Ministry of Higher Education and Scientific Research
UNIVERSITY OF ANBAR
COLLEGE of COMPUTER SCIENCES AND INFORMATION TECHNOLOGY
DEPT. COMPUTER NETWORKS SYSTEMS

وزارة التعلـــيم العالـــي والبحـــث العلمي
جامـــعـــة الأنبار
كلـــية علوم الحاسوب وتكنولوجيا المعلومات
قســـم أنظمة شبكات الحاسوب

Program Catalogue | ٢٠٢٣-٢٠٢٤ | دليل البرنامج الدراسي

University of Anbar
جامعة الانبار

First Cycle – Bachelor's Degree (B.Sc.) - *COMPUTER NETWORKS SYSTEMS*

بكالوريوس – علوم أنظمة شبكات الحاسوب

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١. Mission & Vision Statement

Vision Statement

Vision Statement for the Computer Networks Systems Department in a Computer Science and information technology:

"To be a leading Networking Department, empowering students to become skilled professionals in the rapidly evolving field of computer networking, enabling them to drive innovation and shape the future of technology."

Explanation:

١. Leading Networking Department: The vision emphasizes the desire to be at the forefront of networking education, setting the standard for excellence in the field. It reflects a commitment to staying updated with the latest advancements and best practices.
٢. Empowering Students: The vision recognizes the importance of empowering students by providing them with a comprehensive education that equips them with the necessary knowledge, skills, and hands-on experience to excel in the networking industry.
٣. Skilled Professionals: The vision focuses on producing graduates who are highly skilled and capable of meeting the demands of the evolving

networking landscape. It highlights the aim to develop well-rounded professionals who can adapt to new technologies, troubleshoot complex network issues, and contribute to the growth of the industry.

٤. Rapidly Evolving Field: The vision acknowledges the dynamic nature of the networking field. It signifies the department's commitment to keeping pace with emerging trends, technologies, and industry standards, ensuring that students receive an education that is relevant and up to date.

٥. Shaping the Future of Technology: The vision highlights the department's aspiration to play a significant role in shaping the future of technology through its contributions to the field of computer networking. It signifies the intention to produce graduates who can make meaningful contributions and lead advancements in networking technologies and practices.

Mission Statement

The mission of the Networking Department in our Computer College is to provide comprehensive and cutting-edge education in the field of networking. We aim to equip our students with the knowledge, skills, and practical experience necessary to excel in the rapidly evolving networking industry.

Our department is committed to fostering a dynamic learning environment that promotes innovation, collaboration, and critical thinking. We strive to empower our students to become competent and resourceful professionals who can meet the challenges of networking in today's interconnected world.

Key Principles:

١. Quality Education: We are dedicated to delivering high-quality education that meets industry standards and prepares our students for successful careers in networking. Our curriculum is regularly updated to reflect the latest advancements and emerging technologies in the field.

٢. Practical Experience: We emphasize hands-on learning and practical experience to ensure that our students develop the necessary skills to design, implement, and troubleshoot networks. Through lab exercises, projects, and industry partnerships, we provide opportunities for real-world application of theoretical concepts.

٣. Professional Development: We foster a culture of continuous learning and professional development among our students and faculty. We encourage participation in workshops, seminars, industry conferences, and certification programs to enhance technical expertise and stay abreast of industry trends.

٤. Ethical Practices: We emphasize the importance of ethical behavior and responsible use of technology in networking. Our students are trained to prioritize privacy, security, and ethical considerations in all their networking activities. We promote integrity, professionalism, and adherence to ethical guidelines.
٥. Community Engagement: We actively engage with the local and global networking community to foster networking excellence and contribute to its advancement. We organize events, seminars, and conferences to facilitate knowledge sharing and networking opportunities for our students and faculty.

٢. Program Specification

Program code:	BSc-MECH	**ECTS**	٢٤٠
Duration:	٤ levels, ٨ Semesters	**Method of Attendance:**	Full Time

٣. Program Goals

The goals for the Networking Department in a computer college may vary depending on the specific objectives and priorities of the institution. However, here are some common program goals that a Networking Department might strive to achieve:

١. Provide comprehensive networking education: The Networking Department should aim to deliver a comprehensive curriculum that covers fundamental and advanced concepts in computer networking. This includes topics such as

network protocols, network security, routing and switching, wireless networks, network management, and emerging networking technologies.

٢. Develop practical skills: The department should focus on equipping students with hands-on skills that are applicable to real-world networking scenarios. Practical training should involve configuring and managing network devices, troubleshooting network issues, designing network infrastructures, and implementing network security measures.

٣. Keep pace with industry trends and advancements: The field of networking is rapidly evolving, with new technologies, protocols, and trends emerging regularly. The Networking Department should strive to stay up-to-date with these advancements and incorporate relevant and cutting-edge topics into the curriculum. This ensures that students are equipped with the knowledge and skills needed to adapt to the ever-changing networking landscape.

