Ministry of Higher Education and
Scientific Research - Iraq
Northern Technical University
Technical Engineering College for Computer and AI /Kirkuk
Department of Cybersecurity Technology Engineering

MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	**Democracy and Human rights**	**Module Delivery**	
Module Type	BASIC		**Theory**
Module Code	NTU100	✓	**Lecture**
ECTS Credits	2		**Lab**
SWL (hr/sem)	50		**Tutorial**
			Practical
			Seminar
Module Level	1	**Semester of Delivery**	1
Administering Department	CYBT	**College**	**TECHNICAL ENGINEERING COLLEGE FOR COMPUTER AND AI /KIRKUK**
Module Leader	Bashaar Muhammed Gulmurad	**e-mail**	Bashaar1988@ntu.edu.iq
Module Leader's Acad. Title	Assist Lec.	**Module Leader's Qualification**	Ms.C
Module Tutor	None	**e-mail**	None
Peer Reviewer Name	None	**e-mail**	None
Review Committee Approval	21/10/2025	**Version Number**	1.0

Relation With Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

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

Module Objectives أهداف المادة الدراسية	تهدف الديمقراطية وحقوق الانسان للحفاظ على كرامة الفرد وحقوقه الأساسية وتعزيزها كما تحقيق العدالة الاجتماعية وتشجيع التنمية الاقتصادية والاجتماعية للمجتمع وتماسكه فضلا عن توطيد الأمان الوطني وإرساء مناخ مؤات للسلام الدولي وذلك لان حقوق الانسان والديمقراطية مرجعاً أساسياً للجميع لحماية حقوق الإنسان؛ وهي توفر بيئة لحماية حقوق الإنسان وإعمالها إعمالاً فعلياً. واليوم، بعد مضي فترة على تحقيق الديمقراطية في مختلف أنحاء العالم، يبدو أن العديد من النظم الديمقراطية تتراجع. ويظهر أن بعض الحكومات تتعمد إضعاف إجراء عمليات تحقق مستقلة بشأن سلطاتها، والقضاء على أي نقد، وتفكيك الرقابة الديمقراطية وضمان حكمها لمدة طويلة، مع أثر سلبي على حقوق الشعب.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1 - فهم ومعرفة وأدراك حقوقه التي اقرها الله له وللبشر جميعاً وبالتالي فهي هبه وليس مكسب من أحد ولا يحق لأي شخص انتزاعها. 2- يعبر الطالب بأسلوبه الخاص عن هذه الحقوق ويدافع عنها. 3- تعليل الظواهر واعطاء التفسيرات لما يحدث امامه من انتهاك لحقوق الانسان وحرياته من خلال تحديد اوجه النقص او الثغرات الموجودة في ضوء المعلومات المتوفرة لديه 4- فهم اهم النظم السياسية والتي تعد ضمانه لحقوق الانسان وحرياته السياسية ومحاولة تطبيقه على ارض الواقع الا

	وهو النظام الديمقراطي.
Indicative Contents المحتويات الإرشادية	❖ حقوق الانسان في التاريخ المعاصر والحديث: الاعتراف الدولي بحقوق الانسان منذ الحرب العالمية الأولى وعصبة الامم المتحدة (4 ساعات) ❖ حقوق الانسان، تعريفها، اهدافها وحقوق الانسان في الحضارات القديمة وخصوصا حضارة وادي الرافدين (6 ساعات) ضمانات واحترام وحماية حقوق الانسان على الصعيد الدولي: - دور الأمم المتحدة ووكالاتها المتخصصة في توفير الضمانات - دور المنظمات الاقليمية (الجامعة العربية، الاتحاد الأوربي، الاتحاد الافريقي، منظمة الدول الأمريكية، منظمة آسيان) ❖ دور المنظمات الدولية الاقليمية غير الحكومية والرأي العام في احترام وحماية حقوق الانسان (12 ساعة) ❖ المشاكل والمعوقات ونقاشات الطلبة (6 ساعات)

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	-استراتيجية التفكير حسب قدرة الطالب 2-استراتيجية مهارة التفكير العالية 3-استراتيجية التفكير الناقد في التعلم 4-العصف الذهني

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments داخل الكلية	1	10% (10)	6	LO #1-7
	Assignments بيتية	1	10% (10)	8	LO #1-9
	Report	1	10% (10)	15	LO #1-14
Summative assessment	**Midterm Exam**	2 hr	20% (20)	7	LO # 1-7
	Final Exam	3 hr	60% (60)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered

Week 1	حقوق الانسان، تعريفها، اهدافها حقوق الانسان في الحضارات القديمة وخصوصا حضارة وادي الرافدين
Week 2	حقوق الانسان في الشرائع السماوية مع التركيز على حقوق الانسان في الإسلام
Week 3	حقوق الانسان في التاريخ المعاصر والحديث : الاعتراف الدولي بحقوق الانسان منذ الحرب العالمية الأولى وعصبة الامم المتحدة
Week 4	الاعتراف الاقليمي بحقوق الانسان : الاتفاقية الاوربية لحقوق الانسان 1950 ، الاتفاقية الامريكية لحقوق الانسان 1969 ، الميثاق الافريقي لحقوق الانسان 1981 ، الميثاق العربي لحقوق الانسان 1994
Week 5	حقوق الانسان في التاريخ المعاصر والحديث : الاعتراف الدولي بحقوق الانسان منذ الحرب العالمية الأولى وعصبة الامم المتحدة
Week 6	حقوق الانسان في الدساتير العراقية بين النظرية والواقع
Week 7	حقوق الانسان الاقتصادية والاجتماعية والثقافية و حقوق الانسان المدنية والسياسية
Week 8	حقوق الانسان الحديثة : الحقائق في التنمية ، الحق في البيئة النظيفة ، الحق في التضامن ، الحق في الدين
Week 9	ضمانات احترام وحماية حقوق الانسان على الصعيد الوطني ، الضمانات في الدستور والقوانين الضمانات في الرقابة الدستورية ، الضمانات في حرية الصحافة والرأي العام ، دور المنظمات غير الحكومية في احترام وحماية حقوق الانسان
Week 10	ضمانات واحترام وحماية حقوق الانسان على الصعيد الدولي : - دور الأمم المتحدة ووكالاتها المتخصصة في توفير الضمانات - دور المنظمات الاقليمية (الجامعة العربية ، الاتحاد الأوربي ، الاتحاد الافريقي ، منظمة الدول الأمريكية ، منظمة آسيان) دور المنظمات الدولية الاقليمية غير الحكومية والرأي العام في احترام وحماية حقوق الانسان
Week 11	مصطلح الديمقراطية ، نشأته، دلالته، تاريخ الديمقراطية.
Week 12	الاسلام والديمقراطية ومساوئ الحكم الاستبدادي .
Week 13	الانتقادات الموجهة للديمقراطية، ومحاسن النظام الديمقراطي.
Week 14	الأنظمة الديمقراطية في العالم/الديمقراطية في العالم الثالث/ المشاكل التي تواجه البلدان العربية في التحول الديمقراطي
Week 15	**الامتحان النهائي**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	حقوق الانسان والديمقراطية – المفاهيم والمرتكزات للدكتور سماح مهدي العلياوي والدكتور سلمان كاظم البهادلي	Yes
Recommended Texts	الديمقراطية وحقوق الانسان في الاسلام للدكتور راشد الغنوشي	No
Websites	https://www.neelwafurat.com https://studies.aljazeera.ne	

APPENDIX:

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 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.

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MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	ENGLISH LANGUAGE	**Module Delivery**	
Module Type	BASIC		**Theory** ✓ **Lecture** **Lab** **Tutorial** **Practical** **Seminar**
Module Code	NTU101		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	1	**Semester of Delivery**	1
Administering Department	CYBT	**College**	TECCAIK
Module Leader	Alaan Ghazi	**e-mail**	Alaan.ghazi@ntu.edu.iq
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	Ph. D
Module Tutor	None	**e-mail**	None
Peer Reviewer Name	None	**e-mail**	None
Review Committee Approval	21/10/2025	**Version Number**	1.0

Relation With Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

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

Module Aims أهداف المادة الدراسية	To enable the learner to communicate effectively and appropriately in real life situation. To use English effectively for study purposes across the curriculum. To develop and integrate the use of the four language skills i.e. Reading, Listening, Speaking, and Writing. To revise and reinforce structure already learned.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Students will heighten their awareness of the correct usage of English grammar in writing and speaking. Students will improve their speaking ability in English both in terms of fluency and comprehensibility. Students will give oral presentations and receive feedback on their performance. Students will increase their reading speed and comprehension of academic articles. Students will improve their reading fluency skills through extensive reading. Students will enlarge their vocabulary by keeping a vocabulary journal.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: Part 1 – **Grammar** [4 hrs] Tenses, Present tenses: Present Simple, Present Continuous Part 2 – **Vocabulary** [6 hrs] Irregular verbs, making connections, Nouns, verbs, and adjectives, Making negatives. Part 3 – **Speaking** [6 hrs] Information gap, people's lifestyles, comparing cities. Part 4 – **Listening**[4 hrs] Telling stories, Town survey, attitudes to shopping, comparing cities. **Revision [2 hrs]**

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	The main strategy that will be adopted in delivering this module is to encourage student's participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials, and interesting sampling activities for the students.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	10% (10)	3, 7, 11, 14	LO #1, 2, 10 and 11
	Assignments	4	20% (10)	0	0
	Projects / Lab.	0	0	0	0
	Report	1	10% (10)	5, 6, 8, 10, 13	LO # 5, 8 and 12
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	3 hr	50% (50)	15	All

