

**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

2024

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.

Ministry of Higher Education and Scientific Research
Scientific supervision and evaluation device
Department of Quality Assurance and Academic Accreditation

Academic Description Program 2023-2024

Name university: Mosul
Name collage: Computer science And Mathematic
Name of department: Networks
File filling date: 1-4-2024

Signature: 
Asst. Prof. Dr Ayad Hussain
Abdulqader

Department Head

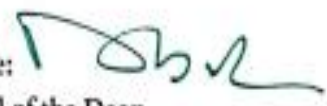
Date: 24/4/2024

Signature: 
The file has already been checked by
Director of Quality Assurance and
Assesment Performance of the college of
computer science and mathematic
Asst. Prof. Dr. Mohammed Chachan
yonnis
Date: 24/4/2024

Signature: 
Associate Dean for Scientific Affairs

Prof. Dr. Safwan Omar Hasoon

Date: 24/4/2024

Signature: 
Approval of the Dean
Prof. Dr. Dhuha Basheer Abdullah
Date: 24/4/2024

1. Program Vision

Our vision is to be a pioneering force in the field of networks, driving technological advancements and innovation. We strive to cultivate a dynamic learning environment that nurtures creativity, critical thinking, and collaboration. Through cutting-edge research, industry partnerships, and experiential learning, we aim to equip our students with the skills and knowledge needed to excel in network design, configuration, management, and security. Our vision is to produce highly skilled professionals who are adaptable, forward-thinking, and capable of addressing the complex challenges of the network industry. We aspire to be recognized as a global leader in networks education, making a positive impact on society through our graduates' contributions to the advancement of network technologies.

2. Program Mission

Our mission is to provide high-quality education and research in the field of computer networks. We aim to equip our students with the necessary knowledge and skills to design, configure, manage, and secure complex network systems, as well as develop innovative and user-friendly applications that leverage the power of networks. Through hands-on projects, practical training, and collaboration with industry partners, we foster creativity, critical thinking, and problem-solving abilities in the context of application development. Our mission is to produce skilled professionals who can contribute to the advancement of network technologies and create impactful web and mobile applications that meet the needs of today's digital world.

3. Program Objectives

The Networks department aims to achieve the following program objectives:

1. **Knowledge and Skills:** Provide students with a strong foundation in computer networking principles, protocols, and technologies, enabling them to understand and analyze network architectures and configurations.
2. **Design and Implementation:** Equip students with the ability to design and implement secure and efficient computer networks, considering factors such as scalability, reliability, and performance.
3. **Network Administration:** Develop skills in network administration and management, including network monitoring, troubleshooting, and optimization, to ensure the smooth operation and performance of network infrastructures.

4. **Application Development:** Prepare students to contribute to the growing demand for network-connected applications, including mobile apps, web applications, and IoT solutions, and empower them to leverage networks for seamless data exchange and enhanced user experiences.
5. **Security:** Familiarize students with network security concepts and best practices, enabling them to identify and mitigate network vulnerabilities and threats, and implement effective security measures.
6. **Collaboration and Communication:** Foster effective teamwork, communication, and collaboration skills, enabling students to work efficiently in multidisciplinary teams and effectively communicate complex network concepts to diverse stakeholders.
7. **Professionalism and Ethical Practices:** Instill a strong sense of professionalism and ethical responsibility in students, emphasizing the importance of integrity, privacy, and ethical decision-making in the context of network design, management, and usage.
8. **Lifelong Learning:** Foster a passion for continuous learning and professional development, encouraging students to stay updated with emerging network technologies and adapt to the evolving landscape of computer networks.

4. Program Accreditation

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

Accreditation Board for Engineering and Technology (ABET)

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	SSWL	USSWL	ECTS	Type	Pre-request
NT101	Information Technology Basics	78	72	6.00	B	None
NT102	Problems Solving & Programming 1	108	92	8.00	C	None
NT103	Calculus	48	77	5.00	S	None
NT104	Logic Design Fundamentals	93	82	7.00	C	None
UOM102	English Language 1	32	18	2.00	B	None
UOM104	Democracy and Human Rights	32	18	2.00	B	None