٤. Promote teamwork and collaboration: Networking professionals often work in teams and collaborate with colleagues to design, implement, and manage networks. The program should emphasize the importance of teamwork and provide opportunities for students to work collaboratively on networking projects and assignments. This helps develop their interpersonal and communication skills, as well as their ability to work effectively in a team-based environment.

٥. Prepare students for industry certifications: Many networking professionals pursue industry certifications to validate their skills and enhance their career prospects. The Networking Department should align the curriculum with relevant industry certifications, such as Cisco Certified Network Associate (CCNA) or CompTIA Network+, and provide resources and guidance to help students prepare for these certifications..

٦. Ensure high-quality teaching and learning: The department should prioritize the recruitment and professional development of skilled faculty members who possess both industry experience and teaching expertise. Regular assessments and feedback mechanisms should be implemented to ensure the quality of teaching and learning experiences. Additionally, the program should leverage modern educational technologies and resources to enhance the learning environment.

٧. Support lifelong learning: Networking professionals need to continuously update their knowledge and skills to keep pace with advancements in the field. The department should encourage and support students' lifelong learning by offering opportunities for professional development, such as continuing education programs, workshops, and seminars. This helps

students stay relevant in their careers and adapt to the evolving demands of the networking industry.

٤. Student Learning Outcomes (SLOs)

Student Learning Outcomes for the Networking Department in a Computer College can vary depending on the specific curriculum and goals of the institution. However, here are some common learning outcomes that are typically associated with a Networking Department in a Computer College:

١. Knowledge of Networking Concepts: Students should demonstrate a solid understanding of fundamental networking concepts, including network architecture, protocols, topologies, and technologies.
٢. Network Implementation: Students should be able to implement computer networks, considering factors such as scalability, security, reliability, and performance.
٣. Network Administration and Management: Students should acquire the skills to administer and manage network systems effectively, including tasks such as configuring network devices, troubleshooting network issues, and ensuring network security.
٤. Network Security: Students should understand the principles and techniques of network security, including authentication, access control, encryption, firewalls, intrusion detection, and prevention systems.
٥. Network Protocols and Services: Students should have a comprehensive understanding of various network protocols and services, such as TCP/IP, DNS, DHCP, VPN, and others, and be able to apply them effectively in network configurations.
٦. Network Performance Optimization: Students should learn techniques to optimize network performance, including analyzing and improving network latency, bandwidth utilization, and response times.
٧. Collaboration and Communication: Students should develop effective communication and collaboration skills to work in multidisciplinary teams, interact with clients or users, and present technical information clearly and professionally.
٨. Ethical and Legal Considerations: Students should understand the ethical and legal issues related to networking, including privacy, intellectual property, cybercrime, and compliance with industry regulations.

٩. Professional Development: Students should develop a commitment to continuous learning and professional growth, keeping up with advancements in networking technologies and industry trends.

٥. Academic Staff

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٦. Credits, Grading and GPA

Credits

Grading

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (٥٠ - ١٠٠)	A - Excellent	امتياز	٩٠ - ١٠٠	Outstanding Performance
	B - Very Good	جيد جدا	٨٠ - ٨٩	Above average with some errors
	C - Good	جيد	٧٠ - ٧٩	Sound work with notable errors
	D - Satisfactory	متوسط	٦٠ - ٦٩	Fair but with major shortcomings
	E - Sufficient	مقبول	٥٠ - ٥٩	Work meets minimum criteria
Fail Group (٠ – ٤٩)	FX – Fail	راسب - قيد المعالجة	(٤٥-٤٩)	More work required but credit awarded
	F – Fail	راسب	(٠-٤٤)	Considerable amount of work required
Note:				

Number Decimal places above or below ٠,٥ will be rounded to the higher or lower full mark (for example a mark of ٥٤,٥ will be rounded to ٥٥, whereas a mark of ٥٤,٤ will be rounded to ٥٤. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Calculation of the Cumulative Grade Point Average (CGPA)

١. The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

CGPA of a ٤-year B.Sc. degree:

CGPA = [(١st module score x ECTS) + (٢nd module score x ECTS) + ……] / ٢٤٠

V. Curriculum/Modules

Semester ١ | ٣٠ ECTS | ١ ECTS = ٢٥ hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CNDC ١١٠	Information Technology	٧٨	٤٧	٥,٠٠	C	None
CCIT ٠٦٠	Mathematics	٩٣	٥٧	٦,٠٠	B	None
UOA ٠١٠	English I	٣٣	١٧	٢,٠٠	S	None
CNDC ١٠٧	Programming C++ (١)	١٠٨	٩٢	٨,٠٠	C	None
CNDC ١٠٩	Logic Design (١)	٧٨	٤٧	٥,٠٠	C	None
CNDC ١١٤	Electrical circuits	٦٣	٣٧	٤,٠٠	C	None

