Ministry of Higher Education and
Scientific Research - Iraq
University of Baghdad
College of science
Department of gis

المرحلة الاولى

(المرحلة الاولى/الفصل الاول)

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Arabic Language I**			**Module Delivery**	
Module Type	ساندة			☒Theory ☒Lecture ☒Lab ☐Tutorial ☐Practical ☐Seminar	
Module Code	**UOB101**				
ECTS Credits	٢				
SWL (hr/sem)	**50**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	S		**College**	Type College Code	
Module Leader	Leqaa faleh owdaa flaih		**e-mail**	leqaa.falih@ircoedu.uobaghdad.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	1/10/2024		**Version Number**	1.0	
Relation with other Modules العلاقة مع المواد الدراسية الأخرى					

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	**١-تعلم مهارات الكتابة والاملاء والتعبير الصحيح خلال تطبيق قواعد اللغة العربية بشكل مفصل وتطبيقي على نصوص عربية.** **٢- لفهم الجمع وأنواع الاسماء وكيفية التعامل معها.** **٣- لفهم العدد واستعماله بشكل صحيح من حيث المطابقة والمخالفة** **للتفريق بين الضاد والظاء.** **٤- للتفريق ومعرفة استعمال التاء المربوطة والتاء الطويلة.** **٥-التمييز بين العلامات الاصلية والفرعية.** **٦- تعلم استعمال الأدوات وعمل كل أداة ومعناها في التعبير.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**هام: اكتب ٦ مخرجات تعليمية على الأقل، ومن الأفضل أن تكون مساوية لعدد أسابيع الدراسة** **١-التعرف على كيفية جمع الأسماء وأنواع الجموع وسبب اختلافها وقائمة بالمصطلحات المختلفة المرتبطة ببلاغة اللغة العربية تعلم كتابة الهمزة وانواعها.** **٢-وصف عمل الجمل الفعلية وأنواع الافعال** **٣-ناقش وتفاعل ومشاركة قواعد الجمل الاسمية وعلامات الاعراب الاصلية والفرعية والتطبيقات ضمن نصوص أدبية وقرانية.** **٤-القدرة على استعمال علامات الترقيم في كتابة البحوث والتقارير .** **٥-التمييز بين الأدوات وأسلوب العطف والجر.** **٦-التعرف على قواعد اللغة العربية الأساسية وتطبيقاتها.**
Indicative Contents المحتويات الإرشادية	**يتضمن المحتوى الإرشادي ما يلي.** **مقدمة في البداية التي أسس لها علماء اللغة العربية وكيف بدأت كتابة المؤلفات بالمعاجم والقواعد وجمع اللهجات واستقراء اللغة وحركة الترجمة والفتوحات وتطور اللغة.**

ومشكلات المراجعة (٦ ساعات) ودراسة الجمل وانواعها والافعال والعلامات الاصلية والفرعية والعدد. ومشكلات الكتابة والاملاء التي يقع فيها الطلبة في التفرقة بين الضاد والظاء والتاء المربوطة والطويلة والهمزة وانواعها وكيفية كتابتها. (٦ساعات) ودراسة الموضوعات الصرفية التي تخص المشتقات من اسم الفاعل واسم المفعول وصيغة المبالغة واوزانها ومعانيها وصيغها السماعية والقياسية.. وعلامات الترقيم وكيفية توظيفها في كتابة التقارير والبحوث والمخطوطات. (٦ساعات)	

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	كتب شيئًا مثل: الاستراتيجية الرئيسية التي سيتم تبنيها في تقديم هذه الوحدة هي تشجيع الطلاب على المشاركة في التمارين، مع تحسين مهارات التفكير النقدي وتوسيعها في نفس الوقت. سيتم تحقيق ذلك من خلال الفصول والبرامج التعليمية التفاعلية ومن خلال النظر في أنواع التجارب البسيطة التي تتضمن بعض أنشطة أخذ العينات التي تهم الطلاب.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	٦٠	Structured SWL (h/w) **الحمل الدراسي المنتظم للطالب أسبوعيا**	٤
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	٣٠	Unstructured SWL (h/w) **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	٢
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	٦٠		

Module Evaluation

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تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	٥/٣٠	**10% (10)**	**5 and 10**	**LO #1, #2 and #10, #11**
	Assignments	**6**	**10% (10)**	**2,3,6,8,10 and 12**	**LO #3, #4 and #6, #7**
	Projects / Lab.		**10% (10)**	**Continuous**	**All**
	Report	٥	**10% (10)**	**13**	**LO #5, #8 and #10**
Summative assessment	**Midterm Exam**	**2hr:**	**10% (10)**	**7**	**LO #1 - #7**
	Final Exam	**3hr**	**50% (50)**	**16**	**All**
Total assessment			**100% (100 Marks)**		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	**علامات الترقيم والتنقيط والنواسخ**
Week 2	المشتقات.
Week 3	الجملة الاسمية
Week 4	الجملة الفعلية
Week 5	الفرق بين الضاد والظاء
Week 6	التاء المربوطة والتاء المفتوحة

Week 7	الهمزة وانواعها
Week 8	العدد
Week 9	الجمع
Week 10	العلامات الاصلية والعلامات الفرعية
Week 11	اعلام عراقيون بدر شاكر السياب والجواهري
Week 12	العطف
Week 13	حروف الجر
Week 14	الاسم المؤنث والاسم المذكر
Week 15	الحذف والزيادة
Week 16	الأسماء المنصوبة

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	المادة نظري /لا يوجد

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	جامع الدروس العربية وشرح ابن عقيل	Yes
Recommended Texts	Electromagnetic theory (book). 2000.vol.1	yes
Websites	https://www.coursera.org/browse/physical-science-and-engineering/electrical-engineering	

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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	Calculus	**Module Delivery**
Module Type	Basic	☒**Theory**

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Module Code	**UOBRS14**			☒Lecture ☒Lab ☐Tutorial ☐Practical ☐Seminar
ECTS Credits	6			
SWL (hr/sem)	150			
Module Level	1	**Semester of Delivery**	1	
Administering Department	B	**College**	Type College Code	
Module Leader	rehab noori shalan	**e-mail**	rehab.shallan@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Professor	**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	1/10/2024	**Version Number**	1.0	

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	1. Use functions and other pre-Calculus mathematics proficiently. 2. Calculate, use, and explain the concept of limits. 3. Explain and interpret the meaning of the derivative of a function. 4. Use shortcuts to calculate derivatives efficiently. 5. Use derivatives to solve authentic real-life application problems.

	6. Use definite integrals and the Fundamental Theorem of Calculus to find areas and total change.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Determine the existence of, estimate numerically and graphically, and find algebraically the limits of functions. 2. Recognize and determine infinite limits and limits at infinity and interpret with respect to asymptotic behavior. 3. Determine continuity at a point or on intervals and distinguish between the types of discontinuities at a point. 4. Determine the derivative of a function using the limit definition. Interpret the derivative as the slope of a tangent line to a graph, the slope of a graph at a point, and the rate of change of a dependent variable with respect to an independent variable. 5. Determine the derivative and higher derivatives of a function explicitly using differentiation formulas. 6. Determine derivatives implicitly 7. Solve related rates problems. 8. Determine absolute extrema for a continuous function on a closed interval. Use these and other appropriate techniques to solve optimization problems. 9. Use the first and second derivatives to analyze and sketch the graph of a function, including asymptotes, intervals on which the graph is increasing, decreasing, concave up, or concave down, and any local extrema and inflection points. 10. Determine antiderivatives and indefinite integrals and integrate by substitution. 11. Use the Fundamental Theorem of Calculus to evaluate definite integrals. 12. Use definite integrals to find areas of planar regions.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Limits and Continuity Limit of a function, evaluation of limits, continuity. 1- Differentiation Derivative of a function, rules of differentiation, higher derivatives, L'Hôpital's rule. 2- Applications of Differentiation Maximum and minimum, rates of change, differentials, linear approximations, increasing and decreasing functions, curve sketching.

	3- Integration Integrals, techniques of integration, applications of integration. 4- Ordinary Differential Equations First order equations, second order linear equations with constant coefficients.
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Here are some learning and teaching strategies that may be effective for a course on Digital image processing : 1. Lectures: Lectures can provide an overview of key concepts and techniques in digital image processing. 2. Education: provide lectures and printed sources from the modern, diverse and rich sources including examples 3. Education: Harnessing smart blackboard to the goal of teaching students and explain the steps the solution and extraction results 4. Education: resolving some questions, with intent to contain mistakes and make the students extracted error 5. Learning: asking questions and inquiries and making the student turn into a teaching explanation and solution on the blackboard at that point, brainstorming method 6. Learning: questions directly and consequently all students to learn the extent of interaction and the rest to be paid attention to 7. Learning: Each specific group and explain its interaction between students with questions and answers and provide an environment that enables the student to lecture management or debate.

