



وزارة التعليم العالي والبحث العلمي  
جهاز الاشراف والتقويم العلمي  
دائرة ضمان الجودة والاعتماد الأكاديمي  
قسم الاعتماد



## دليل وصف البرنامج الأكاديمي والمقرر الدراسي

جامعة الكفيل - كلية العلوم - قسم علوم الامن السيبراني

2026

## المقدمة:

يُعد البرنامج التعليمي بمثابة حزمة منسقة ومنظمة من المقررات الدراسية التي تشتمل على إجراءات وخبرات تنظم بشكل مفردات دراسية الغرض الأساس منها بناء وصقل مهارات الخريجين مما يجعلهم مؤهلين لتلبية متطلبات سوق العمل يتم مراجعته وتقييمه سنوياً عبر إجراءات وبرامج التدقيق الداخلي أو الخارجي مثل برنامج الممتحن الخارجي.

يقدم وصف البرنامج الأكاديمي ملخص موجز للسمات الرئيسية للبرنامج ومقرراته مبيناً المهارات التي يتم العمل على اكسابها للطلبة مبنية على وفق اهداف البرنامج الأكاديمي وتتجلى أهمية هذا الوصف لكونه يمثل الحجر الأساس في الحصول على الاعتماد البرامجي ويشترك في كتابته الملاكات التدريسية بإشراف اللجان العلمية في الأقسام العلمية.

ويتضمن هذا الدليل بنسخته الثانية وصفاً للبرنامج الأكاديمي بعد تحديث مفردات وفقرات الدليل السابق في ضوء مستجدات وتطورات النظام التعليمي في العراق والذي تضمن وصف البرنامج الأكاديمي بشكلها التقليدي نظام (سنوي، فصلي) فضلاً عن اعتماد وصف البرنامج الأكاديمي المعمم بموجب كتاب دائرة الدراسات ت م 2906/3 في 2023/5/3 فيما يخص البرامج التي تعتمد مسار بولونيا أساساً لعملها.

وفي هذا المجال لا يسعنا إلا أن نؤكد على أهمية كتابة وصف البرامج الأكاديمية والمقررات الدراسية لضمان حسن سير العملية التعليمية.

## مفاهيم ومصطلحات:

وصف البرنامج الأكاديمي: يوفر وصف البرنامج الأكاديمي إيجازاً مقتضباً لرؤيته ورسالته وأهدافه متضمناً وصفاً دقيقاً لمخرجات التعلم المستهدفة على وفق استراتيجيات تعلم محددة.

وصف المقرر: يوفر إيجازاً مقتضباً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهنأً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ويكون مشتق من وصف البرنامج.

رؤية البرنامج: صورة طموحة لمستقبل البرنامج الأكاديمي ليكون برنامجاً متطوراً وملهماً ومحفزاً وواقعياً وقابلاً للتطبيق.

رسالة البرنامج: توضح الأهداف والأنشطة اللازمة لتحقيقها بشكل موجز كما يحدد مسارات تطور البرنامج واتجاهاته.

اهداف البرنامج: هي عبارات تصف ما ينوي البرنامج الأكاديمي تحقيقه خلال فترة زمنية محددة وتكون قابلة للقياس والملاحظة.

هيكلية المنهج: كافة المقررات الدراسية / المواد الدراسية التي يتضمنها البرنامج الأكاديمي على وفق نظام التعلم المعتمد في مسار بولونيا سواء كانت متطلب (وزارة، جامعة، كلية وقسم علمي) مع عدد الوحدات الدراسية.

مخرجات التعلم: مجموعة متوافقة من المعارف والمهارات والقيم التي اكتسبها الطالب بعد انتهاء البرنامج الأكاديمي بنجاح ويجب أن يُحدد مخرجات التعلم لكل مقرر بالشكل الذي يحقق اهداف البرنامج.

استراتيجيات التعليم والتعلم: بأنها الاستراتيجيات المستخدمة من قبل عضو هيئة التدريس لتطوير تعليم وتعلم الطالب وهي خطط يتم إتباعها للوصول إلى أهداف التعلم. أي تصف جميع الأنشطة الصفية واللاصفية لتحقيق نتائج التعلم للبرنامج.

## نموذج وصف البرنامج الأكاديمي

اسم الجامعة: جامعة الكفيل

الكلية/ المعهد: كلية العلوم

القسم العلمي: قسم علوم الامن السيبراني

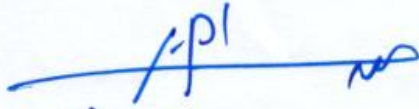
اسم البرنامج الأكاديمي او المهني: بكالوريوس

اسم الشهادة النهائية: بكالوريوس في علوم الامن السيبراني

النظام الدراسي: بولونيا

تاريخ اعداد الوصف:

تاريخ ملء الملف: 2026/4/12



التوقيع:

اسم المعاون العلمي: د. محمد باقر رضا

التاريخ: 2026/4/12



التوقيع:

اسم رئيس القسم: د. محمد عبد الرضا خليل

التاريخ: 2026 / 4 / 12


دقق الملف من قبل

شعبة ضمان الجودة والأداء الجامعي

اسم مدير شعبة ضمان الجودة والأداء الجامعي: د. هاشم علي هاشم

التاريخ: 2026/4/12

التوقيع



مصادقة السيد العميد

2026/4/12

1. رؤية البرنامج
الريادة في تمكين الفضاء الرقمي عبر تعليم مبتكر، لإعداد كفاءات متخصصة في الأمن السيبراني وفق القيم الاسلامية والمعايير العالمية الرصينة.

2. رسالة البرنامج
يسعى القسم الى توفير بيئة علمية محفزة، تمنح الطلبة مهارات حماية البنى التحتية المعلوماتية، وتطوير حلول أمنية ذكية تخدم الأمن القومي والتحول الرقمي المستدام مع الالتزام باخلاقيات المهنة

3. اهداف البرنامج
<ul style="list-style-type: none"> <li>1- إعداد ملاكات وطنية قادرة على التصدي للتهديدات السيبرانية وإدارة المخاطر الرقمية باحترافية.</li> <li>2- تطوير أبحاث تطبيقية في تقنيات التشفير، وأمن الشبكات، والذكاء الاصطناعي المرتبط بالأمن الرقمي.</li> <li>3- تطبيق المعايير الوطنية الخاصة ببرامج العلوم وتهيئة القسم للحصول على الاعتماد البرامجي بعد تخريج الدفعة الاول من الطلبة.</li> <li>4- الحصول على المراتب المتقدمة في التصنيفات العالمية والوطنية.</li> <li>5- تحديث المناهج الدراسية باستمرار لتواكب التطور المتسارع في أساليب الهجمات السيبرانية ووسائل الدفاع عنها.</li> <li>6- بناء تعاون استراتيجي مع القطاعين الحكومي والخاص لتقديم استشارات أمنية وتدريب ميداني للطلبة.</li> <li>7- ترسيخ المبادئ القانونية والأخلاقية في التعامل مع البيانات والأنظمة الحساسة</li> </ul>

4. الاعتماد البرامجي
لا يوجد

5. المؤثرات الخارجية الأخرى
لا يوجد

6. هيكلية البرنامج				
هيكل البرنامج	عدد المقررات	وحدة دراسية	النسبة المئوية	ملاحظات *
متطلبات المؤسسة	6	12	11.5%	
متطلبات الكلية	2	20	4%	
متطلبات القسم	44	208	84.5%	
التدريب الصيفي				
أخرى				

7. وصف البرنامج				
السنة / المستوى	رمز المقرر أو المساق	اسم المقرر أو المساق	الساعات المعتمدة	
			نظري	عملي
المرحلة الأولى / الفصل الدراسي الأول	CSII11	اساسيات البرمجة	2	2
	DCS111	تنظيم الحاسوب	2	2
	CSII12	رياضيات	3	0
	DCS113	هياكل متقطعة (1)	2	0
	DCS114	مبادئ امنية المعلومات	2	2
	uokfl-6	ديمقراطية وحقوق الانسان	2	0
	uokfl-03	لغة إنكليزية 1	2	0
	CSII2	البرمجة المتقدمة	2	2
	DCS122	مبادئ الامن السيبراني	2	2
	CSII2	هياكل متقطعة 2	3	0
	uokfl-01	لغة عربية (1)	2	0
	CSII23	تصميم منطقي	2	2
	DCS123	النظرية الاحتمالية	2	0
	DCS124	التوعية والتدريب الامن	2	0
المرحلة الثانية / الفصل الدراسي الأول	DCS211	البرمجة كيانية (1)	2	2
	DCS212	اساسيات قواعد بيانات	2	2
	CSI211	طرق عددية	2	2
	DCS213	نظم تشفير حديثة(1)	2	2
	DCS214	هياكل بيانات	2	2
	KU09	اللغة الانكليزية (2)	2	0
	KU08	جرائم حزب البعث البائد	2	0
المرحلة الثانية / الفصل الدراسي الثاني	DCS221	البرمجة كيانية (2)	2	2
	DCS222	أدوات الامن السيبراني	2	2
	DCS223	قواعد البيانات الموزعة	2	2
	CSI221	احصاء و احتمالية	2	0
	DCS224	امن البرمجيات	2	0
	DCS225	تشفير(2)	2	2

0	2	لغة عربية(2)	KU26	
0	2	الترميز ونظرية المعلومات	DCS311	المرحلة الثالثة / الفصل الدراسي الاول
2	2	مبادئ الحوسبة السحابية	DCS312	
2	2	شبكات الحاسوب	DCS313	
2	2	تحليل الشفرات الخبيثة	DCS314	
2	2	ذكاء اصطناعي	DCS315	
0	2	معمارية الحاسوب	DCS316	
2	2	تصميم المترجمات	DCS321	المرحلة الثالثة / الفصل الدراسي الثاني
2	2	امن الشبكات	DCS322	
2	2	امن قواعد البيانات	DCS323	
0	2	نمذجة ومحاكاة	DCS324	
2	2	بروتوكولات الاتصالات الامنة	DCS325	
2	2	القرصنة الأخلاقية	DCS326	
2	2	نظم التشغيل	DCS411	المرحلة الرابعة / الفصل الدراسي الاول
2	2	امن انترنت الأشياء	DCS412	
2	2	برمجة تطبيقات ويب	DCS413	
0	2	امن الحوكمة الالكترونية	DCS414	
2	2	امن الحوسبة السحابية	DCS415	
2	0	مشروع تخرج 1	DCS416	
2	2	امن نظم التشغيل	DCS421	المرحلة الرابعة / الفصل الدراسي الثاني
2	2	امن تطبيقات الويب	DCS422	
2	2	الأدلة الجنائية الرقمية	DCS423	
2	2	التحليل الذكي للتهديدات الأمنية	DCS424	
0	2	ادارة مخاطر المعلومات	DCS425	
2	0	مشروع تخرج 2	DCS426	

8.	مخرجات التعلم المتوقعة للبرنامج
المعرفة	
أ1- الإلمام الشامل بالمفاهيم والمبادئ الأساسية المرتبطة بتخصصات ومجالات الأمن السيبراني.	
أ2- الفهم العميق والاستيعاب الكامل للمقررات والمناهج الدراسية المعتمدة في البرنامج.	
أ3- تنمية القدرات الذهنية والتحليلية لتشخيص التحديات التقنية وابتكار حلول علمية فعالة لها.	
المهارات	
ب1- توظيف المعارف النظرية وتطبيقها باحترافية في البيئات والمواقف العملية التقنية.	
ب2- إجادة استخدام وتشغيل الأجهزة والبرمجيات والتقنيات الحديثة الخاصة بمجال الاختصاص.	
ب3- اكتساب مهارات برمجية متقدمة وتوظيف لغات البرمجة المتنوعة في تطوير الأنظمة وحمايتها.	
القيم	

- ج1- ترسيخ المبادئ والأخلاقيات المهنية لبناء خريج واعي يتميز بالإخلاص والنزاهة في بيئة عمله.  
ج2- تعزيز الالتزام بالمنهجية العلمية والأخلاقية، وتنمية روح المواطنة والمسؤولية تجاه خدمة المجتمع.  
ج3- استثمار وتوجيه طاقات الطلبة نحو التطوير المستمر وبناء مسار مهني واعد ومستقبل مشرق.

## 9. استراتيجيات التعليم والتعلم

1. التأكيد على الحاجة إلى التعلم والخبرة في التدريس.
2. المناقشة من خلال العمل الجماعي.
3. كتابة التقارير الذاتية.
4. اعداد المشاريع النهائية.

## 10. طرائق التقييم

1. الامتحانات اليومية
2. الامتحانات الشهرية
3. الامتحانات الشفهية
4. أداء الواجبات المناطة بالطالب
5. تنفيذ مشاريع ذات اهداف محددة

## 11. الهيئة التدريسية

### أعضاء هيئة التدريس

الرتبة العلمية	التخصص	المتطلبات/المهارات الخاصة (ان وجدت )	اعداد الهيئة التدريسية

محااضر	ملاك		خاص	عام	
	1			اللغة الإنجليزية	أستاذ دكتور
	1			علوم الحاسوب	م.د.
	1		معالجة اللغات الطبيعية	علوم الحاسوب	م.د.
	1		الاتصالات	هندسة تقنيات الحاسوب	م.د.
	1		القانون الخاص	قانون	م.
	1		الذكاء الاصطناعي	علوم الحاسوب	م.م.
	1		امنية الشبكات	علوم الحاسوب	م.م.
	1		الذكاء الاصطناعي	هندسة تقنيات الحاسوب	م.م.
	1		الشبكات والاتصالات	علوم الحاسوب	م.م.
	1		الذكاء الاصطناعي	علوم الحاسوب	م.م.
	1		رياضيات واحصاء	محاسبة	م.م.
	1			اللغة العربية	م.م.

<b>التطوير المهني</b>
توجيه أعضاء هيئة التدريس الجدد
التطوير المهني لأعضاء هيئة التدريس

<b>12. معيار القبول (وضع الأنظمة المتعلقة بالالتحاق بالكلية أو المعهد)</b>
يقبل القسم مخرجات المرحلة الإعدادية للسنوات السابقة وعلى قناة القبول المركزي وبعدها يتم التنافس بين الطلبة داخل الكلية على أساس المعدل والرغبة.
يقبل القسم الطلبة من خريجي الدراسة الإعدادية الفرع العلمي وحسب القوانين النافذة في وزارة التعليم العالي والبحث العلمي.

### 13. أهم مصادر المعلومات عن البرنامج

1. القوانين والتعليمات النافذة في وزارة التعليم العالي والبحث العلمي.
2. المعايير التعليمية العالمية المتبعة في اغلب جامعات العالم.
3. الموقع الالكتروني الرسمي للجامعة والكلية.

