

**Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department**



Academic Program Guide 2025-2026

2026



Academic Program Description Form

University Name: University of Al-Hamdaniya

Faculty/Institute: College of Computing and Informatics

Scientific Department: Department of Computer Networks

Academic or Professional Program Name: Bachelor Science in Computer Networks

Final Certificate Name: Bachelor Science in Computer Networks

Academic System: Bologna Process and Courses System

Description Preparation Date: 15 / 5 / 2026

File Completion Date: 16 / 5 / 2026

Signature:

Head of Department Name

Asst. Lect. Mariam Raheem Mirza

Date: 17 / 5 / 2026



Signature:

Scientific Associate Name

Dr. Noora Hashim Mohammed

Date: 17 / 5 / 2026

The file is checked by:

Quality Assurance and University Performance Division

Director of Quality Assurance and University Performance Division

Date: 17 / 5 / 2026

Signature:

Asst. Lect. Laith Saadi Salman



**Approval of the President of the University of Al-Hamdaniya
(acting as Dean of the College)**

Prof. Dr. Nashat Mubarak Sliwa

Date: 18 / 5 / 2026

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.



In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

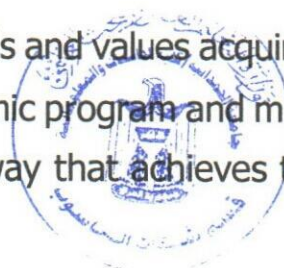
Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

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

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.



Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

1. Program Vision

The Department of Computer Networks aspires to be a leading academic and research hub at both the local and regional levels, distinguished for preparing highly qualified graduates with advanced scientific knowledge and technical expertise in computer networks. The department aims to foster innovation, contribute to the advancement of modern technologies, actively participate in driving digital transformation, and support the achievement of sustainable development goals.

2. Program Mission

The Department of Computer Networks is committed to providing comprehensive and advanced education in computer networks aligned with international standards. Through updated curricula that integrate theoretical knowledge with practical applications, the department seeks to graduate competent professionals capable of adapting to rapid developments in digital technologies. The department also strives to provide a supportive learning environment that fosters innovation, critical thinking, and professional integrity, while promoting community engagement, advancing applied research, and offering technical consultations.



3. Program Objectives

- 1- Deliver high-quality academic education covering both fundamental and advanced concepts in computer networks.
- 2- Develop students' practical skills through hands-on training and applied projects, enabling them to design, manage, and troubleshoot networks effectively.
- 3- Stay aligned with global trends and emerging developments in information technology and networking, and continuously update curricula accordingly.
- 4- Prepare students to obtain internationally recognized professional certifications (e.g., CCNA, CompTIA Network+).
- 5- Foster teamwork and collaboration through joint applied projects, while enhancing effective communication skills.
- 6- Support applied research and encourage forward-looking studies in networking and telecommunications.
- 7- Contribute to community service through scientific consultations, training programs, and specialized workshops.
- 8- Continuously develop faculty members' capabilities and promote lifelong learning and professional development.



4. Program Accreditation

Does the program have program accreditation? And from which agency?

No

5. Other external influences

Central examinations

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	4	8	5.5%	
College Requirements	4	11	%7.6	

Department Requirements	45	125	%86.8	
Summer Training	1	-	-	
Other				

* This can include notes whether the course is basic or optional.





7. Program Specification

1st Stage

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSW L	USSW L	ECTS	Type	Pre-request
HCN101	Information Technology Basics اساسيات تكنولوجيا المعلومات	78	72	6.00	B	None
HCN102	Problems Solving & Programming 1 حل المشاكل وبرمجتها 1	108	92	8.00	C	None
HCN103	Calculus التفاضل والتكامل	48	77	5.00	S	None
HCN104	Logic Design Fundamentals اساسيات التصميم المنطقي	93	82	7.00	C	None
HCN102	English Language 1 لغة انكليزية 1	32	18	2.00	B	None
UOH104	Democracy and Human Rights الديمقراطية وحقوق انسان	32	18	2.00	B	None