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
NT107	Problems Solving & Programming 2	78	72	6.00	C	NT102
NT108	Computer Organization	63	72	6.00	C	NT104
NT109	Data Communication & Networking	63	62	5.00	C	NT101
NT110	Probabilities & statistics	63	62	5.00	S	None
NT111	Discrete Mathematics	48	52	4.00	B	None
UOM101	Arabic Language	32	18	1.00	B	None
UOM103	Computer	48	27	3.00	B	None

2nd Stage

Second Year-First Semester

المرحلة الثانية- الفصل الاول

Subject	Theoretical	Practical	Units
Data Structures هياكل البيانات	2	2	3
Object Oriented Programming II البرمجة الكيانية II	2	2	3
Website Design & Programming I تصميم وبرمجة المواقع I	2	2	3
Network Protocols I بروتوكولات الشبكة I	3	-	3
Microprocessors & Interfacing I	2	2	3

I المعالجات الدقيقة وأجهزة التواصل			
Software Engineering هندسة البرمجيات	2	-	2
Total units مجموع الوحدات			17

Second Year- Second Semester المرحلة الثانية- الفصل الثاني

Subject	Theoretical	Practical	Units
Introduction to Routing & Switching مقدمة الى التوجيه والتبديل	2	2	3
Visual Programming البرمجة المرئية	2	2	3
Computer Architecture معمارية الحاسوب	3	0	3
Algorithms Analysis & design تحليل وتصميم الخوارزميات	2	2	3
Principles of Data Bases مبادئ قواعد البيانات	2	2	3
Cybersecurity Principles مبادئ الامن السبراني	2	-	2
Website Design & Programming II تصميم وبرمجة المواقع II	2	2	3
Total Units			20

8. Expected learning outcomes of the program

Knowledge

1. The learning outcomes of the Networks department include:

1. Comprehensive Understanding: Develop a deep understanding of computer network principles, protocols, architectures, and technologies.
2. Network Design and Implementation: Acquire the skills to design, configure, and implement secure and efficient computer networks, considering factors such as scalability, reliability, and performance.

1. Theory
2. Process
3. Student training/summer training
4. Graduation research

<ol style="list-style-type: none"> 3. Network Administration and Management: Gain proficiency in network administration, monitoring, troubleshooting, and optimization to ensure the smooth operation and performance of network infrastructures. 4. Network Security: Demonstrate knowledge of network security concepts and best practices, and apply effective measures to protect networks from vulnerabilities and threats. 5. Application Development: Develop the ability to design and implement network, smartphone, and web-based applications that leverage computer networks to enhance user experiences and meet real-world requirements. 6. Collaboration and Communication: Foster effective teamwork, communication, and collaboration skills necessary for working in multidisciplinary teams and effectively communicating network concepts to diverse stakeholders. 7. Professionalism and Ethical Practices: Adhere to professional and ethical standards in network design, management, and usage, demonstrating integrity and responsible decision-making. 8. Lifelong Learning: Cultivate a mindset of continuous learning and professional development to adapt to emerging network technologies and evolving industry trends. 	
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Skills	
<ol style="list-style-type: none"> 1. The skill of solving and programming problems. 2. Skill in configuring and designing local networks. 3. The skill of building network applications. 4. Skill in programming web-based applications. 5. The skill of discussing and making the right decisions. 6. Skill in using modern means, including computers. 7. The skill of searching for correct scientific information. 8. The skill of conducting scientific research, analyzing it, solving its problems, and drawing appropriate conclusions in solving them for the purpose of decision-making. solving its problems, and drawing appropriate conclusions in solving them for the purpose of decision-making. 	<ol style="list-style-type: none"> 1. The ability to study group. 2. The ability to conduct scientific discussion among students. 3. The ability to develop skills among students. 4. Ability in discussion, analysis, and collective decision-making. <p>Develop the ability to cooperate.</p>

Ethics

1. Demonstrate awareness of ethical issues related to data privacy, confidentiality, and intellectual property.
2. Adhere to ethical guidelines and professional standards in statistical analysis and informatics practices.
3. Embrace lifelong learning and stay updated with emerging trends and technologies in the field.