	8. Instructors can use slides, diagrams, and other visual aids to help students understand complex topics. 9. Online resources: Online resources such as interactive tutorials, video lectures, and online forums can supplement classroom instruction and provide students with additional opportunities to learn image processing. 10. Assessments: Assessments can help students measure their understanding of course material and provide instructors with feedback on the effectiveness of their teaching. Assessments can include quizzes, exams, and projects. By using a combination of these learning and teaching strategies, instructors can create a dynamic and engaging learning environment that helps students develop the knowledge and skills they need to succeed in the field of calculus.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	62	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	138	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7

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

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Chapter 1 1- Slope and equation of line 2- Function and their graphs 3- Shifts, circle and parabola
Week 2	Chapter 2 1- Limits 2- Limits involving infinity 3- Continues functions 4- Slopes, tangent lines and derivatives
Week 3	Chapter 2 5- Differentiation rule 6- Velocity, speed and other rate of change 7- Derivatives of trigonometric functions 8- Chain rule 9- Maxima, minima
Week 4	**Chapter 3** 1- Definite integral

	2- The fundamental theorem of integral calculus 3- Indefinite integral
Week 5	**Chapter 3** 4- Integration by substation 5- A brief introduction to logarithms and exponential 6- Areas between curves, volumes of solids of revolution areas of surfaces of revolutio
Week 6	**Chapter 4** 1- Inverse function and their derivatives 2- $\ln(x)$, e^x, and logarithmic differentia tier 3- Hospital rule 4- The inverse trigonometric functions 5- Derivative of inverse trigonometric functions
Week 7	**Chapter 5** 1- Basic integration formula 2- Integration by parts 3- Trigonometric integral
Week 8	**Chapter 5** 4- Trigonometric substation 5- Rational functions and partial fractions 6- Improper integrals
Week 9	**Chapter 5** Taylor's series and Maclaurin series
Week 10	**Chapter 6** 1- Polar coordinate 2- Graphing in Polar coordinate 3- Integration in Polar coordinate

Week 11	Chapter 7 (matrices) 1- Definition pf matrix. 2- Equality, addition and multiplication of matrices. 3- Transpose of matrix.
Week 12	Chapter 7 (matrices) 4- Some types of matrices. 5- Determinant of matrix. 6- Adjoint of matrix.
Week 13	Chapter 7 (matrices) 7- Inverse of matrix. 8- Solution of a set of linear equations.
Week 14	Chapter 7 (matrices) 9- Eigenvalues and eigenvectors.
Week 15	Course review, final project presentations, and exam preparation.
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	Thomas' Calculus Joel R. Hass, Christopher E. Heil, Maurice D. Weir 14th Edition	Yes
Recommended Texts	Solutions for Thomas Calculus 14th George B. Thomas Jr.	No

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Websites	https://www.academia.edu/57466287/Thomas_calculus_14th_edition_hass_solutions_manual

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

MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	**Democracy and Human rights**	**Module Delivery**
Module Type	**Suplement**	**Theory** **Lecture** **Tutorial** **Seminar**
Module Code	**UOB104**	
ECTS Credits	**2**	

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SWL (hr/sem)	**50**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	S		**College**	Type College Code	
Module Leader	**ghofran alawi abdallah shekheter**		**e-mail**	**ghofran.alawi1204a@colaw.uobaghdad.edu.iq**	
Module Leader's Acad. Title	**Lecturer**		**Module Leader's Qualification**	M.Sc.	
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval	1/10/2024		**Version Number**	1.0	

Relation With Other Modules

العلاقة مع المواد الدراسية الأخرى

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	**1. This course deals with the basic concept of human rights& democracy** **2. Clarifying and training students on the most important principles of human rights and democracy.** **3. Organizing discussions and presentations on the most vital and basic topics affecting community building, related to human rights and democracy..** **4. Adopting teamwork with students to develop their cognitive abilities and create a spirit of cooperation, initiative, creativity and exchange of views in an effort to build the foundations of peaceful community coexistence.** **5. Providing society with conscious youth aware of the importance of its role in building society, its unity and cohesion through spreading the culture of human rights and establishing the rules of correct democracy.** **6. Human rights guarantee the protection and respect of an individual's interests, even when he or she is not a majority. In a democratic climate,**

	sustainable democratic power cannot be conceived without respecting, protecting and fulfilling human rights. Through their combined influence, they allow the individual a life based on the freedom of self-determination and collective. That is why the protection and realization of human rights truly form the basis of the democratic project.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**Cognitive goals.** **1. Educate students and inform them about the importance of human rights and democracy.** **2. Recognize and understand the methods of teamwork for the exchange of ideas and creative discussions** **3. Developing students' performance through guidance in preparing mini-research on modern vocabulary on vital topics related to human rights and democracy.** **4. Providing students with creative development abilities in modern proposals and creative developmental ideas by discussing awareness videos presented on electronic classes.** **5. Developing the skills of sharing opinions and ideas and respecting others opinion.** **6. Objective Skills :** **7. Basic knowledge in the principles of human rights and democracy.** **8. Building the innovative personality of knowledge through online research and the transfer and exchange of information.** **9. Discuss the various properties about everything related to human rights and their importance in our daily lives.** **10. Identify everything related to democracy and the foundations of the performance of the electoral process and its importance in building the nation.** **11. Identify the capacitor and inductor phasor relationship with respect to voltage and current.**

Indicative Contents **المحتويات الإرشادية**	**- Developing the student's analytical and critical skills regarding the reality and future of human rights and democracy** **- Training the student on the importance of active participation in aspects of public life, such as promoting respect for the principles of public human rights and active participation in political and cultural life.** **- Enable students to understand the importance of education and its role in spreading the culture of human rights and democracy in building a civilized society based on good governance, the most important component of which is belief in human rights, education and active participation in governance through free and fair elections.**
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	**The main strategy that will be adopted in delivering this module is to encourage students' participation in the discussions, dialogues and group work lectures & exercises, while at the same time refining and expanding their critical thinking skills. There are many teaching and learning methods used, and the most important of these methods are:** **Theoretical lecture, discussion and dialogue, panel discussions on certain topics, theoretical student research** **Library and electronic activities (which helps students to reach the following results:** **1- The scientific ability to distinguish between correct information and wrong information.** **2- Ease of scientific drafting and ease of correction.** **3. Ability to memorize and guess.** **4- The ability to link concepts and principles with reality.** **5. Ability to invoke, link, interpret.**
Student Workload (SWL)	

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الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	32	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	18	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1.25
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	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Attending lectures	1	1%	1.5	41#15 weeks
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري مادة حقوق الانسان و الديمقراطية

	Material Covered	**Human rights & Democracy**

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Week 1	**Familiarity with the concept of human rights and the definitions approaching it, discussing, dismantling and criticizing them in a scientific way in order to reach the most accurate and objective. - Definition of right , of human, of the concept of human rights. Human rights qualities, Types of human rights Human Rights Categories**
Week 2	**The historical development of human rights: Orcagina Reforms 1- Urnamo Law.2- The law of Ishtar Bit. 3- The law of the Kingdom of Eshnuna.4- Code of Hammurabi.**
Week 3	**Human rights in other ancient civilizations: 1- Indian and Chinese civilization 2- Pharaonic civilization of Egypt 3- Greek civilization 4- Roman civilization**
Week 4	**Human rights in heavenly laws** **Human Rights in Judaism, Human rights in Christianity, Human Rights in Islam.**
Week 5	**Human rights in Renaissance - modern and contemporary societies** **Introducing the student to the most important UN document in the field of human rights, which was approved and approved by the Assembly on January 10, 1948** **Universal Declaration of Human Rights 1948.**
Week 6	**Non-governmental organizations defending human rights: Amnesty International, b. International Committee of the Red Cross. Arab Organization for Human Rights.**
Week 7	**Definition of the phenomenon of administrative corruption, Types of administrative corruption, Causes of administrative corruption. The repercussions of the phenomenon of administrative corruption on human rights and society. Successful treatments to combat corruption and protect society from it.**
Week 8	**Introduction - Historical development of the concept of democracy, definition of democracy, freedom. The difference between freedom and democracy, The relationship between the rights and public freedoms of individuals and democracy, Islamic views in a democratic system of government , Shura and Democratic System**
Week 9	**Specifications and duties of the Islamic ruler reading, The era of Imam Ali "peace be upon him" to his governor over Egypt: Specifications of the Islamic ruler: First: The moral and doctrinal components of the ruler Second: The general culture of the Islamic ruler, Third: Acumen and good choice: -Fourth: Direct relationship with people: Fourth: Direct relationship with people.** **Duties of the Islamic ruler:** **First: Social Reform: Second: Achieving security and defense** **Third: The architecture of the country "economic development"**

Week 10	**Forms of democracy: (1): Direct democracy ,(2): Semi-direct democracy , (3): Parliamentary democracy (parliamentary representation)4): Liberal Democracy (5): consociation Democracy, (6): Delegated Democracy.**
Week 11	**Conditions for the success of the elements and pillars of the democratic system General conditions for the success of the democratic system: 1. Respect for human rights, 2. Political pluralism 3. Peaceful transfer of power 4. Political equality 5. Respect the principle of the majority 6. Existence of the rule of law.**
Week 12	**Components or elements of democracy: 1 – Citizenship 2- Political participation 3. Elections 4. MPs and Responsibility 5. Opposition 6- Separation of government and parliament 7- Constitutional legitimacy**
Week 13	**The concept of elections and their legal adaptation: First: The concept of election Second: Legal adaptation of the Election, Third: Conditions of Election, Fourth: Concepts of Elections, Fifth: Types of Electoral Systems. Assessing the Democratic System, Pros and advantages of the democratic system, Disadvantages and disadvantages of the democratic system, Implementing the democratic system in Iraq.**
Week 14	**Lobbyists: First: the concept and definition. Second: Types of pressure groups. Third: The methods of pressure groups that they use to achieve their goals. Fourth: Lobbying and Democracy.**
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Ministry of Higher Education and
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	Material Covered
Week 1	لا يوجد

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Martyrdom verses from the Holy Quran Mohammed Al-Tarawneh et al., International Humanitarian Law, ICRC, Amman, 2005 Diamond Larry, Democracy: Its Development and Ways to Enhance It, translated by Fawzia Naji, Dar Al-Mamoun for Translation, Iraq, 2005.	Yes
Recommended Texts	journal.un.org Hadi, Riad Azabz. (2005). Human rights (evolving contents and protection) (Baghdad).	Yes
Websites	Universal Declaration of Human Rights | United Nations https://sc.uobaghdad.edu.iq/?page_id=8415 https://www.youtube.com/@ansamalobidimanagerofhuman2891	

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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	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group	**FX –** Fail	مقبول بقرار	(45-49)	More work required but credit awarded
(0 – 49)	**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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information

