Ministry of Higher Education and
Scientific Research
Anbar University
College of Computer Science
and information technology

UNIVERSITY OF ANBAR

Computer Network Systems Department Guide
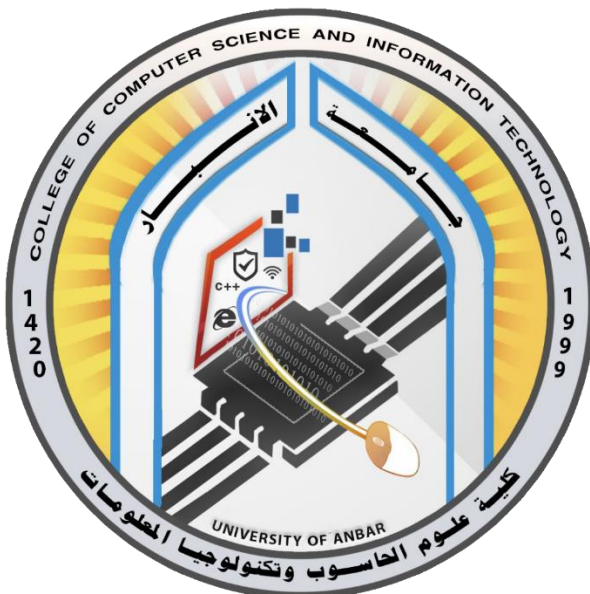
2023-2024

Emblem of the Republic of Iraq

Ministry of Higher Education and Scientific Research

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Department Head's Speech

The tremendous development witnessed in the past decades in the field of computers and informatics, and the accompanying development in the field of communications, networks, and biotechnology, which had a great impact on our daily lives in various fields. As a result, computer network systems were created to keep pace with this development and consolidate concepts and theories related to the fields of knowledge related to computer science.

The Department of Computer Network Systems was established as one of the departments of the College of Computer Science and Information Technology in 2018-2019. The duration of study is four years to obtain a bachelor's degree in computer network systems. The idea of establishing the department was to be a scientific launching pad and renaissance based on transforming the latest developments in knowledge and science into qualified human energies to localize, innovate, and create technology.

The Computer Network Systems Department aims to prepare a generation of graduates who possess a high level of analysis, design and innovation capabilities, as they are considered among the important and basic conditions for those working in the computer field. To achieve this, the department adopts student-centered scientific and cultural activities with the ,aim of creating an atmosphere of scientific competition among students which will achieve development in their abilities and skills so that they contribute efficiently and professionally to society. The computer science program offered by the department also provides a unique and appropriate

environment of its kind that qualifies students studying to be equipped with everything new in the field of computer science and informatics, through contact with those with specialization and experience in the field of computers and information technology, which supports knowledge in this field in addition to the technical and research skills for study.

Through the Computer Science and Communications program, the department provides students with scientific foundations in various fields and sciences that contribute to providing original scientific solutions that serve multiple areas in the local community. When developing the study plan, the combination of theory, application and practice was taken into consideration. The department seeks, within the course of developing and updating the program plan, to adopt international foundations and standards in updating the study plan from organizations specialized in computing sciences and information technology.

Prof. Dr. Ahmed Nouri Rasheed
Head of the Computer Network
Systems Department

Establishment

Since its establishment as one of the departments of the College of Computer Science and Information Technology, the Computer Network Systems Department aims to consolidate scientific knowledge and practical , experiences in the field of computer science and information technology which enables male and female students to keep pace with the latest developments in this broad and renewable field, as a large number of job .opportunities are available for graduates of the Systems Department Computer Networks, the curriculum is therefore designed in a way that allows great freedom in adapting the curriculum according to the needs of students, business and industry. For this purpose, the educational program of the Computer Network Systems Department focused on the basic outcomes that must be met, providing the possibility of going deeper into each specialty.

Vision

Graduating distinguished students scientifically, professionally and ethically in computer science at the local, regional and international levels.

The Message

Serving students and the community by providing a distinguished educational environment and sustainable, high-quality research facilities.