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
HCN107	Problems Solving & Programming 2 حل المشاكل وبرمجتها 2	93	107	8.00	C	HCN102
HCN108	Computer Organization تنظيم الحاسوب	63	62	5.00	C	HCN104
HCN109	Data Communication & Networking اتصالات البيانات والشبكات	93	57	6.00	C	HCN101
HCN110	Probabilities & statistics الاحتمالية والاحصاء	63	62	5.00	S	None
HCN111	Discrete Mathematics رياضيات متقطعة	48	52	4.00	B	None
UOH101	Arabic Language 1 لغة عربية 1	33	17	2.00	B	None

2nd Stage

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

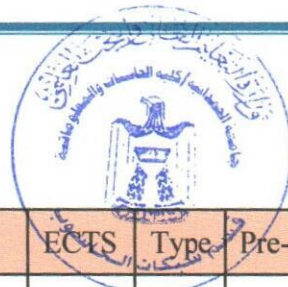
Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
HCN 201	Object Oriented Programming البرمجة الكائنية	108	92	8.00	C	HCN107
HCN 202	Web Development I تطوير الويب 1	63	87	6.00	C	HCN107
HCN 203	Network Protocols I بروتوكولات الشبكة 1	48	52	4.00	C	HCN109
HCN 204	Data Structures هياكل البيانات	63	87	6.00	C	HCN107
HCN 205	IT Ethics أخلاقيات تكنولوجيا المعلومات	33	17	2.0	C	None
UOH2022	English Language 2 لغة إنكليزية 2	33	17	2.00	S	None
UOH2050	Ba'ath Party Crimes جرائم نظام حزب البعث	33	17	2.00	S	None

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
HCN 207	Visual Programming البرمجة المرئية	63	87	6.0	C	HCN 201
HCN 208	Algorithm Analysis & Design تحليل وتصميم الخوارزميات	63	62	5.0	C	HCN 204
HCN 209	Data Bases قواعد البيانات	63	62	5.0	C	HCN 204
HCN 210	Web Development II تطوير الويب 2	63	87	6.0	C	HCN 202
HCN 207	Network Protocols II بروتوكولات الشبكة 2	63	87	6.00	C	HCN 203
UOH2012	Arabic Language 2 لغة عربية 2	33	17	2.00	S	None

3rd Stage

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs



Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
HCN 301	Operating System Concepts مفاهيم نظم التشغيل	63	62	5.00	C	HCN 108
HCN 302	Advanced web Development تطوير الويب المتقدمة	63	62	5.00	C	HCN 210
HCN 303	Network Programming I برمجة الشبكات 1	63	62	5.00	C	HCN 211
HCN 304	Routing & Switching التوجيه والتبديل	63	62	5.00	C	HCN 211
HCN 305	Wireless & Mobile Computing الحوسبة المتنقلة واللاسلكية	63	62	5.0	C	HCN 203
HCN 306	Microprocessors Programming & Interfacing برمجة المعالجات الدقيقة و اجهزة التواصل	63	62	5.00	C	HCN 108

.10

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
HCN 307	Network Modelling & Simulation نمذجة ومحاكاة الشبكات	63	62	5.00	C	HCN 305
HCN 308	Artificial Intelligence الذكاء الاصطناعي	63	62	5.00	C	HCN 208
HCN 309	Network Programming II برمجة الشبكات 2	63	87	6.00	C	HCN 303
HCN 310	Smart phone & tablet Programming برمجة الهواتف الذكية والاجهزة اللوحية	63	87	6.00	C	HCN 207
HCN 311	Projects Management ادارة المشاريع	48	27	3.00	C	
HCN 312	Internet of Things انترنت الاشياء	63	62	5.00	C	HCN 306

4th Stage



Fourth Year- First Semester

المرحلة الرابعة- الفصل الاول

Code	Subject	Theoretical	Practical	Units
HCN 401	Network Security II أمن الشبكات II	2	2	3
HCN 402	Project I مشروع التخرج I	-	-	2
HCN 403	Server Administration II ادارة الشبكة II	2	2	3
HCN 404	Distributed Systems النظم الموزعة	2	2	3
HCN 405	Multimedia Networking شبكات الوسائط المتعددة	2	-	2
HCN 406	Smart phone & tablet Programming II برمجة الهواتف الذكية والاجهزة اللوحية II	2	2	3
Total Units				16

