyzing data, and producing research publications, while promoting innovation and the generation of new knowledge.

Device image	Device name in English
	**DCP-L2540DW**
	**Digital projector BenQ**

	**Cyborg 15 A12VF**
	**Cyborg 15 A12VF**
	**Cyborg 15 A12VF**
	**Cyborg 15 A12VF**
	**Cyborg 15 A12VF**

	**Cyborg 15 A12VF**
	**Cyborg 15 A12VF**
	**Cyborg 15 A12VF**
	**Cyborg 15 A12VF**
	**Cyborg 15 A12VF**

	**Cyborg 15 A12VF**
	**Cyborg 15 A12VF**
	**Cyborg 15 A12VF**
	**Cyborg 15 A12VF**

3. Programming Lab LGE00841:

The Programming Laboratory is a dedicated learning environment designed to translate theoretical programming concepts into practical applications. It provides students with opportunities to master programming languages, develop software, and execute technical projects using appropriate hardware and software tools. The laboratory fosters the development of logical thinking, problem-solving abilities, and collaborative skills, while serving as a stimulating environment that encourages innovation and creativity within the technical domain.

Device image	Device name in English
	DCP-L2540DW
	Digital projector BenQ
	Smart TV

4. Database Lab LGE00177:

The Database Laboratory is a practical learning environment designed to train students in the design, creation, and management of databases using database management systems such as MySQL and Oracle. The laboratory enables students to execute SQL queries, and to efficiently understand, analyze, and organize data structures. It also supports the development of problem-solving skills, the application of data security principles, and the maintenance of data integrity.

Device image	Device name in English
	**DCP-L2540DW**
	**Digital projector BenQ**

5. Multimedia Lab LGE00512:

The Multimedia Laboratory is a specialized learning and technical environment focused on the design and processing of multimedia content, including audio, video, images, and animation. The laboratory provides advanced tools and software that enable students to create innovative and interactive media, while fostering skills in digital design, media production, and visual communication. It also promotes creativity and innovation within the fields of media and emerging technologies.

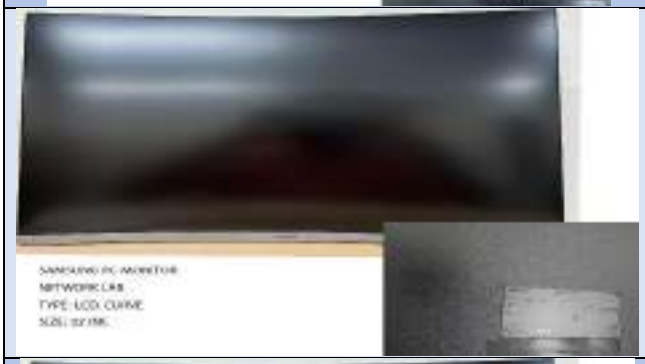
Device image	Device name in English
	**Xerox 3025**

	**Digital projector BenQ**
	**Smart TV**

6. Computer Networks Lab LGE00306:

The Computer Networks Laboratory in the Department of Computer Science is designed to provide students with both theoretical knowledge and practical skills in networking. The laboratory is equipped with advanced hardware and network controllers, enabling students to design, build, and experiment with local area networks (LANs) and explore various network configurations. Key activities include configuring LANs and wide area networks (WANs), optimizing wired and wireless networks, studying communication protocols such as TCP/IP, and applying fundamental cybersecurity measures. Additionally, the laboratory allows students to work with virtual networks and utilize specialized software, enhancing their understanding of modern network architectures and operational requirements.

Device image	Device name in English
	**Xerox 3025**

	**Digital projector BenQ**
	**LC32R500FHMXZN**
	**LC32R500FHMXZN**
	**LC32R500FHMXZN**
	**LC32R500FHMXZN**

	**Think centre neo 50t gen 3**
	**Think centre neo 50t gen 4**
	**Think centre neo 50t gen 5**
	**Think centre neo 50t gen 6**

	LG interactive screen 75

Guide Preparation Committee

No.	Name	
1	Assist. Lecturer. Senan Adel Mawlood	Chairman
2	Dr. Hanaa Fathi Mahmood	Member
3	Dr. Younis Abbas Younis	Member
4	Lecturer. Kanar Muhammad Sami Mustafa	Member
5	Lecturer. Esraa Abd Alsalam Abd Alkader	Member
6	Assist. Lecturer. Ammar Adil Ahmed	Member

This guide was prepared under the direction of the Dean of the College of Education for Pure Sciences, Professor Dr. Jassim Fatehi Ali, and under the supervision of the Head of the Department of Computer Science, Assistant Professor Dr. Mohammed Hazim Ameen. It serves as a reference for familiarizing readers with the Department of Computer Science, its faculty members, academic programs, and scientific activities.

Edition2025