Total assessment	100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Grammar: Tenses, Questions, Questions words Vocabulary: Using a bilingual dictionary, Parts of speech, and Words with more than one meaning. Everyday English: Social expressions.
Week 2	Reading: the many ways we communicate Speaking: Information gap Listening: Neighbors
Week 3	Grammar: Present tenses: Present Simple, Present Continuous, have/have got Vocabulary: Describing countries, Collocation Everyday English: Making conversation
Week 4	Reading: three people talk about their experiences Speaking: people's lifestyles Listening: what annoys you about the people in your life?
Week 5	Grammar: Past tenses: Past Simple, Past Continuous Vocabulary: Irregular verbs, making connections, Nouns, verbs, and adjectives, Making negatives. Everyday English: Time expressions
Week 6	Reading: Newspaper stories Speaking: Telling stories Listening: A radio drama
Week 7	Grammar: Quantity, Articles Vocabulary: Buying things Everyday English: Prices and shopping
Week 8	Reading: 'The best shopping street in the world' Speaking: Town survey, attitudes to shopping Listening: Buying things
Week 9	Grammar: Verb patterns 1, Future intentions Vocabulary: Hot verbs Everyday English: How do you feel?
Week 10	Reading: Hollywood kids Speaking: Being a teenager Listening: You've got a friend
Week 11	Grammar: Comparative and superlative adjectives Vocabulary: Synonyms and antonyms Everyday English: Directions
Week 12	Reading: 'A Tale of two millionaires' Speaking: comparing cities Listening: Living in another country
Week 13	Grammar: Present Perfect and Past Simple Vocabulary: Past participles, Adverbs, Word pairs Everyday English: Short answers
Week 14	Review

Week 15	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	New Headway Intermediate Students Book	No
Recommended Texts		
Websites	You can visit the course page at the following link: https://youtube.com/playlist?list=PLzQug2pV17x9JD3wR8mk5qst_1EQ1myF6	

APPENDIX:

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	MATHEMATICS			Module Delivery	
Module Type	SUPPORT			☐Theory ☒ Lecture ☐ Lab ☒Tutorial ☐ Practical ☐ Seminar	
Module Code	CYBT108				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	1		Semester of Delivery	1	
Administering Department	CYBT		College	TECCAIK	
Module Leader	Fadhil Mukhlif		e-mail	fmukhlif@ntu.edu.iq	
Module Leader's Acad. Title	Lecturer		Module Leader's Qualification	Ph. D.	
Module Tutor			e-mail		
Peer Reviewer Name			e-mail		
Scientific Committee Approval Date	21/10/2025		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		Semester	
Co-requisites module	Discrete Math (CYBT205)	Semester	1

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	1. Enhance Problem-Solving Skills: Develop the ability to analyze and solve mathematical problems using appropriate strategies, techniques, and mathematical reasoning. 2. Foster Mathematical Thinking: Cultivate critical thinking and logical reasoning skills necessary for understanding and applying mathematical concepts and principles. 3. Promote Conceptual Understanding: Develop a deep understanding of mathematical concepts, including algebra, geometry, statistics, and probability, by exploring their properties, relationships, and applications. 4. Cultivate Mathematical Modeling Skills: Apply mathematical concepts and techniques to real-world problems, formulate mathematical models, and interpret and analyze the results. 5. Promote Mathematical Technology Literacy: Utilize technology tools, such as calculators, graphing software, and spreadsheets, to enhance mathematical understanding, visualization, and problem solving.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Numeracy Skills: Develop the ability to work with numbers, perform calculations, and solve mathematical problems accurately and efficiently. 2. Mathematical Reasoning: Develop logical thinking and problem-solving skills to analyze and solve mathematical problems using appropriate strategies and techniques. 3. Mathematical Communication: Express mathematical ideas and concepts clearly and effectively using mathematical language, symbols, and diagrams. 4. Mathematical Modeling: Apply mathematical concepts and techniques to real-world situations and formulate and solve problems using mathematical models. 5. Algebraic Reasoning: Understand and apply algebraic concepts and methods to analyze patterns, relationships, and functions. 6. Geometric and Spatial Reasoning: Understand and analyze geometric shapes, properties, and spatial relationships using visual representations, diagrams, and proofs.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	1. Lectures and Presentations: Lectures are commonly used to present foundational concepts, theories, and methodologies in engineering analysis. 2. Practical Assignments and Problem-Solving Exercises: Hands-on assignments and problem-solving exercises allow students to apply the concepts learned in class to real-world engineering problems. 3. Case Studies and Real-World Examples: Presenting case studies and real-world examples helps students connect theoretical concepts with practical applications. By analyzing and discussing real-world engineering 4. Group Projects and Collaborative Learning: Group projects encourage collaboration and teamwork among students.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي الغير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي الغير المنتظم للطالب أسبوعيا	5.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	10% (10)	2,4,6,7	LO #1, #2 and #9
	Assignments	9	10% (10)	1,2,3,4,5,6, 7,8,9	LO #1, #4,#5, #6,#7,#8,#9 and #6, #7
	Reading	2	5% (5)	5,7	LO #10, #12,#13
	Report	1	5% (5)	2	LO #5, #8 and #10
	Web Based Learning	4	5% (5)	1,5,8,10	LO #5, #8 ,#9 and #10
	Seminar	1	5% (5)	8	LO #9, #13
	Midterm Exam	2hr	10% (10)	7	LO #1 - #7

Summative assessment	**Final Exam**	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الإسبوعي النظري

	Material Covered
Week 1	Matrix and Determinants • Matrix, properties, and operations • Determinants and properties of determinants
Week 2	**Matrix and Determinants** • Inverse of square matrix by determinants. • Solving linear System equations using the inverse of the coefficient matrix and Cramer's rule.
Week 3	**Review of Functions** • Algebraic functions. • Review of natural logarithm, the exponential function, trigonometric functions, inverse trigonometric functions and hyperbolic functions.
Week 4	**Derivatives** • Derivatives formula and chain rule. • Derivatives of natural logarithm, the exponential function.
Week 5	**Derivatives** • trigonometric functions , inverse trigonometric functions and hyperbolic functions • Applications of differentiation.
Week 6	**Integration** • Review of Integration, Indefinite and Definite Integral • Applications of integration.
Week 7	**Integration** • approximation (trapezoidal rule, Simpson's rule) • Area between curves.
Week 8	**Techniques of integration** • Basic integration formulas. • Integration by parts.

Week 9	**Techniques of integration** • Partial fractions. • Trigonometric substitutions. • Improper integral.
Week 10	**Applications of integration** • Volume and solid revolution • Length of plane curves.
Week 11	**Vectors** • Vectors – The Basics • Vector Arithmetic
Week 12	**Vectors** • Dot product • Cross product • Applications.
Week 13	**Complex numbers** • Complex numbers in Cartesian coordinates and polar from. • linear algebra for complex number in polar and Cartesian.
Week 14	**Linear Algebra** • Euler's formula. • DeMoivre's theorem to find powers and the nth roots of given complex numbers.
Week 15	**Review**
Week 16	**Final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Calculus I, Paul Dawkins, 2007.	Yes
Recommended Texts	Advance Engineering Mathematics, Alan Jeffrey, 2002.	Yes
Websites		

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 mark of 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.

Ministry of Higher Education and Scientific Research - Iraq
Northern Technical University
Technical Engineering College for Computer and AI /Kirkuk
Department of Cybersecurity Techniques Engineering

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Fundamentals of Electrical Engineering**			**Module Delivery**	
Module Type	**SUPPORT**			✓ Theory ✓ Lecture ✓ Lab Tutorial Practical Seminar	
Module Code	**CYBT101**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	CYBT		**College**	**Northern Technical University Technical Engineering College for Computer and AI /Kirkuk**	
Module Leader	Arkan Raoof Ismael		**e-mail**	arkan.raoof23@ntu.edu.iq	
Module Leader's Acad. Title			**Module Leader's Qualification**	M. Sc.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	21/10/2025		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	

Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. To learn the basics of electrical elements (Symbols and Abbreviations, Units, Electric Circuit and Direct Current). 2. Study Ohm's law 3. To learn Kirchhoff's Laws 4. Network Analysis Methods 5. Study The Alternating Current Network 6. Phase Diagram
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. Recognize how electricity works in electrical circuits. 2. List the various terms associated with electrical circuits. 3. Summarize what is meant by a basic electric circuit. 4. Define Ohm's law. 5. Explain the two Kirchoff's laws used in circuit analysis. 6. Use different Network Analysis Methods to analyze and solve the electrical circuits 7. Discuss the various properties of resistors, capacitors, and inductors. 8. Discuss the operations of sinusoid and phasors in an electric circuit. 9. Identify the capacitor and inductor phasor relationship with respect to voltage and current.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A - Introduction to electrical circuits</u> Symbols And Abbreviations, Units, Electric Circuit & It's Element. The Direct Current Network. Ohm's law, Series Circuits, Parallel Circuits, Series-Parallel Circuits, Open and Short Circuits, Source Transformation Conversion Of Delta to Star Connection And Vice Versa [15 hrs] <u>Part B - Kirchhoff's Laws</u> How to use in Network Analysis. [5 hrs] <u>Part C - Network Analysis Methods</u> Loop (mesh) Current Method. Superposition Method. Thevenin's Theorem Norton's Theorem

	Maximum Power Transfer Theorem Nodal Voltage Method. [30 hrs] Part D - The Alternating Current Network Types of Alternating Waveforms, Generation of Alternating Current, and Definitions related to Alternating Waveforms. The Mean Values of Current and Voltage the Effective Vales of Current and Voltage Circuit Elements in the Phase Domain The Vector Diagram Series Ac Circuits and Parallel Ac Circuits Using Kirchhoff's laws to solve AC circuits [20 hrs] Revision problem classes [5 hrs]

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

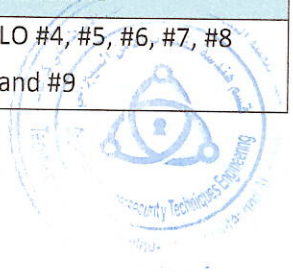
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي الغير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي الغير المنتظم للطالب أسبوعيا	4.1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**125**		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	6	10% (10)	4, 5, 6, 8, 11 and 12	LO #4, #5, #6, #7, #8 and #9