معلومات المادة الدراسية

Module Title	Digital Image Processing I	**Module Delivery**	
Module Type	**Core**	☒**Theory** ☒**Lecture** ☐**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	**UOBRS15**		
ECTS Credits	**2**		
SWL (hr/sem)	**50**		
Module Level	1	**Semester of Delivery**	1
Administering Department	B	**College**	Type College Code
Module Leader	Mohammed ismaeal abdalmajeed	**e-mail**	mohammed.ismael@sc.uobaghdad.edu.iq

	Ministry of Higher Education and Scientific Research - Iraq University of Baghdad College of science Department of gis	

Module Leader's Acad. Title	Assistant Professor	**Module Leader's Qualification**	
Module Tutor	Name (if available)	**e-mail**	E-mail
Peer Reviewer Name	Ban A. Alrazaq	**e-mail**	Dr.ban1969@gmial_com
Scientific Committee Approval Date	1/10/2024	**Version Number**	

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم	
	1.Communicative Approach: Emphasize communicative activities that promote interaction among students. Encourage pair and group work, role-plays, and discussions to practice language skills in meaningful contexts. 2.Integrated Skills: Integrate the four language skills (speaking, listening, reading, and writing) in lessons to create a balanced approach to language learning. Provide opportunities for students to use and develop these skills simultaneously. 3.Vocabulary Expansion: Incorporate vocabulary-building exercises and activities throughout the course. Use real-life contexts, visuals, and practical examples to help students learn and remember new words. 4.Grammar Focus: Teach and reinforce grammar structures in a systematic and progressive manner. Provide clear explanations, examples, and practice exercises to ensure students understand and can apply the grammar rules correctly. 5.Authentic Materials: Include authentic texts, such as articles, newspaper clippings, songs, and videos, to expose students to real-world language usage. This helps develop their reading and listening comprehension skills and exposes them to cultural aspects of English-speaking countries. 6.Cultural Awareness: Integrate cultural topics and discussions into the lessons to foster cultural awareness and sensitivity. Encourage students to share their own cultural backgrounds and experiences to promote understanding and appreciation of diverse perspectives. 7.Error Correction: Provide constructive feedback and error correction during speaking and writing activities. Help students identify and correct their mistakes, focusing on accuracy while encouraging fluency and self-expression. 8.Technology Integration: Utilize technology tools, such as interactive whiteboards, online resources, and language learning apps, to engage students and enhance their language learning experience. Incorporate multimedia materials for listening and speaking practice. 9.Regular Assessment: Assess students' progress regularly through quizzes, tests, and assignments. Provide timely feedback to guide their learning and address areas that need improvement.

	10.Individualization: Cater to the individual needs and learning styles of students. Offer differentiated tasks and activities to ensure all learners are appropriately challenged and supported. 11.Cooperative Learning: Promote collaboration and teamwork among students through pair work, group projects, and peer feedback. This encourages active participation and a supportive learning environment. 12.Review and Revision: Schedule regular review sessions to consolidate previously learned material. Encourage students to revise and practice independently, providing resources for self-study and additional practice.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	109	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	91	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7

	Projects	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	Soars, John and Liz, (2011), New Headway Plus, Special Edition, Beginner Level, Oxford University Press.	Yes
Recommended Texts	New Headway Plus provides an integrated skills course with each unit divided into grammar, vocabulary, skills work and everyday English segments	yes
Websites	Oxford University Press: The New Headway series is published by Oxford University Press. Visit their website at www.oup.com and search for "New Headway Plus, Special Edition, Beginner Level " or browse their English language teaching section for information on the course.	

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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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	English Language I	**Module Delivery**
Module Type	**Core**	☒**Theory**

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College of science
Department of gis

Module Code	**UOB102**			☒**Lecture** ☐**Tutorial** ☐**Practical** ☐**Seminar**
ECTS Credits	**2**			
SWL (hr/sem)	**50**			
Module Level	1	**Semester of Delivery**	1	
Administering Department	S	**College**	Type College Code	
Module Leader	Rania Yahya Khudair	**e-mail**	rania.y@coeduw.uobaghdad.edu.iq	
Module Leader's Acad. Title	Assistant Professor	**Module Leader's Qualification**		
Module Tutor	Name (if available)	**e-mail**	E-mail	
Peer Reviewer Name	Name	**e-mail**	E-mail	
Scientific Committee Approval Date	1/10/2024	**Version Number**	1.0	

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	New Headway Beginner Plus is a Beginner course in English intended to provide students with the fundamentals of the language and a foundation at First Year students / college of science, moving towards a higher level of proficiency at this stage. 1. Listening Objectives: • Understand and respond to basic greetings, introductions, and simple instructions.

- Comprehend and extract information from short, simple spoken passages related to everyday topics.
- Identify and understand common vocabulary and expressions in spoken English.

2. Speaking Objectives:

- Engage in basic conversations using simple greetings, introductions, and expressions related to personal information.
- Ask and answer simple questions about personal details, daily routines, and familiar topics.
- Participate in short dialogues and role-plays to practice communication skills.

3. Reading Objectives:

- Read and comprehend simple texts, such as signs, labels, short passages, and dialogues.
- Recognize and understand basic vocabulary words and phrases in context.
- Extract information from texts related to everyday situations and topics.

4. Writing Objectives:

- Write short sentences and paragraphs about personal information, experiences, and familiar topics.
- Fill out basic forms with personal details, such as name, age, and nationality.
- Write simple messages, notes, and emails related to everyday situations.

5. Vocabulary and Grammar Objectives:

- Acquire a basic vocabulary related to common topics, such as greetings, numbers, time, family, food, and everyday objects.
- Understand and use basic grammatical structures, including present simple, present continuous, simple past, and basic question forms.
- Recognize and use common prepositions, articles, and basic sentence structures.

6. Cultural Awareness Objectives:

- Develop an understanding of cultural customs and practices related to greetings, social norms, and everyday interactions in English-speaking countries.
- Gain exposure to cultural elements through reading or listening to texts about customs, traditions, and holidays.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of the course, the students will be able to: 1. Listening and Speaking Skills: • Understand and respond appropriately to basic questions and statements. • Engage in simple conversations related to personal information, daily routines, and immediate surroundings. • Follow simple instructions and directions. • Develop basic pronunciation and intonation skills. 2. Reading Skills: • Recognize and understand basic vocabulary words and phrases in simple texts. • Comprehend and extract information from short, simple texts such as signs, notices, and labels. • Understand basic sentence structures and common grammatical patterns. 3. Writing Skills: • Write simple sentences and short paragraphs about personal information, experiences, and familiar topics. • Fill out simple forms and write basic personal information. • Write simple messages, notes, and emails related to everyday situations. 4. Vocabulary and Grammar: • Acquire and use a basic range of vocabulary related to everyday topics, such as greetings, numbers, time, family, food, and common objects. • Understand and use basic grammatical structures, including present simple, present continuous, simple past, and basic question forms. • Recognize and use common prepositions, articles, and basic sentence structures. 5. Cultural Awareness: • Develop an understanding of cultural customs and practices related to greetings, social norms, and everyday interactions in English-speaking countries. • Gain exposure to cultural elements through reading or listening to texts about customs, traditions, and holidays.
Indicative Contents المحتويات الإرشادية	1. Use simple forms of polite expressions to establish basic social contact and to perform

	everyday functions including making requests and offers, conducting simple phone conversations, asking and telling time, giving simple directions, asking about price, ordering a meal, etc. 2. Use a narrow range of positive and negative adjectives to describe objects, people and places. 2.3. Exchange information by forming and responding to simple questions. 3. Produce simple sentences using the correct word order and punctuation marks. 4. Use capital and lower case letters accurately in writing. 5. Construct a short guided paragraph on a familiar topic concerning home, family, friends and holidays. 5. Use the basic tenses including the present and past simple, and present continuous correctly. 6. Use the basic auxiliary verbs (am/is/are/was/were/can) and a range of regular and irregular verbs. 7. Demonstrate awareness of the essential grammatical features and functions including questions and negatives, plural nouns, frequency adverbs, possessives, pronouns and determiners.
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	

	1.Communicative Approach: Emphasize communicative activities that promote interaction among students. Encourage pair and group work, role-plays, and discussions to practice language skills in meaningful contexts. 2.Integrated Skills: Integrate the four language skills (speaking, listening, reading, and writing) in lessons to create a balanced approach to language learning. Provide opportunities for students to use and develop these skills simultaneously. 3.Vocabulary Expansion: Incorporate vocabulary-building exercises and activities throughout the course. Use real-life contexts, visuals, and practical examples to help students learn and remember new words. 4.Grammar Focus: Teach and reinforce grammar structures in a systematic and progressive manner. Provide clear explanations, examples, and practice exercises to ensure students understand and can apply the grammar rules correctly. 5.Authentic Materials: Include authentic texts, such as articles, newspaper clippings, songs, and videos, to expose students to real-world language usage. This helps develop their reading and listening comprehension skills and exposes them to cultural aspects of English-speaking countries. 6.Cultural Awareness: Integrate cultural topics and discussions into the lessons to foster cultural awareness and sensitivity. Encourage students to share their own cultural backgrounds and experiences to promote understanding and appreciation of diverse perspectives. 7.Error Correction: Provide constructive feedback and error correction during speaking and writing activities. Help students identify and correct their mistakes, focusing on accuracy while encouraging fluency and self-expression. 8.Technology Integration: Utilize technology tools, such as interactive whiteboards, online resources, and language learning apps, to engage students and enhance their language learning experience. Incorporate multimedia materials for listening and speaking practice. 9.Regular Assessment: Assess students' progress regularly through quizzes, tests, and assignments. Provide timely feedback to guide their learning and address areas that need improvement.