### 14. خطة تطوير البرنامج

متابعة البرنامج بعناية

مهارات عالمية

تنمية قدرة الطالب على التأثير وإقناع الآخرين بالمناقشة والتوصل إلى اتفاق

قدرة الطالب على التحدث باللغة الإنجليزية

قدرة الطالب على إيجاد الحلول المناسبة للمشاكل

## مخطط مهارات البرنامج

مخرجات التعلم المطلوبة من البرنامج										اساسي أم اختياري	اسم المقرر	رمز المقرر	
القيم		المهارات			المعرفة			أ1	أ2				أ3
ج1	ج2	ب1	ب2	ب3	أ1	أ2	أ3						
√	√		√	√	√		√	√	√	C	اساسيات البرمجة	CSI111	
√	√		√	√	√		√	√	√	C	تنظيم الحاسوب	DCS111	
√	√		√	√	√		√	√	√	S	رياضيات	CSI112	
√	√		√	√	√		√	√	√	B	هياكل متقطعة (1)	DCS113	
√	√		√	√	√		√	√	√	B	مبادئ امنية المعلومات	DCS114	
√	√		√	√	√		√	√	√	S	ديمقراطية وحقوق الانسان	uokfl-6	
√	√		√	√	√		√	√	√	S	لغة إنكليزية 1	uokfl-03	
√	√		√	√	√		√	√	√	C	البرمجة المتقدمة	CSI12	
√	√		√	√	√		√	√	√	B	مبادئ الامن السيبراني	DCS122	
√	√		√	√	√		√	√	√	B	هياكل متقطعة 2	CSI12	
√	√		√	√	√		√	√	√	S	لغة عربية(1)	uokfl-01	
√	√		√	√	√		√	√	√	C	تصميم منطقي	CSI123	
√	√		√	√	√		√	√	√	S	النظرية الاحتمالية	DCS123	
√	√		√	√	√		√	√	√	C	التوعية والتدريب الامن	DCS124	

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<u>اساسيات البرمجة</u> <b>Programming Fundamentals</b>		Module Delivery
Module Type	<u>Basic learning activities</u>		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	<b>CSI111</b>		
ECTS Credits	<b>8</b>		
SWL (hr/sem)	<b>200</b>		
Module Level	UGI	Semester of Delivery	
Administering Department	Cyber Security	College	Science
Module Leader	Fatima Tahseen	e-mail	<a href="mailto:fatimaalbadry@alkafeel.edu.iq">fatimaalbadry@alkafeel.edu.iq</a>
Module Leader's Acad. Title	Assist. Lec.	Module Leader's Qualification	Master
Module Tutor	Fatima Tahseen	e-mail	<a href="mailto:fatimaalbadry@alkafeel.edu.iq">fatimaalbadry@alkafeel.edu.iq</a>
Peer Reviewer Name		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	1. This course aims to provide students with an overview of programming languages. 2. Enable the student to design algorithms and flowcharts to solve and develop programming issues. 3. Learning and understanding basic concepts and methods of structured programming using PYTHON

	<p>4. Enable the student from converting algorithms /flowcharts into an executable program on the computer.</p> <p>5. Enable the student to use control Statements.</p>
<p><b>Module Learning Outcomes</b></p> <p>مخرجات التعلم للمادة الدراسية</p>	<p>1. Understand the programming and programming languages.</p> <p>2. Understand the algorithms.</p> <p>3. Learn how to write algorithms and flowcharts.</p> <p>4. Learn how to analyze problems, find appropriate solutions, and develop correct algorithms that contribute to solving these problems.</p> <p>5. Learn how to write simple programs.</p> <p>6. Learn how to convert the algorithm into a program.</p> <p>7. Understanding the Control statements, and learn how to use them in the programs.</p>
<p><b>Indicative Contents</b></p> <p>المحتويات الإرشادية</p>	<p style="text-align: right;">Indicative content includes the following.</p> <p style="text-align: right;"><u>Part A:</u></p> <ul style="list-style-type: none"> <li>• Programming and programming languages.</li> <li>• Algorithms and Flowcharts.</li> <li>• Python Basics.</li> </ul> <p style="text-align: right;"><u>Part B:</u></p> <ul style="list-style-type: none"> <li>• Selection Statements.</li> <li>• If and IF Else statements.</li> <li>• Switch – case statements.</li> </ul> <p style="text-align: right;"><u>Part C:</u></p> <ul style="list-style-type: none"> <li>• Looping Statements</li> <li>• While Statement</li> <li>• Do – While Statement</li> <li>• For statement</li> </ul>

### Learning and Teaching Strategies

#### استراتيجيات التعلم والتعليم

<b>Strategies</b>	In this course, the student learned the basics of programming through theoretical lectures and practical application in the laboratory, in addition to daily assignments and daily tests, asking some questions and using the brainstorming method.
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### Student Workload (SWL)

#### الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

<p><b>Structured SWL (h/sem)</b></p> <p>الحمل الدراسي المنتظم للطالب خلال الفصل</p>	78	<p><b>Structured SWL (h/w)</b></p> <p>الحمل الدراسي المنتظم للطالب أسبوعيا</p>	5
<p><b>Unstructured SWL (h/sem)</b></p> <p>الحمل الدراسي غير المنتظم للطالب خلال الفصل</p>	122	<p><b>Unstructured SWL (h/w)</b></p> <p>الحمل الدراسي غير المنتظم للطالب أسبوعيا</p>	8

<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	<b>200</b>
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<b>Module Evaluation</b> تقييم المادة الدراسية					
As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	<b>Assignments</b>	4	10% (10)	3, 5 and 8 and 9	LO #3, #4 and #6, #7
	<b>Projects / Lab.</b>	15	10% (10)	Continuous	All
	<b>Report</b>	1	10% (10)	13	LO #5, #8 and #10
<b>Summative assessment</b>	<b>Midterm Exam</b>	2hr	10% (10)	12	LO #1 - #7
	<b>Final Exam</b>	2hr	50% (50)	16	All
<b>Total assessment</b>			100% (100 Marks)		

<b>Delivery Plan (Weekly Syllabus)</b> المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	Introduction to Programming <ul style="list-style-type: none"> <li>• Defining the programming, programming language, Levels of programming languages.</li> <li>• Steps to solve the problems.</li> </ul>
Week 2	Algorithms <ul style="list-style-type: none"> <li>• Defining the algorithms.</li> <li>• Algorithm properties.</li> <li>• Flowcharts.</li> <li>• Writing a simple algorithm.</li> </ul>
Week 3	More about algorithms <ul style="list-style-type: none"> <li>• More examples on algorithms</li> </ul>
Week 4	Introduction to Python language

	<ul style="list-style-type: none"> <li>• Python languages basics.</li> <li>• Write a simple program.</li> <li>• Converting algorithms to programs.</li> </ul>
<b>Week 5</b>	<p>Python basics</p> <ul style="list-style-type: none"> <li>• Keywords and Identifier.</li> <li>• Data types.</li> <li>• Variables and their Declarations.</li> <li>• Variable initialization.</li> <li>• Variable scope.</li> </ul>
<b>Week 6</b>	<p>More about Python basics</p> <ul style="list-style-type: none"> <li>• Arithmetic operation.</li> <li>• Operation order.</li> <li>• Comparison and logic operations.</li> </ul>
<b>Week 7</b>	<p>More about Python basics</p> <ul style="list-style-type: none"> <li>• Unary operators</li> <li>• Increment and decrement operators.</li> <li>• Characters and Literal in PYTHON</li> <li>• Objects, variables and constants.</li> </ul>
<b>Week 8</b>	<p>Control Statements</p> <p>Selection Statements</p> <ul style="list-style-type: none"> <li>• Selection Statement (IF statement)</li> <li>• Examples on If statements.</li> </ul>
<b>Week 9</b>	<p>More about selection Statements</p> <ul style="list-style-type: none"> <li>• If – else Statement</li> <li>• Examples on if – else statement.</li> </ul>
<b>Week 10</b>	<p>More about selection Statements</p> <ul style="list-style-type: none"> <li>• Switch case statement.</li> <li>• Examples on switch - case statement.</li> </ul>

<b>Week 11</b>	Control Statements Looping Statements <ul style="list-style-type: none"> <li>• While statement</li> <li>• Examples on while statements.</li> </ul>
<b>Week 12</b>	More about Looping statements <ul style="list-style-type: none"> <li>• Do –while Statement</li> <li>• Examples on Do – while statement.</li> </ul>
<b>Week 13</b>	More about Looping statements. <ul style="list-style-type: none"> <li>• For Statement</li> <li>• Examples on for statement.</li> </ul>
<b>Week 14</b>	Control Statements. <ul style="list-style-type: none"> <li>• Jumping statements (break and continue)</li> <li>• Examples on break and continue.</li> </ul>
<b>Week 15</b>	Comprehensive review of the course

### Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	Introduction to Python language editor (editor interface, menu, how to run and check program)
Week 2	Writing a simple program
Week 3	Writing more programs
Week 4	Writing more simple programs
Week 5	Performing the arithmetic and logic programs
Week 6	unary operator examples. Perform the
Week 7	Perform the increments and decrement operations.
Week 8	Perform the if statement examples
Week 9	Perform the if – else examples
Week 10	Perform the switch case examples
Week 11	Perform the while examples

Week 12	Perform the do – while examples
Week 13	Perform the for statements examples
Week 14	Perform the break and continue examples
Week 15	Comprehensive review of the course

## Learning and Teaching Resources

### مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>	<ul style="list-style-type: none"> <li>Python: How To Program, Deitel and Deitel, 4th edition, Prentice Hall, 2002.</li> <li>Deitel, Paul, Harvey Deitel, and Paul J. Deitel. Python for Programmers. Pearson, 2019..</li> <li>Sakpere, Aderonke Busayo, and Adedeji Folashade. "Comparative Analysis of Two Programming Platforms for Beginners: Python and Scratch." International Journal of Education and Management Engineering 14.5 (2024): 46-62..</li> </ul>	No
<b>Recommended Texts</b>	<ul style="list-style-type: none"> <li>Python Programming: A Complete Guide to Mastering the C Language, Augie Hansen and August Hansen, Addison-Wesley, 1989.</li> </ul>	No
<b>Websites</b>	<a href="https://www.python.org/">https://www.python.org/</a>	

## Grading Scheme

### مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
<b>Success Group (50 - 100)</b>	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
<b>Fail Group (0 - 49)</b>	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.

Module Information			
معلومات المادة الدراسية			
Module Title	<b>هياكل متقطعة (1)</b> <b><u>Discrete Structures</u></b>		Module Delivery
Module Type	<b><u>B</u></b>		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	DCS113		
ECTS Credits	4		
SWL (hr/sem)	<b><u>150</u></b>		
Module Level	UGI	Semester of Delivery	
Administering Department	Cyber Security	College	Science
Module Leader	Ayat Ma'an	e-mail	<a href="mailto:ayaat.maan@alkafeel.edu.iq">ayaat.maan@alkafeel.edu.iq</a>
Module Leader's Acad. Title	Assist. Lec.	Module Leader's Qualification	Master
Module Tutor	Ayat Ma'an	e-mail	<a href="mailto:ayaat.maan@alkafeel.edu.iq">ayaat.maan@alkafeel.edu.iq</a>
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	1
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	<ol style="list-style-type: none"> <li>1. The course aims to study discrete structures in terms of the use of algebraic laws.</li> <li>2. Charts and shapes</li> <li>3. To reach an easy and clear way for students</li> <li>4. To solve all material issues related to discontinuous structures.</li> <li>5. In addition to studying quantifiers and predicates logic</li> <li>6. Studying the different groups, theories and schemes so that the student can solve the duties required of him and the exercises with simplicity, ease and clarity.</li> </ol>
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> <li>1. Learn how to solve algebraic laws, groups and Venn diagrams correctly, efficiently and clearly</li> <li>2. The subjects studied in discrete structures are either definite or indefinite. The term finite structures are sometimes used to refer to fields of discrete mathematics that deal with finite groups</li> <li>3. especially in fields of business relevance.</li> <li>4. Discrete mathematical structures have gained wide importance over the recent decades due to their wide applications in computer science.</li> <li>5. Discrete mathematics terms and notations are useful for studying and expressing problems of objects in computer programming and algorithms.</li> <li>6. Some branches of discrete mathematics are also useful in studying some business and economic issues.</li> </ol>
Indicative Contents المحتويات الإرشادية	The course aims to study discontinuous structures in terms of the use of algebraic laws, diagrams and shapes to reach an easy and clear way for students to solve all issues related to the subject of discontinuous

	structures. In addition to studying quantifiers and predicates logic and studying different groups, theories and schemes so that the student can solve the duties required of him and the exercises with simplicity, ease and clarity.
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Discrete structures are the study of mathematical structures that are essentially discontinuous, in the sense that they do not require the presence of the adjective of communication and do not require it in order to study this subject. Most of the topics studied in discrete mathematics are related to countable sets (a completely different concept from finite sets), an example of which is the set of integers. Discrete mathematics has gained wide importance in recent decades due to its wide applications in computer science. Discrete mathematics terms and notations are useful for studying and expressing objects in computer programming and algorithms. Some branches of discrete mathematics are also useful in studying some business and economic issues.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
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	52	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

## Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	1	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	9	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	0	0% (10)	Continuous	All
	Report	15	15% (10)	13	LO # 5, 8 and 10
Summative assessment	Midterm Exam	2hr	15% (10)	7	LO # 1-7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

## Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Definition to discrete structure
Week 2	Conditional statement, Type of statements
Week 3	Algebra of propositions
Week 4	Laws of Algebra propositions
Week 5	Define of Predicates logic
Week 6	Define of quantifiers and examples
Week 7	Sets theory
Week 8	Type of set operation
Week 9	Venn diagram in details
Week 10	Laws of set operation and type

Week 11	Define of Cartesian product
Week 12	types of relations
Week 13	Graphs of relation, construct the relation
Week 14	How to solve laws of relations
Week 15	Other approaches to computability
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Discrete Mathematics and Its Applications_7th_Edition	
Recommended Texts	Foreman, M., Akihiro Kenmore, eds. Handbook of Set Theory. 3 vols., 2010. Each chapter surveys some aspect of contemporary research in set theory. Does not cover established elementary set theory.	

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.

