



Republic of Iraq - Ministry of Higher Education and Scientific Research
Al-Nahrain University
Bachelor's degree in Computer Science (First Cycle)
Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25 hr
Program Curriculum (2024 - 2025)

جمهورية العراق - وزارة التعليم العالي والبحث العلمي
جامعة النهرين
بكالوريوس في علوم الحاسوب (الدورة الاولى)
أربع سنوات (ثمانية فصول دراسية) - 240 وحدة اوروبية - كل وحدة اوروبية = 25 ساعة
المنهاج الدراسي للعام 2024-2025



Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGI	One	1	URCOM	Computer	حاسوب	English	2	0	2	0	0	0	4	64	11	75	3.00	B	
		2	COMP1101	Programming Fundamentals	اساسيات برمجة	English	3	0	4	0	3	0	4	154	121	275	11.00	C	
		3	COMP1102	Discrete Structure	هياكل متقطعة	English	3	0	0	0	2	0	3	78	47	125	5.00	C	
		4	CRCAL1	Calculus1	حساب التفاضل والتكامل ١	English	2	0	0	0	2	0	3	63	37	100	4.00	S	
		5	CRELE	Electronics	فيزياء الكهرونية	English	2	0	2	0	0	0	4	64	61	125	5.00	S	
		6	URENG1	New Headway Plus	اللغة الانكليزية	English	2	0	0	0	0	0	3	33	17	50	2.00	B	
								Total	14	0	8	0	7	0	21	456	294	750	30.00
UGI	Two	1	COMP1203	Computer Organization	تركيب حاسوب	English	2	0	2	0	0	0	4	64	61	125	5.00	C	
		2	COMP1201	Programming Language	لغة برمجة	English	3	0	4	0	3	0	4	154	96	250	10.00	C	
		3	CRPROSTA	Probability and Statistics	احتمالية واحصاء	English	2	0	0	0	0	0	3	33	67	100	4.00	S	
		4	CRCAL2	Calculus 2	حساب التفاضل والتكامل ٢	English	2	0	0	0	0	0	3	33	67	100	4.00	S	
		5	CRLOGCIR	Logic Circuits	منطق رقمي	English	2	0	2	0	0	0	4	64	61	125	5.00	C	
		6	URDEM	Democracy and Human Rights	الديمقراطية وحقوق الانسان	Arabic	2	0	0	0	0	0	2	32	18	50	2.00	B	
								Total	13	0	8	0	3	0	20	380	370	750	30.00



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المنهاج الدراسي للعام 2024-2025



Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGI	Three	1	COMP2105	Object Oriented Programming	برمجة شيئية	English	2	0	2	0	1	0	4	79	71	150	6.00	C	
		2	COMP2106	Structured Programming	البرمجة المهيكلة	English	3	0	2	0	0	0	4	79	71	150	6.00	E	
		3	COMP2107	Computer Skills I	مهارات حاسوب I	English	0	0	2	0	0	0	3	33	42	75	3.00	C	
		4	COMP2108	Data Structure	هياكل البيانات	English	2	0	2	0	1	0	4	79	71	150	6.00	C	
		5	COMP2109	Computation Theory	نظرية احتسابية	English	3	0	0	0	0	0	3	48	77	125	5.00	C	
		6	URARA	Arabic Language	اللغة العربية	Arabic	2	0	0	0	0	0	3	33	17	50	2.00	B	
		7	URENG2	New Headway Plus	اللغة الانكليزية	English	2	0	0	0	0	0	3	33	17	50	2	B	
							Total	14	0	8	0	2	0	24	384	366	750	30.00	
UGII	Four	1	COMP2210	System Programming	برمجة نظم	English	3	0	2	0	0	0	4	79	96	175	7.00	E	
		2	URBRC	Ba'ath Regime Crimes	جرائم نظام البعث في العراق	Arabic	2	0	0	0	0	0	3	33	17	50	2.00	B	
		3	COMP2211	Algorithm Design and Analysis	تصميم وتحليل خوارزميات	English	2	0	2	0	1	0	4	79	71	150	6.00	C	
		4	COMP2207	Computer Skills II	مهارات حاسوب II	English	0	0	2	0	0	0	3	33	42	75	3.00	C	
		5	CRNUMMET	Numerical Methods	طرائق عددية	English	2	0	2	0	0	0	4	64	61	125	5.00	S	
		6	COMP2212	Computer Graphics	رسومات الحاسوب	English	2	0	2	0	0	0	4	64	61	125	5.00	C	
		7	URARA2	Arabic Language II	اللغة العربية ٢	Arabic	2	0	0	0	0	0	3	33	17	50	2.00		
							Total	13	0	10	0	1	0	25	385	365	750	30.00	



Ministry of Higher Education and
Scientific Research - Iraq
Al-Nahrain University
College of Science
Computer Science Department



MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Discrete Structure		Module Delivery
Module Type	CORE		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	COMP1102		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	1	Semester of Delivery	
Administering Department	Computer Science	College	Science
Module Leader	Lecturer Azhar M. Kadim	e-mail	azhar.mawlodkadim@nahrainuniv.edu.iq
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	M.Sc.
Module Tutor	None	e-mail	None
Peer Reviewer Name	Prof. Dr. Mohammed Sahib Mahdi	e-mail	Mohammed.sahibmahdi@nahrainuniv.edu.iq
Review Committee Approval	25/5/2023	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>Module Aims أهداف المادة الدراسية</p>	<ol style="list-style-type: none"> 1. Introduction to Discrete Mathematics: Introduce students to the basic concepts and techniques of discrete mathematics and their relevance to computer science. 2. To develop problem-solving skills. 3. To understand fundamental mathematical structures. 4. Logic and Proof Techniques: Develop students' understanding of propositional and predicate logic, including logical connectives and quantifiers. Teach proof techniques, such as direct proof and mathematical induction. 5. To apply concepts in computer science and information technology. 6. To enhance logical reasoning and critical thinking.
<p>Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"> 1. Understanding fundamental concepts in discrete mathematics. 2. Applying mathematical reasoning to problem-solving. 3. Analyzing algorithms using mathematical techniques. 4. Solving combinatorial problems. 5. Developing formal proofs. 6. Applying discrete mathematics to computer science. 7. Enhancing problem-solving skills.
<p>Indicative Contents المحتويات الإرشادية</p>	<p>Understanding what is discrete mathematics & Propositional logic. Learning what is Truth Tables of Compound Propositions [25 hrs]</p> <p>Applications of Propositional Logic: Logic Circuits [25 hrs]</p> <p>Understanding Predicates and Quantifiers [25 hrs]</p> <p>Explaining proof strategies and their methods (contrapositive , contradiction) [25 hrs]</p>
<p>Learning and Teaching Strategies استراتيجيات التعلم والتعليم</p>	
<p>Strategies</p>	<ul style="list-style-type: none"> • Clear organization and structure of course material

	<ul style="list-style-type: none"> • Use of examples and illustrations to clarify concepts • Problem-solving approach with relevant exercises • Interactive learning activities and group work • Gradual increase in difficulty level of topics • Highlighting practical applications of discrete mathematics • Regular formative assessments and timely feedback • Providing additional resources and references for further study • Encouraging critical thinking and analysis • Creating a supportive learning environment
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Student Workload (SWL) الحمل الدراسي للطالب			
SSWL (Structured SWL (h/sem)) الحمل الدراسي المنتظم للطالب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	5.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	3.13
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15% (15)	5, 10	All
	Assignments	2	15% (15)	2, 12	All
	Projects / Lab. Report	1	10% (10)	13	All
	Summative assessment	Midterm Exam	2 hr	10% (10)	7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	What is discrete mathematics & Propositional logic

Week 2	Conditional statement
Week 3	Conditional statement (converse,contrapositive and inverse)
Week 4	Truth Tables of Compound Propositions
Week 5	Precedence of Logical Operators
Week 6	logic and bit operations
Week 7	Mid-term Exam I
Week 8	Applications of Propositional Logic: Logic Circuits
Week 9	Propositional Equivalences
Week 10	Predicates
Week 11	Quantifiers
Week 12	Proof strategies
Week 13	Proof Methods and Strategy: contrapositive , contradiction
Week 14	Mid-term Exam II
Week 15	Preparatory Week
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts		Yes

	“Discrete Mathematics Applications and Its Kenneth H. Rosen Eighth Edition”, Kenneth H. Rosen, 2019.	
Recommended Texts		
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				



ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي



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College of Science
Computer Science Department