	10.Individualization: Cater to the individual needs and learning styles of students. Offer differentiated tasks and activities to ensure all learners are appropriately challenged and supported. 11.Cooperative Learning: Promote collaboration and teamwork among students through pair work, group projects, and peer feedback. This encourages active participation and a supportive learning environment. 12.Review and Revision: Schedule regular review sessions to consolidate previously learned material. Encourage students to revise and practice independently, providing resources for self-study and additional practice.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	109	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	91	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation

تقييم المادة الدراسية

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

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

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Hello! p6 ***am/are/is, my/your*** *I'm Pablo.* *My name's Judy.* *What's your name?* p6 ***This is ...*** *This is Ben.* *Nice to meet you.* p7
Week 2	Your world p12***he/she/they, his/her*** *He's from the United States.* *Her name's Karima.* p13 *They're on holiday.* p16 Questions

	What's his name? *Where's she from?* p13
Week 3	All about you p18 ***am/are/is*** *We're all singers.* p20 Negatives *She isn't a nurse.* p18 *I'm not from Scotland.* p20 *They aren't builders.* p20 Questions *What's her address? How old is she?* *Is she married?* p19 Short answers *Yes, she is. / No, she isn't.* p20
Week 4	Family and friends p24 **Possessive adjectives** *my, your, our, their* p24 **Possessive *'s*** *Annie's husband Jim's office* p24 ***has/have*** *I have a small hotel. She has a job.* *We have three sons.* p27 **Adjective + noun** *a small hotel a big house a good job* p27*apples, beer, bread, cake* p36 **Shopping**

	newsagent's, chemist's, *off-licence* p36 **Can you come for dinner?** *Would you like some* *more rice?* *Could you pass the* *salt, please?* *How would you like* *your coffee?* *This is delicious!* p37
Week 5	The way I live p32 **Present Simple *I/you/we/they*** *I like ice-cream. I don't like tennis.* *Do you like football?* p33 *Where do you work? Do you live in Dundee?* p34 *In Brazil they speak Portuguese.* p36 ***a* and *an*** *a waiter, an actor, an Italian restaurant* p34 **Adjective + noun** *an American car Spanish oranges* p37
Week 6	Every day p40 **Present Simple *he/she*** *He gets up at 6.00.* *He has lunch in his office.* p42 *She lives in a small house.* p44

	Questions and negatives *What time does he have breakfast?* *He doesn't live in London.* p43 **Adverbs of frequency** *He always works late.* *He never goes out.* p42
Week 7	Mid-term Exam
Week 8	My favourites p48 **Question words** *who, where, why, how* p48 **Pronouns** Subject/Object/Possessive *I/me/my we/us/our they/them/ their* p49 ***this* and *that*** *I like this wine. Who's that?* p50
Week 9	Where I live p56 ***There is/are ...*** *There's an old sofa.* *Are there any armchairs?* *There are some books.* p57 **Prepositions** *in, on, under, next to* p58
Week 10	Times past p64

	was/were born *When were you born?* *I was born in 1996.* p65 **Past Simple – irregular verbs** *went, came, saw* *She went shopping.* p68
Week 11	We had a great time! p72 **Past Simple – regular and irregular** *played, got, watched, did* p72 Questions *What did you do?* *Did you go out?* p73 Negatives *They didn't go to work.* p73 ***ago*** *I went to Rome ten years ago.* p78
Week 12	I can do that! p80 ***can/can't*** *He can speak French. I can't draw.* *Can she run fast?* p80 **Adverbs** *I can cook a little bit. I can't cook at all.* *really well, fluently* p82 **Requests and offers** *Can you tell me the time? Can I help you?* p83

Week 13	Please and thank you p88 ***I'd like ...*** *I'd like some ham.* *How much would you like?* p88 ***some* and *any*** *I'd like some cheese.* *Do you have any Emmental?* *I don't have any apple juice.* p89 ***like* and *would like*** *I like Coke.* *I like going to the cinema.* *I'd like to go out.* p91
Week 14	Here and now p96 **Present Continuous** *She's wearing a T-shirt.* *What's he doing?* p97 **Present Simple and Present Continuous** *He lives in London.* *They're staying in a hotel.* p98
Week 15	It's time to go! p104 **Future plans** *They're going on holiday.* *Which countries are you going to visit?* *I'm leaving on Tuesday.*

	What are you doing this evening? p104 **Revision** Question words – *when, where, who, how* p106 Tenses – present, past, and future tenses p110
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Soars, John and Liz, (2011), New Headway Plus, Special Edition, Beginner Level, Oxford University Press.	Yes
Recommended Texts	New Headway Plus provides an integrated skills course with each unit divided into grammar, vocabulary, skills work and everyday English segments	yes
Websites	Oxford University Press: The New Headway series is published by Oxford University Press. Visit their website at www.oup.com and search for "New Headway Plus, Special Edition, Beginner Level " or browse their English language teaching section for information on the course.	

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group	**A -** Excellent	امتياز	90 - 100	Outstanding Performance

(50 - 100)	**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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Fail Group	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
(0 – 49)	**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	Physics	**Module Delivery**
Module Type	**Core**	☒**Theory** ☒**Lecture** ☒**Lab**
Module Code	**UOBRS13**	

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ECTS Credits	**8**		☐**Tutorial** ☐**Practical** ☐**Seminar**	
SWL (hr/sem)	**200**			
Module Level	1	**Semester of Delivery**	1	
Administering Department	C	**College**	Type College Code	
Module Leader	Zehraa najim abdul-ameer	**e-mail**	Zehraa.najim@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Professor	**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)	**e-mail**	E-mail	
Peer Reviewer Name	Hasan Jaber Mohammed	**e-mail**	hasan.jaber@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	1/10/2024	**Version Number**	1.0	

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	1. To develop problem solving skills and understanding of general physics through the application of techniques. 2. To understand motion laws, velocity and acceleration from. 3. This course deals with the basic concept of energy 4. This is the basic subject for all types of force. 5. To understand three newton's laws and electromagnetic problems. 6. To perform Maxwell's equation and its applications.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• Apply fundamental physics principles to solve quantitative and qualitative problems in mechanics, thermodynamics, electromagnetism, optics and modern physics. • Perform experiments using laboratory equipment to verify physical theories, measure fundamental constants and analyze experimental uncertainties and sources of error. • Interpret physics concepts through mathematical formulation and use equations to model real-world physical systems. • Recognize the role of evidence, assumptions, logic and subjectivity in developing and evaluating scientific theories. • Explain physics concepts and justify solutions clearly and precisely using appropriate terminology in speech and writing. • Evaluate the limitations and practical applications of physics in various domains of science and technology. • Work productively with others to carry out experimental procedures, analyze data and develop group solutions to problems. • Demonstrate a capacity for independent inquiry, critical thinking and self-directed learning in studying physics. • Develop an appreciation for the thought processes, evidence and creativity involved in the scientific enterprise. Compared to learning objectives which state what students will learn and be able to do during the course, learning outcomes focus on what students have achieved and can demonstrate by the end of the course. The outcomes listed above reflect abilities in several domains by the end of the physics course: 1. Application of conceptual knowledge 2. Experimental and practical skills 3. Mathematical and quantitative problem-solving skills 4. Critical thinking and perspective 5. Communication skills 7. Collaboration and teamwork 8. Independent learning and inquiry 9. Attitudes towards physics and the scientific process

	The wording, scope and level of detail of outcomes can vary depending on your course format, level, aims and priorities. But in general, learning outcomes for a physics course should encompass the development of knowledge,skills, perspectives and attitudes in students.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. **Introduction to physics: One-dimensional motionDisplacement, velocity, and time: One-dimensional motionAcceleration: One-dimensional motion** **Kinematic formulas and projectile motion: One-dimensional motionOld videos on projectile motion** Revision problem classes [6 hrs] **Newton's laws of motion: Forces and Newton's laws of motionNormal force and contact force: Forces and Newton's laws of motionBalanced and unbalanced forces: Forces and Newton's laws of motion** **Forces and Newton's laws of motionInclined planes and friction: Forces and Newton's laws of motionTension: Forces and Newton's laws of motionTreating systems** **introduction to electromagnetic waves: Electromagnetic waves and interferenceInterference of electromagnetic waves** Revision problem classes [6 hrs]
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

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Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل		**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل		**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل			

Module Evaluation

تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)

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المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction - Introduction to physics, motion laws,-Motion in 2D Projectile 1D
Week 2	Force and motion, Types of forces
Week 3	Review of Applications of forces Gravitational forces, Centripetal force
Week 4	Review of Work , Energy ,Types of energy, Laws of conservation of energy ,and applications POWER and relation with energy
Week 5	Review Momentum ,Linear momentum, Conservation of momentum
Week 6	Review of Collision -elastic –inelastic 2D collision
Week 7	Mid-term Exam + Unit-Step Forcing, Forced Response, the RLC Circuit
Week 8	Review of Center of mass
Week 9	Waves ,Waves types ,Waves parameters, Hooks law
Week 10	Quantities ,Vectors ,Scalars, Vector addition ,Subtraction ,Vector product ,Scalar product
Week 11	Triple product ,Divergence ,Curl ,Laplace
Week 12	principles of electromagnetic theory Maxwell's equations, differential form Integral form
Week 13	Electromagnetic spectrum, radio stations ,antenna

Week 14	Energy current density, Poynting vector ,Electric field energy density,Magnetic field energy density
Week 15	Electromagnetic spectrum, Regions ,Wavelengths ,Applications
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
3	Lab 1: Introduction to mechanics
Week 2	Lab 2: simple pendulum
Week 3	Lab 3: diffraction grating
Week 4	Lab 4: Flywheel
Week 5	Lab 5: surface tension
Week 6	Lab 6: refractive index
Week 7	Lab 7: sound velocity