	Assignments	7	10% (10)	3, 4, 5, 6, 8, 11 and 12	LO #4, #5, #6, #7, #8 and #9
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	6	10% (10)	13	LO #4, #5, #6, #7, #8 and #9
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الإسبوعي النظري

	Material Covered
Week 1	Symbols And Abbreviations, Units, Electric Circuit & It's Element. The Direct Current Network.
Week 2	Ohm's law, Series Circuits, Parallel Circuits, Series-Parallel Circuits, Open and Short Circuits, Source Transformation
Week 3	Conversion Of Delta to Star Connection And Vice Versa
Week 4	Kirchhoff's Laws How to use in Network Analysis..
Week 5	Loop (mesh) Current Method.
Week 6	Superposition Method.
Week 7	Thevenin's Theorem
Week 8	Norton's Theorem
Week 9	Maximum Power Transfer Theorem
Week 10	Nodal Voltage Method
Week 11	Types of Alternating Waveforms, Generation of Alternating Current, and Definitions related to Alternating Waveforms. The Mean Values of Current and Voltage the Effective Vales of Current and Voltage
Week 12	Circuit Elements in the Phase Domain The Vector Diagram
Week 13	Series Ac Circuits and Parallel Ac Circuits
Week 14	Using Kirchhoff's laws to solve AC circuits
Week 15	Preparatory week before the final Exam
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الأسبوعي للمختبر

	Material Covered
Week 1	Basic information
Week 2	Color of resistance
Week 3	Ohm's law and resister in series and parallel
Week 4	Star and delta connection
Week 5	Kirchhoff's law
Week 6	Superposition theorem
Week 7	Thevenin's Theorem
Week 8	Maximum Power Transfer
Week 9	Norton's Theorem
Week 10	Operating of Oscilloscope (CRO)
Week 11	Utilization of Oscilloscope
Week 12	The Sine wave
Week 13	Application of AC signal
Week 14	Time constant

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Electric Circuits, by: James W. Nilsson and Susan A. Riedel Pearson Education Limited 10th edition 2015	Yes
Recommended Texts	FUNDAMENTALS OF ELECTRICAL ENGINEERING, by: Giorgio Rizzoni, McGraw-Hill, 1st edition, 2009.	No
Websites	https://www.coursera.org/browse/physical-science-and-engineering/electrical-engineering	

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

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Ministry of Higher Education and Scientific Research - Iraq Northern Technical University
Technical Engineering College for Computer and AI /Kirkuk
Department of Cybersecurity Technology Engineering

MODULE DESCRIPTION FORM

Fundamentals of Programming

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Fundamentals of Programming**			**Module Delivery**	
Module Type	Core			☐ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	CYBT103				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level	1		**Semester of Delivery**	1	
Administering Department	CYBT		**College**	TECCAIK	
Module Leader	Enas Aziz		**e-mail**	enasfaek@ntu.edu.iq	
Module Leader's Acad. Title	Lect.		**Module Leader's Qualification**	Ph. D	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	21/10/2025		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module		**Semester**	1
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Objectives أهداف المادة الدراسية	1. Introducing the fundamentals and principles of programming in C++ language. 2. Teaching the concept of Procedure Oriented Programming. 3. Starts from scratch to advance programing by improving the skills of the students through several program implementation and code writing. 4. The students should be able to define programming purposes & the required code lines to perform the needed works. 5. as well as qualifying him to use the different kinds of programming style and program functions in building & executing the projects of cyber security engineering.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understanding the fundamentals of programming in C++ language. 2. Mastering C++ programming tools and techniques, including common integrated development environment (IDE) such as visual studio. 3. Becoming familiar with the C++ concepts such as Variables, assignments, Simple input, Main program and functions. 4. Being competent in common If-statement, Loops, Boolean Expressions & Logical operators. 5. Being able to perform Function call, Parameters, return values. 6. Being able to write C++ codes, Basics of program design & Programming style.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ 15 اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي الغير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي الغير المنتظم للطالب أسبوعيا	4.1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**125**		

Module Evaluation تقييم المادة الدراسية				
		Time/Number	**Weight (Marks)**	**Week Due**
Formative assessment	**Quizzes**	4	10% (10)	3,6,9,12
	Assignments	8	5% (5)	Every other week
	Projects / Lab.	14	10% (10)	Continuous
	Report	2	5% (5)	7, 14
	Seminar	1	10% (10)	15
Summative assessment	**Midterm Exam**	2hr	10% (10)	7
	Final Exam	3hr	50% (50)	16
Total assessment			100% (100 Marks)	

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to C++ (Structure of a program), Flow Chart
Week 2	Variables, assignments, Simple input, Main program.
Week 3	If-statement If-else, Boolean Expressions & Logical operators.
Week 4	Loops Nested Loops, and program Design.
Week 5	Output formatting.
Week 6	Functions, Parameters, return values.
Week 7	Mid- Term Exam
Week 8	Lists Methods, Nesting, Slicing, and Comprehension.
Week 9	Strings and String Formatting.
Week 10	Dictionary and Handle Exceptions.
Week 11	Values and references.
Week 12	Basics of program design & Programming style.
Week 13	Pointers (Reference operator, dereference operator, Declaring variables of pointer types, Pointers and arrays, Pointers to pointers, void pointers, and Pointers to functions).
Week 14	Review
Week 15	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Getting started - Structure of a program- Flow Chart.
Week 2	Lab 2: Variables, assignments, Simple input, Main program - Examples and Problems
Week 3	Lab 3: If-statement If-else, Boolean Expressions & Logical operators - Examples and Problems.
Week 4	Lab 4: Loops Nested Loops, and program Design - Examples and Problems.
Week 5	Lab 5: Loops Nested Loops, and program Design - Examples and Problems.
Week 6	Lab 6: Functions, Parameters, return values - Examples and Problems.
Week 7	Lab 7: Debugger - Examples and Problems.
Week 8	Lab 8: Lists Methods, Nesting, Slicing, and Comprehension - Examples and Problems.
Week 9	Lab 9: Dictionary and Handle Exceptions - Examples and Problems.
Week 10	Lab 10: Pointers - Examples and Problems.
Week 11	Lab 11: Strings and String Formatting - Examples and Problems.
Week 12	Lab 12: Programming style.
Week 13	Lab 13: Values and references.
Week 14	Lab 14: Dynamic Memory - Examples and Problems.

Week15	Lab 15: Review
Week 16	**Final Exam**



Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1. Choudhary, H. (2013). C++ Programming-Final Golden Edition. Beginners To Experts Approach Guide-With Easy Learning & Problem Analysis to Program Design & Development.	no
Recommended Texts	2. Farrell, J. (2008). Object-oriented programming using C++. Cengage Learning. 3. Object-Oriented Programming in C++, Fourth Edition.	no
Websites	4. https://www.geeksforgeeks.org/cpp 5. https://www.w3schools.com/cpp	

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 mark of 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.

Ministry of Higher Education and Scientific Research - Iraq Northern Technical University
Technical Engineering College for Computer and AI /Kirkuk
Department of Cybersecurity Technology Engineering

MODULE DESCRIPTION FORM

Linux Administration

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Linux Administration**			**Module Delivery**	
Module Type	**Core**			☐ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**CYBT100**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	CYBT		**College**	TECCAIK	
Module Leader	Ihsan Hussein		**e-mail**	ihsan.bayoglu@ntu.edu.iq	
Module Leader's Acad. Title	Assist. Lect		**Module Leader's Qualification**	M. Sc.	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	21/10/2025		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Introduction to Cyber Security Engineering (CYBT107)	**Semester**	2
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Introducing the fundamentals and principles of Linux administration using Linux operating system. 2. starts from scratch to network monitoring applications. 3. Improving the skills of the students through several Linux implementations and scripts writing. 4. The students should be able to understand the uses and purpose of using scripts and retrieve important network settings and packets sending and receiving information. 5. Help the students perform the needed cyber security works as well as qualifying him to use the different kinds of shell scripting style and instructions to build & execute the projects of cyber security engineering.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understanding the fundamentals of Linux administration. 2. Mastering Linux Instructions and commands, including common users administration & Permissions. 3. Becoming familiar with the Linux operating system and its distributions. 4. Being competent in common Networking & Configuring Network Settings and Package Management. 5. Being able to perform Bash Scripting and Execute shell command. 6. Being able to write complete shell scripts to perform I/O Manipulation and I/O Redirections

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي الغير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي الغير المنتظم للطالب أسبوعيا	4.1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**125**		

Module Evaluation تقييم المادة الدراسية				
		Time/Number	**Weight (Marks)**	**Week Due**
Formative assessment	**Quizzes**	4	10% (10)	3,6,9,12
	Assignments	8	5% (5)	Every other week
	Projects / Lab.	14	10% (10)	Continuous
	Report	2	5% (5)	7
Summative assessment	**Midterm Exam**	2hr	10% (10)	7
	Final Exam	3hr	50% (50)	15
Total assessment			100% (100 Marks)	

Code CYBT 403	Name of the Course Unit	Semester	In-Class Hours (T+P)	Credit	ECTS Credit
	Linux Administration	1	2+2		5

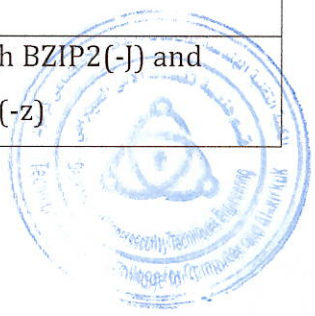
GENERAL INFORMATION	
Language of Instruction :	English
Level of the Course Unit :	BACHELOR'S DEGREE
Type of the Course :	Compulsory
Mode of Delivery of the Course Unit	Face to Face
Coordinator of the Course Unit	
Instructor(s) of the Course Unit	

OBJECTIVES AND CONTENTS	
Objectives of the Course Unit:	Introducing the fundamentals and principles of Linux administration using Linux operating system. starts from scratch to network monitoring applications. Improving the skills of the students through several Linux implementations and scripts writing. The students should be able to understand the uses and purpose of using scripts and retrieve important network settings and packets sending and receiving information. Help the students perform the needed cyber security works as well as qualifying him to use the different kinds of shell scripting style and instructions to build & execute the projects of cyber security engineering.
Contents of the Course Unit:	• Linux Fundamentals • Users & Permissions • Networking & Package Groups • Linux Services • Bash Scripting • Shell script • I/O Manipulation and I/O Redirections

	Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري
WEEK	KEY LEARNING OUTCOMES OF THE COURSE UNIT (On successful completion of this course unit, students/learners will or will be able to)
1	Linux Fundamentals: Linux Distros & History, Debian vs RedHat, Basic Commands.
2	Linux Fundamentals: Debian vs RedHat.
3	Linux Fundamentals: Basic Commands.
4	Users & Permissions: File System & File Structure

	Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري
WEEK	**KEY LEARNING OUTCOMES OF THE COURSE UNIT (On successful completion of this course unit, students/learners will or will be able to)**
5	Users & Permissions: Users & Groups, Permissions
6	Networking & Package Groups: Package Management.
7	Networking & Package Groups: Configuring Network Settings.
8	Linux Services: Apache, Creating a Basic Website
9	Linux Services: SSH & Telnet
10	Linux Services: FTP, SMB
11	Bash Scripting, Data types and variables, Execute shell command
12	Shell Scripting, Loops function
13	Shell conditions, and arithmetic comparisons
14	I/O Manipulation, I/O Redirections
15	Review
16	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab1: Installation of Linux OS.
Week 2	Lab2 : Basic Command 1
Week 3	Lab 3: Visual interface (VI Editor)
Week 4	Lab 4: User Administration and Group Administration
Week 5	Lab5: Permissions and Access control List
Week 6	Lab 6: Change ownership of files and directories and Change group owner of files and directories
Week 7	Lab 7: Partitions and Swap partition (Virtual memory)
Week 8	Lab 8: Disk Quotas and Logical Volume Manager (LVM)
Week 9	Lab 9: Redundant party of independent disks (RPID) and Backup and restore using CPIO Command
Week 10	Lab 10: Backup and restore using TAR and Filter the Archive through BZIP2(-J) and Backup and restore using TAR and Filter the Archive through GZIP2(-z)



Week 11	Lab 11: Redundant party of independent disks (RPID)
Week 12	Lab 12: Backup and restore using CPIO Command
Week 13	Lab 13: Backup and restore using TAR and Filter the Archive through BZIP2(-J)
Week 14	Lab 14: Review
Week 15	**Final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1. Unix And Linux®System Administration Handbook. Fourth Edition, Evi Nemeth Garth Snyder,Trent R. Hein and Ben Whaley	yes
Recommended Texts	1. Modern Linux Administratio (2016) by Sam R. Alapati. 2. LINUX SYSTEM ADMINISTRATION by *Tom Adelstein and Bill Lubanovic*	yes
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
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Ministry of Higher Education and
Scientific Research - Iraq
Northern Technical University
Technical Engineering College for Computer and AI/ Kirkuk
Department of Cybersecurity Technology Engineering

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	ENGINEERING DRAWING	**Module Delivery**	
Module Type	BASIC		**Theory** **Lecture** ✓ **Lab** **Tutorial** **Practical** **Seminar**
Module Code	CYBT109		
ECTS Credits	3		
SWL (hr/sem)	75		

Module Level	1	**Semester of Delivery**	1
Administering Department	CYBT	**College**	TECCAIK
Module Leader	Deniz Nisham Anwer	**e-mail**	deniz.anwer@ntu.edu.iq
Module Leader's Acad. Title	Assist. Lecturer	**Module Leader's Qualification**	M.Sc.
Module Tutor	None	**e-mail**	
Peer Reviewer Name	None	**e-mail**	None
Review Committee Approval		**Version Number**	1.0

Relation with Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

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

Module Aims أهداف المادة الدراسية	1. Define engineering drawing material, its uses and Engineering drawing tools 2. Introduction to Engineering drawing through AutoCAD software 3. Developing the student's mental and abilities in drawing simple and complex shapes 4. Decomposes 3D shapes into binary projections
Module Learning Outcomes	1. Learning types of engineering lines and their uses and how to draw

مخرجات التعلم للمادة الدراسية	2. Drawing geometric shapes such as square, rectangular, parallelogram and circle 3. Learning dimensions in engineering drawing and how to put them on the drawing 4. Learning Fundamentals of projection in engineering drawing 5. Ability of drawing an anthropomorphic shape
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: • Part A – AutoCAD interface Setup, save, limits, grid, object snap and ortho mode [3 hrs.] • Part B- Coordinate method Direct distance method, Absolute coordinate, Relative coordinate, Polar coordinate[3hrs] • Part C Draw menu Line, polyline, rectangle, arc, circle, ellipse and hatch [12hrs] • Part D Modify and Properties menu Copy, move, offset, erase, extend, trim and array, line shape and line size [9 hrs.] • Part D Projection Front, side and top ortho projections [6 hrs.] • Part E stereoscopic shapes Method for drawing stereoscopic shapes[6hrs] • Revision problem classes [8 hrs.]

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	27	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.8
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	3	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	3	5% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	5% (10)	Continuous	All
	Report	0	0% (0)	0	0
Summative assessment	Midterm Exam	2 hr	30% (10)	7	LO # 1-7
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	-Get a quick introduction to AutoCAD -Drawing Setup in AutoCAD -Use precision drawing tools such as Grid, Object Snap, and Limits to create accurate measurements in drawings.
Week 2	Coordinate method (Direct distance method, Absolute coordinate, Relative coordinate, Polar coordinate)
Week 3	Draw menu (line, poly line, polygon, rectangle).
Week 4	Drawing objects of Pentagonal, hexagonal and octagonal shapes
Week 5	Draw menu (arc, circle, ellipse, point and text).
Week 6	Draw several shapes containing circles and texts
Week 7	Modify menu (erase, copy, mirror, move offset,)
Week 8	Modify menu (rotate, trim, extend, explode)
Week 9	Properties and Layers in AutoCAD and dimension
Week 10	Orthographic projection
Week 11	Draw the three projection(front, side and top) of some shapes
Week 12	Basics of drawing stereoscopic shapes
Week 13	Draw stereoscopic shape
Week 14	Printing the graphic
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Definition of AutoCAD interface
Week 2	**Lab 2**: Applications of Coordinate method
Week 3	Lab 3: Draw figures of lines, polygons and rectangle
Week 4	Lab 4: Drawing objects of Pentagonal, hexagonal and octagonal shapes

Week 5	Lab 5:Drawing figures of circles and ellipse
Week 6	Lab 6: Draw several shapes containing circles and texts
Week 7	Lab 7: Applications of some order in modify menu
Week 8	Lab 8: Applications of other order in modify menu
Week 9	Lab 9: Practicing of using layers
Week 10	Lab 10:Practicing of projection of simple figure
Week 11	Lab 11: Draw three projection of figure
Week 12	Lab 12: Practicing of drawing stereoscopic shapes
Week 13	Lab 13: Draw stereoscopic shape
Week 14	Lab 14: Practicing of Printing the graphic

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	AutoCAD 2017 2D Fundamentals Randy H. Shih ® Tutorial First Level by Randy H. Shih	No
Recommended Texts	Introduction to AutoCAD 2011 2D and 3D Design, Alf Yarwood	No
Websites	HTTPS://YOUTU.BE/XFO8VQT731M **Introduction to AutoCad 2017 Tutorial series**	

APPENDIX:

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 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.

Recommended Texts	CyberEthics Book by Richard A. Spinello	No
Websites		

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 mark of 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.

Ministry of Higher Education and
Scientific Research - Iraq
Northern Technical University
Technical Engineering College for Computer and Artificial
Intelligence /Department of AI Technology Engineering

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	COMPUTER 1	**Module Delivery**	
Module Type	BASIC		Theory ✓ Lecture ✓ Lab Tutorial Practical Seminar
Module Code	NTU102		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	1	**Semester of Delivery**	2
Administering Department	CYBT	**College**	NORTHERN TECHNICAL UNIVERSITY TECHNICAL ENGINEERING COLLEGE FOR COMPUTER AND ARTIFICIAL INTELLIGENCE/KIRKUK
Module Leader	Alaan Ghazi	**e-mail**	Alaan.ghazi@ntu.edu.iq
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor	None	**e-mail**	None
Peer Reviewer Name	None	**e-mail**	None
Review Committee Approval	21/10/2025	**Version Number**	1.0