<b>Module Information</b> معلومات المادة الدراسية			
<b>Module Title</b>	<b>Mathematics</b> <b>رياضيات</b>		<b>Module Delivery</b>
<b>Module Type</b>	<b>Support</b>		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
<b>Module Code</b>	<b>CSI112</b>		
<b>ECTS Credits</b>	<b>6</b>		
<b>SWL (hr/sem)</b>	<b>150</b>		
<b>Module Level</b>	UGI	<b>Semester of Delivery</b>	1
<b>Administering Department</b>	Cyber Security	<b>College</b>	Science
<b>Module Leader</b>	Hashim Ali Hashim	<b>e-mail</b>	hashim.ali@alkafeel.edu.iq
<b>Module Leader's Acad. Title</b>	Assist. Lec.	<b>Module Leader's Qualification</b>	Master
<b>Module Tutor</b>	Hashim Ali Hashim	<b>e-mail</b>	hashim.ali@alkafeel.edu.iq
<b>Peer Reviewer Name</b>		<b>e-mail</b>	E-mail
<b>Scientific Committee Approval Date</b>		<b>Version Number</b>	1.0

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

<b>Module Aims, Learning Outcomes and Indicative Contents</b> أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	

<p><b>Module Objectives</b> أهداف المادة الدراسية</p>	<p>1-provide the student with knowledge of the function and some types of functions 2-rein forcing studying and understanding some math terms such relation,sequences and series and calculus 3-enable the student to interpret and write math application in the field of study 4-applying math rules and rules and developing inference and conclusion among student 5- identify the ability to derive functions and the integration of function and its relationship to continuity 6-know the applications of calculus and integration in various sciences</p>
<p><b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية</p>	<p>1-Introducing math concepts 2-Appling math concepts 3-Realizing the importance of math concepts in scientific life 4-Distinguishing between different math concepts 5-Developing students math concepts 6-Trying to reach new math concepts</p>
<p><b>Indicative Contents</b> المحتويات الإرشادية</p>	<p>Indicative content includes the following. Real number and properties of operations arithmetic, domain function definition and the corresponding domain ,the extent of the function ,drawing functions and express method, the relationship between the derivative and continuity, Rols theorem and Mean value theorem ,define integration and study methods of integration ,fundamental laws of integration, Application of integration , improper integrals.</p>

<p><b>Learning and Teaching Strategies</b> استراتيجيات التعلم والتعليم</p>			
<p><b>Strategies</b></p>	<p><b>1-Giving scientific lectures in classrooms and using the (data show) . table statement of the main ideas of the topic 2-Guiding students to some websites to benefit from them 3-Assign the student to prepare brief reports on some topics and carry out homework</b></p>		
<p><b>Student Workload (SWL)</b> الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا</p>			
<p><b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل</p>	<p>63</p>	<p><b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا</p>	<p>4</p>
<p><b>Unstructured SWL (h/sem)</b></p>	<p>87</p>	<p><b>Unstructured SWL (h/w)</b></p>	<p>6</p>

الحمل الدراسي غير المنتظم للطلاب خلال الفصل		الحمل الدراسي غير المنتظم للطلاب أسبوعيا	
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطلاب خلال الفصل	<b>150</b>		

<b>Module Evaluation</b> تقييم المادة الدراسية					
As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	<b>Assignments</b>	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	<b>Projects / Lab.</b>				
	<b>report</b>	2	10% (10)	13	LO #5, #8 and #10
<b>Summative assessment</b>	<b>Midterm Exam</b>	2hr	20% (20)	6 and 13	LO #1 - #7
	<b>Final Exam</b>	3hr	50% (50)	7	All
<b>Total assessment</b>			100% (100 Marks)	15	

<b>Delivery Plan (Weekly Syllabus)</b> المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	<b>Real number</b>
Week 2	<b>Functions</b>
Week 3	<b>Limit and continuity</b>
Week 4	<b>Derivative</b>
Week 5	<b>Rolls theorem and Mean value theorem</b>
Week 6	<b>Application of Derivative</b>
Week 7	<b>definite integration</b>
Week 8	<b>integration indefinite</b>
Week 9	<b>Transcendental function</b>
Week 10	<b>Transcendental function</b>
Week 11	<b>Methods of integration</b>

Week 12	Methods of integration
Week 13	Methods of integration
Week 14	Application of integration
Week 15	Faulty integrations

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	<ul style="list-style-type: none"> <li>Thomas G.B. Calculus and Analytic Geometry 4<sup>th</sup> 1984</li> </ul>	Yes
Recommended Texts	المواقع الالكترونية الرصينة www. Free science. Info/math	

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
<p><b>Note:</b> 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.</p>				

<b>Module Information</b> معلومات المادة الدراسية			
<b>Module Title</b>	<b><u>Computer Organization</u></b> تنظيم الحاسوب		<b>Module Delivery</b>
<b>Module Type</b>	<b><u>E</u></b>		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
<b>Module Code</b>	<b>DCS111</b>		
<b>ECTS Credits</b>	<b><u>4</u></b>		
<b>SWL (hr/sem)</b>	<b><u>100</u></b>		
<b>Module Level</b>	UGI	<b>Semester of Delivery</b>	1
<b>Administering Department</b>	Cyber Security	<b>College</b>	Science
<b>Module Leader</b>	Mohsin Mohammed Mahdi	<b>e-mail</b>	muhsen.mohammad@alkafeel.iq
<b>Module Leader's Acad. Title</b>	Assist. Lec.	<b>Module Leader's Qualification</b>	Master
<b>Module Tutor</b>	Mohsin Mohammed Mahdi	<b>e-mail</b>	muhsen.mohammad@alkafeel.iq
<b>Peer Reviewer Name</b>		<b>e-mail</b>	E-mail
<b>Scientific Committee Approval Date</b>		<b>Version Number</b>	1.0

<b>Relation with other Modules</b> العلاقة مع المواد الدراسية الأخرى			
<b>Prerequisite module</b>	CSI112	<b>Semester</b>	1
<b>Co-requisites module</b>	None	<b>Semester</b>	

<b>Module Aims, Learning Outcomes and Indicative Contents</b> أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
<b>Module Objectives</b> أهداف المادة الدراسية	1. Understanding Computer Architecture: <ul style="list-style-type: none"> <li>• Gain a comprehensive understanding of computer organization and architecture principles.</li> <li>• Understand the components and their interconnections in a computer system.</li> </ul> 2. Data Representation and Arithmetic: <ul style="list-style-type: none"> <li>• Learn various number systems and their conversions (binary, decimal, hexadecimal).</li> <li>• Understand how data is represented and manipulated in a</li> </ul>

	<ul style="list-style-type: none"> <li>• computer system.</li> <li>• Perform arithmetic operations on binary numbers.</li> </ul> <p>3. Memory Systems:</p> <ul style="list-style-type: none"> <li>• Understand the organization and hierarchy of computer memory systems.</li> <li>• Learn about caching techniques and their impact on performance.</li> <li>• Study memory management and addressing techniques.</li> </ul> <p>4. Instruction Set Architecture (ISA):</p> <ul style="list-style-type: none"> <li>• Learn about different instruction set architectures and their characteristics.</li> <li>• Understand the components and execution of instructions.</li> <li>• Analyze the relationship between ISA and machine language.</li> </ul> <p>5. Processor Organization:</p> <ul style="list-style-type: none"> <li>• Understand the structure and components of a processor.</li> <li>• Learn about instruction pipelining and its benefits and challenges.</li> <li>• Study the design and implementation of control units.</li> </ul> <p>6. Input/Output (I/O) Systems:</p> <ul style="list-style-type: none"> <li>• Learn about different I/O devices and their interfaces.</li> <li>• Understand the techniques used for I/O data transfer.</li> <li>• Study interrupt handling and DMA (Direct Memory Access).</li> </ul> <p>7. Parallel Processing and Multiprocessor Systems:</p> <ul style="list-style-type: none"> <li>• Understand the concepts of parallel processing and its benefits.</li> <li>• Study different parallel processing architectures and their characteristics.</li> <li>• Learn about multiprocessor systems and their organization.</li> </ul> <p>8. Performance Evaluation and Optimization:</p> <ul style="list-style-type: none"> <li>• Learn performance metrics and evaluation techniques for computer systems.</li> <li>• Understand the factors affecting computer system performance.</li> <li>• Study optimization techniques to improve system performance.</li> </ul> <p>9. Emerging Trends and Technologies:</p> <ul style="list-style-type: none"> <li>• Explore current and emerging trends in computer organization.</li> <li>• Study new technologies and their impact on computer systems.</li> <li>• Understand the challenges and opportunities in designing future computer architectures.</li> </ul>
<p style="text-align: center;"><b>Module Learning Outcomes</b></p> <p>مخرجات التعلم للمادة الدراسية</p>	<p>1. Understand the fundamental principles of computer organization and architecture, including the components and their interactions within a computer system.</p> <p>2. Demonstrate knowledge and proficiency in various number systems, data representation, and arithmetic operations in a computer system.</p> <p>3. Analyze and evaluate different memory systems, including cache memory and main memory, and understand their impact on computer performance.</p> <p>4. Describe and interpret different instruction set architectures (ISAs), including their</p>

	<p>components, instruction formats, and execution.</p> <p>5. Analyze and evaluate the design and organization of processors, including pipelining techniques and control unit implementation.</p> <p>6. Understand the principles and techniques of input/output (I/O) systems, including I/O devices, interfaces, interrupts, and direct memory access (DMA).</p> <p>7. Discuss and evaluate parallel processing and multiprocessor systems, including concepts of parallelism, parallel architectures, and interconnectivity.</p> <p>8. Apply performance evaluation techniques to measure and analyze the performance of computer systems, and propose optimization strategies for improving system performance.</p> <p>9. Stay informed about current and emerging trends and technologies in computer organization, and assess their potential impact on future computer architectures.</p> <p>10. Demonstrate effective problem-solving, critical thinking, and analytical skills in the context of computer organization and architecture.</p> <p>11. Communicate effectively, both orally and in writing, about complex concepts and topics related to computer organization.</p> <p>12. Work collaboratively and contribute effectively as a team member in group projects and activities related to computer organization.</p>
<p><b>Indicative Contents</b> المحتويات الإرشادية</p>	<p>1. Introduction to Computer Organization: o Basic concepts and terminology in computer organization. o Historical development and evolution of computer architecture.</p> <p>2. Digital Logic and Boolean Algebra: o Binary representation and arithmetic operations. o Logic gates, Boolean functions, and truth tables. o Combinational and sequential logic circuits.</p> <p>3. Data Representation and Arithmetic: 84 o Number systems: binary, decimal, hexadecimal. o Signed and unsigned integer representation. o Floating-point representation and arithmetic operations.</p> <p>4. Central Processing Unit (CPU): o Instruction set architecture (ISA) and machine language. o CPU organization and components. o Control unit, instruction fetching, and execution.</p>

	<p>5. Memory Systems: o Memory hierarchy and storage technologies. o Cache memory organization, principles, and mapping techniques. o Main memory organization and addressing modes. o Virtual memory concepts and techniques.</p> <p>6. Input/Output (I/O) Systems: o I/O devices, interfaces, and data transfer methods. o Interrupt handling and interrupt-driven I/O. o Direct Memory Access (DMA) and its role in data transfer.</p> <p>7. Pipeline Processing: o Instruction pipelining concepts and stages. o Hazards and techniques for hazard detection and resolution. o Performance metrics and improvements in pipeline processing.</p> <p>8. Parallel Processing and Multiprocessor Systems: o Concepts of parallel processing and its benefits. o Types of parallel architectures: SIMD, MIMD, and multicore. o Interconnection networks and communication among processors.</p> <p>9. Performance Evaluation and Optimization: o Performance metrics and measurement techniques. o Bottleneck identification and performance analysis. o Techniques for optimizing computer system performance.</p> <p>10. Emerging Trends and Advanced Topics: o Advanced topics in computer organization, such as superscalar processors, out-of-order execution, and speculative execution. o Emerging technologies and their impact on computer organization, such as quantum computing and neuromorphic computing.</p>
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<b>Learning and Teaching Strategies</b> استراتيجيات التعلم والتعليم	
<b>Strategies</b>	<p>1. Understand the Fundamentals:</p> <ul style="list-style-type: none"> <li>• Start by grasping the foundational concepts and principles of computer organization, such as binary representation, digital logic, and Boolean algebra.</li> <li>• Build a strong understanding of number systems, data representation, and arithmetic operations used in computer systems.</li> </ul> <p>2. Visualize and Diagram:</p> <ul style="list-style-type: none"> <li>• Use visual aids, diagrams, and flowcharts to represent and understand the structure and organization of computer components.</li> <li>• Draw diagrams to illustrate the flow of data and control signals within a computer system, such as the CPU, memory, and I/O devices.</li> </ul> <p>3. Hands-on Experience:</p> <ul style="list-style-type: none"> <li>• Gain practical experience by working with computer hardware and software. This can involve assembling computers, configuring components, or writing low-level programs.</li> </ul>

- Experiment with simulators or emulators to observe how instructions are executed and how data flows through different computer components.
4. Relate to Real-World Examples:
- Relate the concepts of computer organization to real-world examples and applications. Understand how the principles of computer organization are applied in everyday computing devices.
5. Analyze and Evaluate Case Studies:
- Study and analyze case studies of actual computer architectures and designs.
  - Examine the trade-offs made in the design of different computer systems, considering factors such as performance, power consumption, and cost.
6. Solve Practice Problems:
- Practice solving problems related to computer organization. This could involve analyzing and designing digital circuits, writing assembly language programs, or optimizing system performance.
7. Stay Updated with Current Research:
- Keep up-to-date with the latest advancements and research in computer organization.
  - Read academic papers, attend conferences, and follow industry trends to understand emerging technologies and new approaches to computer organization.
8. Collaborate and Discuss:
- Engage in discussions and collaborate with peers or study groups. Share knowledge, exchange ideas, and clarify concepts through group discussions or online forums.
9. Seek Guidance and Resources:
- Consult textbooks, online resources, and academic materials that cover computer organization.
  - Seek guidance from instructors, tutors, or professionals with expertise in computer architecture and organization.
10. Practice Conceptual Mapping:
- Develop a conceptual map or framework to connect the different topics and components of computer organization.
  - Understand how the various concepts and components fit together to form a cohesive computer system.

### Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

<b>Structured SWL (hr/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	<b>63</b>	<b>Structured SWL (hr/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	<b>4</b>
<b>Unstructured SWL (hr/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	<b>37</b>	<b>Unstructured SWL (hr/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	<b>2.5</b>
<b>Total SWL (hr/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	<b>100</b>		

### Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	2	10% (10)	5 and 10	#1, #2 and #10, #11
	<b>Assignments</b>	2	10% (10)	2 and 12	#3, #4 and #6, #7
	<b>Projects / Lab.</b>	15	10% (10)	All	
	<b>Report</b>	1	10% (10)	13	#5, #8 and #10
<b>Summative assessment</b>	<b>Midterm Exam</b>	2hr	10% (10)	7	#1 - #7
	<b>Final Exam</b>	3hr	50% (50)	16	All
<b>Total assessment</b>			100% (100 Marks)		

### Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

Week	Material Covered
<b>Week 1</b>	<b>Introduction to Security</b> <ul style="list-style-type: none"> <li>Basic principles</li> <li>Overview of system security.</li> <li>How to establish trust in computing systems</li> </ul>
<b>Week 2</b>	<b>Brief Introduction to Cryptography</b> <ul style="list-style-type: none"> <li>Symmetric and asymmetric cryptosystems</li> <li>Stream ciphers and block ciphers</li> </ul>
<b>Week 3</b>	<b>Brief Introduction to Cryptography</b>

	<ul style="list-style-type: none"> <li>• Hash functions, MACs, and digital signatures</li> <li>• Advanced topics: Blockchains</li> </ul>
<b>Week 4</b>	<b>Intrusion Detection</b> <ul style="list-style-type: none"> <li>• Different types</li> <li>• Intrusion detections techniques</li> <li>•</li> </ul>
<b>Week 5</b>	<b>Malware Detection</b> <ul style="list-style-type: none"> <li>• Hardware and software malware detection</li> <li>• Evasive malware</li> </ul>
<b>Week 6</b>	<b>Hardware Trust Units</b> <ul style="list-style-type: none"> <li>• Basic principles of establishing trust in hardware</li> <li>• Attestation, TPM, and secure boot</li> </ul>
<b>Week 7</b>	<b>Trusted Execution Units</b> <ul style="list-style-type: none"> <li>• SGX and Trustzone (attacks, defenses, and use-cases)</li> <li>• Open-Source Enclaves</li> </ul>
<b>Week 8</b>	<b>Memory Safety and Security</b> <ul style="list-style-type: none"> <li>• Attacks (buffer-overflow, ROP, jump-oriented)</li> <li>• Hardware-Support for memory security</li> <li>• Program analysis tools and methodologies</li> </ul>
<b>Week 9</b>	<b>Machine Learning Security</b> <ul style="list-style-type: none"> <li>• Security in ML (attacks and defenses)</li> </ul>
<b>Week 10</b>	<b>Machine Learning Privacy</b> <ul style="list-style-type: none"> <li>• Privacy in ML (attacks)</li> <li>• Privacy-Preserving Computation</li> </ul>
<b>Week 11</b>	<b>Side-Channels</b> <ul style="list-style-type: none"> <li>• Micro-architectural side-channels</li> <li>• Physical Side-Channels</li> </ul>
<b>Week 12</b>	<b>Hardware Security</b> <ul style="list-style-type: none"> <li>• Hardware Trojan</li> </ul>
<b>Week 13</b>	<b>Hardware Security</b> <ul style="list-style-type: none"> <li>• Fault attacks (PMU, rowhammer)</li> </ul>

<b>Week 14</b>	<b>Hardware Security</b> <ul style="list-style-type: none"> <li>• Supply-chain security</li> </ul>
<b>Week 15</b>	<b>Hardware Security</b> <ul style="list-style-type: none"> <li>• PUF and encryption implementation</li> </ul>

<b>Delivery Plan (Weekly Lab. Syllabus)</b> المنهاج الاسبوعي للمختبر	
<b>Week</b>	<b>Material Covered</b>
<b>Week 1</b>	Introduction to Python language editor (editor interface, menu, how to run and check program)
<b>Week 2</b>	Writing a simple program
<b>Week 3</b>	Writing more programs
<b>Week 4</b>	Writing more simple programs
<b>Week 5</b>	Performing the arithmetic and logic programs
<b>Week 6</b>	unary operator examples. Perform the
<b>Week 7</b>	Perform the increments and decrement operations.
<b>Week 8</b>	Perform the if statement examples
<b>Week 9</b>	Perform the if – else examples
<b>Week 10</b>	Perform the switch case examples
<b>Week 11</b>	Perform the while examples
<b>Week 12</b>	Perform the do – while examples
<b>Week 13</b>	Perform the for statements examples
<b>Week 14</b>	Perform the break and continue examples
<b>Week 15</b>	Comprehensive review of the course

## Learning and Teaching Resources

### مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>	<p><b>Textbook:</b></p> <ol style="list-style-type: none"> <li>Forouzan, B.A. and Mukhopadhyay, D., 2015. Cryptography and network security (Vol. 12). New York, NY, USA:: Mc Graw Hill Education (India) Private Limited. Er Vikrant Vij - Computer Networks-Laxmi Publications (2018)</li> <li>Sharma, K., Gigras, Y., Sharma, V., Hemanth, D.J. and Poonia, R.C. eds., 2022. <i>Internet of Healthcare Things: Machine Learning for Security and Privacy</i>. John Wiley &amp; Sons.</li> <li>Tehranipour, M. and Wang, C. eds., 2011. <i>Introduction to hardware security and trust</i>. Springer Science &amp; Business Media.</li> </ol>	Yes (E-copy)

## Grading Scheme

### مخطط الدرجات

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

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	مبادئ امنية الحاسوب Data Security Principle		Module Delivery
Module Type	<b>B</b>		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	DCS112		
ECTS Credits	<b>4</b>		
SWL (hr/sem)	<b>100</b>		
Module Level	UGI	Semester of Delivery	
Administering Department	Cyber Security	College	Science
Module Leader	Ayat Abbas	e-mail	aayat.alkhazali@alkafeel.edu.iq
Module Leader's Acad. Title	Assist. Lec.	Module Leader's Qualification	Master
Module Tutor	Ayat Abbas	e-mail	aayat.alkhazali@alkafeel.edu.iq
Peer Reviewer Name		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 Aims أهداف المادة الدراسية	1. Confidentiality: Ensure that data is accessible only to authorized individuals or entities, protecting it from unauthorized access or disclosure.

	<p>2. Integrity: Maintain the accuracy, consistency, and trustworthiness of data by preventing unauthorized modifications, corruption, or tampering.</p> <p>3. Availability: Ensure that data is accessible and usable by authorized users when needed, avoiding disruptions or downtime that could hinder productivity.</p> <p>4. Authentication: Verify the identity of individuals or systems accessing data to prevent unauthorized access and protect against identity theft or impersonation.</p> <p>5. Auditing and Accountability: Establish mechanisms to track and monitor data access, modifications, and user activities, enabling traceability, investigation, and accountability in case of security incidents or breaches.</p>
<p><b>Module Learning Outcomes</b></p> <p>مخرجات التعلم للمادة الدراسية</p>	<p>1. Understand the key principles and concepts of data security.</p> <p>2. Identify and assess potential risks to data security.</p> <p>3. Apply appropriate measures to protect data confidentiality and integrity.</p> <p>4. Implement authentication and access control mechanisms to ensure authorized data access.</p> <p>5. Develop strategies for ensuring data availability and preventing downtime or disruptions.</p> <p>6. Demonstrate knowledge of auditing and accountability practices to track and monitor data access.</p> <p>7. Comply with legal and regulatory requirements related to data security.</p>
<p><b>Indicative Contents</b></p> <p>المحتويات الإرشادية</p>	<ul style="list-style-type: none"> <li>Threat landscape: Overview of common threats and vulnerabilities in data security.</li> <li>Risk assessment: Understanding and conducting risk assessments to identify potential security risks.</li> <li>Encryption and data protection: Exploring encryption techniques and methods to safeguard data.</li> <li>Access control: Implementing access control mechanisms to regulate data access based on user roles and permissions.</li> <li>Security policies and procedures: Developing and implementing data security policies and procedures.</li> <li>Incident response: Understanding incident response protocols to effectively address and mitigate data security incidents.</li> <li>Compliance and legal considerations: Familiarity with relevant regulations and standards pertaining to data security.</li> </ul>

<p><b>Learning and Teaching Strategies</b></p> <p>استراتيجيات التعلم والتعليم</p>	
<p><b>Strategies</b></p>	<ul style="list-style-type: none"> <li>Defense in depth: Implement multiple layers of security controls to create a comprehensive and resilient defense strategy.</li> <li>Regular updates and patch management: Keep software and systems up to date with the latest security patches and updates to address known vulnerabilities.</li> </ul>

	<ul style="list-style-type: none"> <li>Employee training and awareness: Educate and train employees on data security best practices and the importance of maintaining strong security measures.</li> <li>Data classification and protection: Classify data based on its sensitivity and apply appropriate protection measures, such as encryption or access controls.</li> </ul>
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<b>Student Workload (SWL)</b> الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	63	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	4
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	2.5
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	100		

<b>Module Evaluation</b> تقييم المادة الدراسية					
As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	1	10% (10)	5, 10	LO #1, 2, 10 and 11
	<b>Assignments</b>	9	10% (10)	2, 12	LO # 3, 4, 6 and 7
	<b>Projects / Lab.</b>	15	10% (10)	Continuous	All
	<b>Report</b>	15	10% (10)	13	LO # 5, 8 and 10
<b>Summative assessment</b>	<b>Midterm Exam</b>	2hr	10% (10)	7	LO # 1-7
	<b>Final Exam</b>	3hr	50% (50)	16	All
<b>Total assessment</b>			100% (100 Marks)		

## Delivery Plan (Weekly Syllabus)

### المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Introduction, Basic Security Concepts
Week 2	(Cryptosystem), Components of the Cryptographic System
Week 3	Encryption Algorithms Traditional Transposition
Week 4	Monoalphabetic Substitution, Cipher Systems
Week 5	Homophonic Substitution Cipher Systems
Week 6	Polyalphabetic Substitution Cipher Systems
Week 7	One-Time Pad and Stream Ciphers
Week 8	Mathematical Background
Week 9	Public key Cryptography and RSA
Week 10	Block Ciphers
Week 11	Security Mechanisms, Authentication
Week 12	Firewall Concept
Week 13	Definitions about Viruses, Hackers, Attacks
Week 14	Network Security
Week 15	Review
Week 16	Exam

## Delivery Plan (Weekly Lab. Syllabus)

### المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	Language Principles
Week 2	Language Definitions for Cryptosystem
Week 3	Programs for: Transposition Methods
Week 4	Programs for: Monoalphabetic Substitution Methods
Week 5	Programs for: Homophonic Substitution Methods
Week 6	Programs for: Polyalphabetic Substitution Methods
Week 7	Programs for: LFSR and NLFSR
Week 8	Programs for: Prime, GCD, Inverse
Week 9	Programs for: RSA Algorithm Steps
Week 10	Programs for: DES Algorithm Steps
Week 11	Programs for: Authentication Steps

<b>Week 12</b>	Programs for: Some Applications
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Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	"Principles of Information Security" by Michael E. Whitman and Herbert J. Mattord (Latest edition - 2018)	Yes
Recommended Texts	Cryptography and Network Security: Principles and Practice" by William Stallings (Latest edition - 2020)	No
Websites	<a href="https://www.coursera.org/browse/physical-science-and-engineering/electrical-engineering">https://www.coursera.org/browse/physical-science-and-engineering/electrical-engineering</a>	

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
<b>Success Group</b> (50 - 100)	<b>A</b> - Excellent	امتياز	90 - 100	Outstanding Performance
	<b>B</b> - Very Good	جيد جدا	80 - 89	Above average with some errors
	<b>C</b> - Good	جيد	70 - 79	Sound work with notable errors
	<b>D</b> - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
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<b>Fail Group</b> (0 - 49)	<b>FX</b> - Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	<b>F</b> - Fail	راسب	(0-44)	Considerable amount of work required
<p><b>Note:</b> 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.</p>				



# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<b>الديمقراطية وحقوق الإنسان</b> <b>Democracy and Human Rights</b>		Module Delivery
Module Type	<u>s</u>		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	QU02		
ECTS Credits	<u>2</u>		
SWL (hr/sem)	<b><u>50</u></b>		
Module Level	UGI	Semester of Delivery	1
Administering Department	Cyber Security	College	Science
Module Leader	Ali Thuban	e-mail	<a href="mailto:ali.thuban@alkafeel.edu.iq">ali.thuban@alkafeel.edu.iq</a>
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	Master
Module Tutor	Ali Thuban	e-mail	<a href="mailto:ali.thuban@alkafeel.edu.iq">ali.thuban@alkafeel.edu.iq</a>
Peer Reviewer 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	

<p><b>Module Aims</b> أهداف المادة الدراسية</p>	<p>تهدف المادة الى تعريف الطلبة بحقوق الإنسان وابرز مصادرها وخصائصها والمراحل التاريخية التي مرت بها حقوق الإنسان. ثم التعرف على الاعلان العالمي لحقوق الإنسان وأبرز المواد التي تضمنها الإعلان ، والمعاهدات والمواثيق الدولية وابرز المنظمات الدولية في مجال حقوق الإنسان وتعريف الطلبة بحقوق الإنسان في الديانات السماوية.</p>
<p><b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية</p>	<p>أ- الأهداف المعرفية: 1-إكساب الطلبة المعرفة المتعلقة بالديمقراطية وحقوق الإنسان. 2-تعريف الطالب بأهمية الديمقراطية وحقوق الإنسان في الدين الإسلامي الحنيف ودور النبي(ص) في ترسيخها. 3-إكساب الطالب المعرفة الضرورية بالتجارب الإقليمية للديمقراطية وحقوق الإنسان. 4-تعريف الطالب بالديمقراطية وحقوق الإنسان ضمن الدستور العراقي. 5-تعريف الطالب بالحقوق والواجبات على المستوى الوطني و الدولي. 6-تعريف الطالب بالملكية الفكرية ومايتعلق بها. ب-الأهداف المهاراتية الخاصة بالمادة: 1-أن يكتسب الطالب الحس الأخلاقي وربطه بالعمل. 2-أن يكتسب الطالب القدرة والفهم الصحيح لحقوق الإنسان والديمقراطية. 3-أن يكتسب الطالب المعرفة الضرورية بالحقوق والواجبات. ج-الأهداف الوجدانية: 1-تشجيع الطلبة على الاستفادة من مادة الديمقراطية وحقوق الإنسان عن طريق الإيمان بأهميتها في العملية التعليمية وفي مجال التخصص بشكل عام. 2-تشجيع الطلبة ورفع روح المنافسة بينهم. 3-تعزيز التعاون بين الطلبة عن طريق التطبيق الفعلي في الجانب التطبيقي. 4- تنمية الطاقات الفكرية والإبداعية لدى الطلبة من خلال تنفيذهم لمختلف الواجبات.</p>
<p><b>Indicative Contents</b> المحتويات الإرشادية</p>	

## Learning and Teaching Strategies

### استراتيجيات التعلم والتعليم

<p><b>Strategies</b></p>	<p>أ-طرائق التعليم والتعلم 1.إلقاء المحاضرات العلمية في القاعات الدراسية. 2.إرشاد الطلاب إلى بعض المواقع الإلكترونية للإفادة منها. 3.تكليف الطالب بإعداد تقارير مختصرة لبعض المواضيع وتنفيذ الواجبات المنزلية. 4.حلقات نقاشية لمعالجة المشاكل التي يواجهها الطالب في المادة. 5-إعطاء الأنشطة الجماعية أهمية من خلال تخصيص درجات على الأنشطة الجماعية . 6-إدارة المحاضرة على شكل يجعل الطالب يشعر بأهمية الوقت. 7-تشجيع الطالب على تقديم أعمال إبداعية في التخصص تواكب معايير الجودة في خدمة المجتمع. ب-طرائق التقييم 1.تنفيذ الواجبات اليومية. 2.الإختبارات اليومية والشهرية والنهائية. 3.الالتزام بالحضور لقاعة الدرس وانهاء الاعمال المكلف بها والواجبات والتقارير ضمن توقيتات محددة. 4-المناقشة والمشاركة الفاعلة في قاعة الدرس.</p>
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### Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	32	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	2
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	18	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	50		