MODULE DESCRIPTOR FORM نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	ELECTRONIC PHYSICS		Module Delivery
Module Type	SUPPLEMENT		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CREQ1110		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	1	Semester of Delivery	
Administering Department	Computer Science	College	Science
Module Leader	Mohammed Sahib Mahdi	e-mail	Mohammed.sahibmahdi@nahrainuniv.edu.iq
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	None	e-mail	None
Peer Reviewer Name	AbdulKareem Merhej	e-mail	abdulkareemmerhij@nahrainuniv.edu.iq
Review Committee Approval	15/5/2023	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>Module Aims أهداف المادة الدراسية</p>	<ol style="list-style-type: none">1. To understand the difference between the analog and digital concepts.2. How deal with analog and digital concepts.3. To train on diode structure, biasing types, current and voltage characteristics of diodes.4. To improve some common application circuits of diodes.5. To perform bipolar transistors, and switch transistor and how its converted into logic gate.
<p>Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none">1. Define the problem (input and output), and write its functions.2. Estimate both the current and voltage of the diode contributed in electronic circuit.3. Sketch the I-V characteristics curve of the diode and can determine the operation point of such diode.4. Design simple circuit for given application.5. Understand structure, operation, and functions of the transistor.6. Understand how converts the transistor to be digital logic gate.
<p>Indicative Contents المحتويات الإرشادية</p>	<p>Indicative content includes the following: This module introduces the student to understand the difference between the analog and digital concepts. [25 hrs] How analog to digital conversion process is performed and what specification is needed. [25 hrs] Other topics include: general view on diode structure, biasing types, current and voltage characteristics of diodes. [25 hrs] Some common application circuits of diodes such as regular, rectifier, and limiter are demonstrated. Bipolar transistor is given including: structure, common configuration, switch transistor and how its converted into logic gate. [25 hrs]</p>

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies

The length of the semester is 16 weeks, including the exam, and there will be approximately 102 hours dedicated to teaching the student the theoretical and practical foundations of the subject of the course, including the theoretical subject, which will take a period of 30 lecture hours (3 hours per week) and a practical subject of 30 hours during the course (two hours per week). Two hours are devoted to the mid-term exam, three hours for short exams that extend from the middle to the end of the course, then 20 hours for seminars, homework and the like.

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	4.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	4.13
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	Continuous	LO #1
	Assignments	2	10% (10)	2, 12	LO # 2 and 3
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO #4
Summative assessment	Midterm Exam	2 hr	10% (10)	7, 14	LO # 5 and 6
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

Material Covered	
Week 1	Analog and Digital Concepts.

Week 2	Analog and Digital Circuits, Electronic Signal, Analog and Digital Signals.
Week 3	A\D Conversion, Sampling and quantization, PCM
Week 4	Conductors, Semiconductors, and Isolators, P-N Junction, Potential barrier of diode.
Week 5	Reverse biasing diode, Reverse Breakdown of a diode, Forward biasing diode.
Week 6	I-V characteristics of diode, Diode circuit analysis, load line method, approximation method.
Week 7	Zener diode specification and rates, Voltage regular, Positive/negative half wave rectifier, Full wave rectifier.
Week 8	Two sources circuits, Voltage limiter, Lights emitting diode (LEDs).
Week 9	Bipolar transistor structure, Bipolar transistor operation.
Week 10	Common-base configuration, Common-base characteristics.
Week 11	Common-collector configuration, Common-collector characteristics.
Week 12	Common-emitter configuration, Common-emitter characteristics.
Week 13	Amplifiers.
Week 14	Switch transistor (saturation and cutoff states), Switching circuit application.
Week 15	Final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Electronic Signals.
Week 2	Lab 2: Diode biasing.
Week 3	Lab 3: Voltage regular, Positive/negative half wave rectifier, Full wave rectifier.
Week 4	Lab 4: Voltage regular.
Week 5	Lab 5: Positive/negative half wave rectifier.
Week 6	Lab 6: Full wave rectifier.
Week 7	Lab 7: Common-collector configuration.
Week 8	Lab 8: Common-emitter configuration.
Week 9	Lab 9: Common-Base configuration.
Week 10	Lab 10: Amplifiers.
Week 11	Lab 11: Switching circuit application.
Week 12	Lab 12: Switching circuit Primary logic circuits.
Week 13	Lab 13: Switching circuit logic circuits.

Week 14	Lab 14: Transistor (saturation and cutoff states).
Week 15	Lab 15: Switching circuit applications.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Morris Mano, Charles R. Kime, "Logic and Computer Design Fundamentals", Pearson Prentice Hall, 2004.	Yes
Recommended Texts	John F. Wakerly "Digital Design: Principles and Practices Package" 4 th edition, Prentice-Hall, 2007.	Yes
Websites	https://sc.nahrainuniv.edu.iq/computers/comp_102.pdf	

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MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	English Language		Module Delivery
Module Type	BASIC		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input checked="" type="checkbox"/> Seminar
Module Code	URENG1		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	1	Semester of Delivery	
Administering Department	Computer Science	College	Science
Module Leader	Lecturer Israa Namh Abdula	e-mail	Israa.asultani@nahrainuniv.edu.iq
Module Leader's Acad. Title	Assist. Lecturer	Module Leader's Qualification	M.A.
Module Tutor	None	e-mail	None
Peer Reviewer Name	None	e-mail	None
Review Committee Approval	25/5/2023	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>Module Aims أهداف المادة الدراسية</p>	<ol style="list-style-type: none"> 1. Developing Basic Communication Skills: <ul style="list-style-type: none"> - Enable students to express themselves effectively in everyday situations. - Focus on building a foundation in speaking and listening. 2. Enhancing Reading Comprehension: <ul style="list-style-type: none"> - Improve students' ability to understand and interpret written texts. - Introduce strategies for effective reading comprehension. 3. Strengthening Writing Proficiency: <ul style="list-style-type: none"> - Develop students' writing skills across different genres (e.g., essays, emails, reports). - Emphasize grammar, sentence structure, and vocabulary usage. 4. Expanding Vocabulary: <ul style="list-style-type: none"> - Introduce new words and phrases to broaden students' vocabulary. - Provide strategies for effective vocabulary acquisition and retention. 5. Grammar Mastery: <ul style="list-style-type: none"> - Ensure a solid grasp of essential grammar rules and structures. - Focus on practical application in spoken and written communication. 6. Listening Skills Development: <ul style="list-style-type: none"> - Improve students' ability to comprehend spoken English in various contexts. - Provide exposure to different accents and speaking speeds. 7. Critical Thinking through Discussions: <ul style="list-style-type: none"> - Encourage students to engage in discussions to develop critical thinking skills. - Promote the use of evidence and persuasive language in discussions. 8. Effective Presentation Skills: <ul style="list-style-type: none"> - Equip students with the skills to deliver clear and engaging presentations. - Focus on aspects such as organization, delivery, and visual aids.
<p>Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"> 1. Students will demonstrate the ability to initiate and sustain simple conversations in English. 2. Students will be able to ask and respond to basic questions related to personal information, daily activities, and immediate surroundings. 3. Students will exhibit improved reading comprehension by accurately summarizing and analyzing information from a variety of texts. 4. Students will produce well-organized written compositions with a clear introduction, body, and conclusion. 5. Students will apply correct grammar and sentence structures in spoken and written communication. 6. Students will demonstrate improved listening comprehension across a range of accents and contexts

	<p>7. Students will actively participate in discussions, expressing and defending their opinions.</p> <p>8. Students will deliver clear and organized presentations using appropriate language and visuals.</p>
<p>Indicative Contents المحتويات الإرشادية</p>	<p>Basic Communication Skills: [7 hrs]</p> <ul style="list-style-type: none"> • Greetings and introductions • Describing daily routines • Asking and answering simple questions <p>Reading Comprehension: [6 hrs]</p> <ul style="list-style-type: none"> • Short stories and simple narratives • Comprehension exercises with questions <p>Writing Proficiency: [6 hrs]</p> <ul style="list-style-type: none"> • Sentence structure and formation • Paragraph writing <p>Vocabulary Expansion: [6hrs]</p> <ul style="list-style-type: none"> • Everyday vocabulary • Academic vocabulary <p>Listening Skills Development: [7 hrs]</p> <ul style="list-style-type: none"> • Listening to dialogues and conversations • Podcasts and audio materials
<p>Learning and Teaching Strategies استراتيجيات التعلم والتعليم</p>	
<p>Strategies</p>	<ul style="list-style-type: none"> • Emphasize interactive and communicative activities to engage students actively in the learning process • Design tasks that require students to use English to accomplish specific goals, fostering language use in context. • Recognize and accommodate diverse learning styles and paces within the classroom. • Incorporate authentic materials like newspaper articles, blogs, or videos to expose students to real-life language use. • Implement ongoing formative assessments, such as quizzes, peer evaluations, and class discussions, to gauge student progress. • Provide constructive feedback on both spoken and written language, and encourage students to reflect on their learning experiences • Adapt lesson plans based on the evolving needs and interests of the students, allowing for flexibility in the teaching approach.