Relation With Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

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

Module Aims أهداف المادة الدراسية	1. Studying computer principles. 2. Defining keyboards and mice. 3. Presenting principles of memories. 4. Explaining disc drives. 5. Explaining principles of windows. 6. Illustrating accessories of windows.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Abilities to recognize different computer hardware parts. 2. Defining various types of keyboards and mice. 3. Getting knowledge about computer memories and drives. 4. Getting knowledge about windows. 5. Presenting different windows accessories.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Computer types of: digital, analogues and hybrid. Different memory types of: RAM, ROM, PROM, EPROM and EEPROM. Different drives types of: magnetic and optical. Windows facilities of: Notepad, Wordpad, Paint, Accessories and others.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	Strategies that will be adopted for delivering this module are theoretical lectures, practical experiments, home works and exams. This will be achieved through classes, interactive tutorials and by considering practical experiments.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	2	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	0.1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	0	0% (0)	N/A	N/A
	Assignments (Homework)	5	15% (15)	10	LO #1 - #10
	Projects / Lab.	15	15% (15)	Continuous	All
	Report	0	0% (0)	N/A	N/A
Summative assessment	**Midterm Exam**	2hr	30% (30)	10	LO #1 - #10
	Final Exam	3hr	40% (40)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
1st	Introducing to the Computer System Including: What is Computer?, Computer System, Functions of Computer Input Storage Process & Output, Classification of Computers and Computer Units
2nd, 3rd, 4th	Explaining Types of Computer Keyboards and Types of Keyboard Keys
5th	Explaining Types of Computer Mice and Mouse Functions
6th	Explaining Different Plugs and Ports for Some Computer Parts
7th	Illustrating Computer Discs and Drives
8th	Illustrating RAM, Non-Volatile and Cache Memories
9th, 10th, 11th	Demonstrating Computer Hardware Parts and Definitions
12th, 13th	Presenting Windows, Windows Desktop and Windows Taskbar
14th	Illustrating Start Menu and Windows Accessories
15th	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
1st	Introducing to the Computer System Including: What is Computer?, Computer System, Functions of Computer Input Storage Process & Output, Classification of Computers and Computer Units
2nd, 3rd, 4th	Explaining Types of Computer Keyboards and Types of Keyboard Keys
5th	Explaining Types of Computer Mice and Mouse Functions
6th, 7th	Explaining Different Plugs and Ports for Some Computer Parts, and Illustrating Computer Discs and Drives
8th	Illustrating RAM, Non-Volatile and Cache Memories
9th, 10th, 11th, 12th	Demonstrating Computer Hardware Parts and Definitions, and Presenting Windows, Windows Desktop and Windows Taskbar
13th, 14th	Illustrating Start Menu and Windows Accessories
15th	Final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	[1] Umar Farooq, "What is Computer - Definition & Basic Concept of Computer", Study Lecture Notes, 2016. [2] University Information Technology Services, "Microsoft Windows 10, Getting Started Guide", Kennesaw State University – UITS, 2016.	In the internet
Recommended Texts	Cre8te Opportunities, "Introduction To Computers (Windows 10)", Digital Skills Academy, 2016.	In the internet
Websites	[1] http://www.studylecturenotes.com/computer-science/what-is-computer-definition-basic-concept-of-computer	

[2] http://ergonomictrends.com/different-types-of-computer-keyboards/
[3] UKEssays, "Wireless Mouse: History and Types", 2018. [Online]. Available: https://www.ukessays.com/essays/computer-science/wireless-mouse-history-types-5302.php?vref=1.
[4] https://searchstorage.techtarget.com/definition/RAM-random-access-memory
[5] https://tldp.org/HOWTO/Network-boot-HOWTO/a610.html#:~:text=PROM%3A%20Pronounced%20prom%2C%20an%20acronym,the%20computer%20is%20turned%20off.

APPENDIX:

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 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.

Ministry of Higher Education and
Scientific Research - Iraq
Northern Technical University
Technical Engineering College for Computer and AI/ Kirkuk
Department of Cybersecurity Technology Engineering

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	ARABIC LANGUAGE	**Module Delivery**	
Module Type	BASIC		**Theory** ✓ **Lecture** **Lab** **Tutorial** **Practical** **Seminar**
Module Code	NTU103		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	1	**Semester of Delivery**	2
Administering Department	CYBT	**College**	TECCAIK
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor	None	**e-mail**	None
Peer Reviewer Name	None	**e-mail**	None
Review Committee Approval	21/10/2024	**Version Number**	1.0

Relation With Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

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

Module Aims أهداف المادة الدراسية	To enable the learner to communicate effectively and appropriately in real life situation. To use Arabic effectively for study purposes across the curriculum. To develop and integrate the use of the four language skills i.e. Reading, Listening, Speaking, and Writing. To revise and reinforce structure already learned.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Students will heighten their awareness of the correct usage of Arabic grammar in writing and speaking. Students will improve their writing ability in Arabic Students will give oral presentations and receive feedback on their performance. Students will increase their reading speed and comprehension of academic articles. Students will improve their reading fluency skills through extensive reading. Students will enlarge their vocabulary by keeping a vocabulary journal.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: Part 1 – **Grammar** [4 hrs] Tenses, Present tenses: Present Simple, Present Continuous Part 2 – **Vocabulary** [6 hrs] Irregular verbs, making connections, Nouns, verbs, and adjectives, Making negatives. Part 3 – **Speaking** [6 hrs] Information gap, people's lifestyles, comparing cities. Part 4 – **Listening**[4 hrs] Telling stories, Town survey, attitudes to shopping, comparing cities. **Revision [2 hrs]**

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	The main strategy that will be adopted in delivering this module is to encourage student's participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials, and interesting sampling activities for the students.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	10% (10)	3, 7, 11, 14	LO #1, 2, 10 and 11
	Assignments	4	20% (20)	0	0
	Projects / Lab.	0	0	0	0
	Report	4	10% (10)	5, 6, 8, 10, 13	LO # 5, 8 and 12
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	3 hr	50% (60)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Grammar: Tenses, Questions, Questions words Vocabulary: Using a bilingual dictionary, Parts of speech, and Words with more than one meaning. Everyday Arabic: Social expressions.
Week 2	Reading: the many ways we communicate Speaking: Information gap Listening: Neighbors
Week 3	Grammar: Present tenses: Present Simple, Present Continuous, have/have got Vocabulary: Describing countries, Collocation Everyday Arabic: Making conversation
Week 4	Reading: three people talk about their experiences Speaking: people's lifestyles Listening: what annoys you about the people in your life?
Week 5	Grammar: Past tenses: Past Simple, Past Continuous Vocabulary: Irregular verbs, making connections, Nouns, verbs, and adjectives, Making negatives. Everyday Arabic: Time expressions
Week 6	Reading: Newspaper stories Speaking: Telling stories Listening: A radio drama
Week 7	Grammar: Quantity, Articles Vocabulary: Buying things Everyday Arabic: Prices and shopping
Week 8	Reading: 'The best shopping street in the world' Speaking: Town survey, attitudes to shopping Listening: Buying things
Week 9	Grammar: Verb patterns 1, Future intentions Vocabulary: Hot verbs Everyday ArabicArabic: How do you feel?
Week 10	Reading: Hollywood kids Speaking: Being a teenager Listening: You've got a friend
Week 11	Grammar: Comparative and superlative adjectives Vocabulary: Synonyms and antonyms Everyday English: Directions
Week 12	Reading: 'A Tale of two millionaires' Speaking: comparing cities Listening: Living in another country
Week 13	Grammar: Present Perfect and Past Simple Vocabulary: Past participles, Adverbs, Word pairs Everyday Arabic: Short answers
Week 14	Review
Week 15	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts		No
Recommended Texts		
Websites		

APPENDIX:

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 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.

Ministry of Higher Education and Scientific Research - Iraq
Northern Technical University
Technical Engineering College for Computer and AI /Kirkuk
Department of Cybersecurity Technology Engineering

MODULE DESCRIPTION FORM
نموذج وصف المادة الدراسية

Digital Electronics

Module Information معلومات المادة الدراسية					
Module Title	Digital Electronics			**Module Delivery**	
Module Type	SUPPORT			☐ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	CYBT106				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level	1		**Semester of Delivery**	2	
Administering Department	CYBT		**College**	TECCAIK	
Module Leader			**e-mail**	E-mail	
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		

Scientific Committee Approval Date	21/10/2025	**Version Number**	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		**Semester**	
Co-requisites module	Fundamentals of Electronic Engineering CYBT200 Computer Organization and Architectures CYBT204	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Understanding the principles of digital electronics: This includes understanding the properties of digital signals, logic gates, Boolean algebra, and other fundamental concepts. 2. Designing digital circuits: This involves designing and analyzing digital circuits using various tools and techniques such as truth tables, Karnaugh maps, and circuit simulation software. 3. Implementing digital circuits: This includes building digital circuits using electronic components such as logic gates, flip-flops, and counters. 4. Troubleshooting digital circuits: This involves identifying and diagnosing problems in digital circuits using various diagnostic tools and techniques. 5. Understanding digital systems: This includes understanding how digital circuits are combined to create digital systems such as computers, microcontrollers, and other digital devices. 6. Applying digital electronics to real-world problems: This involves using digital electronics to solve real-world problems such as designing control systems, communication systems, and data processing systems.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1.Students should be able to describe the basics of digital electronics, including binary arithmetic, logic gates, Boolean algebra, and digital circuits. 2. Analyzing and designing digital circuits: Students should be able to analyze and design combinational and sequential digital circuits using various tools and techniques, including truth tables, Karnaugh maps, and state diagrams. 3. Understanding the operation of digital devices: Students should be able to explain the operation of digital devices such as flip-flops, counters, registers, and memory devices. 4. Applying digital electronics to real-world problems: Students should be able to apply their knowledge of digital electronics to solve real-world problems, such as designing a digital system to control a traffic light or implementing a digital filter for audio signal processing. 5. Understanding the limitations of digital electronics: Students should be able to identify the limitations of digital electronics, such as timing constraints, noise, and power consumption, and suggest appropriate solutions.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1- Boolean Algebra: This is a mathematical system that allows digital signals to be represented and manipulated using a set of logical operations such as AND, OR, and NOT. Boolean algebra can be used to simplify complex digital circuits and to derive expressions for the output of a circuit. 2- Karnaugh Maps: Karnaugh maps are graphical tools that can be used to simplify Boolean expressions and to derive the minimal sum of products (MSP) or product of sums (POS) expressions for a digital circuit.