9. Teaching and Learning Strategies

1. Continuous aspiration towards cognitive excellence in education, scientific research and professional service in various sciences.
2. Preparing students for the labor market and developing their abilities to interact and communicate with others through effective participation in the field training program.
3. Acquiring skills to present ideas and work within one team through graduation projects.
4. Qualifying students for postgraduate studies in the field of Computer Networks
5. Preparing specialized scientific leaders through the graduate program.
6. Interaction with other sciences, especially Statistics, mathematics and computers.

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	
Assistant Professor	Computer Science	Computer Networks			2	
Lecturer	Computer Science	Computer Networks			2	
Lecturer	Computer Science	Computer Networks			1	
Lecturer	Computer Science	Security and Network Management			1	
Lecturer	Computer Science	Software Engineering			1	
Lecturer	Computer Science	Complex Networks			1	
Lecturer	Computer Science	Artificial Intelligence			1	
Asst. Lecturer	Computer Science	Computer Networks			3	
Asst. Lecturer	Law	Law			1	

Professional Development

Mentoring new faculty members

1. E-learning.
2. Using the Internet.
3. Using modern means of communication.
4. Use modern means of communication.
5. Extracurricular activities.
6. Advanced training courses in learning modern programs.
7. Scientific consultations and ways of developing and applying them in various fields.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty members such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

