MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Computer Application**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOMU0000017				
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level	2		**Semester of Delivery**	3	
Administering Department	**Fuel and Energy Techniques Engineering Department**		**College**	**Engineering Technical College**	
Module Leader	**Ali Ajmi falih hussin**		**e-mail**	Ali.Ajmi.Faleh@uomus.edu.iq	
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**	Msc. Software	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**		

Relation with other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية

Module Aims اهداف المادة الدراسية	The module aims to: 1. Security and Networking: • Understand the basic concepts and components of computer networks. • Gain knowledge of network security principles and threats. • Develop skills in network troubleshooting and problem-solving. 2. E-Commerce: • Familiarize with the concepts and services of electronic banking. • Understand the different modes of online banking, such as ATM, debit cards, phone banking, SMS banking, and mobile banking. 3. Computer Troubleshooting: • Develop the ability to identify and solve common hardware and software issues faced by computer users. • Learn basic troubleshooting techniques and tools for diagnosing and resolving computer problems. 4. Introduction to AI: • Understand the definition and history of artificial intelligence. • Explore the various AI techniques and approaches. • Recognize the challenges and ethical considerations in AI.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Security and Networking: • Understand the basic concepts of computer networks and their components • Gain knowledge of network security principles and be able to identify network threats • Develop troubleshooting skills to diagnose and resolve network issues 2. E-Commerce: Comprehend the concepts and services of electronic banking, including online banking, ATM, debit cards, phone banking, SMS banking, and mobile banking 3. Computer Troubleshooting: • Ability to identify and solve common hardware and software problems encountered by computer users • Demonstrate proficiency in using basic troubleshooting techniques and tools 4. Introduction to AI: • Define and explain the concept of artificial intelligence • Understand the history and evolution of AI • Explore various AI techniques and approaches • Recognize the challenges and ethical considerations in AI development and deployment 5. AI in Our Daily Lives: Understand the applications of AI in smartphones and virtual assistants 6. Applications of AI: Identify and analyze the use of AI in various domains, such as education, healthcare, finance, transportation, marketing, and advertising 7. AI and Society: • Examine the social, international, and future implications of AI • Understand how AI affects human society and the future of humanity 8. Ethical Challenges in AI: Identify and discuss the ethical considerations in AI, including privacy, surveillance, and the impact on the job market 9. The Future of AI: Explore future trends and emerging technologies in the field of artificial intelligence.
Indicative Contents المحتويات الارشادية	The indicative contents for the Computer Application module may include: 1. Security and Networking: [4 hrs.] • What is a network? • Types of networks. • Basic network components. • Network security basics. • Understanding network threats. • Network troubleshooting. 2. E-Commerce: [4 hrs.]

	• Concepts of electronic banking services. • Online banking. • ATM and debit card services. • Phone banking. • SMS banking. • Electronic alert. • Mobile banking. 3. Computer Troubleshooting: [4 hrs.] • Identifying and solving common hardware and software problems thatcomputer users encounter. • Basic troubleshooting techniques and tools for diagnosing and resolving issues. 4. Introduction to AI: [4 hrs.] • Definition of AI. • History of AI. • AI techniques and approaches. • Challenges and ethical considerations in AI. 5. AI in Our Daily Lives: [4 hrs.] • AI in smartphones and virtual assistants like Siri or Google Assistant. 6. Applications of AI: [4 hrs.] • Education. • Healthcare. • Finance. • Transportation. • Marketing. • Advertising. 7. AI and Society: [4 hrs.] • How AI affects social, international relations. • AI and the future of humanity. 8. Ethical Challenges in AI: [4 hrs.] • AI ethics. • Privacy and surveillance. • The impact of AI on the job market. 9. The Future of AI: [4 hrs.] • Future trends in AI. • Recent research and emerging technologies.
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The learning and teaching strategies employed in the computer application content that will be used :. 1. Lectures: Lectures serve as the primary mode of content delivery, where instructors present key concepts, theories, and techniques. Lectures may include visual aids, examples, and demonstrations to enhance understanding and provide real-world context. 2. Interactive Discussions: Interactive discussions encourage student participation and facilitate deeper understanding of the material. Students are encouraged to ask questions, share their insights, and engage in discussions on specific topics or problem- solving strategies.