	3- Combinational Logic Design: Combinational logic circuits are digital circuits whose outputs depend only on the current input values. Strategies for designing combinational logic circuits include Boolean algebra, Karnaugh maps, and the use of standard logic gates. 4- Sequential Logic Design: Sequential logic circuits are digital circuits whose outputs depend on both the current input values and the previous state of the circuit. Strategies for 5- designing sequential logic circuits include state diagrams, state tables, and the use of flip-flops and registers.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي الغير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي الغير المنتظم للطالب أسبوعيا	4.1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**125**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due
Formative assessment	**Quizzes**	6	10% (10)	3,5,7,9,10,13
	Assignments	10	10% (5)	2 ,4,5,6,7,8,9,10,11,13
	Projects / Lab.	15	10% (5)	Continuous
	Report	15	10% (5)	Continuous

	Ministry of Higher Education and Scientific Research - Iraq Northern Technical University Technical Engineering College for Computer and AI/ Kirkuk Department of Cybersecurity Technology Engineering	

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Ethics of the Information Age**			**Module Delivery**	
Module Type	SUPPORT			☐ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**CYBT102**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level		1	**Semester of Delivery**		1
Administering Department		CYBT	**College**		TECCAIK
Module Leader	Hasan Kareem Abdulrahman		**e-mail**		Hasan.abdulrahman@ntu.edu.iq
Module Leader's Acad. Title		Assist. Prof	**Module Leader's Qualification**		Ph. D
Module Tutor	Name (if available)		**e-mail**		
Peer Reviewer Name		Name	**e-mail**		E-mail
Scientific Committee Approval Date			**Version Number**		1.0

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	• Examine the legal, regulatory, and ethical frameworks that govern information technologies in commercial, governmental, and social environments. • Introduce students to the foundational concepts of digital ethics, highlighting how technological systems shape individual and collective behavior in the information age. • Help students understand similarities and differences between major ethical theories (utilitarianism, deontology, virtue ethics) and how they apply to modern digital dilemmas. • Provide students with basic ideas and knowledge about how information technologies influence values, decision-making, and societal norms. • Introduce terminology related to information ethics such as digital rights, privacy, algorithmic bias, surveillance, cybercrime ethics, and global data governance. • Explore how ethical policies in organizations can be developed to align with compliance requirements, human rights principles, and responsible innovation. • Introduce students to new ways of thinking about identity, culture, and digital citizenship in the context of global information systems. • Use ethical reasoning and critical analysis to evaluate real-world cases involving cybersecurity incidents, misinformation, AI systems, and digital platforms.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understanding the impact of technology on society: Students will analyze how digital technologies transform social structures, institutions, and relationships, identifying ethical risks associated with data use, automation, and cybersecurity. Students will explain the ethical significance of digital identity groups and the factors that shape digital inequality and power. 2. Students will define and explain key ethical concepts, theories, and principles relevant to the information age, and apply them to technology-related issues. 3. Students will critically engage with ethical frameworks to examine digital dilemmas, distinguish ethical reasoning from other forms of analysis, and understand how ethics differs from law or policy.

	4. Students will construct clear, evidence-based arguments using credible sources and demonstrate familiarity with fundamental ethical analysis and basic descriptive statistics where relevant. 5. Students will develop critical thinking skills to evaluate ethical implications of emerging technologies, including AI, data mining, cybercrime, surveillance, and online behavior. 6. Students will improve communication and research skills, and develop the ability to engage with diverse perspectives when addressing ethical challenges related to society, culture, and global digital systems
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. 1. Introduction to Ethics and Technology (3 hrs) 2. Foundations of Cyber & Information Ethics (2 hrs) 3. Ethical Theories for the Digital Age (10 hrs) 4. Technology, Society, and Ethical Impacts (3 hrs) 5. Ethics of Cybercrime and Digital Deviance (2 hrs) 6. Technology, Social Change, and Moral Challenges (2 hrs) 7. Ethics of Globalization and Digital Governance (2 hrs) 8. Professional Ethics in Cybersecurity (1 hr) 9. Ethical Issues in Online Harassment & Cyberbullying (2 hrs) 10. Moral and Social Effects of Cyberbullying (1 hr) 11. Human Factors, Responsibility, and Ethical Decision-Making (3 hrs) 12. Ethical Risk Management in Cyber Incidents (3 hrs)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy for delivering this module is to encourage active student participation through interactive learning, guided discussions, case studies, and ethical scenario analysis. Students will refine their critical thinking and reasoning skills by examining real-world dilemmas, participating in class debates, and analyzing ethical issues emerging from current technologies.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Ethics and the Information Age • Overview of course • What is digital ethics? • Why ethics matters in modern technological society
Week 2	Foundations of Information Ethics • Ethics vs. law vs. policy • Digital rights and responsibilities • Cybersecurity principles and ethical challenges
Week 3	Ethical Theories for the Information Age • Utilitarianism, deontology, virtue ethics • Applying theories to real digital problems • Values, norms, and moral reasoning
Week 4	Technology, Society, and Ethical Impacts • Ethical impact of technology on society • Cultural and social factors in ethical decision-making • Privacy, transparency, and accountability
Week 5	Ethics of Cybercrime and Deviance • Digital deviance models • Ethical dimensions of hacking and cybercrime • Societal impact of unethical digital behavior
Week 6	Technology and Social Change • How technology accelerates social change • Ethical implications of automation and AI • Digital activism and moral responsibility
Week 7	Mid term exam
Week 8	Ethics and Globalization • Global digital ethics • International data governance and digital sovereignty • Cross-border ethical dilemmas
Week 9	Professional Ethics in Cybersecurity • Ethical codes • Responsible disclosure • Ethics of surveillance, monitoring, and defense
Week 10	Ethics of Cyberbullying • Definitions and types • Ethical analysis of online harassment • Differences vs. traditional bullying

Week 11	Effects of Cyberbullying • Emotional and psychological consequences • Social and academic impact • Ethical and legal implications
Week 12	Responding to Digital Harassment • Identifying unethical digital behaviors • Ethical duties of institutions • Reporting and supporting victims
Week 13	Human Factors and Ethical Decision-Making • Human behavior and moral failure in cyber incidents • Responsibility and human error • Social influences on ethical judgment
Week 14	Ethical Risk and Incident Management • Ethical responsibility in cyber incidents • Political and legal mechanisms for digital control • Preventing unethical technological harm
Week 15	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Ethics for the Information Age, - 9th edition - by Michael J. Quinn- Pearson	No

Summative assessment	**Midterm Exam**	2hr	10% (10)	7
	Final Exam	3hr	50% (50)	15
Total assessment			100% (100 Marks)	

	Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري
WEEK	**KEY LEARNING OUTCOMES OF THE COURSE UNIT (On successful completion of this course unit, students/learners will or will be able to)**
1	• Introduction to system numbers and Logic Law • Logic gates AND, OR, NOT, NAND • Logic gates NOR, XOR, XNOR.
2	• logic simplification using Boolean functions • logic simplification using DE Morgan's theorem
3	• Karnaugh maps definition: Karnaugh maps of 2-variables and 3-variables • Karnaugh maps of 4-variables and 5-variables
4	• Sum of Product (SOP) definition: logic circuit design using SOP • Product of Sum (POS) definition: logic circuit design using POS
5	• Adder digital circuit design and Application with examples, parallel binary adder and Application with examples • Parallel binary adder circuit design and Application with examples • Subtracter digital circuit design and Application with examples
6	• Multiplier digital circuit design and Application with examples • Divider digital circuit design and Application with examples
7	• Decoder definition and Types: Decoder digital circuit design and Application with examples • Encoder definition and Types: Encoder digital circuit design and Application with examples
8	• Multiplexer definition and Types, Multiplexer digital circuit design and Application with examples • Demultiplexer definition and Types: Demultiplexer digital circuit design and Application with examples.
9	• Comparator definition and Types: Comparator digital circuit design and Application with examples • Code conversion definition and Types: Code conversion digital circuit design and Application with examples
10	• Flip-flops definition and Types: Flip-flops digital circuit design and Application with examples. (SR latch, D latch)-Edge triggered and conversion from one type to another) • Flip-flops definition and Types: Flip-flops digital circuit design and Application with examples. (T-latch, and J-K F.F)-Edge triggered and conversion from one type to another)
11	• Counters (asynchronous, synchronous, decade, up/down, cascade, counter decoding)
12	• Asynchronous Counters Design and Application • Synchronous Counters Design and Application
13	• Shift-registers: serial in and serial out registers Design and Application • Shift-registers: serial in and parallel out Design and Application.
14	• Timer: Definition, 555 Timer Design and Application

	Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري
WEEK	**KEY LEARNING OUTCOMES OF THE COURSE UNIT (On successful completion of this course unit, students/learners will or will be able to)**
15	review
16	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week 1	**Lab 1:** Connect different logic gates AND, OR, NOT, NAND, NOR
Week 2	**Lab 2: EX-OR gate and EX-NOR gates, Design AND & OR and NOT gates by using NAND and NOR gates.**
Week 3	**Lab3: De-Morgan's theorems.**
Week 4	**Lab 4: Designing a combinational logic circuit (SOP) and (POS), The realization of the Boolean equation.**
Week 5	**Lab 5: Half binary Adder.**
Week 6	**Lab 6: Full binary Adder.**
Week 7	**Lab 7: Half binary subtractor.**
Week 8	**Lab 8: Full binary subtractor ,2'S complement Adder-subtractor**
Week 9	**Lab 9: Design Binary comparator.**
Week 10	**Lab 10: Decoders digital circuit.**
Week 11	**Lab 11: Encoders digital circuit.**
Week 12	**Lab 12: Digital Multiplexer.**
Week 13	**Lab 13: Demultiplexer digital circuit.**

Week 14	**Lab 14: J-K flip flop.**
Week 15	**review**
Week 16	**Final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Digital Fundamentals ELEVENTH EDITION Thomas L. Floyd	Yes
Recommended Texts	"Digital Design" by M. Morris Mano and Michael Ciletti Fundamentals of Digital Logic and Microcontrollers" by M. Rafiquzzaman	yes
Websites		

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 mark of 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.



Ministry of Higher Education and Scientific Research - Iraq
Northern Technical University
Technical Engineering College for Computer and AI /Kirkuk
Department of Cybersecurity
Technology Engineering

MODULE DESCRIPTION FORM

Introduction to Python Programming

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Introduction to Python Programming			Module Delivery	
Module Type	Core			☐ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	CYBT105				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	1		Semester of Delivery	2	
Administering Department	CYBT		College	TECCAIK	
Module Leader			e-mail	E-mail	
Module Leader's Acad. Title			Module Leader's Qualification		
Module Tutor			e-mail		
Peer Reviewer Name			e-mail		
Scientific Committee Approval Date	21/10/2025		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Fundamentals of Programming (CYBT103)	Semester	1
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	Introduce the Python programming environment, including installation, execution of scripts, and use of basic development tools . Explain the basic syntax and structure of Python programs . Demonstrate the use of variables, data types, and operators in Python . Apply control structures such as conditional statements and loops to solve simple programming problems . Utilize Python built-in functions and modules to perform basic computational tasks . Develop simple Python scripts related to basic cybersecurity concepts, such as password checking or log analysis .
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Install and configure the Python development environment and execute Python programs . Write Python programs using correct syntax and indentation rules . Manipulate variables, strings, numbers, and other basic data types in Python . Implement decision-making and iteration structures (if statements, loops) in Python programs . Use built-in functions and standard Python modules to perform common programming tasks . Create simple Python scripts to automate basic cybersecurity-related operations, such as input validation or simple data processing .