.11
.12

Fourth Year- Second Semester .13

المرحلة الرابعة- الفصل الثاني .14

Code	Subject	Theoretical	Practical	Units
HCN 407	Internet of Things انترنت الاشياء	3	0	3
HCN 408	Project II مشروع التخرج II	-	-	2
HCN 409	Cloud Computing الحوسبة السحابية	2	-	2
HCN 410	Networks management and analysis ادارة وتحليل الشبكات	2	2	3
HCN 411	Department Elective I اختياري I	2		2
HCN 412	Department Elective II اختياري II	2		2





8. Expected learning outcomes of the program

Knowledge

A. Knowledge Outcomes (What students will *know* and *understand*)

1. Comprehensive Understanding

Understand the principles, protocols, architectures, and technologies of computer networks.

2. Network Security Knowledge

Demonstrate understanding of security concepts, threats, vulnerabilities, and protective technologies.

3. Application Concepts

Understand the fundamentals of how networks support web-based, mobile, and distributed applications.

Skills

B. Skill-Based Outcomes (What students will be *able to do*)

1. Network Design and Implementation

Design, configure, and implement secure, scalable, and high-performance networks.

2. Network Administration and Troubleshooting

Perform effective network monitoring, fault diagnosis, and optimization.

3. Application Development

Develop network-driven applications across platforms (e.g., smartphone, web) that solve real-world problems.

4. Communication and Collaboration

Communicate network-related ideas effectively and collaborate within multidisciplinary teams.

Ethics

C.

1. Professionalism and Ethical Practice

Adhere to ethical standards in networking, including responsible data use, integrity, and system fairness.

2. Lifelong Learning

Demonstrate a commitment to continuous learning

and adapting to emerging network technologies and trends.

3. Responsibility and Integrity

Exhibit accountability in handling network resources and projects with reliability and honesty.



9. Teaching and Learning Strategies

Strategies and Teaching Methods Adopted for Program Implementation:

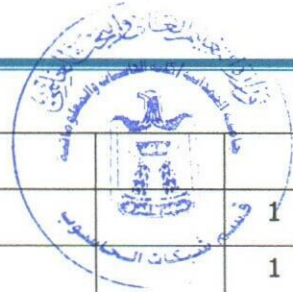
1. Delivering theoretical lectures using PowerPoint.
2. Conducting laboratory experiments to apply concepts practically.
3. Utilizing computer labs for training on software and applications.
4. Presenting video lectures to support educational content.
5. Assigning group projects to enhance collaborative work.

10. Evaluation methods

1. Electronic exams (on line).
2. Central and monthly examinations.
3. Daily exams.
4. Daily duties.
5. Scientific reports
6. Computerized laboratory examinations.
7. Graduation projects.

11. Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
PhD.	Computer Science	Information Security			1	
PhD.	Computer Science	Data Security/			1	



		Cyber Security				
PhD.	Computer Science	Networks			1	
Msc.	Computer Engineering	Communications and Networks Engineering			1	
Msc.	Electrical and Electronic Engineering	Digital Communications Networks Engineering			1	
Msc.	Software	Software Science			1	
Msc.	Computer and Electronic Engineering	Digital Image and Signal Processing			1	



12. Professional Development

Mentoring new faculty members

The academic program aims to empower new faculty members in various fields of education through: Organizing training courses to improve teaching methods, course design, and student learning assessment, in addition to introducing university systems and e-learning. Continuous evaluation of faculty performance to identify areas that need improvement. Encouraging participation in faculty development courses organized by the university.

Professional development of faculty members

Professional development of faculty members in the Computer Network Department is essential to keep pace with rapid technological advancements and emerging industry trends. Continuous training in areas like AI-driven networking, cybersecurity, and cloud technologies enhances both teaching quality and research output. It also fosters innovation and curriculum relevance. Investing in faculty development directly elevates the department's academic and professional standards.