### Module Evaluation

تقييم المادة الدراسية

As	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome	
<b>Formative assessment</b>	<b>Quizzes</b>	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	<b>Assignments</b>	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	<b>Projects / Lab.</b>				
	<b>Report</b>	1	10% (10)	13	LO # 5, 8 and 10
<b>Summative assessment</b>	<b>Midterm Exam</b>	2 hr	20% (10)	7	LO # 1-7
	<b>Final Exam</b>	2hr	50% (50)	16	All
<b>Total assessment</b>		100% (100 Marks)			

### Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	التعرف على مفهوم ومميزات الديمقراطية
Week 2	ركائز الديمقراطية والمفاهيم الأساسية
Week 3	التعرف على البعد التاريخي والنهوض بالواقع العربي في ظل الديمقراطية
Week 4	التعرف على الآليات وترسيخ الأفكار الديمقراطية
Week 5	الأصل التاريخي للديمقراطية في الدستور العراقي
Week 6	التعرف على التحديات
Week 7	المشكلات التي واجهت الديمقراطية في العراق

Week 8	المفاهيم الأساسية مفهوم حقوق الإنسان (التعريف – الخصائص – الفئات) والتعرف على تاريخ حقوق الإنسان (حقوق الإنسان في الحضارات القديمة)
Week 9	الدين وحقوق الإنسان (حقوق الإنسان في الشرائع السماوية: الدين الإسلامي – الديانة المسيحية – الديانة اليهودية) و الإسلام وحقوق الإنسان (دور شخصية النبي محمد (ص) في ترسيخ حقوق الإنسان)
Week 10	الإسلام وحقوق الإنسان (حقوق الإنسان في الحقبة مابعد النبي محمد (ص)) التعرف على اهم تجارب حقوق الإنسان (مصادر حقوق الإنسان العالمية)
Week 11	التجارب الاقليمية (مصادر حقوق الإنسان الإقليمية والوطنية) دستور العراق مابعد 2005م وحقوق الإنسان (حقوق الإنسان في دستور جمهورية العراق لسنة 2005م)
Week 12	التعرف على الحقوق والواجبات (ضمانات حقوق الإنسان وحمايتها على المستوى الدولي و الوطني)
Week 13	التعرف على الحقوق والواجبات (الضمانات الدستورية لحقوق الإنسان في الدستور العراقي) ترسيخ فكرة منظمات المجتمع المدني الداعمة لحقوق الإنسان (دور منظمات المجتمع المدني والنقابات والجمعيات في حماية حقوق الإنسان)
Week 14	حقوق الإنسان والملكية الفكرية (تأريخ الملكية الفكرية، تعريفها، حقوقها، فئاتها، أنواعها، حمايتها) حقوق الإنسان والملكية الفكرية (المنظمة العالمية للملكية الفكرية، حماية الملكية الفكرية وحق المؤلف في العراق)
Week 15	المفاهيم الأساسية مفهوم حقوق الإنسان (التعريف – الخصائص – الفئات) والتعرف على تاريخ حقوق الإنسان (حقوق الإنسان في الحضارات القديمة)

## Learning and Teaching Resources

### مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	- منشورات مفوضية حقوق الانسان في العراق/ مركز البحوث. - الديمقراطية/ تأليف د. رياض عزيز هادي، بغداد 2008. - الديمقراطية من الفكر الى التطبيق/ تأليف د. حامد حمزة، مجلة دراسات سياسية، بيت الحكمة، العدد(15) لسنة 2010 بغداد. - حقوق الإنسان والحريات الأساسية تأليف فيصل شنتاوي قانون حقوق الإنسان مصادره وتطبيقاته الوطنية والدولية تأليف محمد بشير الشافعي القانون الدولي لحقوق الإنسان تأليف عبد الكريم خليفة حقوق الإنسان بين المفهوم الغربي والإسلامي تأليف نبيل قرقور حقوق الإنسان والحريات الأساسية تأليف هاني الطعيمات.	Yes
Recommended Texts	- جدلية العلاقة بين الديمقراطية و تداول السلطة، مجلة دراسات سياسية، بيت الحكمة، العدد(16) لسنة 2010 بغداد.	Yes
Websites	<a href="https://www.coursera.org/browse/physical-science-and-engineering/electrical-engineering">https://www.coursera.org/browse/physical-science-and-engineering/electrical-engineering</a>	

## Grading Scheme

### مخطط الدرجات

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

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<b>English Language (1)</b> <b>اللغة الانكليزية (1)</b>		Module Delivery
Module Type	<b>Support</b>		<input checked="" type="checkbox"/> Theory
Module Code	<b>QU01</b>		<input checked="" type="checkbox"/> Lecture
ECTS Credits	<b>2</b>		<input type="checkbox"/> Lab
SWL (hr/sem)	<b>50</b>		<input type="checkbox"/> Tutorial
			<input type="checkbox"/> Practical
			<input type="checkbox"/> Seminar
Module Level	UGI	Semester of Delivery	1
Administering Department	Cyber Security	College	Science
Module Leader	Haider Ghazi	e-mail	E-mail
Module Leader's Acad. Title	Assit. Prof.	Module Leader's Qualification	Ph.D.
Module Tutor	Haider Ghazi	e-mail	
Peer Reviewer Name		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

<p><b>Module Aims</b> أهداف المادة الدراسية</p>	<ol style="list-style-type: none"> <li>1. To Develop English skills by listening and writing .</li> <li>2. Learning English and conversation training</li> <li>3. Conversations in English in the field of computers (Information Technology).</li> <li>4. The student receives all the information about the computer and at the same time learns and trains the correct pronunciation in this language.</li> <li>5. conversations between students about everything related to Information Technology.</li> <li>6. Obtain English skill support high level of graduate .</li> </ol>
<p><b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية</p>	<p>Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks.</p> <ol style="list-style-type: none"> <li>1. Learning English and conversation training.</li> <li>2. Listening and writing in English language.</li> <li>3. Basic information about Information Technology (IT).</li> <li>4. Learns and trains the correct pronunciation in this language.</li> <li>5. Learn and write common sentences in the English language.</li> <li>6. Learn to write words that end or start with the same syllable in the English language.</li> <li>7. Learn about job interviews.</li> <li>8. Learn personal presentation in English language.</li> </ol>
<p><b>Indicative Contents</b> المحتويات الإرشادية</p>	<p><b><u>Unit 1: E-commerce companies [8hrs]</u></b> E-commerce companies: listening, writing, reading, speaking and vocabulary. E-commerce features: listening, writing, language, speaking and vocabulary. Transaction security: listening, writing, language, speaking and vocabulary. Online transaction: listening, writing, language, speaking and vocabulary.</p> <p><b><u>Unit 2: Network systems [8hrs]</u></b> Types of network: describe networks and make recommendations. Networking hardware: listening, writing, language, speaking and vocabulary. Talking about the past: listening, writing, language, speaking and vocabulary. Network range and speed: listening, writing, language, speaking and vocabulary.</p> <p><b><u>Unit 3: IT support [8hrs]</u></b> Fault diagnosis: talk about results of an action, language, speaking and vocabulary. Software repair: listening, writing, language, speaking and vocabulary. 40 Hardware repair: listening, writing, language, speaking and vocabulary. Customer service: explain the use of things. listening, writing and vocabulary.</p>

	<p><b>Unit 4: IT security and safety [8hrs]</b> Security solutions: listening, writing, language, speaking and vocabulary. Workstation health and safety: listening, writing, language, speaking and vocabulary. Security procedures: listening, writing, language, speaking and vocabulary. Reporting incidents: listening, writing, language, speaking and vocabulary.</p>
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<b>Learning and Teaching Strategies</b> استراتيجيات التعلم والتعليم	
<b>Strategies</b>	<p>The main strategy that will be adopted in the delivery of this units are to encourage students to participate in writing and reading exercises, while improving their listening skills. This will be achieved through student interaction in class and completion of daily assignments (homework).</p>

<b>Student Workload (SWL)</b> الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	32	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	2
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	18	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	50		

<b>Module Evaluation</b> تقييم المادة الدراسية					
As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	<b>Assignments</b>	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	<b>Projects / Lab.</b>				

	<b>Report</b>	1	10% (10)	13	LO # 5, 8 and 10
<b>Summative assessment</b>	<b>Midterm Exam</b>	2 hr	20% (20)	7	LO # 1-7
	<b>Final Exam</b>	2hr	50% (50)	16	All
<b>Total assessment</b>			100% (100 Marks)		

## Delivery Plan (Weekly Syllabus)

### المنهاج الاسبوعي النظري

Week	Material Covered
<b>Week 1</b>	E-commerce companies +listening, speaking and vocabulary.
<b>Week 2</b>	E-commerce features + listening, writing, language and vocabulary.
<b>Week 3</b>	Transaction security + listening, writing, language and speaking.
<b>Week 4</b>	Online transaction + listening, writing, language, speaking and vocabulary
<b>Week 5</b>	Types of network /describe networks and make recommendations.
<b>Week 6</b>	Networking hardware + listening, writing, language, speaking and vocabulary.
<b>Week 7</b>	Talking about the past + listening, writing, language, speaking and vocabulary.
<b>Week 8</b>	Network range and speed + listening, writing, language, speaking and vocabulary.
<b>Week 9</b>	Fault diagnosis + talk about results of an action, language, speaking and vocabulary.
<b>Week 10</b>	Software repair + listening, writing, language, speaking and vocabulary.
<b>Week 11</b>	Hardware repair + listening, writing, language, speaking and vocabulary.
<b>Week 12</b>	Security solutions: listening, writing, language, speaking and vocabulary.
<b>Week 13</b>	Workstation health and safety: listening, writing, language, speaking and vocabulary.
<b>Week 14</b>	Security procedures + Reporting incidents/ listening, writing, language, speaking and vocabulary.
<b>Week 15</b>	Exam

## Learning and Teaching Resources

### مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>	English for information technology , 1 vocational English, course book, Maja Olejniczak, series editor David Bonamy.	Yes
<b>Recommended Texts</b>		

<b>Websites</b>	<a href="https://www.youtube.com/watch?v=WOVu22J_sN8">https://www.youtube.com/watch?v=WOVu22J_sN8</a>
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<b>Grading Scheme</b> مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
<b>Success Group</b> (50 - 100)	<b>A</b> - Excellent	امتياز	90 - 100	Outstanding Performance
	<b>B</b> - Very Good	جيد جدا	80 - 89	Above average with some errors
	<b>C</b> - Good	جيد	70 - 79	Sound work with notable errors
	<b>D</b> - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	<b>E</b> - Sufficient	مقبول	50 - 59	Work meets minimum criteria
<b>Fail Group</b> (0 - 49)	<b>FX</b> – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	<b>F</b> – Fail	راسب	(0-44)	Considerable amount of work required
<b>Note:</b> 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.				

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<b>Advanced Programming</b> البرمجة المتقدمة		Module Delivery
Module Type	<b>Core</b>		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	<b>CSI121</b>		
ECTS Credits	<b>8</b>		
SWL (hr/sem)	<b>200</b>		
Module Level	UGI	Semester of Delivery	2
Administering Department	Cyber Security	College	Science
Module Leader	Hassan Mohsin	e-mail	mohsin.hassan@alkafeel.edu.iq
Module Leader's Acad. Title	Assist. Prof.	Module Leader's Qualification	Ph.D.
Module Tutor	Hassan Mohsin	e-mail	mohsin.hassan@alkafeel.edu.iq
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/10/2025	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Algorithms and structure programming with PYTHON 1	Semester	
Co-requisites module	None	Semester	

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

<p>أهداف المادة الدراسية</p>	<ol style="list-style-type: none"> <li>1. To develop problem solving skills and understanding of programming through the application of instruction.</li> <li>2. To understand input, output instruction.</li> <li>3. This course deals with the basic operation in any program code.</li> <li>4. This is the basic subject for all programs. Learning different instructions, programming concepts, ideas and data structures like array, pointers, functions, strings and structures in order to build different programs efficiently.</li> <li>5. To understand how to analysis any problem to solve it by programs.</li> <li>6. To perform a good programmer .</li> </ol>
<p><b>Module Learning Outcomes</b></p> <p>مخرجات التعلم للمادة الدراسية</p>	<p>Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks.</p> <ol style="list-style-type: none"> <li>1. Recognize how instruction works in program code.</li> <li>2. List the various terms of programming.</li> <li>3. Summarize what is meant by a basic instruction.</li> <li>4. Discuss the simple programming and the perfect programming.</li> <li>5. Describe the problem and how to solve it by programming.</li> <li>6. Identify the basic elements of any program code.</li> <li>7. Discuss the precedence of operator.</li> <li>8. Discuss the various of idea to solve any program .</li> </ol>
<p><b>Indicative Contents</b></p> <p>المحتويات الإرشادية</p>	<p style="text-align: right;">Indicative content includes the following.</p> <ul style="list-style-type: none"> <li>• <b>Part A – function:</b> Definition of functions, examples, Definition of default argument, Definition of recursive functions, Definition of call by reference functions, [20 hrs]</li> <li>• <b>Part B – arrays:</b> Definition of 1D , examples, Definition of 2D, main and second diagonal, examples [ 20 hrs.]</li> <li>• <b>Part C – string:</b> Definition of string, read and write string, Definition of string function, examples [15 hrs.]</li> <li>• <b>Part D- structures:</b> Definition of structures, read structurer, write structures, examples, Definition of nested structure, examples [20 hrs.]</li> <li>• <b>Part E - files :</b> Definition files , Open files , closing files , rewind , Fgetc, fputc functions, examples , Fgets , fputs function , examples , Fread and fwrite with arraye and structures [20 hrs.]</li> </ul>

## Learning and Teaching Strategies

### استراتيجيات التعلم والتعليم

<b>Strategies</b>	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.
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## Student Workload (SWL)

### الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	78	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	5
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	122	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	8
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	<b>200</b>		

## Module Evaluation

### تقييم المادة الدراسية

As	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome	
<b>Formative assessment</b>	<b>Quizzes</b>	2	10% (10)	7 and 11	LO #1,#2,#3,#4 and #5,#6
	<b>Assignments</b>	4	10% (10)	4, 5 ,10 and 13	LO #1, #2and #3,#4, and #5 ,and #6
	<b>Projects / Lab. Report</b>	15	10% (10)	Continuous	All
	<b>Report</b>	2hr	10% (10)		LO #5, #8 and #10
<b>Summative assessment</b>	<b>Midterm Exam</b>	2hr	10% (10)	12	LO #1 - #7
	<b>Final Exam</b>	2hr	50% (50)	16	All
<b>Total assessment</b>			100% (100 Marks)		