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي الغير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي الغير المنتظم للطالب أسبوعيا	5.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية				
		Time/Number	**Weight (Marks)**	**Week Due**
Formative assessment	**Quizzes**	4	10% (10)	3,6,9,12
	Assignments	8	5% (5)	Every other week
	Projects / Lab.	14	10% (10)	Continuous
	Report	2	5% (5)	7, 14
	Seminar	1	10% (10)	15
Summative assessment	**Midterm Exam**	2hr	10% (10)	7
	Final Exam	3hr	50% (50)	15
Total assessment			100% (100 Marks)	

OBJECT ORIENTED PROGRAMMING - PROGRAMME COURSE DESCRIPTION

Code CYBT 107	Name of the Course Unit	Semester	In-Class Hours (T+P)	Credit	ECTS Credit
	Object Oriented Programming	2	2+2	6	7

GENERAL INFORMATION	
Language of Instruction :	**English**
Level of the Course Unit :	**BACHELOR'S DEGREE**
Type of the Course :	**Compulsory**
Mode of Delivery of the Course Unit	**Face to Face**
Coordinator of the Course Unit	
Instructor(s) of the Course Unit	

OBJECTIVES AND CONTENTS	
Objectives of the Course Unit:	This course unit aims to introduce students to the fundamentals of Python programming as a practical tool for cybersecurity applications. It focuses on developing basic programming skills such as writing Python scripts, using variables, data types, and control structures. The unit enables students to understand how Python can be used to automate simple computing tasks. It also introduces basic problem-solving techniques through programming. By the end of the unit, students will be able to create simple Python programs relevant to introductory .cybersecurity tasks
Contents of the Course Unit:	Introduction to Python and programming basics Python installation and development environment Variables, data types, and basic operators (Conditional statements (if, else, elif (Loops (for and while Functions and basic program structure Simple Python scripts for basic cybersecurity-related tasks



	Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري
WEEK	**KEY LEARNING OUTCOMES OF THE COURSE UNIT (On successful completion of this course unit, students/learners will or will be able to)**
1	.Introduction to programming and Python, applications of Python in cybersecurity
2	.Python installation, development environments, and writing the first Python program
3	.Variables, data types (integers, floats, strings), and basic operators
4	.Input and output operations, string manipulation
5	.Conditional statements (if, elif, else
6	.(Loops (for loop and while loop
7	.Practical exercises using loops and conditions
8	.Midterm Exam / Review
9	Functions and modular programming in Python
10	.Lists and tuples
11	.Dictionaries and sets
12	.(File handling (reading and writing files
13	.Basic Python modules and libraries relevant to cybersecurity
14	.(Simple cybersecurity scripts (password checker, log file analysis
15	.Project presentation / course review
16	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	.Lab 1: Introduction to programming and Python Cybersecurity Programming
Week 2	Lab 2: Python installation, development environments, and writing the first Python program
Week 3	.Lab 3: Variables, data types (integers, floats, strings), and basic operators
Week 4	Lab 4: Input and output operations, string manipulation
Week 5	Lab 5 : Conditional statements (if, elif, else
Week 6	Lab 6: Loops (for loop and while loop
Week 7	Lab 7: Practical exercises using loops and conditions
Week 8	Lab 8: Functions and modular programming in Python
Week 9	.Lab 9: Lists and tuples
Week 10	.Lab 10: Dictionaries and sets
Week 11	Lab 11: File handling (reading and writing files
Week 12	.Lab 12: Basic Python modules and libraries relevant to cybersecurity
Week 13	Lab 13. Simple cybersecurity scripts (password checker, log file analysis
Week 14	Lab 14: Simple cybersecurity scripts (password checker, log file analysi
Week 15	Lab 15: review/preparation for final exam
Week 16	**Final Exam**



	Text	Available in the Library?
Required Texts	**Python Programming for Beginners: The Complete Python Coding Crash Course**	no
Recommended Texts	**Python Basics: A Practical Introduction to Python 3**	no
Websites		

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 mark of 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.



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Technical Engineering College for Computer and AI /Kirkuk
Department of Cybersecurity Techniques Engineering

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Engineering Mathematics			Module Delivery	
Module Type	SUPPORT			☐Theory ☒ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐Seminar	
Module Code	CYBT104				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	1		Semester of Delivery	2	
Administering Department	CYBT		College	TECCAIK	
Module Leader			e-mail	E-mail	
Module Leader's Acad. Title			Module Leader's Qualification		
Module Tutor			e-mail		
Peer Reviewer Name			e-mail	E-mail	
Scientific Committee Approval Date	21/10/2025		Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	MATHEMATICS (CYBT108)	Semester	1
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Understand the basic concepts: Students should be able to define and understand key concepts in probability, such as events, outcomes, sample space, probability, and random variables. 2. Comprehend probability laws: Students should become familiar with the laws and rules of probability. 3. Solve probability problems: Students should be able to solve probability problems using both theoretical calculations and practical applications, such as calculating probabilities of events, determining expected values, and understanding the law of large numbers. 4. Understand independence and dependence: Students should learn the concepts of independence and dependence between events and random variables, and how they affect probability calculations.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understand the basic concepts and terminology used in probability and statistics. 2. Comprehend the fundamental principles of probability theory, including probability axioms, random variables, and probability distributions. 3. Analyze and interpret data using descriptive statistics, including measures of central tendency (mean, median, mode) and variability (variance, standard deviation). 4. Understand the concept of sampling and its importance in statistical inference. 5. Apply basic regression analysis techniques to examine relationships between variables. 6. Understand the limitations and assumptions associated with various statistical methods. 7. Use statistical software or programming languages to analyze and visualize data.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. Understanding the problem: Begin by reading and understanding the problem statement carefully and identifying key information, variables, and what is required. 2. Define the problem in probabilistic terms: Determine how the problem can be translated into a probabilistic framework. 3. Use appropriate probability models: Determine the appropriate probability model or distribution that best represents the problem at hand. 4. Break down complex problems: If a problem seems complex, it should be broken down into smaller, easier-to-handle parts.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي الغير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي الغير المنتظم للطالب أسبوعيا	5.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	10% (10)	5 ,8 and 10	LO #1, #2 and #10, #11
	Assignments	5	10% (10)	2,4,8,9,10	LO #3, #4 and #6, #7
	Projects / Lab.	15	10% (10)	Continuous	All
	Report	1	5% (5)	13	LO #5, #8 and #10
	Seminar	1	5% (5)	10	LO #7, #9 and #13
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الإسبوعي النظري

	Material Covered
Week 1	**Introduction to Statistics** • An overview of the role of statistics in science. • types of statistics (descriptive and inferential).
Week 2	**Introduction to Statistics** • data presentation. • (arithmetical mean, median, mode).
Week 3	**Introduction to Statistics** • exploring Univariate Data, types of data.

	• mean and median, standard Deviation and Variance.
Week 4	**Introduction to Statistics** • range, IQR and Finding Outliers. • graphs and Describing Distributions. • Overview of software security and defense practices
Week 5	**Introduction to Probability** • Introduction to Probability. • Counting Techniques. • combinations and Permutations
Week 6	**Introduction to Probability** • sets and Venn Diagrams. • basic probability models. • general probability rules.
Week 7	**probabilistic models** • Introduction to discrete distributions. • random variables. • binomial distributions.
Week 8	**probabilistic models** • geometric distributions. • continuous distributions. • density curves.
Week 9	**probabilistic models** • Introduction to Suricata. • Installation and configuration of Suricata. • Rulesets, and signatures. • Understanding the rules and rule management
Week 10	**Normal Distribution** • Introduction to normal distribution. • Standard Normal Calculations. • density curves. • bivariate data.

Week 11	**Axioms of probability** • Scatter plots, the least squares regression line, residuals, nonlinear models. • relations in categorical data, Samples and experiments: sampling, designing experiments. • simulating experiments, estimation: margins of error and estimates.
Week 12	**Confidence Interval** • confidence interval for a proportion, confidence interval for the difference of two proportions. • confidence interval for a mean, confidence interval for the difference of two means.
Week 13	**Axioms of probability** • Tests of significance, inference for the mean of a population. • sample proportions. • inference for a population proportion.
Week 14	**Comparing Two Means, comparing two proportions, goodness of fit test and two-way tables, inference for regression, confidence intervals, test for slope of regression lines.**
Week 15	**Review**
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	
Week 9	
Week 10	
Week 11	



Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Freund, J. E. (2012). *Introduction to probability*. Courier Corporation.	Yes
Recommended Texts	Pishro-Nik, H. (2016). Introduction to probability, statistics, and random processes.	Yes
Websites		

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 mark of 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.