Student Workload (SWL)

الحمل الدراسي للطالب

SSWL (Structured SWL (h/sem)) الحمل الدراسي المنتظم للطالب خلال الفصل	32	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	2.13
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	18	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.2
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation

تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

	Material Covered
Week 1	Introduction to the course, syllabus, and expectations.
Week 2	Unit One of the textbook “Hello”: Basic greetings and practice activities: counting, and identifying objects in the classroom.
Week 3	Unit One of the textbook “Hello”: Icebreaker activities for student interaction, Simple role-playing for greetings and numbers.
Week 4	Unit Two of the textbook “Your World”: Vocabulary related to daily routines and countries’ names. Present simple tense for daily activities. Describing things using adjectives.
Week 5	Unit Three of the textbook “All About You”: Vocabulary related to professions, questions and negatives, and Social expressions.
Week 6	Unit Four of the textbook “Family and Friends”: Possessive Adjectives, Possessive (‘s), and (Adjective+noun) <ul style="list-style-type: none"> • Reading and Speaking: Vocabulary related to food and meals, Reading and understanding a simple restaurant menu. • Role-playing restaurant scenarios.

Week 7	Mid-term Exam I
Week 8	Unit Five of the textbook “The Way I Live”: Uses of definite and indefinite articles, Adjectives + nouns. <ul style="list-style-type: none"> - Vocabulary related to food and meals. - Languages and Nationalities
Week 9	Unit Six of the textbook “Every day”: Adverbs of frequency used with present simple tense. <ul style="list-style-type: none"> - Vocabulary related to travel and transportation. - Asking for and giving directions. - Role-playing travel scenarios.
Week 10	Unit Seven of the textbook “My favourites”: Reading and writing a postcard and an e-mail to a friend. Adjectives and their opposites.
Week 11	Unit Eight of the textbook “Where I live”: Vocabulary related to travel and transportation and asking for and giving directions. Introduction to prepositions (prepositions of place)
Week 12	-Writing and talking about personal interests. -Group activity: planning a class event based on shared interests.
Week 13	Vocabulary related to health and daily activities. Expressions for discussing health. Role-playing doctor-patient scenarios.
Week 14	Mid-term Exam II
Week 15	Preparatory Week
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	“New Headway Plus - Beginner”, John and Liz Soars, 2014.	Yes
Recommended Texts	Short story “The Sound of Thunder” by Ray Bradbury	
Websites	www.youtube.com (short videos+ chosen movies)	

APPENDIX:

GRADING SCHEME

مخطط الدرجات

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

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Computer		Module Delivery
Module Type	Core		<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	URCOM		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	1	Semester of Delivery	
Administering Department	CS	College	College of Sciences
Module Leader	Dr. Safaa H. Shwail	e-mail	safaa.husseinshwail@nahrainunive.edu.iq
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	01/06/2023	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>Module Aims أهداف المادة الدراسية</p>	<ol style="list-style-type: none">1. The History of the Personal Computer2. Understanding Digital Components3. Processing, Storage, and Connectivity4. Accessing, Using, and Managing Software5. Application Software6. Understanding System Software7. Understanding Programming8. How Networks Function9. Threats to Your Digital Assets
<p>Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none">1. You will be able to describe the history of personal computer hardware and software development.2. You will be able to describe the devices that make up a computer system.3. You will be able to describe how computers process and store data and how devices connect to a computer system4. You will be able to explain the ways to access and use software and describe how to best manage your software.5. Describe the different types of application software used for productivity and multimedia.6. You will be able to explain the types and functions of operating systems and explain the steps in the boot process7. You will be able to describe the life cycle of a software project and identify the stages in the program development life cycle8. You will be able to explain the basics of networking, including the components needed to create a network, and describe the different ways a network can connect to the Internet.9. You will be able to describe hackers, viruses, and other online annoyances and the threats they pose to your digital security
<p>Indicative Contents المحتويات الإرشادية</p>	<p>Understanding Digital Components, Understanding Your Computer, Input Devices, Output Devices.</p> <p>Processing, Storage, and Connectivity, Processing and Memory on the Motherboard, Storing Data and Information, Connecting Peripherals to the Computer, Power Management and Ergonomics.</p> <p>Accessing, Using, and Managing Software, Software Basics, Managing Your Software,</p> <p>Application Software, Productivity and Business Software, Multimedia and Educational Software.</p>

	<p>Understanding System Software, Operating System Fundamentals, What the Operating System Does, Starting Your Computer.</p> <p>Understanding Programming, Life Cycle of an Information System, Life Cycle of a Program.</p> <p>How Networks Function, Networking Fundamentals, Network Architectures, Network Components, Connecting to the Internet.</p> <p>Threats to Your Digital Assets, Identity Theft and Hackers, Computer Viruses, Online Annoyances and Social Engineering.</p>
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Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	<p>The main strategy that will be adopted in delivering this module is by explaining lectures in an interactive way by letting the students to participate in the presenting through questions and answers while at the same time refining and expanding their critical thinking skills. This will be achieved through classes and labs.</p>
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Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation

تقييم المادة الدراسية

	Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Quizzes	4	10% (10)	2,5,8,12	All

Formative assessment	Assignments	2	5% (5)	5,10	All
	Projects / Lab.	1	15% (15)	Continuous	All
	Report	1	10% (10)	10	All
Summative assessment	Midterm Exam	2 hr	10% (10)	7,14	All
	Final Exam	3hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	The History of the Personal Computer
Week 2	Understanding Digital Components
Week 3	Understanding Digital Components (cont.)
Week 4	Processing, Storage, and Connectivity
Week 5	Accessing, Using, and Managing Software
Week 6	Application Software
Week 7	Application Software (cont.)
Week 8	Mid-term Exam 1
Week 9	Understanding System Software
Week 10	Understanding System Software (cont.)
Week 11	Understanding Programming
Week 12	Understanding Programming (cont.)
Week 13	How Networks Function
Week 14	Threats to Your Digital Assets
Week 15	Mid-term Exam 2
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Computer Hardware 1

Week 2	Lab 2: Computer Hardware 2
Week 3	Lab 3: Computer Assembly 1
Week 4	Lab 4: Computer Assembly 2
Week 5	Lab 5: Disk Operating System
Week 6	Lab 6: Dos Commands: Internal Commands
Week 7	Lab 7: Dos Commands: Internal Commands 2
Week 8	Mid-Term Exam 1
Week 9	Lab 8: Dos Commands: Internal Commands 3
Week 10	Lab 9: Dos Commands: Internal Commands 4
Week 11	Lab 10: Dos Commands: External Commands 1
Week 12	Lab 11: Dos Commands: External Commands 2
Week 13	Lab 12: Dos Commands: External Commands 3
Week 14	Lab 13: Dos Commands: External Commands 4
Week 15	Mid-Term Exam 2

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Technology in action complete, 16 th edition, 2020.	No
Recommended Texts	Computer System Architecture 3rd edition by M.Morris Mano 1992	No
Recommended Texts	Fundamentals of Logic Design, 6th edition 2010	No

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings

	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



Ministry of Higher Education and
Scientific Research - Iraq
Al-Nahrain University
College of Science
Computer Science Department



MODULE DESCRIPTION FORM نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	Programming Fundamentals I		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	COMP1101		
ECTS Credits	11		
SWL (hr/sem)	275		
Module Level	1	Semester of Delivery	
Administering Department	Computer Science	College	Science
Module Leader	Dr. Hasnaa Imad Abdulsalam	e-mail	hasnaimad@nahrainuniv.edu.iq
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	Ph.D.
Module Tutor	Haider Majeed Jaber	e-mail	haidermjaber@gmail.com
Peer Reviewer Name	Dr. Tiba Zaki Abdulhameed	e-mail	tiba.zaki@nahrainuniv.edu.iq
Scientific Committee Approval Date	01/06/2023	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>Module Aims أهداف المادة الدراسية</p>	<ol style="list-style-type: none">1. Think like a programmer.2. Algorithmic thinking: being able to formulate the problem into steps using specific instruction.3. Learn Java syntax to translate the algorithm steps to java program.4. learn how to write, compile, test, fix errors, and run programs in java5. Seeking new information.
<p>Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p>	<ul style="list-style-type: none">● Identify the main structure of java programs● Write simple programs:This includes being able to write programs that solve specific problems.● Debug programs:This includes being able to find and fix errors in programs.● Test programs:This includes being able to write tests to ensure that programs work correctly.● Document programs:This includes being able to write clear and concise documentation for programs.● state the steps needed to solve a simple● Translate the algorithm steps to a java code.Problem-solving skills <p>Programming requires students to be able to break down complex problems into smaller, more manageable steps.</p> <ul style="list-style-type: none">● Critical thinking skills <p>Programming requires students to be able to think logically and to come up with creative solutions to problems.</p> <ul style="list-style-type: none">● Creativity <p>Programming can be a creative outlet for students to express themselves and to solve problems in new and innovative ways.</p> <ul style="list-style-type: none">● Communication skills <p>Programmers need to be able to communicate their ideas clearly and concisely to both technical and non-technical audiences.</p> <ul style="list-style-type: none">● Teamwork skills <p>Programming is often a team sport, and students need to be able to work effectively with others to achieve common goals.</p>