## Delivery Plan (Weekly Syllabus)

### المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Function in PYTHON

	<ul style="list-style-type: none"> <li>• Defining the function.</li> <li>• Explain the advantages of the functions.</li> <li>• How to declare the defining and calling the function</li> <li>• Examples on functions</li> </ul>
<b>Week 2</b>	<p>More about functions</p> <ul style="list-style-type: none"> <li>• Passing parameters to function (by value and by reference)</li> <li>• Examples on passing parameters.</li> <li>• Overloading</li> </ul>
<b>Week 3</b>	<p>More about function</p> <ul style="list-style-type: none"> <li>• Recursive Function</li> <li>• Examples on recursive function.</li> </ul>
<b>Week 4</b>	<p>Array in PYTHON</p> <ul style="list-style-type: none"> <li>• One Dimension array.</li> <li>• How to declare the array.</li> <li>• How to access the array elements.</li> <li>• How to read and write the array.</li> </ul>
<b>Week 5</b>	<p>More about the array.</p> <ul style="list-style-type: none"> <li>• Examples on 1 D array.</li> </ul>
<b>Week 6</b>	<p>More about array.</p> <ul style="list-style-type: none"> <li>• How to declare a 2D array.</li> <li>• How to access, read and write 2D array elements.</li> <li>• Characteristics of square matrix <math>A[n][n]</math>.</li> <li>• Examples on 2D arrays.</li> </ul>
<b>Week 7</b>	<p>More about array</p> <ul style="list-style-type: none"> <li>• More examples on array.</li> </ul>

<p><b>Week 8</b></p>	<p>Reference and pointers</p> <ul style="list-style-type: none"> <li>• Defining the reference</li> <li>• Defining the pointer.</li> <li>• Dereferencing operator</li> <li>• Examples on reference and pointer</li> </ul>
<p><b>Week 9</b></p>	<p>Pointers in PYTHON</p> <ul style="list-style-type: none"> <li>• Pointer to pointers</li> <li>• Pointer and array</li> <li>• Examples on pointer to pointer</li> <li>• Examples on pointer and array</li> </ul>
<p><b>Week 10</b></p>	<ul style="list-style-type: none"> <li>• String in PYTHON</li> <li>• Defining the string.</li> <li>• Examples on reading and writing the string</li> <li>• Pointer and string</li> </ul>
<p><b>Week 11</b></p>	<p>More about the string in Python</p> <ul style="list-style-type: none"> <li>• Using cstring library</li> <li>• Examples on cstring library</li> </ul>
<p><b>Week 12</b></p>	<p>Structure in PYTHON</p> <ul style="list-style-type: none"> <li>• Defining the structure in Python</li> <li>• How to declare the structure</li> <li>• How to read and write the structure elements.</li> <li>• Examples on structure.</li> </ul>
<p><b>Week 13</b></p>	<p>More about structures</p> <ul style="list-style-type: none"> <li>• Array of structures.</li> <li>• Declaring, reading and writing the array of structures.</li> </ul>

<b>Week 14</b>	• More examples on structures.
<b>Week 15</b>	A comprehensive review on the

### Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	Perform examples on Function in PYTHON
Week 2	Perform examples on Passing parameters in PYTHON and overloading
Week 3	Perform examples on Recursive functions
Week 4	Perform examples on 1D array in PYTHON
Week 5	More examples on 1D arrays
Week 6	Perform examples on 1D arrays.
Week 7	Examples on 2D arrays
Week 8	Examples on square array characteristics
Week 9	Perform examples on references
Week 10	Perform examples on pointers
Week 11	More examples on pointers and array
Week 12	Perform examples on string
Week 13	More examples on string and Cstring library
Week 14	More examples on structure
Week 15	Comprehensive review on the course

### Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>	<ul style="list-style-type: none"> <li>• Python: How To Program, Deitel and Deitel, 4th edition, Pren ce Hall, 2002.</li> <li>• Deitel, Paul, Harvey Deitel, and Paul J. Deitel. Python for Programmers. Pearson, 2019..</li> <li>• Sakpere, Aderonke Busayo, and Adedeji Folashade. "Comparative Analysis of Two Programming Platforms for Beginners: Python and Scratch."</li> </ul>	No

	International Journal of Education and Management Engineering 14.5 (2024): 46-62..	
<b>Recommended Texts</b>	• Deitel, Paul, Harvey Deitel, and Paul J. Deitel. Python for Programmers. Pearson, 2019..	No
<b>Websites</b>	<a href="https://www.python.org/">https://www.python.org/</a>	

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

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<u>مبادئ الامن السيبراني</u> Cybersecurity Principles		Module Delivery
Module Type	<b>B</b>		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	<b><u>DCS122</u></b>		
ECTS Credits	<b><u>4</u></b>		
SWL (hr/sem)	<b><u>100</u></b>		
Module Level	UGI	Semester of Delivery	2
Administering Department	Cyber Security	College	Science
Module Leader	Ali Fouad Al-Hammami	e-mail	<a href="mailto:alhammami@alkafeel.edu.iq">alhammami@alkafeel.edu.iq</a>
Module Leader's Acad. Title	Assist. Lec.	Module Leader's Qualification	Master
Module Tutor	Ali Fouad Al-Hammami	e-mail	<a href="mailto:alhammami@alkafeel.edu.iq">alhammami@alkafeel.edu.iq</a>
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/10/2025	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. The roles and influences of governments, commercial and other organizations, citizens and criminals in cyber security affairs.

	<ol style="list-style-type: none"> <li>2. Issues surrounding privacy and anonymity</li> <li>3. The importance of taking a multi-disciplinary approach to cyber security</li> <li>4. The potentialities and challenges of emerging block chain technology to enhance inter-organization trust and data/processing integrity This is the basic subject for all programs.</li> <li>5. The cyber threat landscape, both in terms of recent emergent issues and those issues which recur over time</li> <li>6. General principles and strategies that can be applied to systems to make them more robust to attack</li> <li>7. Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. General principles and strategies that can be applied to systems to make them more robust to attack</li> </ol>
<b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> <li>1. 1- Protect and defend computer systems and networks from cybersecurity attacks. ...</li> <li>2. Diagnose and investigate cybersecurity events or crimes related to computer systems and digital evidence.</li> <li>3. Effectively communicate in a professional setting to address information security issues.</li> </ol>
<b>Indicative Contents</b> المحتويات الإرشادية	<p style="text-align: right;">Indicative content includes the following.</p> <p><b>Part A –:</b> Introduction to Cyber security and Security Fundamentals Overview of cybersecurity and its importance Basic security concepts and principles Threat modeling, [20 hrs.]</p> <p><b>Part B –</b> Network Security Network security fundamentals, including firewalls, intrusion detection, and preventiosystems Encryption and decryption techniques Virtual Private Networks (VPNs) [20 hrs.]</p> <p><b>Part C –</b> Cryptography Access Control and Authentication Security Management and Risk Assessment [15 hrs.]</p> <p><b>Part D-</b> structures: Definition of structures, read structurer, write structures, examples, Definition of nested structure, examples [20 hrs.]</p> <p style="text-align: center;"><b>Part E -</b> Web Security and Applications Mobile Security, Cloud Security</p> <p><b>Part F-</b>incident Response and Recovery incident response planning and management, Disaster recovery and business continuity planning, Cyber security incident investigations</p>

<b>Learning and Teaching Strategies</b> استراتيجيات التعلم والتعليم	
<b>Strategies</b>	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 أسبوعا

<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	63	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	4
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	2.5
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	100		

### Module Evaluation

تقييم المادة الدراسية

As	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome	
<b>Formative assessment</b>	<b>Quizzes</b>	1	10% (10)	5, 10	LO #1, 2, 10 and 11
	<b>Assignments</b>	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	<b>Projects / Lab. Report</b>	15	10% (10)	Continuous	All
	<b>Report</b>	1	10% (10)	13	LO # 5, 8 and 10
<b>Summative assessment</b>	<b>Midterm Exam</b>	2hr	10% (10)	7	LO # 1-7
	<b>Final Exam</b>	3hr	50% (50)	16	All
<b>Total assessment</b>		100% (100 Marks)			

### Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
<b>Week 1</b>	Introduction to Cyber Security (Overview, Definitions, and Terminology)
<b>Week 2</b>	Cyber Threats, Attacks, and Actors (Types and Examples)
<b>Week 3</b>	Cyber security Risk Management (Identification, Assessment, and Control)
<b>Week 4</b>	Cyber Defense Strategies (Prevention, Detection, and Response)
<b>Week 5</b>	Cryptography (Principles, Techniques, and Applications)

<b>Week 6</b>	Cybercrime Investigations and Forensics (Tools, Procedures, and Techniques)
<b>Week 7</b>	Network Security (Protocols, Devices, and Services)
<b>Week 8</b>	Operating System Security (Threats, Vulnerabilities, and Patches)
<b>Week 9</b>	Web Security (Threats, Configurations, and Best Practices)
<b>Week 10</b>	Cloud Security (Deployment Models, Risks, and Controls)
<b>Week 11</b>	Mobile Security (Threats, Platform, and App Security)
<b>Week 12</b>	Social Engineering (Phishing, Scams, and Deception)
<b>Week 13</b>	Ethics and Legal Issues in Cybersecurity (Privacy, Intellectual Property, and Liability)
<b>Week 14</b>	Emerging Trends in Cybersecurity (Artificial Intelligence, Internet of Things, and Blockchain)
<b>Week 15</b>	Review
<b>Week 16</b>	Exam

### Delivery Plan (Weekly Lab. Syllabus)

المناهج الاسبوعي للمختبر

Week	Material Covered
<b>Week 1</b>	Language Principles
<b>Week 2</b>	Language Definitions for Cryptosystem
<b>Week 3</b>	Programs for: Transposition Methods
<b>Week 4</b>	Programs for: Monoalphabetic Substitution Methods
<b>Week 5</b>	Programs for: Homophonic Substitution Methods
<b>Week 6</b>	Programs for: Polyalphabetic Substitution Methods
<b>Week 7</b>	Programs for: LFSR and NLFSR
<b>Week 8</b>	Programs for: Prime, GCD, Inverse
<b>Week 9</b>	Programs for: RSA Algorithm Steps
<b>Week 10</b>	Programs for: DES Algorithm Steps
<b>Week 11</b>	Programs for: Authentication Steps
<b>Week 12</b>	Programs for: Some Applications

### Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
<b>Success Group (50 - 100)</b>	<b>A - Excellent</b>	امتياز	90 - 100	Outstanding Performance
	<b>B - Very Good</b>	جيد جدا	80 - 89	Above average with some errors
	<b>C - Good</b>	جيد	70 - 79	Sound work with notable errors
	<b>D - Satisfactory</b>	متوسط	60 - 69	Fair but with major shortcomings
	<b>E - Sufficient</b>	مقبول	50 - 59	Work meets minimum criteria

<b>Fail Group (0 – 49)</b>	<b>FX – Fail</b>	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	<b>F – Fail</b>	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.

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<b>هياكل متقطعة (2)</b> <b><u>Discrete Structures (2)</u></b>		Module Delivery
Module Type	Support		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	<b><u>CSI122</u></b>		
ECTS Credits	<b><u>6</u></b>		
SWL (hr/sem)	<b><u>150</u></b>		
Module Level	UGI	Semester of Delivery	
Administering Department	Cyber Security	College	Science
Module Leader	Ayat Ma'an	e-mail	ayaat.maana@alkafeel.edu.iq
Module Leader's Acad. Title	Assist. Lec.	Module Leader's Qualification	Master
Module Tutor	Ayat Ma'an	e-mail	ayaat.maana@alkafeel.edu.iq
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/10/2025	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. The course aims to study discrete structures in terms of the use of algebraic laws. 2. Studying the Graphs and Trees

	<ol style="list-style-type: none"> <li>3. To reach an easy and clear way for students</li> <li>4. To solve all material issues related to discontinuous structures.</li> <li>5. In addition to studying quantifiers and predicates logic</li> <li>6. Studying the different groups, theories and schemes so that the student can solve the duties required of him and the exercises with simplicity, ease and clarity.</li> </ol>
<b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> <li>1. Learn how to solve algebraic laws, groups and Venn diagrams correctly, efficiently and clearly</li> <li>2. The subjects studied in discrete structures are either definite or indefinite. The term finite structures are sometimes used to refer to fields of discrete mathematics that deal with finite groups,</li> <li>3. especially in fields of business relevance.</li> <li>4. Discrete mathematical structures have gained wide importance over the recent decades due to their wide applications in computer science.</li> <li>5. Discrete mathematics terms and notations are useful for studying and expressing problems of objects in computer programming and algorithms.</li> <li>6. Some branches of discrete mathematics are also useful in studying some business and economic issues.</li> </ol>
<b>Indicative Contents</b> المحتويات الإرشادية	<p>The course aims to study discontinuous structures in terms of the use of algebraic laws, diagrams and shapes to reach an easy and clear way for students to solve all issues related to the subject of discontinuous structures. In addition to studying quantifiers and predicates logic and studying different groups, theories and schemes so that the student can solve the duties required of him and the exercises with simplicity, ease and clarity.</p>

### Learning and Teaching Strategies

#### استراتيجيات التعلم والتعليم

<b>Strategies</b>	<p>Discrete structures is the study of mathematical structures that are essentially discontinuous, in the sense that they do not require the presence of the adjective of communication and do not require it in order to study this subject. Most of the topics studied in discrete mathematics are related to countable sets (a completely different concept from finite sets), an example of which is the set of integers. Discrete mathematics has gained wide importance in recent decades due to its wide applications in computer science. Discrete mathematics terms and notations are useful for studying and expressing objects in computer programming and algorithms. Some branches of discrete mathematics are also useful in studying some business and economic issues.</p>
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### Student Workload (SWL)

### الحمل الدراسي للطلاب محسوب لـ ١٥ أسبوعا

<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطلاب خلال الفصل	63	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطلاب أسبوعيا	4
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطلاب خلال الفصل	87	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطلاب أسبوعيا	6
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطلاب خلال الفصل	<b>150</b>		

### Module Evaluation

#### تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	<b>Assignments</b>	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	<b>Projects / Lab.</b>				
	<b>Report</b>	2	10% (10)	6 and 13	LO #5, #8 and #10
<b>Summative assessment</b>	<b>Midterm Exam</b>	2hr	20% (20)	7	LO #1 - #7
	<b>Final Exam</b>	3hr	50% (50)	16	All
<b>Total assessment</b>			100% (100 Marks)		