13. Acceptance Criterion

The department's capacity is determined within the admission plan based on the department's intake capacity. This is then sent to the college, the university, and the ministry for official approvals. After the central student admissions are issued by the Ministry of Higher Education and Scientific Research, students are accepted by the ministry based on their grades and their preferences. Afterwards, students apply to the college through the registration office in the Computer science and Mathematics College Deanship, submit the required official documents, and are distributed to the college's departments based on their capacity and the student's preferences, including the possibility of transferring from other departments to the department. Once the student is accepted into the Networks Department, registration is completed, and the student begins attending classes in this department.

14. The most important sources of information about the program

- University Guide
- College Website:
https://cci.uohamdaniya.edu.iq/networks/?page_id=19&lang=en
- University website
<https://www.uohamdaniya.edu.iq/>

15. Program Development Plan

- Develop a revised curriculum that reflects current industry trends, technologies, and best practices.
- Integrate foundational concepts with advanced topics such as cloud computing, cybersecurity, and IoT.
- Incorporate hands-on labs, projects, and case studies to enhance practical skills and problem-solving abilities.



Program skill Outline

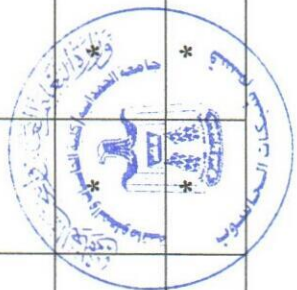
Required program Learning outcomes

Year/L evel	Course code	Course Name	Basic or optional	Knowledge			skill				Ethics		
				A1	A2	A3	B1	B2	B3	B4	C1	C2	C3
1st Semest er	HCN 101	IT Basics	Basic	*	*	*	*	*	*	*	*	*	*
	HCN 102	Problem solving and Programm ing 1	Basic			*			*	*	*	*	*
	HCN 103	Calculus	Basic	*							*	*	*
	HCN 104	Logic Design Fundament al s	Basic	*			*			*	*	*	*
	UOH1 02	English Language 1	Basic	*							*	*	*

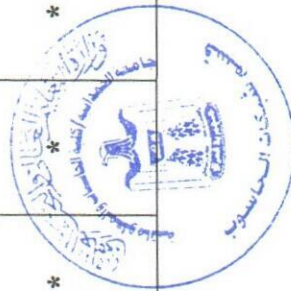
	UOH1 04	Democracy and Human Rights	Basic										*	*	*	*
2 nd Semester	HCN 107	Problem solving and programming 2	Basic			*				*	*	*	*	*	*	*
	HCN 108	Computer Organization	Basic	*			*			*	*	*	*	*	*	*
	HCN 109	Data Communication and Networks	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 110	Probabilities and statistics	Basic	*									*	*	*	*
	HCN 111	Discrete Mathematics	Basic	*									*	*	*	*
	UOH1 01	Arabic Language 1	Basic										*	*	*	*
	HCN 201	Object Oriented	Basic			*						*	*	*	*	*

[illegible]

	HCN 207	Network Protocols II	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	UOH2 012	Arabic Language 2	Basic															*	*
	HCN 301	Operating System Concepts	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 302	Advanced web Development	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5 th Semester	HCN 303	Network Programming I	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 304	Routing & Switching	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 305	Wireless & Mobile Computing	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 306	Microprocessors Programming & Interfacing	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6 th Semester	HCN 307	Network Modelling & Simulation	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 308	Artificial Intelligence	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*



7 th Semester	HCN 309	Network Programming II	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 310	Smart phone & tablet Programming	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 311	Projects Management	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 312	Network Modelling & Simulation	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 401	Network Security II	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 402	Project I	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 403	Server Administration II	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 404	Distributed Systems	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 405	Multimedia Networking	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*



	HCN 406	Smart phone & tablet Programmin g II	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 407	Internet of Things	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 408	Project II	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 409	Cloud Computing	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 410	Networks management and analysis	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 411	Department Elective	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	HCN 412	Department Elective II	Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8 th Semester																			