<p>Indicative Contents المحتويات الإرشادية</p>	<p>Indicative content includes the following.</p> <ul style="list-style-type: none"> ● <u>Introduction to programming languages</u> ● <u>Data types and variables</u> ● <u>Operators and expressions</u> ● <u>Control flow statement</u> ● <u>Methods (Functions)</u>
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<p>Learning and Teaching Strategies استراتيجيات التعلم والتعليم</p>	
<p>Strategies</p>	<p>The main way this module will be taught is by encouraging students to participate in exercises, while also improving and expanding their critical thinking skills. This will be accomplished through lectures, interactive tutorials, and simple experiments that are interesting to the students.</p> <p>Here is a more detailed explanation of each point:</p> <ul style="list-style-type: none"> ● Encouraging student participation in exercises: This will help students learn by doing and apply the concepts they are learning in a practical setting. ● Improving and expanding critical thinking skills: This will help students learn to think more deeply about the material and to come up with their own solutions to problems. ● Lectures: Lectures will provide students with the foundation they need to understand the material. ● Interactive tutorials: Interactive tutorials and discussions will allow students to practice the concepts they are learning in a safe environment. ● Simple experiments: Simple experiments will allow students to see the concepts they are learning in action.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) خلال الفصل للطالب الحمل الدراسي المنتظم	153	Structured SWL (h/w) للتالي أسبوعيا الحمل الدراسي المنتظم	10.2
Unstructured SWL (h/sem) خلال الفصل الحمل الدراسي غير المنتظم للتالي	122	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للتالي أسبوعيا	8.1
Total SWL (h/sem) الحمل الدراسي الكلي للتالي خلال الفصل	275		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)		All
	Assignments	2	10% (10)		All
	Projects / Lab.	1	20% (20)	Continuous	All
	Report	0			
Summative assessment	Midterm Exam	2 hr	10% (10)		All
	Final Exam	3hr	50% (50)		All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Ch1: What is a computer, what is Programming, the hello world program, compiling java program. Displaying two messages
Week 2	Ch1: Formatting source code, using escape sequence, what is computer science?, Debugging programs,
Week 3	Ch2: Declaring Variables, Assigning Variables, Memory Diagrams, Printing Variables, and Arithmetic Operators

Week 4	Ch2: Floating-Point Numbers , Rounding Errors , Operators for Strings , Compiler Error Messages , and Other Types of Errors HW 2.12 Exercises .
Week 5	Ch3:The System Class, The Scanner Class , Language Elements, Literals and Constants, Formatting Output, Reading Error Messages
Week 6	Ch3:Type Cast Operators, Remainder Operator, Putting It All Together, The Scanner Bug HW 3.12 Exercises
Week 7	Mid Term Exam #1
Week 8	Defining New Methods, Flow of Execution, Parameters and Arguments, Multiple Parameters , Stack Diagrams, Math Methods, and Composition
Week 9	Ch4: Return Values , Incremental Development HW 4.11 Exercises
Week 10	Ch5: Conditionals and Logic Relational Operators , The if-else Statement , Chaining and Nesting , The switch Statement , Logical Operators , and De Morgan’s Laws
Week 11	Ch5:Boolean Variables, Boolean Methods , Validating Input, Example Program HW 5.12 Exercises
Week 12	Mid Exam #2
Week 13	Ch6 Loops and Strings The while Statement, Increment and Decrement , and The for Statement .
Week 14	Ch6: Nested Loops
Week 15	review

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Introducing IDE Netbeans through “Hello world program like” Draw christmas tree using stars (print and println) https://www.edureka.co/blog/netbeans-tutorial/amp/
Week 2	Lab 2: compute simple calculations using constants (define length and width and calculate area)

Week 3	Lab 3: (Learning Reinforcement). compute simple calculations using constants (convert temperature from celsius to fahrenheit)
Week 4	Lab 4: Write Java code that computes the total cost and the number of tiles needed for a room of size 4.5x5 m, knowing that each tile is 60 x 60 cm, and the price of a meter square is 12\$.
Week 5	Lab 5: try codes with errors. Read, understand, and fix the errors. print numbers in a formatted style (Write an application Powers.java that prints, in a table like style, the square root, square and cube of the numbers between 2 and 9)
Week 6	Lab 6: practice div , mod (convert 24 hour system to 12 (am,pm) system)
Week 7	Lab 7: Mid-term Exam
Week 8	Lab 8: method practice (void methods)Flow of Execution, Parameters and Arguments, Multiple Parameters .Method that calls another method.
Week 9	Lab 9: methods (calculator) Write a program to calculate the area and perimeter of a triangle. Your program should include areaCalculation and perimeterCalculation methods. The areaCalculation method has 2 parameters, which are the height and the base of the triangle and must return the area of a triangle. The perimeterCalculation method has 3 parameters
Week 10	Lab 10: The if-else Statement , Chaining and Nesting , The switch Statement.(salesman commission assignment)
Week 11	Lab 11: using boolean flag. validating input.
Week 12	Lab 12: Mid-term Exam
Week 13	Lab 13: while loop, for, (printing multiplication table of n)(validating input with loop)
Week 14	Lab 14: nested loop (math series)
Week 15	Lab 15: review

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Think Java: How to Think Like a Computer Scientist, 2 nd Edition, Version 7.1.0	free online

	Allen B. Downey and Chris Mayfield	
Recommended Texts	Introduction to Java Programming, Comprehensive Version, 10th Edition, by Y. Daniel Liang Head First Programming Head First Java	free online
Websites	Book's Website: https://books.trinket.io/thinkjava2/index.html https://codingbat.com/java https://www.codejava.net/java-se/file-io/how-to-read-and-write-text-file-in-java	

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
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	F – Fail	راسب	(0-44)	Considerable amount of work required
<p>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.</p>				



Ministry of Higher Education and
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College of Science
Computer Science Department



MODULE DESCRIPTION FORM
نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Calculus (I)		Module Delivery
Module Type	Support		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CREQ1201		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	2	Semester of Delivery	
Administering Department	Mathematics and computer Applications	College	Science
Module Leader	Dunya mohee	e-mail	Dunya.mohee@nahrainunive.edu.iq
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	Master degree
Module Tutor	م م زياد محمد عبد	e-mail	
Peer Reviewer Name	Dr Ommer Ismael	E-mail	omar.ismael@nahrainuniv.edu.iq
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	The aim of this course is to introduce the concept of limits and derivative, study various techniques of derivatives, then using these concepts in understanding mixed problems of derivatives applications
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After completing the course, students have the ability <ol style="list-style-type: none">1. To determine some special functions.2. To determine the limits of the function in general.3. To determine the derivatives of functions in general4. To compute derivatives involving transcendental functions.5. To compute inverse trigonometric derivatives.6. To demonstrate ability to think critically by recognizing the applications of derivatives7. To demonstrate an intuitive and computational understanding for derivational applications by solving a variety of problems from physics, engineering and mathematics.