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	1. Introductory Physics: - "University Physics" by Young and Freedman - "Physics for Scientists and Engineers" by Giancoli - "Fundamentals of Physics" by Halliday, Resnick, and Walker 2. Classical Mechanics:	Yes

	- "Classical Mechanics" by Herbert Goldstein - "Classical Dynamics of Particles and Systems" by Thornton and Marion - "Introduction to Classical Mechanics" by David Morin 3. Electromagnetism: - "Introduction to Electrodynamics" by David Griffiths - "Electricity and Magnetism" by Edward Purcell - "Classical Electrodynamics" by Jackson 4. Quantum Mechanics: - "Principles of Quantum Mechanics" by Shankar - "Modern Quantum Mechanics" by Sakurai - "Quantum Mechanics Concepts and Applications" by Nouredine Zettili 5. Statistical Mechanics: - "An Introduction to Thermal Physics" by Daniel Schroeder - "Statistical Mechanics: Entropy, Order Parameters, and Complexity" by James Sethna - "Statistical Mechanics" by Pathria and Beale Schaum outlines(book). 2003.vol2	
Recommended Texts	1. Introductory Physics: - "Concepts of Physics" by H.C. Verma - "The Feynman Lectures on Physics" by Richard Feynman - "Physics for Scientists and Engineers with Modern Physics" by Tipler and Mosca 2. Classical Mechanics: - "Classical Mechanics" by Taylor - "Classical Mechanics" by Thornton and Marion - "Analytical Mechanics" by Fowles and Cassiday 3. Electromagnetism: - "Introduction to Electrodynamics" by David Griffiths - "Electricity and Magnetism" by Edward Purcell - "Electromagnetic Fields" by Wangsness 4. Quantum Mechanics:	yes

	- "Principles of Quantum Mechanics" by Shankar - "Modern Quantum Mechanics" by Sakurai - "Quantum Mechanics and Path Integrals" by Feynman and Hibbs 5. Statistical Mechanics: - "Thermal Physics" by Kittel and Kroemer - "Statistical Physics of Particles" by Mehran Kardar - "Introduction to Modern Statistical Mechanics" by David Chandler Electromagnetic theory (book). 2000.vol.1	
Websites	1. Khan Academy (https://www.khanacademy.org/science/physics) - Khan Academy is a popular online learning platform that offers free video lessons and practice problems in physics topics ranging from classical mechanics to modern physics. 2. MIT OpenCourseWare (https://ocw.mit.edu/courses/physics/) - MIT OpenCourseWare is a free and open educational resource that provides access to MIT's course materials from physics courses. The website includes lecture notes, problem sets, and exams. 3. Physics Classroom (https://www.physicsclassroom.com/) - Physics Classroom is an online tutorial that covers topics in physics from high school to college level. The website includes interactive lessons, simulations, and practice problems. 4. HyperPhysics (http://hyperphysics.phy-astr.gsu.edu/hbase/hframe.html) - HyperPhysics is an online encyclopedia of physics concepts that covers topics from mechanics to cosmology. The website includes interactive diagrams and links to other resources. 5. Physlet Physics (https://www.compadre.org/Physlets/) - Physlet Physics is a collection of interactive simulations that can be used to illustrate physics concepts. The website includes simulations on a range of topics from mechanics to quantum mechanics. 6. Wolfram Physics Project (https://www.wolframphysics.org/) - The Wolfram Physics Project is a new approach to understanding the fundamental laws of physics. The website	

Grading Scheme

مخطط الدرجات

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

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	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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية (المرحلة الاولى/الفصل الثاني)

Module Information معلومات المادة الدراسية					
Module Title	Environmental Science			**Module Delivery**	
Module Type	**Core**			☒**Theory** ☒**Lecture** ☒**Lab** ☐**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code					
ECTS Credits					
SWL (hr/sem)					
Module Level		1	**Semester of Delivery**		1
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.

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Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		1/10/2024	**Version Number**		1.0

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	1. Understand the scientific principles and concepts that underlie environmental science, including ecological systems, biogeochemical cycles, and environmental economics. 2. Identify and describe the major environmental challenges facing the planet, such as climate change, biodiversity loss, pollution, and resource depletion. 3. Analyze the impacts of human activities on the environment, including the use of natural resources, land use change, industrial and agricultural practices, and urbanization. 4. Evaluate the effectiveness of different policies and strategies to address environmental issues, such as pollution control, conservation, and renewable energy development. 5. Explore the ethical and social dimensions of environmental issues, including environmental justice, sustainability, and the role of individuals and communities in promoting environmental stewardship. 6. Develop critical thinking and problem-solving skills through interdisciplinary approaches to environmental issues, incorporating perspectives from science, economics, policy, and social science. 7. Demonstrate effective communication skills through written and oral presentations of environmental science research, data analysis, and policy analysis. 8. Apply quantitative methods and analytical tools to environmental science research, such as statistical analysis, modeling, and GIS mapping. 9. Engage with current debates and controversies in environmental science, such as the role of technology in addressing environmental challenges, the relationship between economic

	growth and environmental sustainability, and the trade-offs between conservation and development. 10. Develop a deep appreciation for the complexity and interconnectedness of ecological systems, and the importance of interdisciplinary approaches to understanding and addressing environmental issues.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Demonstrate a comprehensive understanding of key environmental science concepts and principles, including ecosystem dynamics, biogeochemical cycles, and sustainable development. 2. Analyze the causes and consequences of major global environmental challenges, such as climate change, biodiversity loss, and pollution, using interdisciplinary approaches that draw on science, economics, and policy. 3. Evaluate the effectiveness of different policy and management strategies for addressing environmental issues, including traditional regulatory approaches, market-based mechanisms, and community-based conservation programs. 4. Apply quantitative methods and analytical tools to environmental science research, such as statistical analysis, modeling, and geographic information systems (GIS) mapping. 5. Communicate environmental science research findings and recommendations effectively through written and oral presentations, using appropriate scientific and technical language and visual aids. 6. Assess the ethical and social dimensions of environmental issues, including environmental justice, equity, and the role of indigenous knowledge and traditional ecological knowledge. 7. Evaluate the impact of environmental policies and actions on different populations, including vulnerable groups and future generations, and propose strategies for promoting social and environmental justice. 8. Engage in collaborative problem-solving and decision-making processes related to environmental issues, using effective communication, critical thinking, and conflict resolution skills. 9. Develop a deep appreciation for the complexity and interconnectedness of natural systems and the importance of interdisciplinary approaches to understanding and addressing environmental challenges. 1. 10. Demonstrate a commitment to environmental stewardship and sustainability, and recognize the role of individual and collective action in promoting a more sustainable and just world.
Indicative Contents المحتويات الإرشادية	1. Introduction to Environmental Science: Overview of the interdisciplinary nature of environmental science and its importance in understanding and addressing environmental challenges. 2. Ecological Systems: The principles of ecology, including the structure and function of ecosystems, the biogeochemical cycles, and the interactions between organisms and their environment. 3. Climate Change: The causes, consequences, and mitigation strategies for global climate change, including the role of greenhouse gases, energy systems, and policy solutions.

	4. Biodiversity and Conservation: The importance of biodiversity, the threats to biodiversity, and conservation strategies, including protected areas, ecosystem restoration, and sustainable use of natural resources. 5. Pollution: The sources, impacts, and control of various forms of pollution, including air, water, and soil pollution, and the effects on human health and the environment. 6. Environmental Policy and Management: The role of policy and management strategies in addressing environmental issues, including regulatory and market-based approaches, environmental impact assessment, and sustainable development. 7. Land Use and Food Systems: The impacts of land use change, urbanization, and agriculture on the environment, including soil degradation, deforestation, and food security challenges. 8. Renewable Energy and Energy Efficiency: The principles and technologies of renewable energy sources, including wind, solar, and hydroelectric power, and energy efficiency strategies. 9. Environmental Ethics and Justice: The ethical and social dimensions of environmental issues, including environmental justice, sustainability, and the role of individuals and communities in promoting environmental stewardship. 10. Interdisciplinary Approaches to Environmental Science: The importance of interdisciplinary approaches to understanding and addressing environmental challenges, including the integration of science, economics, policy, and social science. 11. Case Studies in Environmental Science: Examples of real-world environmental challenges, including case studies of local and global environmental issues and the application of environmental science principles and strategies. 12. Environmental Science Research Methods: The principles and techniques of environmental science research, including data collection, analysis, and interpretation, and the use of quantitative and qualitative methods.
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. Lectures: Traditional lectures can be used to provide an overview of key concepts and principles in environmental science, and to introduce students to new topics and ideas. 2. Case Studies: Case studies can be used to illustrate real-world environmental issues and challenges, and to encourage critical thinking and problem-solving skills. 3. Group Discussions: Group discussions can be used to promote collaboration and critical thinking, and to encourage students to engage with different perspectives and ideas. 4. Laboratory Exercises: Laboratory exercises can be used to provide hands-on experience with environmental science concepts and techniques, such as soil analysis, water quality testing, and environmental monitoring.