### Delivery Plan (Weekly Syllabus)

#### المنهاج الاسبوعي النظري

Week	Material Covered
<b>Week 1</b>	Definition of proofs
<b>Week 2</b>	Ordered structures
<b>Week 3</b>	Introduction to trees
<b>Week 4</b>	Tree traversal
<b>Week 5</b>	Relations
<b>Week 6</b>	Functions
<b>Week 7</b>	Map function
<b>Week 8</b>	Definition of strings
<b>Week 9</b>	Definition of lists
<b>Week 10</b>	Simple Ciphers

<b>Week 11</b>	Hash function
<b>Week 12</b>	Introduction to Bijection
<b>Week 13</b>	Combinational and sequential analysis and design
<b>Week 14</b>	Combinational and sequential analysis and design
<b>Week 15</b>	Graph Theory
<b>Week 16</b>	Exam

### Learning and Teaching Resources

#### مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>	<ul style="list-style-type: none"> <li>• Digital Design, Third Edition, by M. Morris Mano. Prentice-Hall, Inc. 2002</li> <li>• Logic Design ,Digital Principles and Application", Malvino, 2000</li> <li>• "Introduction to Logic Design" (2nd) edition), Sajjan G. Shiva, 2007.</li> <li>• Jayant Ganguly, Mathematical foundation for computer science 2010.</li> </ul>	
<b>Recommended Texts</b>	<ul style="list-style-type: none"> <li>• Discrete Mathematics with Applications, ThomasKoshy, Elsevier 2003,</li> </ul>	
<b>Websites</b>		

### Grading Scheme

#### مخطط الدرجات

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

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<u>(1) لغة عربية</u> Arabic Language(1)		Module Delivery
Module Type	S		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	QU06		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	UGI	Semester of Delivery	2
Administering Department	Cyber Security	College	Science
Module Leader	Hiba Abd Al-Jalil	e-mail	hiba.alkharsan@alkafeel.edu.iq
Module Leader's Acad. Title	Assist. Lec.	Module Leader's Qualification	Master
Module Tutor	Hiba Abd Al-Jalil	e-mail	hiba.alkharsan@alkafeel.edu.iq
Peer Reviewer 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 تعليم الطلبة مهارات الكتابة الصحيحة على مستوى الأملاء والنحو والصرف فضلا عن تعليم الطلبة أسلوب تحليل النص بالرجوع الى نصوص قرآنية، ونصوص أدبية معتبرة، إلى جانب تنمية قدرة الطلبة على الإلقاء بأسلوب مناسب.		
Module Learning Outcomes	أ-		

مخرجات التعلم للمادة الدراسية	<p>الأهداف المعرفية:          اكتساب ما تم توضيحه من المفردات في حقل "المواضيع المطلوب بحثها و شمولها"          اكتساب مهارات الكتابة الادبية الصحيحة          التأكد من ان الطالب قادر علي الكتابة الموافقة لقواعد اللغة وعلامات الترقيم          ب-          الأهداف المهاراتية الخاصة بالمقرر:          اكتساب الطالب المهارة التي تمكنه من كتابة النصوص العربية بشكل صحيح و مراعاة          علامات التنقيط و قواعد اللغة العربية.          اكتساب الطالبة المهارة التي تمكنه من صياغة الجمل بشكل واضح و بأسلوب ادبي شيق.</p>
<b>Indicative Contents</b> المحتويات الإرشادية	تعليم الطلبة مهارات الكتابة الصحيحة على مستوى الأملاء والنحو والصرف فضلا عن تعليم الطلبة أسلوب تحليل النص بالرجوع الى نصوص قرآنية, ونصوص أدبية معتبرة, إلى جانب تنمية قدرة الطلبة على الإلقاء بأسلوب مناسب.

### Learning and Teaching Strategies

#### استراتيجيات التعلم والتعليم

<b>Strategies</b>	<ul style="list-style-type: none"> <li>• قراءات ، تعلم ذاتي ، حلقات نقاش.</li> <li>• التدريبات والأنشطة في قاعة الدرس.</li> <li>• إرشاد الطلاب إلى بعض المواقع الالكترونية للإفادة منها.</li> <li>• عقد حلقات بحثية يتم من خلالها شرح وتحليل النصوص الأدبية.</li> </ul>
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### Student Workload (SWL)

#### الحمل الدراسي للطلاب محسوب لـ ١٥ أسبوعا

<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطلاب خلال الفصل	32	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطلاب أسبوعيا	2
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطلاب خلال الفصل	18	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطلاب أسبوعيا	1
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطلاب خلال الفصل	<b>50</b>		

### Module Evaluation

#### تقييم المادة الدراسية

As	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11

Formative assessment	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	0	0% (0)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	1hr	20% (20)	7	LO #1 - #7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

## Delivery Plan (Weekly Syllabus)

### المنهاج الأسبوعي النظري

Week	Material Covered
Week 1	تعليم الطلبة كيفية كتابة الهمزة
Week 2	تعليم الطلبة كيفية كتابة الهمزة
Week 3	تعليم الطلبة قواعد العدد والنعت العددي
Week 4	تعليم الطلبة كيفية صياغة العدد على وزن فاعل
Week 5	تعليم الطلبة كيفية وضع علامات الترقيم في النص الكتابي
Week 6	تعليم الطلبة كيفية كتابة الضاد والطاء
Week 7	تعليم الطلبة كيفية التمييز بين الألف المقصورة والألف الممدودة
Week 8	تعليم الطلبة الحروف التي يجب حذفها من الكلمة والحروف التي يجب إضافتها للكلمة
Week 9	تعليم الطلبة علامات الإعراب الأصلية والفرعية
Week 10	تعليم الطلبة التمييز بين التاء المربوطة والهاء في آخر الكلمة
Week 11	تعليم الطلبة بقواعد الجملة الإسمية
Week 12	تعليم الطلبة بقواعد الجملة الفعلية
Week 13	تعليم الطلبة مفهوم الأدب العربي وأهم عصوره التاريخية وفنونه الأدبية
Week 14	تعليم الطلبة حفظ نص قرآني وتحليله
Week 15	تعليم الطلبة حفظ نص أدبي وتحليله

## Learning and Teaching Resources

### مصادر التعلم والتدريس

Text	Available in the Library?
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<b>Required Texts</b>	<ul style="list-style-type: none"> <li>• كتاب اللغة العربية لغير الاختصاص تأليف الدكتور رشيد العبيدي وآخرين</li> <li>• كتاب الأملاء الواضح تأليف علي الجارم وأحمد أمين</li> <li>• النحو الوافي تأليف عباس حسن</li> </ul>	
<b>Recommended Texts</b>	<ul style="list-style-type: none"> <li>• العصر الجاهلي تأليف شوقي ضيف</li> <li>• الميزان في تفسير القرآن تأليف محمد حسين الطباطبائي</li> </ul>	
<b>Websites</b>		

## Grading Scheme

### مخطط الدرجات

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

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	تصميم منطقي <b><u>Logic Design</u></b>		Module Delivery
Module Type	<u>C</u>		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	<b><u>CSI123</u></b>		
ECTS Credits	6		
SWL (hr/sem)	<b><u>150</u></b>		
Module Level	UGI	Semester of Delivery	
Administering Department	Cyber Security	College	Science
Module Leader	Ahmed Ali Taleeb	e-mail	ahmed.ali@alkafeel.edu.iq
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	Ph.D.
Module Tutor	Ahmed Ali Taleeb	e-mail	ahmed.ali@alkafeel.edu.iq
Peer Reviewer Name		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 Aims أهداف المادة الدراسية	

	<ol style="list-style-type: none"> <li>1. To develop problem solving skills and understanding of logic design theory through the application of techniques.</li> <li>2. This course deals with the basic concept of electrical circuits.</li> <li>3. To understand Counting systems, codes, and conversion between different numerical systems.</li> <li>4. To understand foundations and laws of the algebraic general.</li> <li>5. To understand abbreviation of logical functions using Karnaugh map</li> <li>6. To understand all seven logic gates and the truth table of each gate.</li> <li>7. The ability to analyze electronic circuits.</li> </ol>
<p><b>Module Learning Outcomes</b></p> <p>مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"> <li>1. Identify the binary, decimal, octal, and hexadecimal number systems, and learn about conversion methods between these systems.</li> <li>2. Learn about the foundations and laws of Boolean algebra.</li> <li>3. Learn about the logic gate.</li> <li>4. Learn about the Karnaugh map.</li> <li>5. Learn about cascade circuit analysis such as flip-flop and recorders.</li> <li>6. Having the ability to design electronic circuits.</li> </ol>
<p><b>Indicative Contents</b></p> <p>المحتويات الإرشادية</p>	<p style="text-align: right;">Indicative content includes the following.</p> <ol style="list-style-type: none"> <li>1. Introduction to Logic Systems: <ul style="list-style-type: none"> <li>• Overview of digital logic systems</li> <li>• Binary representation and number systems</li> <li>• Logic levels: HIGH and LOW</li> <li>• Basic logic operations: AND, OR, NOT</li> </ul> </li> <li>2. Boolean Algebra: <ul style="list-style-type: none"> <li>• Boolean variables and expressions</li> <li>• Laws and theorems of Boolean algebra</li> <li>• Simplification of Boolean expressions</li> <li>• De Morgan's theorem</li> <li>• Boolean functions and truth tables</li> </ul> </li> <li>3. Logic Gates: <ul style="list-style-type: none"> <li>• Introduction to logic gates</li> <li>• Basic logic gates: AND, OR, NOT</li> <li>• Universal gates: NAND, NOR</li> <li>• XOR and XNOR gates</li> </ul> </li> </ol>

	<ul style="list-style-type: none"> <li>• Gate-level implementation of Boolean functions</li> </ul> <p>4. Combinational Logic Design:</p> <ul style="list-style-type: none"> <li>• Combinational logic circuits</li> <li>• Designing combinational circuits using logic gates</li> <li>• Half-adder and full-adder circuits</li> <li>• Multiplexers and demultiplexers</li> <li>• Encoders and decoders</li> </ul> <p>5. Sequential Logic Design:</p> <ul style="list-style-type: none"> <li>• Introduction to sequential logic circuits</li> <li>• Flip-flops: SR, D, JK, T</li> <li>• Latches and registers</li> <li>• Designing sequential circuits using flip-flops</li> <li>• Counters and shift registers</li> </ul>
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### Learning and Teaching Strategies

#### استراتيجيات التعلم والتعليم

<b>Strategies</b>	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.
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### Student Workload (SWL)

#### الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	63	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	4
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	5.5
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	150		

## Module Evaluation

تقييم المادة الدراسية

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

## Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Number systems
Week 2	Binary number systems
Week 3	Octal number systems
Week 4	Hexadecimal number systems
Week 5	Arithmetic operation on numbering systems
Week 6	Logic gates (AND, OR, NOT)
Week 7	Logic gates (NAND, NOR XOR, & XNOR)
Week 8	Simplification and Boolean function
Week 9	Simplification and Boolean function
Week 10	Karnaugh map
Week 11	Karnaugh map
Week 12	Logic operations
Week 13	Combinational and sequential analysis and design

<b>Week 14</b>	Combinational and sequential analysis and design
<b>Week 15</b>	Digital circuit design optimization methods
<b>Week 16</b>	<b>Preparatory week before the final Exam</b>

### Delivery Plan (Weekly Lab. Syllabus)

#### المنهاج الاسبوعي للمختبر

Week	Material Covered
<b>Week 1</b>	Application of Basic logic gates (AND, OR, NOT) and their Truth Table, Boolean Expression, Function
<b>Week 2</b>	Application of Boolean Algebra
<b>Week 3</b>	Application of De-Morgan theorem
<b>Week 4</b>	Application of Combinational Circuits
<b>Week 5</b>	Application of Combinational Circuits simplification using Boolean Algebra
<b>Week 6</b>	Application of Combinational Circuits simplification using Karnaugh map
<b>Week 7</b>	Application of Digital logic design circuits
<b>Week 8</b>	A Application of Binary adders (Half-Full adders, Half-Full Subtractor)
<b>Week 9</b>	Application of Decoder, Encoder, Multiplexer, De-Multiplexer
<b>Week 10</b>	Application of Sequential circuits (SR_latch and D_latch)
<b>Week 11</b>	Application of Master-slave flip-flop(SR , JK, D and T)
<b>Week 12</b>	Application of Counters and Registers
<b>Week 13</b>	Application of Memory (Static RAM)
<b>Week 14</b>	Application of Memory (ROM)
<b>Week 15</b>	Exam

### Learning and Teaching Resources

#### مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>	<ul style="list-style-type: none"> <li>• "Introduction to Logic Design" (2nd edition), Sajjan G. Shiva, 2007.</li> <li>• Digital Design, Fifth Edition, by M. Morris Mano. Prentice-Hall, Inc. 2012</li> <li>• Digital Design and Computer Architecture Second Edition, by David Money Harris and Sarah L. Harris. Elsevier Inc. 2013</li> </ul>	

<b>Recommended Texts</b>	<ul style="list-style-type: none"> <li>• Ashkan PASHAMEHR, Mahdi ZAVVARI and Hamed ALIPOURBANAEI. : All-optical AND/OR/NOT logic gates based on photonic crystal ring resonators. Front. Optoelectron. 2016.</li> <li>• J.S.Srinivas Raju, Satish Kumar and L.V.S.S.Sai Sneha. : Realization of Logic Gates Using Mcculloch-Pitts Neuron Model. International Journal of Engineering Trends and Technology (IJETT) – Volume-45 Number2 –March(2017)</li> <li>• G.Nagasundari and R.Prabhakari. : Design of Three-Input XOR/XNOR using Systematic Cell Design Methodology. Asian Journal of Applied Science and Technology (AJAST).(2017).</li> </ul>
<b>Websites</b>	<a href="https://www.coursera.org/learn/digital-systems">https://www.coursera.org/learn/digital-systems</a>

<b>Grading Scheme</b> مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
<b>Success Group</b> (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
<b>Fail Group</b> (0 – 49)	<b>FX</b> – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	<b>F</b> – Fail	راسب	(0-44)	Considerable amount of work required
<p><b>Note:</b> 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.</p>				

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<u>النظرية الإحتسابية</u> <b>Computational Theory</b>		Module Delivery
Module Type	<u>S</u>		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	<b>DCS123</b>		
ECTS Credits	<u>2</u>		
SWL (hr/sem)	<b><u>50</u></b>		
Module Level	UGI	Semester of Delivery	
Administering Department	Cyber Security	College	Science
Module Leader	Fatima Tahseen	e-mail	<a href="mailto:ayaat.maana@alkafeel.edu.iq">ayaat.maana@alkafeel.edu.iq</a>
Module Leader's Acad. Title	Assisnt. Lec.	Module Leader's Qualification	Master
Module Tutor	Fatima Tahseen	e-mail	<a href="mailto:ayaat.maana@alkafeel.edu.iq">ayaat.maana@alkafeel.edu.iq</a>
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/10/2025	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