	3. Case Studies and Real-world Applications: Case studies and real-world applications demonstrate the relevance of mathematics in various fields. Students analyze and solve mathematical problems based on real-life scenarios, enabling them to connect theoretical concepts with practical applications. 4. Computer-based Learning: Computer-based learning resources, such as online tutorials, interactive simulations, and mathematical software, are utilized to enhance students' understanding and proficiency in applying mathematical techniques. 5. Group Projects: Group projects promote teamwork, communication, and problem- solving skills. Students work collaboratively on mathematical projects or research assignments, allowing them to explore advanced topics or applications of mathematics. 6. Self-directed Learning: Students are encouraged to take responsibility for their learning by engaging in self-directed study. This may involve reading recommended textbooks, exploring additional resources, and practicing problem-solving independently. 7. Assessments: Regular assessments, including quizzes, tests, and assignments, evaluate students' understanding and application of mathematical concepts. These assessments provide feedback and help track progress throughout the module.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب ل 15 اسبوع

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	45	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب اسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	30	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب اسبوعيا	2
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation
تقييم المادة الدراسية

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	1-5	LO #1, 2, 8 and 9
	Assignments	1	10% (10)	7-10	LO # 3, 4, 6 and 7
	Report	1	10% (10)	12-13	LO # 1-14
	Practical Project	1	10%(10)	14	LO#5
Summative assessment	**Midterm Exam**	2 hours	10% (10)	7	LO # 1-7
	Final Exam	3 hours	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري

	Material Covered
Week 1	**Security and Networking**: What is a network? Types of networks, basic network components, network security basics, network troubleshooting.
Week 2	**E-Commerce**: Concepts of electronic banking services, including online banking, ATM and debit card services, phone banking, SMS banking, electronic alert, and mobile banking.

Week 3-4	**Computer Troubleshooting**: Identifying and solving common hardware and software problems that computer users encounter, including basic troubleshooting techniques and tools.
Week 5-6	**Introduction to AI:** Definition of AI, history of AI, AI techniques and approaches,challenges and ethical considerations.
Week 7	Review and Mid Exam
Week 8-9	**AI in Our Daily Lives**: AI in smartphones and virtual assistants like Siri or Google Assistant.
Week 10-12	**Applications of AI**: Education, healthcare, finance, transportation, marketing, and advertising.
Week 13	**AI and Society**: How AI affects social, international relations, and the future of humanity.
Week 14	**Ethical Challenges in AI:** AI ethics, privacy, surveillance, and the impact of AI on the job market. **The Future of AI**: Future trends in AI, recent research, and emerging technologies.
Week 15	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الأسبوعي للمختبر	
Week	**Material Covered**
Week 1	Introduction to Networking - Setting up a basic network using routers and switches - Identifying different types of networks (LAN, WAN, etc.) - Overview of network components (cables, connectors, etc.)
Week 2	Network Security Basics - Implementing basic security measures (firewalls, antivirus) - Conducting a risk assessment for a sample network - Exploring network security tools and software
Week 3	E-Commerce Services - Simulating online banking transactions - Setting up an ATM simulator - Exploring mobile banking applications
Week 4	Computer Troubleshooting Techniques - Hands-on troubleshooting of common hardware issues - Software troubleshooting exercises using diagnostic tools - Documenting troubleshooting procedures
Week 5	Introduction to AI - Exploring AI development environments (e.g., TensorFlow, PyTorch) - Basic programming exercises in AI (e.g., simple algorithms) - Discussion on the ethical considerations of AI
Week 6	AI in Daily Life - Analyzing the functionality of virtual assistants (Siri, Google Assistant) - Creating simple AI-based applications (chatbots, etc.) - Evaluating user interactions with AI technologies
Week 7	Applications of AI - Case studies on AI applications in healthcare and finance - Developing a simple AI model for a specific application (e.g., predictive analysis) - Group discussions on marketing and advertising with AI
Week 8	AI and Society - ~~Research project on the societal impact of AI technologies~~ - Group presentations on international relations affected by AI