Department Goals

❖ Within the framework of the general objectives of the College of Computer Science and Information Technology - Al Anbar University To keep pace with the global boom in the field of computers and information technology , the Computer Network Systems Department . aims to meet the growing need for specialists in computer networks The department specifically aims to graduate students capable of conducting basic and applied research in all computer sciences in a way that enables the development of scientific research and finding ,scientific solutions to the problems faced by state agencies, factories institutions and various bodies in this field. Study in the Computer Network Systems Department qualifies its graduates to do the following:

- Design and implementation of assembly components for computers and data transmission devices.
- Design and implementation of basic operating programs and advanced information systems.

- Analyzing requirements and setting specifications for computer ,hardware, network equipment, basic programs for operating them and the technical equipment necessary for them.
- Carrying out technical work to raise the efficiency of using and developing computers, basic operating programs and advanced information systems.
- Technical participation in his field of specialization to select the best offers and supervise the preparation, installation and operation.
- Design and implementation of specialized programs in technical and high-tech fields.

Career Opportunities

- ✓ Systems programmer
- ✓ Database designer and administrator
- ✓ Information security manager
- ✓ Manager and software developer
- ✓ Computer center manager
- ✓ Network manager and analyst
- ✓ Information systems analyst
- ✓ Network security specialist

The department's Organizational Structure

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                    ┌──────────────────┐
                    │   Department     │
                    │    Council       │
                    └──────────────────┘
              ┌───────────────┴────────────────┐
     ┌──────────────────┐            ┌──────────────────┐
     │    Head of       │            │   Department     │
     │   Department     │            │   secretariat    │
     └──────────────────┘            └──────────────────┘
              │                  ┌────────────┴────────────┐
     ┌──────────────────┐  ┌──────────────────┐  ┌──────────────────┐
     │   Department     │  │   Department     │  │  Faculty members │
     │   committees     │  │    decision      │  │                  │
     └──────────────────┘  └──────────────────┘  └──────────────────┘
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Quality Assurance and Academic Accreditation Committee	Curricula and Study Plans Committee	Educational Guidance Committee	Examination Committee	Scientific Committee
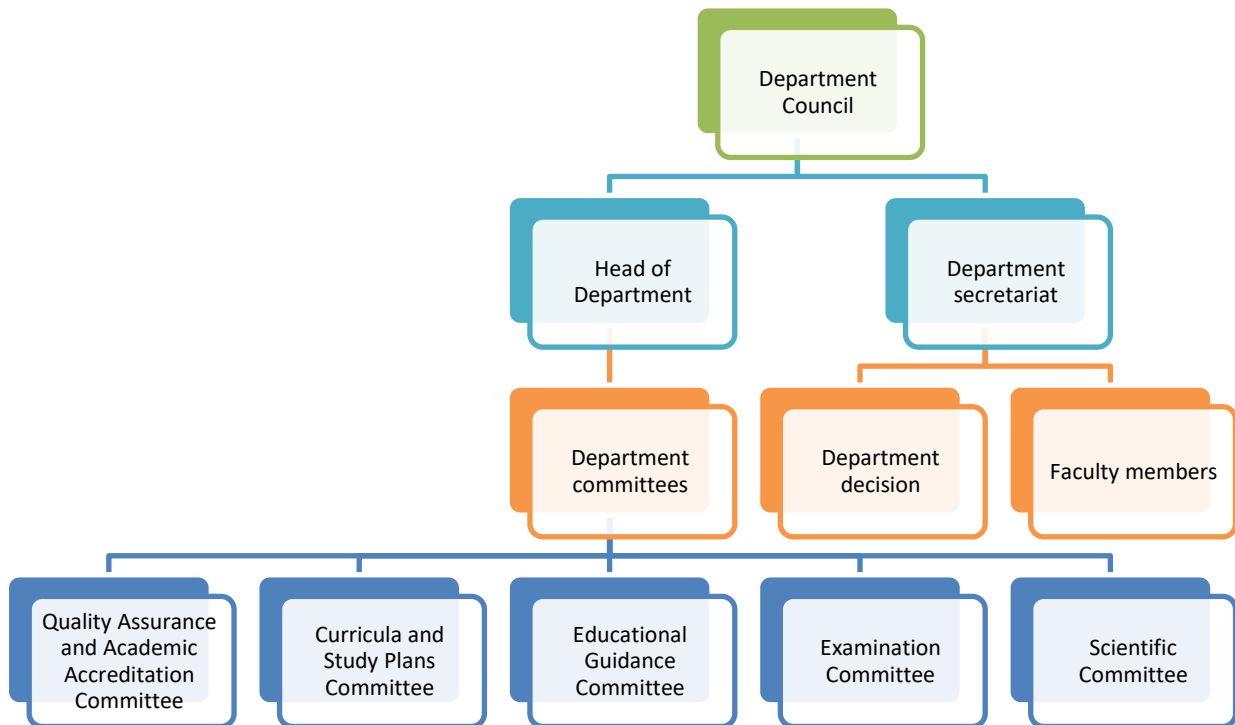
Department Committees