	5. Field Trips: Field trips can be used to provide students with first-hand experience of environmental issues and management strategies, and to encourage observation and data collection skills. 6. Computer-based Simulations: Computer-based simulations can be used to provide students with a virtual environment where they can explore complex environmental systems and processes. 7. Guest Speakers: Inviting guest speakers, such as environmental scientists, policymakers, and community leaders, can be used to provide students with real-world perspectives on environmental issues and solutions. 8. Research Projects: Research projects can be used to encourage independent thinking and analysis, and to provide students with an opportunity to apply environmental science concepts and techniques to a specific research question. 9. Multimedia Presentations: Multimedia presentations, such as videos, podcasts, and interactive websites, can be used to provide students with alternative ways of accessing and engaging with environmental science concepts and ideas. 10. Role-playing Exercises: Role-playing exercises can be used to encourage students to think creatively and collaboratively about different scenarios and perspectives related to environmental issues and policies. These strategies can be used in combination with each other, and adapted to suit the needs and goals of different courses or modules on environmental science.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل		**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem)		**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	

الحمل الدراسي غير المنتظم للطالب خلال الفصل			
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation

تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to Environmental Science - Overview of course objectives and expectations - Introduction to key concepts in environmental science, including ecological systems, sustainability, and environmental ethics

Week 2	Principles of Ecology - Introduction to ecological principles, including the structure and function of ecosystems, biotic and abiotic factors, and energy flow - Ecological interactions, including competition, predation, and symbiosis
Week 3	Climate Change - Introduction to climate change and its causes, such as greenhouse gas emissions and deforestation - Impacts of climate change on the environment and human societies, including sea level rise, extreme weather events, and food security
Week 4	Biodiversity and Conservation - Introduction to biodiversity and its importance - Threats to biodiversity, including habitat destruction and climate change - Strategies for conservation, including protected areas, ecosystem restoration, and sustainable use of natural resources
Week 5	Pollution - Introduction to different types of pollution, including air, water, and soil pollution - Impacts of pollution on human health and the environment - Pollution control strategies, including regulation, technology, and behavioral change
Week 6	Environmental Policy and Management - Overview of environmental policy and its evolution over time - Analysis of different policy approaches, including regulatory and market-based mechanisms - Strategies for environmental management, including environmental impact assessment and sustainable development
Week 7	Land Use and Food Systems - Impacts of land use change, urbanization, and agriculture on the environment, including soil degradation, deforestation, and food security challenges - Sustainable land use and food system strategies, including agroforestry, urban agriculture, and sustainable agriculture practices

Week 8	Renewable Energy and Energy Efficiency - Introduction to renewable energy sources, including solar, wind, and hydroelectric power - Energy efficiency strategies, including building design and transportation choices
Week 9	Environmental Ethics and Justice - Overview of environmental ethics and its importance in environmental science - Analysis of environmental justice issues, including disproportionate impacts of environmental hazards on marginalized populations - Strategies for promoting environmental equity and justice
Week 10	Interdisciplinary Approaches to Environmental Science - Importance of interdisciplinary approaches to understanding and addressing environmental challenges - Integration of science, economics, policy, and social science in environmental science research and analysis
Week 11	Case Studies in Environmental Science - Examination of real-world environmental challenges, including case studies of local and global environmental issues and the application of environmental science principles and strategies - Analysis of environmental solutions and their effectiveness
Week 12	Case Studies in Environmental Science - Examination of real-world environmental challenges, including case studies of local and global environmental issues and the application of environmental science principles and strategies - Analysis of environmental solutions and their effectiveness
Week 13	Research Projects - Development and implementation of research projects related to environmental science - Data collection and analysis using environmental science research methods
Week 14	Research Projects - Development and implementation of research projects related to environmental science - Data collection and analysis using environmental science research methods

Week 15	Environmental Science Communication - Effective communication of environmental science research findings and recommendations to different audiences - Use of scientific and technical language, visual aids, and other communication strategies
Week 16	: Course Review and Reflection - Course reflection and evaluation of learning outcomes - Discussion of future directions for environmental science research and action.

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1. Environmental Science: A Global Concern by William P. Cunningham and Mary Ann Cunningham - This textbook provides a comprehensive introduction to environmental science, covering topics such as ecology, climate change, biodiversity, pollution, and environmental policy. 2. Living in the Environment by G. Tyler Miller Jr. and Scott Spoolman - This textbook covers key topics in environmental science, including ecological principles, environmental health, and sustainability, and includes case studies and critical thinking exercises. 3. The Sixth Extinction: An Unnatural History by Elizabeth Kolbert - This book explores the current mass extinction event and its causes, including climate change and human activities, and provides insights into conservation strategies. 4. Silent Spring by Rachel Carson - This classic book documents the impacts of pesticide use on the environment and human health, and played a key role in the development of the modern environmental movement.	No

Recommended Texts	1. Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming edited by Paul Hawken - This book presents a comprehensive plan to reverse global warming, based on scientific research and analysis of existing strategies and technologies. 2. The Water Will Come: Rising Seas, Sinking Cities, and the Remaking of the Civilized World by Jeff Goodell - This book explores the impacts of sea level rise on human societies and infrastructure, and provides insights into adaptation strategies. 3. The Ecology of Commerce by Paul Hawken - This book explores the relationship between business and the environment, and provides insights into sustainable business practices and the role of corporations in promoting environmental sustainability. 4. An Inconvenient Truth: The Planetary Emergency of Global Warming and What We Can Do About It by Al Gore - This book provides an overview of climate change and its impacts, and presents strategies for mitigating and adapting to its effects.	No
Websites	1. Environmental Protection Agency (EPA) - The EPA is a federal agency responsible for protecting human health and the environment through regulation, policy, and research. The website provides information on a wide range of environmental topics, including air and water quality, climate change, and hazardous waste. 2. National Oceanic and Atmospheric Administration (NOAA) - The NOAA is a federal agency that provides scientific research and services related to weather, climate, oceans, and coasts. The website provides information on climate data, marine ecosystems, and weather forecasts. 3. World Wildlife Fund (WWF) - The WWF is a nonprofit organization dedicated to conservation and protection of endangered species and their habitats. The website provides information on wildlife conservation, sustainable development, and climate change. 4. Intergovernmental Panel on Climate Change (IPCC) - The IPCC is a United Nations body that provides scientific assessments of climate change and its impacts. The website provides information on climate science, adaptation and mitigation strategies, and policy recommendations. 5. The Nature Conservancy (TNC) - The TNC is a nonprofit organization focused on conservation and protection of natural ecosystems. The website provides information on conservation strategies, ecosystem restoration, and sustainable land use. 6. Union of Concerned Scientists (UCS) - The UCS is a nonprofit organization that advocates for science-based solutions to environmental and social challenges. The website provides information on climate change, clean energy, and sustainable agriculture. 7. NASA Earth Observatory - The NASA Earth Observatory provides scientific information and imagery related to Earth's climate, atmosphere, oceans, and land surface. The website includes data visualizations, time-lapse videos, and satellite imagery. 8. Environmental Defense Fund (EDF) - The EDF is a nonprofit organization that works to protect human health and the environment through science-based solutions and advocacy. The website provides information on clean energy, sustainable agriculture, and climate policy.	

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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	Geology	**Module Delivery**
Module Type		**☒Theory**

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Module Code				☒**Lecture** ☒**Lab** ☐**Tutorial** ☐**Practical** ☐**Seminar**	
ECTS Credits					
SWL (hr/sem)					
Module Level		1	**Semester of Delivery**		1
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		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		1/10/2024	**Version Number**		1.0

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

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

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	• Understand the basic concepts of geology including the rock cycle, plate tectonics, seismic activity, and geological time scale • Identify and classify common rock and mineral types based on their physical and chemical properties • Explain how different geological processes shape the Earth's surface, including weathering, erosion, deposition, folding, faulting and metamorphism • Describe the formation and structure of tectonic plates, and how plate movements relate to phenomena like earthquakes, volcanoes and mountain building

	• Understand the progression of life through geological time and how fossils are formed and studied by geologists • Apply geological concepts to interpret geologic features and landscapes through field observations and maps reading • Develop skills to think scientifically, evaluate geological evidence critically and apply knowledge to real world problems • Gain experience using tools and equipment relevant to the geological field, including compasses, clinometers, maps and online databases • Understand the role of geology in exploiting natural resources and mitigating natural hazards like landslides, volcanic eruptions and earthquakes • Develop an appreciation for the history of the earth and how geology contributes to our understanding of the planet and life on it
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• Students will identify and classify common rock and mineral types based on their properties • Students will categorize different types of rocks based on their origins and relate these to the rock cycle. • Students will explain the theory of plate tectonics and relate plate movements to geological activities and structures. • Students will analyze geological maps and diagrams to interpret geological formations, structures and processes. • Students will identify important periods in geological time and place key events in Earth's history in the correct chronological order. • Students will describe the formation of fossils and use fossil evidence to interpret changes in life through geological time. • Students will apply knowledge of geology to explain geological hazards like landslides, earthquakes and volcanic eruptions. • Students will think critically to evaluate geological data and explanations. • Students will communicate geological concepts and ideas effectively in writing and verbally. • Students will demonstrate safe and proper use of geological tools, experimental techniques and field equipment. • Students will develop an awareness of how geology applies to topics like natural resource exploitation and environmental issues. The key parts of effective learning outcomes are: • An action verb describing an observable or measurable student action - identify, explain, analyze, etc. • A clear subject or topic that students will demonstrate knowledge of - rocks, plate tectonics, geological time

	• A defined condition specifying any limits or constraints - based on their properties, using geological maps, applying knowledge to hazards, etc. • An implied standard of achievement - correctly, accurately, effectively, critically, properly, etc.
Indicative Contents المحتويات الإرشادية	•Introduction to geology and the earth - Core and mantle structure - Structure of the earth's outer crust - Plate tectonics and the rock cycle •Minerals and rocks - Physical and chemical properties of minerals - Classifying minerals and rocks - Igneous, sedimentary and metamorphic rocks •Geological time - Geological events through time - Fossils, index fossils and the fossil record - Relative and absolute dating techniques •Earthquakes and volcanoes - Causes and characteristics of earthquakes - Distribution of volcanoes and eruption types - Effects of earthquakes and volcanic eruptions •Landscapes and surface processes

	- Weathering and erosion - Mass movement and mass wasting - Deposition and sedimentation •Structural geology - Stress and strain within rocks - Folding and faulting of rock strata - Interpreting geological structures and maps •Applied geology - Geological hazards and risk assessment - Natural resources and exploitation - Environmental geology •Field work and mapping (practical component) - Using geological equipment and maps - Observing and interpreting rock exposures - Measuring geological features
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• Lectures - To introduce key concepts, theories and processes. Lectures should be interactive with questions, discussions and activities.