	- Discussion on the future implications of AI
Week 9	Ethical Challenges in AI - Debating ethical scenarios related to AI applications - Analyzing case studies of AI ethics violations - Discussing privacy issues and surveillance implications
Week 10	The Future of AI - Researching recent advancements in AI technologies - Group projects on emerging technologies in AI - Presentations on future trends and predictions in AI
Week 11	Review and Mid Exam - Review of key concepts and practical skills learned - Mock exam scenarios and feedback sessions - Q&A sessions to clarify any doubts
Week 12-15	Preparatory Week for Final Exam - Comprehensive review of all topics covered in the course - Final project presentations - Discussion on exam strategies and key focus areas

Learning and Teaching Resources
مصادر التعلم والتعليم

	Text	Available in the Library?
Required Texts	Banafa A. Introduction to Artificial Intelligence (AI). CRC Press; 2024May 13.	NO
Recommended Texts	1. Stallings, W. (2013). *Network Security Essentials: Applications and Standards*. Pearson. 2. Forouzan, B. A. (2007). *Data Communications and Networking*. McGraw-Hill Education. 3. Kurose, J. F., & Ross, K. W. (2016). *Computer Networking: A Top-Down Approach*. Pearson. 4. Easttom, C. (2012). *Network Defense and Countermeasures: Principles and Practices*. Pearson IT Certification 5. Laudon, K., & Traver, C. (2020). E-Commerce 2020: Business, Technology, Society. Pearson. 6. Chaffey, D. (2015). Digital Business and E-Commerce Management: Strategy, Implementation and Practice. Pearson Education. 7. Turban, E., & Volonino, L. (2012). Information Technology for Management: Advancing Sustainable, Profitable Business Growth. Wiley. 8. Mishra, A., & Gupta, A. (2018). Electronic Banking in India: Issues and Challenges. SSRN. 9. Andrews, J. (2019). A+ Guide to IT Technical Support (Hardware and Software). Cengage Learning. 10. Meyers, M. (2020). CompTIA A+ Certification All-in-One Exam Guide. McGraw-Hill Education. 11. Beisse, F. (2015). A Guide to Computer User Support for Help Desk and Support Specialists. Cengage Learning. 12. Norton, P. (2007). Peter Norton's Complete Guide to Windows Troubleshooting. Sams Publishing.	NO

13. Russell, S., & Norvig, P. (2020). Artificial Intelligence: A Modern Approach. Pearson.
14. Kautz, H., & Ghallab, M. (2014). Artificial Intelligence: Foundations of Computational Agents. Cambridge University Press.
15. Marr, B. (2020). The Future of Artificial Intelligence in Business. Wiley.
16. Obermeyer, Z., & Emanuel, E. J. (2016). Predicting the Future — Big Data, Machine Learning, and Clinical Medicine. New England Journal of Medicine.
17. Bostrom, N. (2014). Superintelligence: Paths, Dangers, Strategies. Oxford University Press.
18. Tegmark, M. (2017). Life 3.0: Being Human in the Age of Artificial Intelligence. Knopf.
19. Russell, S., & Norvig, P. (2020). Artificial Intelligence: A Modern Approach. Pearson.
20. Walsh, T. (2018). 2062: The World That AI Made. Macmillan.
21. Schwab, K. (2016). The Fourth Industrial Revolution. World Economic Forum.
22. Russell, S., & Norvig, P. (2020). Artificial Intelligence: A Modern Approach. Pearson.
23. Goodfellow, I., Bengio, Y., & Courville, A. (2016). Deep Learning. MIT Press.
24. Bostrom, N. (2014). Superintelligence: Paths, Dangers, Strategies. Oxford University Press.
25. Tegmark, M. (2017). Life 3.0: Being Human in the Age of Artificial Intelligence. Knopf.
26. Silver, D., et al. (2018). A general reinforcement learning algorithm that masters chess, shogi, and Go through self-play. Science, 362(6419), 1140–1144.

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a markof 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. 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.