Ministry of Higher Education and
Scientific Research - Iraq
Northern Technical University
Technical Engineering College for Computer and AI/ Kirkuk
Department of Cybersecurity Technology Engineering

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	PHYSICS	**Module Delivery**	
Module Type	SUPPORT		✓ Theory ✓ Lecture Lab Tutorial Practical Seminar
Module Code	CAIK100		
ECTS Credits	3		
SWL (hr/sem)	75		
Module Level	1	**Semester of Delivery**	2
Administering Department	CYBT	**College**	TECCAIK
Module Leader		**e-mail**	
Module Leader's Acad. Title	Assistant Lecturer	**Module Leader's Qualification**	
Module Tutor	None	**e-mail**	None
Peer Reviewer Name	None	**e-mail**	None
Review Committee Approval	21/10/2025	**Version Number**	1.0

Relation With Other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module		**Semester**	
Co-requisites module		**Semester**	

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

Module Aims أهداف المادة الدراسية	The objectives of the subject of physics in university and college include the following: 1- It aims to provide students with a solid foundation in the basic principles and concepts of electrical and electronic physics. 2- Develop students' analytical and problem-solving skills. By studying electrical and electronic physics, students learn to apply mathematical techniques and tools to analyze and solve engineering problems. 3- Preparation for advanced studies: Electrical and electronic physics serves as a basis for more advanced courses in electrical engineering or related fields.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- Understanding of Basic Principles: Gain a comprehensive understanding of the basic principles and laws that govern electrical and electronic phenomena of semiconductor physics. 2- Develop strong analytical and problem-solving skills, enabling the ability to apply mathematical techniques and tools to analyze and solve electrical and electronic engineering problems. 3- Familiarity with electrical and electronic components and devices and develop a working knowledge of electrical components and devices commonly used in electrical engineering. 4- Apply the principles of electrical and electronic physics to real-world engineering problems and applications. This includes understanding how electrical and electronic concepts are used in areas such as power systems, communications, control systems, and electronic devices.
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following.** **Part A –** * Introduction to materials science and engineering, Energy levels, atomic structure and Polymer **[**12 **hrs.]** * Electrical source voltage and current, Types of impedances, their characteristics and methods of connection **[12hrs]** * Semiconductors Fundamentals, Extrinsic Semiconductors **[8 hrs.]** **Part B-** * The P-N Junction, The P-N Junction diode, diode application **[**10 **hrs.]** * Type of diode (Zener diode, Light Emitting Diodes, Tunnel Diode) **[10 hrs.]** * Transistor, Bipolar transistor biasing, field effect transistor FET **[**10 **hrs.]**

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	There are many different kinds of teaching and learning techniques, such as: **1.** Engaging students in activities that require their participation, critical thinking, and application of what they have learned is active learning. Examples include case studies, hands-on activities, and problem-based learning. **2-** Collaborative learning: This type of learning involves students working together in groups to accomplish a common goal. Peer learning and group projects are two examples. **3.** Inquiry-based learning: This entails motivating students to pose queries, investigate subjects, and discover solutions via study and experimentation. Scientific research and case studies are examples and reports. **4-** Direct instruction: In this method, the teacher presents knowledge to the students in a planned and systematic way. Examples include tutorials, lectures, and shows. **5-** Differentiated instruction: This refers to adjusting instruction to fit the needs of certain students depending on their interests, learning preferences, and learning styles.

	6- Technology-based instruction: This method involves enhancing instruction and involving students by using technology tools and resources. Online classes, interactive whiteboards, and instructional apps are a few examples. **7-** Effective teaching and learning tactics frequently combine these methods in ways that are suited to the needs of the students and the subject matter being covered.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2.8
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**	4	10% (10)	3, 7, 11, 14	LO #1, 2, 10 and 11
	Assignments	0	0	0	0
	Projects / Lab.	0	0	0	0
	Report	4	10% (10)	5, 6, 8, 10, 13	LO # 5, 8 and 12
Summative assessment	**Midterm Exam**	2 hr	20% (20)	7	LO # 1-7
	Final Exam	3 hr	60% (60)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1-2	Introduction to materials science and engineering, Energy levels, atomic structure and Polymer
Week 3-4	Internal structure of cell, Resistance of Material and resistivity.
Week 5-6	Electrical source voltage, current Types of impedances, their characteristics and methods of connection.
Week 7-8	Semiconductors Fundamentals, Extrinsic Semiconductors.
Week 9-10	The P-N Junction, The P-N Junction diode, diode application.
Week 11-12	Type of diode (Zener diode, Light Emitting Diodes, Tunnel Diode).
Week 13	Transistor, Bipolar, transistor biasing, field effect transistor FET.
Week 14	Review
Week 15	**Final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts		No
Recommended Texts	Electronic devices - Thomas L. Floyd, -Electronic devices and Circuits - Jimme J. Cathy- second edition	
Websites		

APPENDIX:

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 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.

Ministry of Higher Education and Scientific Research - Iraq
Northern Technical University
Technical Engineering College for Computer and AI /Kirkuk
Department of Cybersecurity
Techniques Engineering

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Introduction to Cybersecurity			Module Delivery	
Module Type	Core			☐ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	CYBT 107				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	1		Semester of Delivery	2	
Administering Department	CYBT		College	TECCAIK	
Module Leader	Name		e-mail	E-mail	
Module Leader's Acad. Title	Professor		Module Leader's Qualification		
Module Tutor	Name (if available)		e-mail	E-mail	
Peer Reviewer Name	Name		e-mail	E-mail	
Scientific Committee Approval Date	21/10/2025		Version Number	1.0	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Examining legal and regulatory requirements, ethical issues, and the development of cybersecurity policy for commercial and government organizations. 2. Introduce students to the field of sociology and its central theoretical perspectives from Cybersecurity perspective. Provide students with basic ideas and knowledge in the science of sociology. 3. Help students understand the similarities and differences between different sociological paradigms. 4. provide students with basic ideas and knowledge in the science of sociology and how cybersecurity issues effects society. 5. Introduce student to terminology related to cybersecurity such as Cybercrime and deviance, Globalization. 6. Explore the development of organizational cybersecurity policy that meets an organization's compliance requirements and business goals.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Describe the fundamental concepts and principles of cybersecurity. Students should be able to explain the basic terminology, models, and frameworks used in cybersecurity, such as confidentiality, integrity, availability, risk management, and threat modeling. 2. Identify common cybersecurity threats and attacks. Students should be able to recognize the most common types of cyber threats and attacks, such as malware, phishing, social engineering, and denial-of-service, and understand their impact on individuals, organizations, and society. 3. Apply cybersecurity best practices and tools. Students should be able to apply basic cybersecurity best practices and tools to protect their own devices and data, such as strong passwords, encryption, firewalls, and antivirus software. 4. Analyze cybersecurity incidents and breaches. Students should be able to analyze real-world cybersecurity incidents and breaches, such as data breaches, ransomware attacks, and cyber espionage, and understand their causes, consequences, and mitigation strategies. 5. Evaluate ethical and legal issues in cybersecurity. Students should be able to evaluate ethical and legal issues related to cybersecurity, such as privacy, surveillance, intellectual property, and cybercrime, and understand their implications for individuals, organizations, and society. 6.
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following.** **Introduction to Cybersecurity (4 HOURS)** **Cybersecurity Fundamentals (6HOURS)** **Cybersecurity Operations (4 HOURS)**

	Cybersecurity Ethics and Law (4 HOURS) Incident Response and Recovery. (4 HOURS) Threat Analysis Mode . (4 HOURS) Introduction to Security Policy (4 HOURS) Disaster Recovery and Business Continuity (4 HOURS) Security policy management and maintenance (4 HOURS)

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي الغير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي الغير المنتظم للطالب أسبوعيا	5.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	3	10% (10)	5, 8, and 10	LO #1, #2, #5 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

KEY LEARNING OUTCOMES OF THE COURSE UNIT

المنهاج الإسبوعي النظري

	Material Covered
Week 1	1. **Introduction to Cybersecurity** • Definition of cybersecurity • Importance of cybersecurity • Cybersecurity threats and attacks • Cybersecurity best practices
Week 2	**Introduction to Cybersecurity** • Cybersecurity threats and attacks • Cybersecurity best practices
Week 3	**Cybersecurity Fundamentals** • Security models and frameworks • Risk management
Week 4	**Cybersecurity Fundamentals** • Security policies and procedures • Security controls and countermeasures
Week 5	**Cybersecurity Operations** • Incident response and management • Security monitoring and analysis • Vulnerability assessment and management • Penetration testing and ethical hacking
Week 6	**Cybersecurity Ethics and Law** • Ethical and legal issues in cybersecurity • Cybercrime and cyber law
Week 7	**Cybersecurity Ethics and Law** • Cybersecurity regulations and standards • Cybersecurity career paths and opportunities
Week 8	**Incident Response and Recovery.** • Incident Response and Recovery • Incident response planning
Week 9	**Incident Response and Recovery** • Incident detection and analysis • Incident containment and eradication
Week 10	**Incident Response and Recovery** • Business continuity and disaster recovery
Week 11	**Threat Analysis Mode** • , Categorization of threats. • Analysis of threats.
Week 12	**Introduction to Security Policy** • Overview of security policy development and implementation

	• Why security policy is important. • Risk assessment and analysis • Hands-on exercises in developing security policies
Week 13	**Disaster Recovery and Business Continuity**
	Security Policy Implementation • Best practices for implementing security policies. • Developing and implementing security protocols. • Incident response planning. • Hands-on exercises in implementing security policies.
Week 14	**Security policy management and maintenance** • Security policy auditing and compliance • Security policy training and awareness
Week 15	**Review and Presentation**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Network Security Monitoring Software
Week 2	Lab 2: Vulnerability Assessment Software
Week 3	Lab 3: Packet Sniffer Software
Week 4	Lab 4: Encryption Tools
Week 5	Lab 5: Web Vulnerability Scanning Tools
Week 6	Lab 6: Penetration Testing Tools
Week 7	Lab 7: Antivirus Software
Week 8	Lab 8: Network Intrusion Detection Tools
Week 9	Lab 9: Keylogger Software
Week 10	Lab 10: Threat Intelligence Enrichment Tools
Week 11	Lab 11: Threat Identification in the Network
Week 12	Lab 12: Packet Sniffing Tools
Week 13	Lab 13: Network Security Monitoring Software
Week 14	Lab 14: Vulnerability Assessment Software
Week 15	Review and Students presentation
Week 16	Final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Introduction to Computer Networks and Cybersecurity by Chwan-Hwa (John) Wu and J. David Irwin, 2013	Yes
Recommended Texts	1. Guide to Cyber Security for Beginners 2. Cybersecurity Essentials by Charles J. Brooks and Christopher Grow	No
Websites		

Grading Scheme
مخطط الدرجات

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