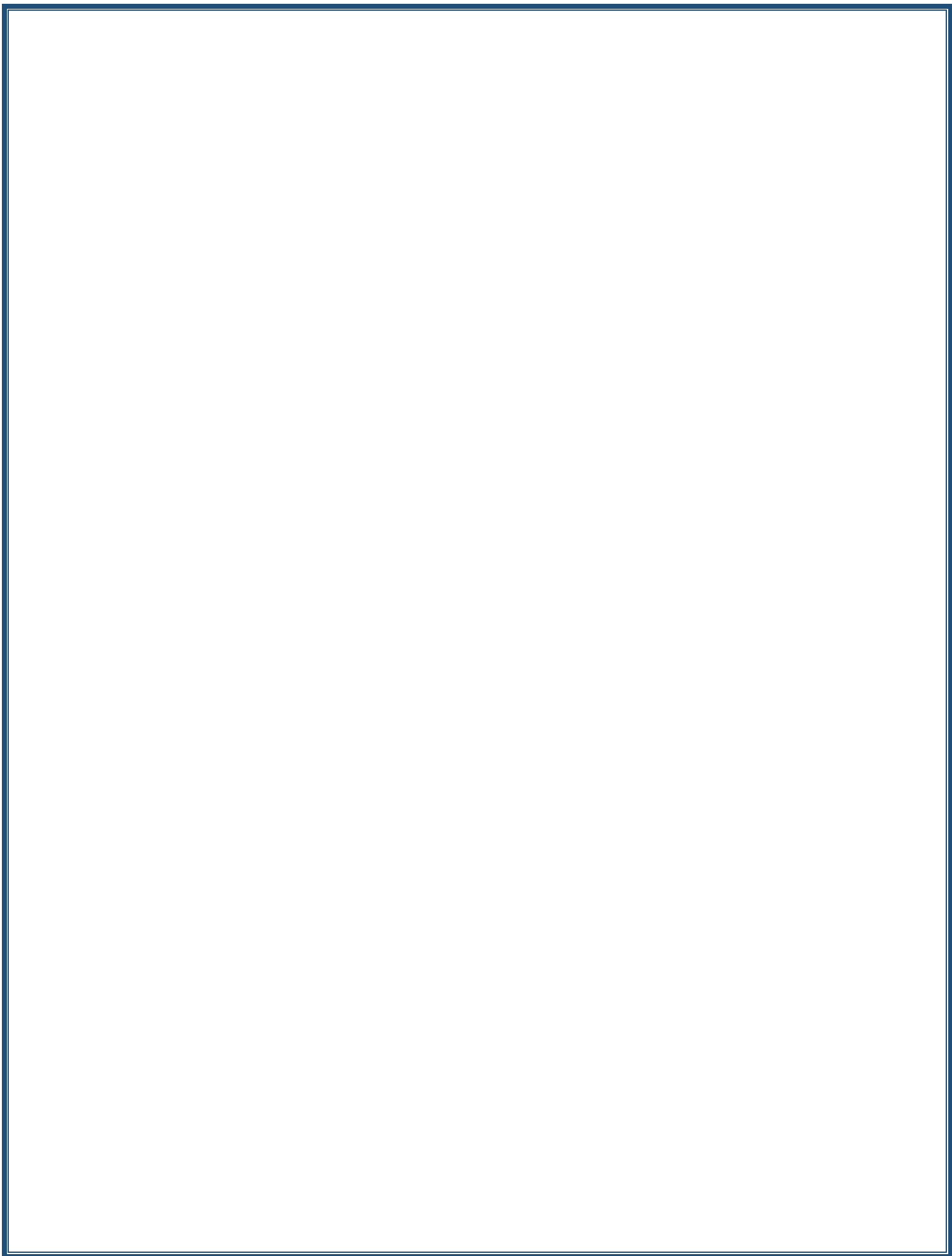
12. Acceptance Criterion

- 1. Central admission to the Ministry of Higher Education and Scientific Research.**
- 2. The student's average is on the central admission lists, with the exception of the children of teaching staff, the martyrs' building, and the privileges stipulated in the Ministry's instructions, as they are accepted according to desire for distribution among the scientific departments.**

13. The most important sources of information about the program

14. 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.



مخطط مهارات المنهج

مخرجات التعلم المطلوبة من البرنامج

القيم				المهارات				المعرفة				اساسي ام اختياري	اسم المقرر	رمز المقرر	السنة / المستوى
4ج	3ج	2ج	1ج	4ب	3ب	2ب	1ب	4أ	3أ	2أ	1أ				
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	اساسي	اساسيات تكنولوجيا المعلومات	NT101	السنة الأول/ الفصل الاول
	✓	✓		✓	✓	✓		✓	✓	✓	✓	اساسي	حل المشاكل وبرمجتها 1	NT102	
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		اساسي	حساب التفاضل والتكامل	NT103	
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	اساسي	أساسيات التصميم المنطقي	NT104	
✓	✓	✓					✓			✓		اساسي	اللغة الانكليزية 1	UOM102	السنة الأول/ الفصل الثاني
✓	✓	✓		✓	✓	✓	✓		✓	✓		اساسي	الديمقراطية وحقوق الانسان	UOM104	
		✓			✓		✓				✓	اساسي	حل المشاكل وبرمجتها 2	NT107	
		✓			✓	✓				✓		اساسي	تنظيم الحاسوب	NT108	
✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	اساسي	اتصالات البيانات والشبكات	NT109	
✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	اساسي	الاحتمالات والإحصاء	NT110	
✓	✓	✓	✓	✓	✓	✓					✓	اساسي	الرياضيات المتقطعة	NT111	
✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	اساسي	اللغة العربية	UOM101	
												اساسي	الحاسوب	UOM103	

القيم				المهارات				المعرفة				اساسي ام اختياري	اسم المقرر	رمز المقرر	السنة / المستوى
4ج	3ج	2ج	1ج	4ب	3ب	2ب	1ب	4أ	3أ	2أ	1أ				
✓	✓		✓	✓	✓	✓	✓				✓	اساسي	هياكل البيانات	NET201	السنة الثانية/ الفصل الاول
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	اساسي	البرمجة الكيانية 2	NET202	
✓	✓	✓		✓	✓	✓		✓	✓	✓		اساسي	تصميم وبرمجة المواقع 1	NET203	
✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	اساسي	بروتوكولات الشبكة 1	NET204	
✓	✓		✓			✓		✓	✓	✓	✓	اساسي	المعالجات الدقيقة واجهزة التواصل	NET205	
		✓				✓						اساسي	هندسة البرمجيات	NET206	
												اساسي	جرائم البعث	NET207	
		✓		✓	✓		✓		✓	✓		اساسي	مقدمة الى التوجيه والتبديل	NET208	السنة الثانية/ الفصل الثاني
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			✓			✓				✓		اساسي	تحليل وتصميم الخوارزميات	NET211	
		✓					✓				✓	اساسي	مبادئ قواعد البيانات	NET212	
✓	✓		✓		✓	✓	✓	✓	✓		✓	اساسي	مبادئ الامن السربراني	NET2013	
✓	✓		✓		✓	✓	✓	✓	✓		✓	اساسي	تصميم وبرمجة المواقع 2	NET214	
✓	✓					✓	✓	✓	✓		✓	اساسي	اللغة الانكليزية 2	NET215	