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	The module will be presented to the students through a specified series of lectures, supported by problem solving practice carried out in interactive tutorials. These tutorials will be supported by practice and directed study outside the classroom. Formative assessment takes place throughout the
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	module during tutorials and feedback is given during these tutorials.
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Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	2.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	67	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	1	10% (10)	6, 10	LO #1, 2, and 6
	Assignments	1	10% (10)	7, 12	LO # 3 and 7
	Projects / Lab.	1	10% (10)	continuous	
	Report	1	10% (10)	14	LO # 5, 7 and 8
Summative assessment	Midterm Exam	1	10% (10)	5,11	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Limits(basic definition+some examples)
Week 2	Some special types of limite
Week 3	Limits of trigonometric limits
Week 4	Continuous functions and their limits
Week 5	Derivatives (basic theorems)
Week 6	General examples for derivatives
Week 7	Mid-term exam
Week 8	Trigonometric functions and their limits
Week 9	Some applications of derivatives
Week 10	Special functions and their derivatves
Week 11	Mixed problems of derivatives
Week 12	Inverse trigonometric functions
Week 13	Derivatives Inverse of trigonometric functions
Week 14	Mixed Examples
Week 15	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts		
Recommended Texts		
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors

	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Computer Organization		Module Delivery
Module Type	Core		<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	COMP1203		
ECTS Credits	8		
SWL (hr/sem)	200		
Module Level	1	Semester of Delivery	
Administering Department	CS	College	College of Sciences
Module Leader	Dr. Safaa H. Shwail	e-mail	safaa.husseinshwail@nahrainunive.edu.iq
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	01/06/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

<p>Module Aims أهداف المادة الدراسية</p>	<ol style="list-style-type: none"> 1. Learning the Processor and its architecture 2. Exploring the Intel 80x86 Base Architecture I 3. Knowing the Instruction Set Architecture 4. Learning the Addressing Modes and the number of addresses 5. Recognizing the Characteristics of Memory Systems 6. Exploring the Memory Hierarchy and the difference between memory types.
<p>Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"> 1. The main components of the Processor and its architecture 2. Processor level architecture 3. CPU level architecture 4. Intel 80x86 Base Architecture: Execution Unit 5. Intel 80x86 Base Architecture: Bus Interface Unit 6. Memory versus I/O Ports 7. Instruction Set Architecture 8. Addressing Modes and number of addresses 9. Memory Locations and Operations 10. Memory Hierarchy 11. Characteristics of Memory Systems 12. CACHE MEMORY PRINCIPLES 13. SEMICONDUCTOR MAIN MEMORY 14. Types of RAM 15. Types of ROM
<p>Indicative Contents المحتويات الإرشادية</p>	<p>Learning the Processor and its architecture: Bus, Registers, Flags, Buffers, Stack, and I/O ports. Exploring processor and CPU level architecture.</p> <p>Exploring Execution unit of the Intel 80x86 Base Architecture: the general-purpose registers, address registers, flags, and Internal buses.</p> <p>Exploring Bus Interface Unit of the Intel 80x86 Base Architecture: Segment Addressing, Instruction Queue, and Memory versus I/O Ports.</p> <p>Knowing the Instruction Set Architecture: Data Movement Instructions, Arithmetic and Logical Instructions, Sequencing Instructions, and Input/Output Instructions.</p> <p>Learning the Addressing Modes and the number of addresses: Immediate Mode, Direct (Absolute) Mode, Indirect Mode, Indexed Mode, Relative Mode, Autoincrement Mode, and Autodecrement Mode.</p> <p>Recognizing the Characteristics of Memory Systems and Exploring the Memory Hierarchy and the difference between memory types: method of accessing units of</p>

	data, CACHE MEMORY PRINCIPLES, SEMICONDUCTOR MAIN MEMORY, types of RAM, and types of ROMs.
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is by explaining lectures in an interactive way by letting the students to participate in the presenting through questions and answers while at the same time refining and expanding their critical thinking skills. This will be achieved through classes and labs.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

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

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Processor and its architecture
Week 2	Processor and its architecture (cont.)
Week 3	Intel 80x86 Base Architecture I
Week 4	Intel 80x86 Base Architecture I (cont.)
Week 5	Intel 80x86 Base Architecture II
Week 6	Intel 80x86 Base Architecture II (cont.)
Week 7	Intel 80x86 Base Architecture II (cont.)
Week 8	Mid-term Exam 1
Week 9	Instruction Set Architecture
Week 10	Instruction Set Architecture (cont.)
Week 11	Addressing Modes
Week 12	Addressing Modes (cont.)
Week 13	Memory Hierarchy
Week 14	Memory Hierarchy (cont.)
Week 15	Mid-term Exam 2
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Introduction
Week 2	Lab 2: Movement Instructions
Week 3	Lab 3: Movement Instructions
Week 4	Lab 4: Movement Instructions
Week 5	Lab 5: Arithmetic Instructions
Week 6	Lab 6: Arithmetic Instructions
Week 7	Lab 7: Arithmetic Instructions
Week 8	Mid-Term Exam 1

Week 9	Lab 8: Logic Instructions
Week 10	Lab 9: Logic Instructions
Week 11	Lab 10: Logic Instructions
Week 12	Lab 11: Sequencing and Jump Instructions
Week 13	Lab 12: Sequencing and Jump Instructions
Week 14	Lab 13: Sequencing and Jump Instructions
Week 15	Mid-Term Exam 2

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Computer Organization and Architecture Designing for Performance, 8th Edition, by William Stallings, 2010	No
Recommended Texts	Computer Systems; A Programmer's Perspective - 2nd Edition, 2011	No
Recommended Texts	Fundamentals of Logic Design, 6th edition 2010	No

Grading Scheme

مخطط الدرجات

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

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



Ministry of Higher Education and
Scientific Research - Iraq
Al-Nahrain University
College of Science
Computer Science Department



MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	DIGITAL LOGIC	Module Delivery	
Module Type	CORE	<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Code	COMP1204		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	1		
Administering Department	Computer Science	College	Science
Module Leader	Mohammed Sahib Mahdi	e-mail	Mohammed.sahibmahdi@nahrainuniv.edu.iq
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	None	e-mail	None
Peer Reviewer Name	Prof. Dr. Abdulkareem Merhej	e-mail	abdulkareemmerhij@nahrainuniv.edu.iq
Review Committee Approval	15/5/2023	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>Module Aims أهداف المادة الدراسية</p>	<ol style="list-style-type: none">1. The student learns to build logical circuits.2. The student learns to deal with current, voltage and digital signals3. The student learns the components and functioning of digital storage units4. The student learns the work of registration in computers5. The student learns how to transmit a digital signal between computer components6. The student learns the components of digital memory and data preservation
<p>Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none">1. Define the problem (input and output), write its functions.2. Minimize function using any type of minimizing methods (Boolean algebra, Karnaugh map or Tabulation method).3. Implement functions using digital circuit (combination or sequential).4. Have knowledge in analyzing and designing procedures of combinational and sequential circuits.5. Have knowledge in analyzing and designing circuits with flip-flops, counters and registers.6. Work effectively with groups.
<p>Indicative Contents المحتويات الإرشادية</p>	<p>Indicative content includes the following: This module introduces the student to understand the digital circuits. [25 hrs] Digital circuits design in computers. [25 hrs] Other topics include: logic circuits, flip flop, registers, RAM. [25 hrs] Some common application circuits of digital RAM types are demonstrated. [25 hrs]</p>

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	The length of the semester is 16 weeks, including the exam, and there will be approximately 102 hours dedicated to teaching the student the theoretical and practical foundations of the subject of the course, including the theoretical subject, which will take a period of 45 lecture hours (three hours per week) and a practical subject of 30 hours during the course (two hours per week). Two hours are devoted to the mid-term exam, three hours for short exams that extend from the middle to the end of the course, then 20 hours for seminars, homework and the like.
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Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	4.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	4.13
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation

تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

	Material Covered
Week 1	Introduction to Digital Logic Design.
Week 2	Logic Gates and Boolean Algebra: Basic Definition, Boolean Functions.

Week 3	Standard Forms: Minterm and Maxterm, Simplification and Boolean Functions.
Week 4	Logic Operations: NAND,NOR, and Exclusive OR, Integrated Circuits.
Week 5	Gate Level Minimization: The Map Method, Two, Three, and Four variable Map.
Week 6	Product of Sums Simplification, Don't Care Conditions, NAND and NOR Implementation.
Week 7	The Tabulation Method, Simplification of Boolean Functions Using Tabulation Method.
Week 8	Analysis and Synthesis of Combinational Circuits: Combinational Circuits, Analysis and Design Procedure.
Week 9	Binary Adders and Subtractor, Decoders and Multiplexers.
Week 10	Analysis and Synthesis of Sequential Circuits: Sequential Circuits, Latches, Flip-Flops: RS, JK, and D.
Week 11	Analysis of Clocked Sequential Circuits, Design Procedure.
Week 12	Registers and Counters: Registers, Shift Registers, Synchronous Counters, Ripple Counters.
Week 13	Sequential Circuits with programmable Logic Devices: Random Access Memory, Memory Decoding.
Week 14	Read Only Memory, Programmable Logic Array.
Week 15	Preparatory Week
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Digital Logic Signals.
Week 2	Lab 2: Logic Gates.
Week 3	Lab 3: Logic Operations.
Week 4	Lab 4: Binary Adders and Subtractor.
Week 5	Lab 5: Binary Decoders and Multiplexers.
Week 6	Lab 6: Flip Flop and RS Circuits.
Week 7	Lab 7: Clocked Sequential Circuits.
Week 8	Lab 8: Registers and Counters: Registers.
Week 9	Lab 9: Registers and Counters: Shift Registers, Synchronous Counters.
Week 10	Lab 10: Registers and Counters: Ripple Counters.
Week 11	Lab 11: Random Access Memory,
Week 12	Lab 12: Memory Decoding.