	• Practical classes - Hands-on work with rock and mineral samples, maps, field trips and using tools and equipment. This reinforces concepts through practical experience. • Demonstrations - To show students geological phenomena and processes that they cannot observe directly, using models and multimedia. • Field work - Site visits and field trips to observe real geological features and landscapes, collect data and practice mapping skills. • Discussion - In-class debates and group work to explore geological problems, evaluate evidence and develop critical thinking. • Interactive software - Using programs to simulate geological processes, identify rock and mineral samples, and interpret maps and data. • Problem solving tasks - Working through real world geological scenarios to apply knowledge and develop analytical skills. • Formative assessment - Regular lower-stakes tests, quizzes and assignments with feedback to monitor student progress. • Geological models - Using physical and virtual 3D models to illustrate geological structures and processes in a hands-on way. • Case studies - Exploring real examples of how geology is applied to solve practical problems or answer research questions. • Self-directed learning - Encouraging students to conduct their own research into particular topics of interest using online resources. • Multimedia - Utilizing videos, animations and images to illustrate geological concepts that are difficult to see directly.
Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا	

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل		**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل		**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation

تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to geology - Origins of geology, earth structure, rock cycle

Week 2	Minerals - Properties, classification, identifying features
Week 3	Igneous rocks - Forming processes, textures, identifying features
Week 4	Sedimentary rocks - Forming processes, structures, identifying features
Week 5	Metamorphic rocks - Forming processes, grades, textures
Week 6	Geological time scale - Geological eras, periods and epochs
Week 7	Plate tectonics - Theory, plate boundaries, crustal movements
Week 8	Earthquakes and volcanoes - Mechanisms, monitoring, effects
Week 9	Weathering and erosion - Weathering processes, landforms
Week 10	Streams and deposition - Sediment transport, landforms
Week 11	Fossils - Formation, types, uses
Week 12	Structural geology - Stress and strain, folding and faulting
Week 13	Geological maps - Reading, interpreting and constructing maps
Week 14	Applied and environmental geology - Natural resources, hazards
Week 15	Revision and review
Week 16	Exams

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي العملي

	Material Covered
Week 1	Lab safety and equipment

Week 2	Minerals - hardness test, streak test, luster
Week 3	Igneous rocks - texture, grain size
Week 4	Sedimentary rocks - particle size, sorting, rounding
Week 5	Metamorphic rocks - foliations, lineations
Week 6	Fossils - characteristics, types
Week 7	Topographic maps - contours, gradients
Week 8	Aerial photos - identifying geological features
Week 9	Geologic map skills - strike and dip, outcrops
Week 10	Rock mechanics - tensile/compressive strength
Week 11	Soil properties - classification, texture
Week 12	Groundwater - permeability, porosity
Week 13	Seismic data - interpreting P and S waves
Week 14	Geologic hazards - risk assessment
Week 15	Applied geology - natural resources
Week 16	Lab cleanup, post-lab assessments *In this lab-focused approach:* •*Weeks 2-5 focus on identifying and classifying rocks and minerals.* •*Weeks 6-9 build mapping skills through interpreting maps, photos and geologic maps.* •*Weeks 10-13 cover practical techniques like rock testing, soil analysis, groundwater studies and seismic data interpretation.* •*Weeks 14 and 15 apply geological knowledge to real world issues of hazards and resources.*

	Lab activities provide hands-on experience that helps cement theoretical knowledge from lectures. *Post-lab assessments and assignments throughout allow students to demonstrate their learning and skill development.* *Lab cleanup and post-lab assessments in the final week wrap up the course.*

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1. "Earth: An Introduction to Physical Geology" by Edward J. Tarbuck, Frederick K. Lutgens, and Dennis Tasa 2. "Essentials of Geology" by Stephen Marshak 3. "Physical Geology" by Charles C. Plummer, Diane H. Carlson, and Lisa Hammersley	No
Recommended Texts	1. "The Geology Book" by Dr. John D. Morris - This book provides an overview of geology from a biblical perspective. 2. "The Map That Changed the World" by Simon Winchester - This book tells the story of William Smith and the creation of the first geological map.	No

Websites	•USGS (United States Geological Survey) - https://www.usgs.gov/ This is the official website of the USGS and contains a wealth of information on geology, earth science, natural resources and hazards. It has maps, photos, data and educational resources. •Geology.com - https://geology.com/ This site has articles, photos, news and information on various topics in geology written for a general audience. It's a good resource for supplementary material. •National Geographic - https://www.nationalgeographic.org/subjects/earth-science/ National Geographic has many excellent articles, photos and videos on geology, earth science, natural disasters and other related topics. •Khan Academy - https://www.khanacademy.org/science/earth-sciences Khan Academy has free interactive lessons on topics in geology, earth science and related fields. It's a great resource forstudents to review concepts and test their knowledge. •Digital Library of Earth Sciences - https://digital-earth.nasa.gov/ This NASA resource has thousands of images, videos, maps, data and educational material related to earth sciences. It's a rich source for visual and data resources. •OpenTopography - https://www.opentopography.org/ This website hosts high-resolution topographic data for the US. It has elevation models, aerial imagery and other GIS datasets that can be useful for mapping and terrain analysis. •Earth Observatory - https://earthobservatory.nasa.gov/

	The Earth Observatory by NASA features maps, images and articles about earth science and geology. It covers current research and major events. •USGS Earthquake Hazards Program - https://www.usgs.gov/natural-hazards/earthquake-hazards This part of the USGS website focuses on earthquakes, including real time data, maps and information about earthquakes around the world.

Grading Scheme

مخطط الدرجات

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

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

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Statistics		**Module Delivery**		
Module Type			☒**Theory** ☒**Lecture** ☒**Lab** ☐**Tutorial** ☐**Practical** ☐**Seminar**		
Module Code					
ECTS Credits					
SWL (hr/sem)					
Module Level			**Semester of Delivery**	1	
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	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**	

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Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Understand the basics of probability and distribution functions such as binomial, normal, and Poisson distributions. 2. Calculate and interpret measures of central tendency (mean, median, mode) and dispersion (range, variance, standard deviation) for data sets. 3. Use statistical graphs and charts like histograms, bar charts, box plots, and scatter plots to visualize and analyze data. 4. Understand the concepts of populations, samples, and sampling methods including random, stratified, cluster and systematic sampling. 5. Perform hypothesis testing using the z-test, t-test, chi-square test, ANOVA and other statistical tests. Interpret p-values and confidence intervals. 6. Estimate parameters and test hypotheses using statistical software like Excel, Minitab, R or SAS. 7. Distinguish between correlation and causation, and calculate and interpret correlation coefficients for data sets. 8. Apply statistical analysis techniques to real world examples from various disciplines like business, health sciences, social sciences, engineering, etc. 9. Develop an understanding of statistical concepts and reasoning to think critically about uses and limitations of statistics. 10. Improve technical communication skills through writing statistical analyses and interpretations in a clear and organized manner.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• Students will be able to calculate and interpret measures of central tendency and dispersion for data sets. • Students will understand basic probability concepts and properties of probability distributions. • Students will be able to select and apply appropriate graphical representations for different types of data. • Students will be able to apply appropriate sampling methods based on the research context. • Students will be able to perform hypothesis testing using statistical software and interpret the results, including p-values and confidence intervals. • Students will be able to distinguish between correlation and causation when analyzing relationships between variables.

	• Students will be able to apply statistical analysis techniques to real world examples and case studies from various disciplines. • Students will think critically about the proper use of statistics and limitations of statistical analysis. • Students will effectively communicate statistical analyses and interpretations in writing for different audiences. • Students will develop quantitative reasoning skills to make evidence-based decisions using statistics. • Students will gain the ability to interpret statistical results reported in research studies and the media with a critical perspective.
Indicative Contents المحتويات الإرشادية	1. Introduction to statistics and probability - Overview of statistics and its applications - Components of a data set - Basic probability rules and concepts - Probability distributions: binomial, normal and Poisson 2. Descriptive statistics - Measures of central tendency: mean, median, mode - Measures of dispersion: range, quartiles, variance, standard deviation - Frequency distributions and histograms - Stem and leaf plots, dot plots, box plots - Measures of skewness and kurtosis 3. Probability distributions - The normal distribution and the central limit theorem - The binomial distribution

	- The Poisson distribution 4. Sampling and sampling distributions - Populations and samples - Sampling methods - Sampling distributions - Standard error 5. Inference - Point estimation and interval estimation - Hypothesis testing (z-test, t-test, chi-square test, ANOVA) - Type I and type II errors, significance level 6. Correlation and regression - Correlation coefficients - Simple linear regression - Predicting with regression models 7. Analysis using statistical software - Data input, cleaning and manipulation - Graphs and summary statistics

	- Hypothesis testing commands - Regression analysis 8. Real world applications - Case studies from business, health sciences, social sciences, etc. 9.Effective communication of statistical results - Reporting measures of central tendency and dispersion - Graphically presenting data - Interpreting statistical tests and models

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• Lectures: Initial introduction to concepts and methods through lectures. This helps provide a foundation of knowledge. • Demonstrations: Use demonstrations and worked examples to illustrate statistical procedures and interpretations. This helps make abstract concepts more concrete. • Hands-on practice: Assign statistical exercises and problems for students to practice the methods taught in lectures. Provide timely feedback. This helps develop skills through active learning.