1. The Department's Curriculum and Study Plans Committee is assigned the following tasks:

o Preparing and developing study plans for the department's academic programs in Arabic and English in accordance with the standards of the university's curricula and study plans unit and the models specified in the procedural guide for study programs and plans at the university, taking into account the opinions of faculty members, students, graduates, the labor market, and the local community.

o Continuous coordination with the plans and curricula committee and unit at the college and university.

o Determining common courses among the multiple programs within the college (college requirements) based on the recommendations of the relevant scientific department councils.

o Reviewing, developing and studying the coding, contents and descriptions of courses and their pre-requisites and the extent to which they are compatible with their objectives and expected educational outcomes and with the goals and vision of the department, college and university.

o Review, develop, and study the extent of compatibility and harmony between the plan's courses, teaching methods, and evaluation with the

expected educational outcomes and with the goals and vision of the department, college, and university.

o   Periodic review of the suitability of the knowledge and skills that the student acquires during his studies in the department with the requirements of the labor market.

o   Periodic evaluation of the study plan through feedback and recommendations extracted from the teaching of special courses by faculty members, arbitrators, evaluators, and graduates, and submitting a proposal for appropriate procedures.

o   Determine the department's elective courses and submit recommendations to the department council.

o   Equivalency of academic subjects for students transferred to the department's programs according to the system.

o   Submitting minutes and reports to the department council on all activities and achievements of the committee.

o   Any other tasks assigned to the committee within the framework of its work.

2. The Quality Assurance and Academic Accreditation Committee in the department is assigned the following tasks:

o Preparing and implementing a plan for quality assurance and national and international academic accreditation in the department.

o Working to spread a culture of quality among department employees.

o Preparing and supplying the department's faculty members with publications, documents, and modern versions of the forms required to obtain local and international accreditation, as well as all relevant references.

o Receiving and reviewing course files and reports from faculty members in the department and submitting them to the Quality Assurance and Academic Accreditation Unit in the college.

o Supervising and coordinating with the various committees in the department in preparing all documents, forms, reports, performance indicators, and benchmark comparisons required to ensure quality and academic accreditation.

o Supervising training and qualification in the field of quality and academic accreditation in the department.

o Collecting and documenting the department's quality assurance and academic accreditation processes and keeping them in indexed files.

o   Follow up on the implementation of continuous improvement recommendations referred to the department from the Quality Assurance and Academic Accreditation Unit.

o   Collecting, transcribing, and analyzing various questionnaires related to quality assurance, academic accreditation, and reporting.

o   Any other tasks assigned to the committee within the framework of its work.

3. Research activities

The most important research activities that members of the Computer Network Systems Department are working on are focused on the following areas:

1   Algorithms
2   Programming Languages and Compiler Design
3   Software Engineering
4   Artificial Intelligence
5   Operating systems
6   Computer Graphics
7   Cryptography
8   Theory of Computation
9   Computer Networks

Computer Networks Systems Program Message

Computer Network Systems Department program is committed to providing high-quality education, and providing students with the principles and skills of scientific research with the aim of preparing them for continuing and professional education, with a high level of ethics and professional responsibilities, and contributing effectively to community service.

Computer Networks Systems Program Goals

1. Preparing qualified graduates who have the ability to carry out computer science work professionally.
2. Maintaining a friendly academic environment that encourages education and scientific research.
3. Preparing students to pursue graduate studies and continuing education.
4. Preparing graduates with a high level of ethical behavior and responsibility, and providing leaders in the academic and community fields.

The Educational Outcomes for Students in the Computer Network Systems Department

1. The ability to apply computer and mathematics knowledge appropriate to students' educational outcomes and specialization.