<p style="text-align: center;"><b>Module Objectives</b> أهداف المادة الدراسية</p>	<ol style="list-style-type: none"> <li>1. Introduce Fundamental Concepts: Provide a solid understanding of the fundamental mathematical properties of computer hardware, software, and certain applications thereof.</li> <li>2. Explore the Chomsky Hierarchy: Familiarize students with the hierarchy of formal languages and their corresponding abstract computational models (from finite state machines to Turing machines).</li> <li>3. Develop Analytical Skills: Enhance students' ability to understand limits of computation—what can and cannot be computed (computability) and how efficiently it can be done (complexity).</li> <li>4. Bridge Theory and Application: Connect abstract theoretical models to practical applications in modern computer science, including Artificial Intelligence.</li> </ol>
<p style="text-align: center;"><b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"> <li>1. Define and explain the core concepts of formal languages, alphabets, strings, and automata.</li> <li>2. Design Finite Automata (DFA/NFA) and formulate Regular Expressions for specific regular languages.</li> <li>3. Prove whether a language is regular or non-regular (e.g., using the Pumping Lemma).</li> <li>4. Construct Context-Free Grammars (CFGs) for specific languages, draw parse trees, and resolve grammar ambiguity.</li> <li>5. Simplify CFGs and convert them into standard forms, specifically Chomsky Normal Form (CNF).</li> <li>6. Design Pushdown Automata (PDA) for context-free languages and Turing Machines for complex computational problems.</li> <li>7. Evaluate how the theoretical concepts of automata and computation apply to modern AI systems.</li> </ol>
<p style="text-align: center;"><b>Indicative Contents</b> المحتويات الإرشادية</p>	<p>1- Fundamentals of Computation and Regular Languages (Weeks 1–5)</p> <p>Introduction to computation theory: Automata, computability, and complexity.</p> <p>Mathematical foundations: Alphabets, strings, sets, and basic language operations.</p> <p>Regular Languages and the design of Finite Automata.</p> <p>Regular Expressions and their equivalence to Finite Automata.</p> <p>Identifying and proving Non-Regular Languages.</p>

	<p>2- Grammars and Context-Free Languages (Weeks 7–11)</p> <p>Introduction to the formal definitions of Grammars.</p> <p>Context-Free Grammars (CFG), Regular Grammars, and parsing concepts (Parse Trees).</p> <p>Identifying and resolving Ambiguity in Grammars and Languages.</p> <p>Techniques for the Simplification of Context-Free Grammars.</p> <p>Standardization of grammars into Chomsky Normal Form.</p> <p>3- Advanced Computational Models and Applications (Weeks 12–15)</p> <p>Architecture and design of Pushdown Automata (PDA).</p> <p>The Turing Machine model and its role as the foundation of modern computing.</p> <p>Real-world and advanced computational applications, specifically focusing on Artificial Intelligence.</p> <p>Seminar discussions bridging theory with modern computational research.</p>
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<p style="text-align: center;"><b>Learning and Teaching Strategies</b> استراتيجيات التعلم والتعليم</p>	
<b>Strategies</b>	<ol style="list-style-type: none"> <li>1- Giving scientific lectures in classrooms and using (Data show) to indicate the main ideas of the subject.</li> <li>2- Data collection and reporting.</li> <li>3- Directing students to some websites to benefit from them.</li> <li>4- Assign students to solve a set of statistical questions through discussions among students</li> <li>5- Assign the student to prepare brief reports on some topics and carry out homework.</li> <li>6- Panel discussions to address the problems faced by the student in the course.</li> <li>7- Giving importance to group activities by assigning grades to group activities.</li> <li>8- Managing the lecture in a way that makes the student feel the importance of time.</li> <li>9- Enabling the student to link the theoretical and practical aspects.</li> <li>10- Encouraging the student to present creative works in the specialty that keep pace with quality standards in community service.</li> </ol>

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### Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	32	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	18	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	<b>50</b>		

### Module Evaluation

تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects				
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	20% (20)	7	LO #1 - #7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

### Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Introduction - Introduction to computation theory (Automata, computability, and complexity)
Week 2	Basics of language (alphabet, string, set, operations)
Week 3	Regular Languages and Finite Automata
Week 4	Regular Expression
Week 5	Non-Regular Languages
Week 6	Mid-term Exam

<b>Week 7</b>	Introduction to Grammars
<b>Week 8</b>	Context-Free Grammars; Regular Grammars; Parse Trees.
<b>Week 9</b>	Ambiguity in Grammars and Languages.
<b>Week 10</b>	Simplification of Context-free Grammars
<b>Week 11</b>	Standard Forms; Chomsky Normal Forms
<b>Week 12</b>	Pushdown Automata (PDA)
<b>Week 13</b>	The Turing Machine
<b>Week 14</b>	Applications with AI
<b>Week 15</b>	Seminar Discussion
<b>Week 16</b>	<b>Preparatory week before the final Exam</b>

### Learning and Teaching Resources

#### مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>		
<b>Recommended Texts</b>	Introduction to the Theory of Computation" by Michael Sipser Introduction to Automata Theory, Languages, and Computation" by John E. Hopcroft, Rajeev Motwani, and Jeffrey D. Ullman	
<b>Websites</b>		

### Grading Scheme

#### مخطط الدرجات

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

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<u>التوعية والتدريب الآمن</u> <b>Awareness and Training for Security</b>		Module Delivery
Module Type	<u>C</u>		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	<b>DCS123</b>		
ECTS Credits	<u>2</u>		
SWL (hr/sem)	<b><u>50</u></b>		
Module Level	UGI	Semester of Delivery	2
Administering Department	Cyber Security	College	Science
Module Leader	Hashim Ali Hashim	e-mail	hashim.ali@alkafeel.edu.iq
Module Leader's Acad. Title	Assisnt. Lec.	Module Leader's Qualification	Master
Module Tutor	Hashim Ali Hashim	e-mail	hashim.ali@alkafeel.edu.iq
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/10/2025	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

<p><b>Module Objectives</b> أهداف المادة الدراسية</p>	<ol style="list-style-type: none"> <li>1. Cultivate a Security Mindset: Develop a foundational understanding of why human behavior is the most critical element in cybersecurity.</li> <li>2. Identify and Mitigate Risks: Train students to recognize common cyber threats, social engineering tactics, and online scams.</li> <li>3. Promote Best Practices: Equip students with actionable skills to secure their digital identities, devices, and communications.</li> <li>4. Foster Organizational Compliance: Ensure students understand the importance of privacy laws, physical security, and corporate security policies.</li> <li>5. Enable Proactive Response: Teach the correct protocols for reporting security incidents and minimizing damage.</li> </ol>
<p><b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية</p>	<p>Identify and describe common cyber threats, including phishing, malware, and social engineering attacks.</p> <p>Implement robust personal security measures, including password managers, Multi-Factor Authentication (2FA), and secure browsing habits.</p> <p>Secure physical and mobile assets against unauthorized access and data loss.</p> <p>Articulate the principles of data privacy, including GDPR, and the importance of safeguarding sensitive information.</p> <p>Evaluate organizational security policies and execute proper incident reporting procedures.</p> <p>Design and participate in security awareness training simulations (e.g., phishing tests) to improve behavioral responses to threats.</p>
<p><b>Indicative Contents</b> المحتويات الإرشادية</p>	<p>The Threat Landscape and Human Element (Weeks 1, 2, 4, 6, 12) .1</p> <p>.Introduction to security awareness and the risk of human error</p> <p>.Common cyber threats targeting end-users (malware, phishing)</p> <p>.Identifying risks in messaging and email communications</p> <p>.The psychology of social engineering (pretexting, baiting, tailgating)</p>

	<p>.Recognizing and avoiding online and offline scams</p> <p>Defense Mechanisms and Best Practices (Weeks 3, 5, 7, 8) .2</p> <p>.Identity protection through password management and 2FA</p> <p>Safe internet habits, identifying secure connections (HTTPS), and avoiding malicious .downloads</p> <p>.Securing mobile devices (biometrics, app permissions, secure Wi-Fi)</p> <p>.Safely navigating and storing data in Cloud Services</p> <p>Privacy, Policy, and Physical Security (Weeks 9, 10, 11, 13) .3</p> <p>.Data privacy laws (GDPR) and protecting personal/sensitive information</p> <p>.Physical security measures for devices and workspaces</p> <p>.Organizational security policies (acceptable use, password policies)</p> <p>.The lifecycle of Incident Reporting and Response</p> <p>Practical Application and Assessment (Weeks 14, 15) .4</p> <p>.Utilizing security awareness training tools and phishing simulators</p> <p>Capstone awareness project synthesizing course concepts into actionable security campaigns.</p>
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<b>Learning and Teaching Strategies</b> استراتيجيات التعلم والتعليم	
<b>Strategies</b>	<ol style="list-style-type: none"> <li><b>1. Giving scientific lectures in classrooms and using (Data show) to indicate main ideas</b> <ul style="list-style-type: none"> <li>• <b>Application:</b> Project real-world examples of phishing emails, malicious URLs, and fake login screens on the board (Weeks 2 &amp; 4). Visualizing these threats is the best way to train the eye to catch them.</li> </ul> </li> <li><b>2. Data collection and reporting</b> <ul style="list-style-type: none"> <li>• <b>Application:</b> Have students collect data on recent, high-profile data breaches in the news or check their own email addresses against breach databases, then write a short report on how human error contributed to the breach (Week 9).</li> </ul> </li> <li><b>3. Directing students to some websites to benefit from them</b></li> </ol>

- **Application:** Direct students to interactive educational sites like **Have I Been Pwned** (to check for compromised accounts) or the **Google Phishing Quiz** (Jigsaw) to test their ability to spot fake emails (Week 4 & 14).

**4. Assign students to solve a set of questions/scenarios through discussions**

- *(Adapted for security contexts)*

- **Application:** Present the class with a "Security Incident Case Study" (e.g., an employee clicks a bad link and a ransomware screen appears). Have students discuss in groups the exact step-by-step response to contain the threat (Week 11).

**5. Assign the student to prepare brief reports on some topics and carry out homework**

- **Application:** Assign practical homework, such as setting up a personal Password Manager, enabling 2FA on their main email account, and writing a brief reflection on the setup process (Week 3).

**6. Panel discussions to address the problems faced by the student in the course**

- **Application:** Host an open discussion about the inconvenience of security (e.g., "Why are password policies so annoying?"). This allows students to vent frustrations while you explain the vital trade-off between convenience and security (Week 13).

**7. Giving importance to group activities by assigning grades to group activities**

- **Application:** For the final Awareness Project (Week 15), group students together to design a "Security Awareness Campaign" for a hypothetical small business, including creating posters and a mock presentation.

**8. Managing the lecture in a way that makes the student feel the importance of time**

- **Application:** Tie the concept of time directly to **Incident Response** (Week 11). Emphasize the "golden hour" of reporting—how every minute saved in reporting a clicked phishing link can save an organization from a massive data breach.

**9. Enabling the student to link the theoretical and practical aspects**

- **Application:** Link the theory of encryption and secure protocols (SSL/TLS in Week 5) to the highly practical act of checking for the padlock icon and verifying website certificates before entering credit card information.

**10. Encouraging the student to present creative works that keep pace with community service**

	<ul style="list-style-type: none"> <li><b>Application:</b> Have students create Arabic/English infographics or short TikTok/YouTube style videos on "How to Avoid Scams" or "Mobile Device Security" to share with their families, elderly relatives, or the local community (Week 12).</li> </ul>
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<b>Student Workload (SWL)</b> الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	32	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	18	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	<b>50</b>		

<b>Module Evaluation</b> تقييم المادة الدراسية					
As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	<b>Assignments</b>	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	<b>Projects</b>				
	<b>Report</b>	1	10% (10)	13	LO #5, #8 and #10
<b>Summative assessment</b>	<b>Midterm Exam</b>	2hr	20% (20)	7	LO #1 - #7
	<b>Final Exam</b>	2hr	50% (50)	16	All
<b>Total assessment</b>			100% (100 Marks)		

<b>Delivery Plan (Weekly Syllabus)</b> المنهاج الاسبوعي النظري	
Week	Material Covered
<b>Week 1</b>	Introduction - Understand what security awareness means and why it is critical for individuals and organizations. Discuss common security risks caused by human error and lack of knowledge
<b>Week 2</b>	BUnderstanding Cyber Threats

	Description: Learn about common cyber threats that target users, such as phishing, social engineering, malware, and weak passwords
<b>Week 3</b>	<p>Password Management &amp; Authentication</p> <p>Description: Learn best practices for creating strong passwords, using password managers, and multi-factor authentication (2FA)</p>
<b>Week 4</b>	<p>Email and Messaging Security</p> <p>Description: Understand risks in email and messaging apps: spam, phishing, attachments, unsafe links. Discuss safe communication practices</p>
<b>Week 5</b>	<p>Safe Internet and Browsing Practices</p> <p>Description: Learn how to identify secure websites (HTTPS, SSL/TLS), avoid malicious downloads, and protect personal data online</p>
<b>Week 6</b>	Mid-term Exam
<b>Week 7</b>	<p>Mobile Device Security</p> <p>Description: Learn how to secure smartphones and tablets: PINs, biometrics, app permissions, updates, and secure Wi-Fi</p>
<b>Week 8</b>	<p>Safe Use of Cloud Services</p> <p>Description: Learn best practices for cloud storage and services: strong passwords, 2FA, sharing policies, and data backup.</p>
<b>Week 9</b>	<p>Data Privacy and Protection</p> <p>Description: Understand the importance of protecting personal and sensitive information online and offline. Discuss GDPR, data breaches, and personal privacy practices</p>
<b>Week 10</b>	<p>Physical Security Awareness</p> <p>Description: Learn about physical security measures: locking devices, secure workspaces, preventing unauthorized access</p>
<b>Week 11</b>	<p>Incident Reporting and Response</p> <p>Description: Learn how to report security incidents, suspicious activities, and potential breaches in a timely manner. Discuss why quick reporting reduces damage</p>
<b>Week 12</b>	<p>Recognizing and Avoiding Scams</p> <p>Description: Understand common online and offline scams: lottery, investment, tech support scams, and social media scams</p>
<b>Week 13</b>	<p>Security Policies and Best Practices</p> <p>Description: Learn the purpose of organizational security policies and how following them keeps data safe. Topics: acceptable use, password policy, device policy</p>
<b>Week 14</b>	<p>Security Awareness Training Tools</p> <p>Description: Introduction to training tools and simulations: online modules, phishing simulators, and awareness quizzes. Discuss how training improves security behavior</p>

<b>Week 15</b>	Review and Awareness Project Description: Apply all learned knowledge in a mini project. Students integrate multiple awareness and training .concepts
<b>Week 16</b>	<b>Preparatory week before the final Exam</b>

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<b>Required Texts</b>		
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