Week 13	Lab 13: Sequential Circuits with programmable Logic Devices
Week 14	Lab 14: Read Only Memory
Week 15	Lab 15: Programmable Logic Array.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Morris Mano, Charles R. Kime, "Logic and Computer Design Fundamentals", Pearson Prentice Hall, 2004.	Yes
Recommended Texts	John F. Wakerly "Digital Design: Principles and Practices Package" 4 th edition, Prentice-Hall, 2007.	Yes
Websites	https://sc.nahrainuniv.edu.iq/computers/comp_102.pdf	

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
<p>NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.</p>				



ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Calculus (II)		Module Delivery
Module Type	B		<ul style="list-style-type: none">• <input 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	CREQ		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level		Semester of Delivery	
Administering Department	Type Dept. Code	College	Type College Code
Module Leader	Name	e-mail	E-mail
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	me	e-mail	E-mail
Scientific Committee Approval Date	01/06/2023	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	The aim of this course is to introduce the concept of integration, study various techniques of integration, test improper integrals for convergence and illustrate some applications of integration. Student will gain proficiency to use integration to solve real world problems such as area and volumes problems.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After completing the course, students have the ability <ol style="list-style-type: none">1. To determine proper integral of one variable functions.2. To determine integral involving the fundamental theorem of Calculus and method of substitution.3. To determine the solution of problems involving the integral of one variable function.4. To compute integral involving transcendental functions.5. To compute integral with advanced integration techniques.6. To demonstrate ability to think critically by recognizing patterns and determining and using appropriate techniques for solving a variety of integration problems.7. To solve indeterminate forms and improper integral problems.8. To solve the parametric representation of curves in the plane, calculate the length of a plane curve and solving area and volume application problems.9. To sketch the graph of a polar equation and the area problems in the polar coordinate system.10. To demonstrate an intuitive and computational understanding for integral applications by solving a variety of problems from physics, engineering and mathematics.
Indicative Contents المحتويات الإرشادية	<ol style="list-style-type: none">1. Proper integral, Fundamental Theorem of Calculus, basic rules of integration.2. Methods of integrations, method of substitution, partial integration method, trigonometry integral and integral of rational function with partial fraction.3. Improper integrals, test for convergence and divergence of improper integrals.4. Application of Definite Integrals, Mean value theorem of integration, Area, solid revolution volume and Arc length.5. polar coordinates, Moments and center of mass and Average value of functions.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The module will be presented to the students through a specified series of lectures, supported by problem solving practice carried out in interactive tutorials. These tutorials will be supported by practice and directed study outside the classroom. Formative assessment takes place throughout the module during tutorials and feedback is given during these tutorials.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	47	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	53	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.5333
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	6, 10	LO #1, 2, and 6
	Assignments	2	10% (10)	7, 12	LO # 3 and 7
	Projects / Lab.	1	10% (10)	continuous	
	Report	1	10% (10)	14	LO # 5, 7 and 8
Summative assessment	Midterm Exam	2	10% (10)	5,11	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Indefinite integrals, Definite integrals, The fundamental theorems of integrals, Basic Integration Formulas.
Week 2	Integration by substitution
Week 3	Integration of certain powers of trigonometric and hyperbolic functions
Week 4	Integrals involving trigonometric substitutions, Integrals involving hyperbolic substitution .
Week 5	Mid-Term Exam + Integrals involving quadratic Function
Week 6	Integration by parts
Week 7	Integration of Rational Functions
Week 8	Integration of Irrational Functions, Integration of Rational Functions of Trigonometric
Week 9	Improper integrals: Definition of improper integral and examples
Week 10	Application of Definite Integrals: Area under the curve
Week 11	Mid-Term Exam + Area between two curves
Week 12	Volume of solid of revolution
Week 13	Arc length, Area of surface of revolution
Week 14	Area in polar coordinates
Week 15	Average value of functions, Moments and center of mass
Week 16	Preparatory week before the final Exam

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

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Calculus and Analytic Geometry by Thomas	Yes
Recommended Texts	Calculus with application brief version	No
Websites	www.mathhandbook.com	

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
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Ministry of Higher Education and
Scientific Research - Iraq
Al-Nahrain University
College of Science
Computer Science Department



MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Programming Language		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	COMP1201		
ECTS Credits	10		
SWL (hr/sem)	250		
Module Level	1	Semester of Delivery	
Administering Department	Computer science	College	Science
Module Leader	Dr. Hasnaa Imad Abdulsalam	e-mail	hasnaimad@nahrainuniv.edu.iq
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	Ph.D.
Module Tutor	Haider Majeed Jaber	e-mail	haidermjaber@gmail.com
Peer Reviewer Name	Dr. Tiba Zaki Abdulhameed	e-mail	tiba.zaki@nahrainuniv.edu.iq
Scientific Committee Approval Date	01/06/2023	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>Module Aims أهداف المادة الدراسية</p>	<ol style="list-style-type: none">1) Problem solving skills<ol style="list-style-type: none">a) Learning how to link and organize simple ideasb) how to break down problems into logical pieces.2) Being able to compare between various solution of the same problem3) building simple applications.
<p>Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p>	<p>The learning outcomes of a class on arrays, recursive methods, and CSV file reading can vary depending on the institution and the instructor, but some common outcomes include:</p> <ul style="list-style-type: none">● Translate Algorithms that manipulate structured data to java code● Identify an array,An array is a data structure that stores a collection of data elements of the same type.● Write code to create and manipulate arrays compose previous programming skills to solve more complex problems <p>This includes being able to create arrays of different sizes, add and remove elements from arrays, and sort arrays.</p> <ul style="list-style-type: none">● Understand the concept of a recursive method <p>A recursive method is a method that calls itself.</p> <ul style="list-style-type: none">● Write code to implement recursive methods <p>This includes being able to write recursive methods to solve problems such as finding the factorial of a number or the Fibonacci sequence.</p> <ul style="list-style-type: none">● Understand the concept of files, especially a CSV file <p>A CSV file is a file that stores data in a tabular format.</p> <ul style="list-style-type: none">● Write code to read and write CSV files
<p>Indicative Contents المحتويات الإرشادية</p>	<p>The indicative content for a class on arrays, recursive methods, and CSV file reading might include the following topics:</p> <ul style="list-style-type: none">● Arrays (1D, and 2D)<ul style="list-style-type: none">○ What is an array?○ How to declare an array

	<ul style="list-style-type: none"> ○ How to access elements of an array ○ How to add and remove elements from an array ○ How to sort an array ○ How to search array ● Recursive methods <ul style="list-style-type: none"> ○ What is a recursive method? ○ How to write a recursive method ○ How to use a recursive method to solve problems ● CSV files <ul style="list-style-type: none"> ○ What is a CSV file? ○ How to read data from a CSV file ○ How to write data to a CSV file
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	<p>The main way this module will be taught is by encouraging students to participate in exercises, while also improving and expanding their critical thinking skills. This will be accomplished through lectures, interactive tutorials, and simple experiments that are interesting to the students.</p> <p>Here is a more detailed explanation of each point:</p> <ul style="list-style-type: none"> ● Encouraging student participation in exercises: This will help students learn by doing and apply the concepts they are learning in a practical setting. ● Improving and expanding critical thinking skills: This will help students learn to think more deeply about the material and to come up with their own solutions to problems. ● Lectures: Lectures will provide students with the foundation they need to understand the material. ● Interactive tutorials: Interactive tutorials and discussions will allow students to practice the concepts they are learning in a safe environment. ● Simple experiments: Simple experiments will allow students to see the concepts they are learning in action.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	153	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	10.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	250		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)		All
	Assignments	2	10% (10)		All
	Projects / Lab.	1	20% (20)	Continuous	All
	Report	0			
Summative assessment	Midterm Exam	2 hr	10% (10)		All
	Final Exam	3hr	50% (50)		All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Ch6: Review loops (nested loops)
Week 2	Ch6: Characters , Which Loop to Use, String Iteration , The indexOf Method, Substrings, String Comparison , String Formatting HW 6.13 Exercises
Week 3	Ch7 Arrays and References Creating Arrays, Accessing Elements , Displaying Arrays
Week 4	Copying Arrays, Traversing Arrays
Week 5	Random Numbers , Building a Histogram.
Week 6	The Enhanced for Loop m, Counting Characters HW 7.11 Exercises
Week 7	Mid-term Exam
Week 8	2D arrays
Week 9	parallel arrays
Week 10	students and subjects table.(how to implement it)
Week 11	manipulation of 2D array
Week 12	Mid-term Exam
Week 13	8 Recursive Methods Recursive Void Methods, Recursive Stack Diagrams , Value-Returning Methods ,The Leap of Faith, Counting Up Recursively HW 8.10 Exercises
Week 14	Introducing files, CSV, (read and write)
Week 15	General review