2. Ability to analyze a problem, and identify and define the computing requirements appropriate to the solution.

3. ,The ability to design, implement, and evaluate a computer-based system process, component, or program to meet desired needs.

4. Ability to work effectively in teams to accomplish a common goal.

5. Understanding the professional, ethical, legal, security, and societal responsibilities related to computer science and its uses.

6. The ability to communicate effectively with a large group of attendees when making any presentation or presenting work related to computer science.

7. Ability to analyze the local and global impact of computing on individuals, organizations and society.

8. Ability to participate in continuing professional development and learn about its requirements.

9. Ability to use current technologies, skills and tools necessary to practice computing.

10. Ability to apply mathematical foundations, algorithmic principles, and computer science theory to the modeling and design of computer

systems in a way that demonstrates an understanding of the trade-offs involved in design choices.

11. The ability to apply design and development principles in building software systems of varying complexity.

Computer Networks Systems Department Curriculum

❖ College requirements for a bachelor's degree in computer network systems:

According to the directives of the Ministry of Higher Education and Scientific ,Research to change the teaching system in the faculties of science and engineering the Bologna system will be adopted in teaching starting from the first stage of this year 2023-2024, while the remaining stages will continue to obtain a bachelor's degree in the semester system in the Computer Network Systems Department, so the student must complete (148) academic hours as follows:

The proposed first-grade semester courses for the academic year 2023-2024

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CNDC 110	Information Technology	78	47	5.00	C	None
CCIT 060	Mathematics	93	57	6.00	B	None
UOA 010	English I	33	17	2.00	S	None
CNDC 107	Programming C++ (1)	108	92	8.00	C	None

CNDC 109	Logic Design (1)	78	47	5.00	C	None
CNDC 114	Electrical circuits	63	37	4.00	C	None

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CNDC 108	Programming C++ (2)	123	102	9.00	C	CNDC 107
CNDC 111	Logic Design (2)	108	42	6.00	C	CNDC 109
CNDC 203	Advanced Mathematics	93	57	6.00	C	None
CCIT 061	Discrete Structure	78	47	5.00	B	None
UOA 017	Freedom and Human Rights	33	17	2.00	S	None
UOA 014	Arabic	33	17	2.00	S	None

The proposed semester courses for the second grade for the academic year 2023-2024

Units	hours		Subjects	Coding
	practical	theoretical		
3	2	2	Data structures	NSCC 201
3	--	3	Advanced Mathematics	NSDC203
3	2	2	Digital Electronic	NSDC204
3	2	2	Microprocessors	NSDC205
2	--	2	Data Communication	NSDE210
4	2	3	Object Oriented Programming I	NSDC208
1	--	1	Democracy	UOA201
2	--	2	Information Theory & Coding	NSDE212
21	4	17	Total hours and units	

First Course

Units	hours		Subjects	Coding
	practical	theoretical		
3	2	2	Algorithms	NSDC209
3	2	2	Numerical Analysis	NSDC202
2	--	2	Computer Architecture	NSDC206
3	2	2	Computer Networks	NSDC207
3	2	2	Web Design	NSDC213
4	2	3	Object Oriented Programming II	NSDE211
2		2	English2	UOA223
20	5	15	Total hours and units	

The proposed semester courses for the third grade for the academic year 2023-2024

First Course

Units	hours		Subjects	Coding
	practical	theoretical		
3	2	2	Visual Programming, I	NSDC305
3	2	2	Database Management Systems (Elective)	NSDE309
3	2	2	WirelessNetworks	NSDC306
3	2	2	Web Programming	NSDC303
2	-	2	Digital Signal ProcessingI	NSDE308
2		2	English	UOA323
16	4	12	Total hours and units	

Units	hours		Subjects	Coding
	practical	theoretical		
Second Course				
2	-	2	**Software Engineering (Elective)**	**NSDE301**
3	2	2	**Visual Programming II**	**NSDC304**
3	2	2	**Multimedia**	**NSCE302**
3	2	2	**Distributed Database (Elective)**	**NSDE312**
3	2	2	**Network Programming**	**NSDC307**
2	--	2	**Digital Signal ProcessingII**	**NSDE313**
16	4	12	**Total hours and units**	