Semester ٢ | ٣٠ ECTS | ١ ECTS = ٢٥ hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CNDC ١٠٨	Programming C++ (٢)	١٢٣	١٠٢	٩,٠٠	C	CNDC ١٠٧
CNDC ١١١	Logic Design (٢)	١٠٨	٤٢	٦,٠٠	C	CNDC ١٠٩
CNDC ٢٠٣	Advanced Mathematics	٩٣	٥٧	٦,٠٠	C	None
CCIT ٠٦١	Discrete Structure	٧٨	٤٧	٥,٠٠	B	None
UOA ٠١٧	Freedom and Human Rights	٣٣	١٧	٢,٠٠	S	None
UOA ٠١٤	Arabic	٣٣	١٧	٢,٠٠	S	None

Semester ٣ | ٣٠ ECTS | ١ ECTS = ٢٥ hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
NSCC٢٠١	Data Structures	٦٣	٦٢	٥,٠٠	S	None
UOA٢٢٣	English II	٤٨	٥٢	٤,٠٠	B	UOA ١٤٠
NSDC٢٠٤	Digital Electronic	٦٣	٦٢	٥,٠٠	S	None
NSDC٢٠٥	Architecture	٦٣	٦٢	٥,٠٠	E	None
NSDE٢١٠	Data Communication	٦٣	٦٢	٥,٠٠	C	None
NSDC٢٠٨	Object oriented Programming (١)	٧٨	٧٢	٦,٠٠	C	None

Semester ٤ | ٣٠ ECTS | ١ ECTS = ٢٥ hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
NSDC٢٠٩	Algorithms	٧٨	٤٧	٥,٠٠	C	None
NSDC٢٠٢	Numerical Analysis	٧٨	٤٧	٥,٠٠	S	None
NSDC٢٠٧	Computer Networks	٧٨	٤٧	٥,٠٠	C	None
NSDC٢١٣	web Design Internet	٦٣	٣٧	٤,٠٠	C	None
NSDE٢١١	Object oriented Programming (٢)	٧٨	٧٢	٦,٠٠	C	NSDC٢٠٨
NSDC٢٠٦	Microprocessors	٩٣	٣٢	٥,٠٠	E	

Semester ٥ | ٣٠ ECTS | ١ ECTS = ٢٥ hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
NSDC٣٠٥	Visual Programming (١)	٧٨	٤٧	٥,٠٠	C	UOA ٢١٠٤
NSDE٣٠٩	Database System	٧٨	٤٧	٥,٠٠	E	None
NSDC٣٠٦	Wireless Networks	٧٨	٤٧	٥,٠٠	C	None
NSDC٣٠٣	Web Programming	٧٨	٤٧	٥,٠٠	E	CHE ٢٣٠٨
NSDE٣٠٨	Signal Processing (١)	٦٣	٦٢	٥,٠٠	E	None
NSCC٤٠١	Operating Systems	٧٨	٤٧	٥,٠٠	S	None

Semester ٦ | ٣٠ ECTS | ١ ECTS = ٢٥ hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
NSDE٣٠١	Software Engineering	٦٣	٣٧	٤,٠٠	E	None
NSDC٣٠٤	Visual Programming (٢)	٧٨	٧٢	٦,٠٠	C	NSDC٣٠٥
NSCE٣٠٢	Multimedia	٧٨	٤٧	٥,٠٠	S	None
NSDE٣١٢	Distributed Database	٧٨	٤٧	٥,٠٠	E	None
NSDC٣٠٧	Network Programming	٧٨	٤٧	٥,٠٠	C	None
NSDE٣١٣	Signal Processing (١)	٦٣	٦٢	٥,٠٠	C	NSDE٣٠٨

Semester ٧ | ٣٠ ECTS | ١ ECTS = ٢٥ hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
NSDC٤٠٨	Network Protocols	٧٨	٧٢	٦,٠٠	C	None
NSDC٤١٣	Information Security	٦٣	٣٧	٤,٠٠	C	None
NSDC٤٠٥	Web Application Development (١)	٧٨	٤٧	٥,٠٠	E	None
NSCC٤١٢	Research Methodology	٦٣	٣٧	٤,٠٠	B	None
NSDC٤٠٧	Mobile Computing	٧٨	٧٢	٦,٠٠	E	None
NSDC٤٠٩	AI (١)	٧٨	٤٧	٥,٠٠	C	None

Semester ٨ | ٣٠ ECTS | ١ ECTS = ٢٥ hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
NSDC٤٠٦	Switching and Routing Network	٩٣	٣٢	٥,٠٠	C	None
NSDC٤٠٤	Networks Security	٦٣	٣٧	٤,٠٠	C	None
NSDE٤١١	AI (٢)	٧٨	٤٧	٥,٠٠	C	NSDC٤٠٩
NSDC٤٠٣	Web Application Development (٢)	٧٨	٤٧	٥,٠٠	E	NSDC٤٠٥
NSDC٤١٠	Project	٩٣	١٨٢	١١,٠٠	C	None

٨. Contact

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