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: nested loops
Week 2	Lab 2: string and char manipulation.
Week 3	Lab 3: methods to Create Arrays, Accessing Elements , Displaying Arrays, print one Dimension array, sum, average.
Week 4	Lab 4: methods to Copy Arrays, Traverse Arrays
Week 5	Lab 5: Random Numbers , Building a Histogram.
Week 6	Lab 6: using array to display international telephone number
Week 7	Lab 7: Mid-term Exam
Week 8	Lab 8: solve mid term questions
Week 9	Lab 9: Histogram of customers distribution of ice-cream company
Week 10	(two dimensional array applications) TickTackToy
Week 11	Matrix operations
Week 12	Mid-term Exam
Week 13	Lab 13: recursive method (factorial, fibonacci, delete char from string, delete two consecutive chars using loops and then using recursive method) Binary Number System . Recursive Binary Method, CodingBat Problems .
Week 14	Lab 14: read csv file
Week 15	Lab 15: review

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Think Java: How to Think Like a Computer Scientist, 2 nd Edition, Version 7.1.0 Allen B. Downey and Chris Mayfield	free online
Recommended Texts	Introduction to Java Programming, Comprehensive Version, 10th Edition, by Y. Daniel Liang Head First Programming Head First Java	
Websites	Book's Website: https://books.trinket.io/thinkjava2/index.html https://codingbat.com/java	

Grading Scheme

مخطط الدرجات

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

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



Ministry of Higher Education
and
Scientific Research - Iraq
Al-Nahrain University College
of Science
Department of Computer



MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information			
الدراسية المادة معلومات			
عنوان النموذج	حقوق الانسان و الديمقراطية	تقديم النموذج	
نوع النموذج	محاضرة نظرية	محاضرة نظرية درس تعليمي ندوة	
رقم النموذج			
ECTS Credits			
SWL (hr/sem)			
Module Level		فصل التسليم	الفصل الاول
Administering Department		الكلية	
مشرف النموذج	د. احمد نعمه جوده	البريد الالكتروني	ahmedjuda68@gmail.com
Module Leader's Acad. Title		مؤهلات مشرف النموذج	مساعد دكتور جامعي
Module Tutor	-	e-mail	-
Peer Reviewer Name		e-mail	

Review Committee Approval		Version Number	
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العلاقة Relation With Other Modules مع المواد الدراسية الأخرى			
Prerequisite module		Semester	
Co-requisites module		Semester	

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

أهداف المادة الدراسية	الهدف من محاضرات حقوق الإنسان والديمقراطية هو تبسيط مبادئ حقوق الإنسان وضمان تطبيق ضوابط الديمقراطية بالتوزيع المتساوي والسليم بين الناس في المجتمع .
مخرجات التعلم للمادة الدراسية	<p>أ- الأهداف المعرفية :</p> <p>1-تعريف الطالب بأصول حقوق الإنسان .</p> <p>2-تعريف الطالب بإيجاز ماهية حقوق الإنسان و حرياته و ماهية الديمقراطية و انواعها</p> <p>3- منح الطالب امكانية المعرفة الجزئية لحقوق الانسان و الحريات الاساسية في ظل الواقع الموجود و انواع النظم السياسية و الدول .</p> <p>4-التعريف بالنمطية العالية و الاداء التاريخي العراقي في حكومات العراق في العصر القديم و الحديث .</p> <p>ب- الأهداف المهاراتية الخاصة بالمقرر :</p> <p>ب1- كيفية تناول المعاهدات الدولية و الإقليمية و التشريعات الداخلية لها .</p> <p>ب2 - استنباط المعارف المتعلقة بحقوق الإنسان و كيفية انعكاسها و دورها الحضاري الحقيقي في حياة الشعوب .</p> <p>ب3 -معرفة آلية تعامل الحكومات و الايديولوجيات المختلفة مع حقوق الإنسان و الديمقراطية من الناحية الفعلية في دول العالم .</p>

Indicative Contents المحتويات الإرشادية	
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم

الاستراتيجية	<p>يتم ذلك من خلال ملزمة تم اعدادها من قبلي بالاستعانة بمصادر خارجية من كتب و صحف و شبكة المعلومات عبر المحاضرات الحضورية و اسناد ذلك بوسائل ايضاح بصيغة وورد او بي دي اف و قياس مدى معرفة الطلاب .</p>
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Student Workload (SWL) الحمل الدراسي للطلاب			
Structured SWL (h/sem) الفصل خلال للطلاب المنتظم الدراسي الحمل		Structured SWL (h/w) أسبوعي للطلاب المنتظم الدراسي الحمل	
Unstructured SWL (h/sem) خلال للطلاب المنتظم غير الدراسي الحمل الفصل		Unstructured SWL (h/w) أسبوعي للطلاب المنتظم غير الدراسي الحمل	
Total SWL (h/sem) الفصل خلال للطلاب الكلي الدراسي الحمل			

Module Evaluation الدراسي ة المادة تقييم					
		المرات / الوقت	الدرجات	الأسبوع المستحق	مخرجات التعليم المتعلقة
التقييم التكويني	الاختبارات	مرتين	10درجة		
	تعيينات	مرة واحدة	20درجة		
	الندوات				
	التقارير	مرة واحدة	10 درجة		
التقييم التلخيصي	امتحان نصف الفصل	مرة واحدة	10درجة		

الامتحان النهائي	مرة واحدة	50 درجة		
التقييم الإجمالي		100 درجة		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
المواد المغطاة	
مفهوم حقوق الانسان.	الاسبوع 1
فئات و مميزات حقوق الانسان.	الاسبوع 2
خصائص و مميزات حقوق الانسان في الاسلام .	الاسبوع 3
الفرق بين حقوق الانسان و الحريات العامة.	الاسبوع 4
الحرية مفهومها و انواعها .	الاسبوع 5
حقوق الانسان في الحضارات القديمة (حضارة وادي الرافدين) .	الاسبوع 6
حقوق الانسان في الحضارات القديمة (الصينية , الهندية , مصر الفرعونية و الاغريقية).	الاسبوع 7
حقوق الانسان في الاديان السماوية (المسيحية و الديانة الإسلامية) .	الاسبوع 8
حقوق الانسان في العصور الوسطى.	الاسبوع 9
حقوق الانسان في العصر الحديث و المنظمات الدولية المسؤولة عن تطبيقها .	الاسبوع 10
مفهوم الديمقراطية و خصانها.	الاسبوع 11
انواع الديمقراطية .	الاسبوع 12
صور انظمة الديمقراطية .	الاسبوع 13
ديمقراطية الحقوق السياسية .	الاسبوع 14
الاسبوع التحضيري (مراجعة المواد الدراسية لامتحان النهائي) .	الاسبوع 15
الامتحان النهائي	الاسبوع 16

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

Week 6	Lab 6:
Week 7	Lab 7:

Learning and Teaching Resources مصادر التعلم والتدريس		
	النص	متوفر في المكتبة؟
الكتب المطلوبة	1- الإعلان العالمي لحقوق الانسان (لجنة صياغة الإعلان العالمي لحقوق الانسان) . 2- حقوق الانسان (توماس باين) . 3- حقوق الانسان في الإسلام (علي عبد الواحد) .	
النصوص الموصى بها	(حقوق الانسان في الوطن العربي) حسين جميل .	
المواقع		

APPENDIX:

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

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	Probability and Statistics		Module Delivery
Module Type	Support		<ul style="list-style-type: none"><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	CREQ1202		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level		Semester of Delivery	
Administering Department	Department of Mathematics and Computer Applications	College	College of sciences
Module Leader	Lamyaa Khalid Hussein Wisam Rafid Dawood	e-mail	lamyaa.khalid@nahrainuniv.edu.iq wisam.rafid@nahrainuniv.edu.iq
Module Leader's Acad. Title	Assistant Lecture Assistant Lecture	Module Leader's Qualification	Ph.D. Master
Module Tutor	/	e-mail	/
Peer Reviewer Name	Lamyaa Khalid Hussein	e-mail	lamyaa.khalid@nahrainuniv.edu.iq
Scientific Committee Approval Date	01/06/2023	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	<p>This course is designed to provide an introduction to a range of statistical tools of relevance to scientists. Specific topics include an overview of statistical distributions, significance testing, uncertainty determination, linear regression and experimental design. The application of statistics for quality control and practical experience in the application of statistical features in the widely used Minitab and Microsoft Excel is particularly emphasized. The teaching methods used will be a combination of lectures, self-study, labs, tutorials, and any combination of discussion, case study, problem-solving exercises and computer-based learning.</p>
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> 1. Describe basic statistical terms which are of relevance to the area of analytical science. 2. Graphically display and numerically summarise data using appropriate tables, graphs and measures of centre, spread and position. 3. Explain and apply concepts of basic probability including, conditional probability, Bayes' theorem, independent events and counting formulae. 4. Make interferences about population parameters using sample statistics using confidence interval estimates and tests of statistical hypotheses. 5. Describe the application of statistics to sampling, quality control, analytical method validation and experimental design. 6. Use an appropriate method for analysing relationships between variables in a dataset
Indicative Contents المحتويات الإرشادية	<ol style="list-style-type: none"> 1. Describe basic statistical terms which are of relevance to the area of analytical science <ul style="list-style-type: none"> • Introduction to Statistical Terms • Populations and Samples • Statistical Description of Data 2. Graphically display and numerically summarise data using appropriate tables, graphs and measures of centre, spread and position. <ul style="list-style-type: none"> • Graphical Representation of data including frequency tables and charts 3. Explain and apply concepts of basic probability including, conditional probability, Bayes' theorem, independent events and counting formulae; <ul style="list-style-type: none"> • Introduction of Probability Theory

	<ul style="list-style-type: none"> • General Rule of Probability • Counting Rule • Bayes Theorem • The Normal Distribution • Applications of the standard Normal Distribution • Binomial Distribution • Poisson Distribution • Relationship Modelling • Pearson's Correlation • Simple Linear Regression • Chi Square Distribution • Chi Square test of goodness of fit • Introduction to Hypothesis Testing • Writing hypotheses for statistical tests <p>4. Make inferences about population parameters using sample statistics using confidence interval estimates and tests of statistical hypotheses</p> <ul style="list-style-type: none"> • Introduction to Hypothesis Testing • Writing hypotheses for statistical tests • One Sample, Independent Samples and Paired Samples t-tests • z-tests for proportion size <p>5. Use an appropriate method for analysing relationships between variables in a dataset</p> <ul style="list-style-type: none"> • Relationship Modelling • Pearson's Correlation Co-efficient • Significance of the correlation co-efficient • Simple Linear Regression • Chi Square test for association • Chi Square test of goodness of fit <p>During the Practical element of the course, students will use the Data Analysis ToolPak in Microsoft Excel and also Minitab to carry out the various types of analysis listed in the syllabus above.</p>
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	<p>The teaching methods used will be a combination of online-lectures, self-study, online practical workshops, and any combination of discussion, case study, problem-solving exercises and computer-based learning.</p> <p>The practical element of the course will be delivered separately to students in their various class groups (Biomedical Science/Medical Biotechnology, Forensic Science, Pharmaceutical Science) so that the examples used in the practical application of statistics can be tailored to their field of study.</p>

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	2.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	67	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.466
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, and 3
	Assignments	1	10% (10)	7, 12	LO # 4 and 6
	Seminar	1	10% (10)	continuous	
	Report	1	10% (10)	14	LO # 5 and 7
Summative assessment	Midterm Exam	2 hr	10% (10)	8	LO # 1-5
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	<ul style="list-style-type: none"> Introduction to Statistical Terms Populations and Samples
Week 2	<ul style="list-style-type: none"> Statistical Description of Data
Week 3	<ul style="list-style-type: none"> Graphical Representation of data including frequency tables and charts
Week 4	<ul style="list-style-type: none"> Measures of Central Tendency , Arithmetic Mean, Weighted Mean, The Harmonic Mean
Week 5	<ul style="list-style-type: none"> The Median, The Mode
Week 6	<ul style="list-style-type: none"> Measures of Dispersion , The Range, Variance and Standard Deviation
Week 7	<ul style="list-style-type: none"> Introduction of Probability Theory General Rule of Probability
Week 8	<ul style="list-style-type: none"> Counting Rule
Week 9	<ul style="list-style-type: none"> Bayes Theorem

Week 10	<ul style="list-style-type: none"> The Normal Distribution Applications of the standard Normal Distribution
Week 11	<ul style="list-style-type: none"> Binomial Distribution Poisson Distribution
Week 12	<ul style="list-style-type: none"> Relationship Modelling Pearson's Correlation
Week 13	<ul style="list-style-type: none"> Simple Linear Regression
Week 14	<ul style="list-style-type: none"> Introduction to Hypothesis Testing Writing hypotheses for statistical tests
Week 15	<ul style="list-style-type: none"> Chi Square Distribution Chi Square test of goodness of fit
Week 16	Preparatory week before the final Exam

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

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	<ul style="list-style-type: none"> Modern Mathematical Statistics with Applications, Jay L. Devore, Kenneth N. Berk, Springer, 2012. 	No
Recommended Texts	<ul style="list-style-type: none"> Mathematical Statistics with Applications", 7th edition, by Wackerly, Mendenhall & Scheaffer 	No
Websites	<ul style="list-style-type: none"> Introduction to statistics, by Ronald E. Walpole. Mathematical Statistics with Applications, Dennis D. Wackerly, William Mendenhall III, Richard L. Scheaffer, Thomson Brooks, 2008. 	

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>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.</p>				



Ministry of Higher Education and
Scientific Research - Iraq
Al-Nahrain University
College of Science
Computer Science Department



MODULE DESCRIPTION FORM
نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Calculus (II)		Module Delivery
Module Type	Support		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CREQ1201		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	2	Semester of Delivery	
Administering Department	Mathematics and computer Applications	College	Science
Module Leader	Dunya mohee	e-mail	Dunya.mohee@nahrainunive.edu.iq
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	Master degree
Module Tutor		e-mail	
Peer Reviewer Name	Dr Ommer Ismael	E-mail	omar.ismael@nahrainuniv.edu.iq
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	The aim of this course is to introduce the concept of integration, study various techniques of integration, test improper integrals for convergence and illustrate some applications of integration. Student will gain proficiency to use integration to solve real world problems such as area and volumes problems.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<p>After completing the course, students have the ability</p> <ol style="list-style-type: none">1. To determine proper integral of one variable functions.2. To determine integral involving the fundamental theorem of Calculus and method of substitution.3. To determine the solution of problems involving the integral of one variable function.4. To compute integral involving transcendental functions.5. To compute integral with advanced integration techniques.6. To demonstrate ability to think critically by recognizing patterns and determining and using appropriate techniques for solving a variety of integration problems.7. To solve indeterminate forms and improper integral problems.8. To solve the parametric representation of curves in the plane, calculate the length of a plane curve and solving area and volume application problems.9. To sketch the graph of a polar equation and the area problems in the polar coordinate system.10. To demonstrate an intuitive and computational understanding for integral applications by solving a variety of problems from physics, engineering and mathematics.

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	The module will be presented to the students through a specified series of lectures, supported by problem solving practice carried out in interactive tutorials. These tutorials will be supported by practice and directed study outside the classroom. Formative assessment takes place throughout the module during tutorials and feedback is given during these tutorials.
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Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	2.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	67	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	1	10% (10)	6, 10	LO #1, 2, and 6
	Assignments	1	10% (10)	7, 12	LO # 3 and 7
	Projects / Lab.	1	10% (10)	continuous	
	Report	1	10% (10)	14	LO # 5, 7 and 8
Summative assessment	Midterm Exam	1	10% (10)	5,11	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Indefinite integrals, Definite integrals, The fundamental theorems of integrals, Basic Integration Formulas.
Week 2	Integration by substitution
Week 3	Integration of certain powers of trigonometric and hyperbolic functions
Week 4	Integrals involving trigonometric substitutions, Integrals involving hyperbolic substitution .
Week 5	Mid-Term Exam + Integrals involving quadratic Function
Week 6	Integration by parts
Week 7	Integration of Rational Functions
Week 8	Integration of Irrational Functions, Integration of Rational Functions of Trigonometric
Week 9	Improper integrals: Definition of improper integral and examples
Week 10	Application of Definite Integrals: Area under the curve
Week 11	Mid-Term Exam + Area between two curves
Week 12	Volume of solid of revolution
Week 13	Arc length, Area of surface of revolution
Week 14	Area in polar coordinates
Week 15	Average value of functions, Moments and center of mass
	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	

Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts		
Recommended Texts		
Websites		

Grading Scheme

مخطط الدرجات

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