The proposed semester courses for the fourth grade for the academic year 2023-2024

Units	hours		Subjects	Coding
	practical	theoretical		
First Course				
3	2	2	**Network Protocols & Services**	**NSDC408**
2	-	2	**Information Security**	**NSDC413**
3	2	2	**Artificial Intelligence I**	**NSDC409**
3	2	2	**Web Application Development I**	**NSDC405**
3	2	2	**Operating Systems**	**NSCC401**
1	--	1	**Research Methodology**	**NSCC412**
2	_	2	**English 4**	**UOA423**
17	4	13	**Total hours and units**	

Units	hours		Subjects	Coding
	practical	theoretical		
3	2	2	**Switching and Routing in the Network**	**NSDC406**
2	-	2	**Networks Security**	**NSDC404**
3	2	2	**Artificial Intelligence II**	**NSDE411**
3	2	2	**Web Application Development II**	**NSDC403**
3	2	2	**Mobile Computing (Elective)**	**NSDC407**
6	12	-	**Project in CNS**	**NSDC410**
20	**10**	**10**	**Total hours and units**	

Second Course header spans the table top.

Members of the department faculty

No	Full Name	Certificate	Academic Title	General Specialty	Subspecialty	Issuing Country
1	Ahmed Nouri Rashid Mustafa	Ph.D	Assistant Professor	Computer Engineering	Networks and digital processing	Greece
2	Sufyan Tayeh Faraj Kaitan Al-Janabi	Ph.D	Professor	Communications Engineering	Computer network security	Iraq
3	Ali Makki Saghir Saleh	Ph.D	Professor	Computer Science	Cybersecurity	Iraq
4	Salah Awad Salman Al-Issawi	Ph.D	Professor	Computer Engineering	Networks and digital processing	United kingdom
5	Abdul Karim Abdul Hamid Najm Abdullah	Ph.D	Assistant Professor	Computer Engineering	computer networks	Poland
6	Khattab Mujjel Ali	Ph.D	Assistant Professor	computer Sciences	Mobile computing and network security	United kingdom
7	Ismail Taha Ahmed Daraj	Ph.D	Assistant Professor	computer Sciences	Image processing	Malaysia
8	Omar Munther Hussein Samit	Ph.D	Assistant Professor	computer Sciences	Image processing	United kingdom
9	Saad Ibrahim Ahmed Hussein	Ph.D	Assistant Professor	Philosophy of Islamic Sharia	Islamic jurisprudence	- Iraq Baghdad
10	Sumaya Abdullah Hamad Shukr	Ph.D	Lecturer	computer Sciences	networks	Iraq
11	Ahmed Mahdi Jubayr Jassim	Ph.D	Lecturer	Computer networks	Wireless Networks (IoT)	Malaysia
12	Sinan Ali Abd Dalli	Ph.D	Lecturer	computer Sciences	networks	India

Computer Network Systems Department Guide

No	Full Name	Certificate	Academic Title	General Specialty	Subspecialty	Issuing Country
13	Fouad Hammadi Awad Ghadhab	Ph.D	Lecturer	computer Sciences	computer Sciences	Iraq
14	Saif Saad Hamid Fateeh	MSc	Lecturer	Computer Engineering	computer networks	India
15	Iman Turki Mahdi Salman	MSc	Lecturer	computer Sciences	Computer Science	Iraq
16	Seddiq Qais Abdul Rahman Dulaimi	MSc	Lecturer	computer Sciences	computer Sciences	Iraq
17	Khitam Abdel-Baset Muhammad Khalil	MSc	Assistant Lecturer	computer Sciences	computer Sciences	Iraq
18	Dania Abdel Qahar Shaker Mahmoud	MSc	Assistant Lecturer	Computer Sciences	computer Sciences	Iraq
19	Uday Abd Hazzam Ahmed	MSc	Assistant Lecturer	management and economy	Banking and Financial Sciences	Iraq
20	Muhammad Shehab Moayad Shehab	MSc	Assistant Lecturer	Electrical and computer engineering	Electrical and computer engineering	Türkiye
21	Tayseer Ahmed Yassin Daoud	MSc	Assistant Lecturer	Mechanical Engineering	Refractories	Iraq