	• Group activities: Assign group projects involving real world data analysis and interpretation. This fosters teamwork and collaboration skills. • Use of software: Integrate the use of statistical software tools early on. Students can learn by doing data analysis through software. This improves statistical literacy. • Case studies: Discuss real world applications and case studies from various disciplines. This helps students see the relevance of statistics. • Discussions: Have in-class discussions for students to exchange ideas and interpretations. This deepens understanding through peer learning. • Project work: Assign a final individual or group project for students to conduct an independent statistical analysis. This assesses higher order skills. • Formative assessment: Use quizzes, exercises and other low-stakes assessments to provide ongoing feedback for students. This helps monitor progress and identify gaps. • Summative assessment: Use exams and final projects to assess overall learning at the end. This provides accountability. • Seek feedback: Regularly seek feedback from students about the course to identify areas for improvement. Adjust strategies based on student needs.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل		**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل		**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	
Total SWL (h/sem)	**200**		

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الحمل الدراسي الكلي للطالب خلال الفصل	

Module Evaluation

تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to Statistics - Definition and importance of statistics - Types of data and scales of measurement - Data collection methods - Descriptive vs. inferential statistics
Week 2	Probability

	- Basic probability concepts - Conditional probability - Bayes' theorem - Probability distributions
Week 3	Sampling and Sampling Distributions - Simple random sampling - Sampling distributions - Central Limit Theorem - Standard error
Week 4	Confidence Intervals - Interpretation and construction of confidence intervals - Margin of error - Sample size determination - Confidence intervals for proportions
Week 5	Hypothesis Testing - Null and alternative hypotheses - Type I and Type II errors - p-values - One-sample and two-sample hypothesis tests
Week 6	: Inference for Means - One-sample and two-sample t-tests - Paired t-tests - Confidence intervals for means - Assumptions of inference for means

Week 7	Inference for Proportions - Confidence intervals for proportions - Hypothesis testing for proportions - Sample size determination for proportions - Assumptions of inference for proportions
Week 8	Analysis of Variance (ANOVA) - One-way ANOVA - Two-way ANOVA - Post-hoc testing - Assumptions of ANOVA
Week 9	Simple Linear Regression - Association and correlation - Simple linear regression model - Inference for regression coefficients - Residual analysis and diagnostics
Week 10	Multiple Linear Regression - Multiple regression model - Inference for regression coefficients - Model selection and diagnostics - Assumptions of multiple linear regression
Week 11	Categorical Data Analysis - Chi-square goodness-of-fit test - Contingency tables - Tests of independence

	- Measures of association
Week 12	Nonparametric Methods - Wilcoxon rank-sum test - Kruskal-Wallis test - Spearman's rank correlation - Assumptions of nonparametric methods
Week 13	: Time Series Analysis - Time series components - Stationarity and differencing - Autocorrelation and partial autocorrelation - ARIMA models
Week 14	Bayesian Statistics - Bayes' theorem revisited - Prior and posterior distributions - Markov Chain Monte Carlo (MCMC) methods - Bayesian model selection
Week 15	Review and Exam Preparation - Review of key concepts and topics - Exam preparation strategies - Practice problems and quizzes
Week 16	Final Exam - Comprehensive final exam covering all course material.

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Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي العملي

	Material Covered
Week 1	Introduction to Statistical Computing - Introduction to R software - Basic R commands and functions - Data import and export - Data visualization in R
Week 2	Descriptive Statistics and Data Visualization - Data summaries and measures of central tendency - Measures of dispersion and variability - Data visualization using histograms, box plots, and scatter plots - Data transformation and normalization
Week 3	Probability and Probability Distributions - Basic probability concepts - Probability distributions (discrete and continuous) - Normal distribution and its properties - Properties of mean and variance
Week 4	Sampling and Sampling Distributions - Simple random sampling - Sampling distributions - Central Limit Theorem - Standard error

Week 5	Confidence Intervals and Hypothesis Testing - Interpretation and construction of confidence intervals - Margin of error - Sample size determination - Hypothesis testing and p-values
Week 6	One-Sample and Two-Sample t-tests - One-sample t-test - Two-sample t-test - Paired t-test - Assumptions of t-tests
Week 7	Analysis of Variance (ANOVA) - One-way ANOVA - Two-way ANOVA - Post-hoc testing - Assumptions of ANOVA
Week 8	Simple Linear Regression - Association and correlation - Simple linear regression model - Inference for regression coefficients - Residual analysis and diagnostics
Week 9	Multiple Linear Regression - Multiple regression model - Inference for regression coefficients - Model selection and diagnostics

	- Assumptions of multiple linear regression
Week 10	Categorical Data Analysis - Chi-square goodness-of-fit test - Contingency tables - Tests of independence - Measures of association
Week 11	Nonparametric Methods - Wilcoxon rank-sum test - Kruskal-Wallis test - Spearman's rank correlation - Assumptions of nonparametric methods
Week 12	Time Series Analysis - Time series components - Stationarity and differencing - Autocorrelation and partial autocorrelation - ARIMA models
Week 13	Bayesian Statistics - Bayes' theorem revisited - Prior and posterior distributions - Markov Chain Monte Carlo (MCMC) methods - Bayesian model selection
Week 14	Multivariate Analysis - Principal Component Analysis (PCA) - Factor Analysis (FA)

	- Cluster Analysis - Discriminant Analysis
Week 15	Survival Analysis - Survival curves and hazard rates - Kaplan-Meier estimator - Log-rank test - Cox proportional hazards model
Week 16	Review and Exam Preparation - Review of key concepts and topics - Exam preparation strategies - Practice problems and quizzes

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1. "Statistics: The Art and Science of Learning from Data" by Alan Agresti and Christine Franklin 2. "Elementary Statistics" by Mario F. Triola 3. "Statistics for Engineers and Scientists" by William Navidi 4. "Statistics for Business and Economics" by David Anderson, Dennis Sweeney, and Thomas Williams 5. "Introduction to Probability and Statistics" by William Mendenhall, Robert Beaver, and Barbara Beaver	No

Recommended Texts	1. "Learning Statistics with R" by Danielle Navarro - This book provides an introduction to statistical analysis using the R programming language. 2. "The Elements of Statistical Learning" by Trevor Hastie, Robert Tibshirani, and Jerome Friedman - This book covers various topics in statistical learning, including regression, classification, and clustering. 3. "Applied Linear Statistical Models" by Michael Kutner, Christopher Nachtsheim, and John Neter - This book provides a comprehensive treatment of linear regression and its applications. 4. "Doing Bayesian Data Analysis" by John Kruschke - This book provides an introduction to Bayesian data analysis using the R programming language. 5. "Experimental Design and Analysis" by Steven R. Brown - This book covers the principles and practice of experimental design and analysis, including factorial designs and response surface methodology.	No

Websites	Khan Academy - https://www.khanacademy.org/math/statistics-probability • Khan Academy has excellent free video lessons covering statistics and probability concepts from the basics to more advanced topics. Statistics How To - https://www.statisticshowto.com/ • This is a comprehensive statistics resource with lessons, definitions, formulas, calculators and examples to help you learn statistics step by step. Stat Trek - http://stattrek.com/ • Stat Trek has a great collection of statistics tutorials, lessons, dictionaries and references organized by type and difficulty level. Statistics Solutions - https://www.statisticssolutions.com/ • Statistics Solutions provides lots of free resources including explanations, tutorials, examples and exercises on various statistical topics. CoolStats - https://stattrek.com/coolistats • CoolStats aims to make statistics fun with interesting examples, interactive tools and visualizations. University of Florida Library Guide - https://guides.uflib.ufl.edu/statista • This is a useful guide to finding statistics resources, tutorials, software and data from the University of Florida Libraries. Youtube Channels: - Khan Academy Statistics - StatQuest with Josh Starmer - Jake VanderPlas (Data Science, Statistics and Python) Software Websites: - Excel (Microsoft) for basic statistics - Minitab - RStudio (Free and open source) - SAS Institute - SPSS (IBM)

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

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

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MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Cartography**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code					
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	**Alaa S. Mahdi**		**e-mail**	**Alaa.s@sc.uobaghdad.edu.iq**	
Module Leader's Acad. Title	**Prof. Assist.**		**Module Leader's Qualification**	Ph.D.	
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	**Prof. Assist. Dr. Auday H. Shaban**		**e-mail**	auday.h@sc.uobaghdad.edu.iq	
Review Committee Approval	1/10/2024		**Version Number**	1.0	

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	

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Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	This course is designed to provide the knowledge and skills for understanding the process of map making, and to acquaint students with new technology use in map making 7. This course deals with the basic concept of cartography 8. Clarifying and training students on the map design.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**The learning outcomes:** 12. Gain knowledges with the map projection, generalization, map symbolization, color theory, thematic map design. 13. Be able to abstract geographical phenomena, spatial cognition and thinking 14. Be skilled to collect, processing and generalization of spatial data 15. Enable to use commercial software and open source tools to produce maps. 16. The students will be able to apply the techniques and principles of map making and designing for map creation and be able to read and coordinate various sheets for making mosaic.
Indicative Contents **المحتويات الإرشادية**	The course combines theory with experiment, with many contents but insufficient class time. The teaching in classroom mainly focuses on important concepts and problems, adopts new teaching methods such as flipped classroom, theme discussion and work competition to facilitate students ' interest. Lab Practice Teaching Activities provide sufficient time for lab exercises. Through the study of basic content, with lab exercises, to improve students ' map producing ability.

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	**The main strategy that will be adopted in delivering this module is to encourage students' participation in the discussions, dialogues and group**

	work lectures & exercises, while at the same time refining and expanding their critical thinking skills. There are many teaching and learning methods used, and the most important of these methods are: **Theoretical lecture, discussion and dialogue, panel discussions on certain topics, theoretical student research** **Library and electronic activities**

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	60	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	90	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Attending lectures	1	1%	1.5	41#15 weeks
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All

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Total assessment	100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري مادة رسم الخرائط

	Material Covered **Cartography**
Week 1	**Unit – 1** 1.1 Introduction to cartography, nature and scope of cartography
Week 2	1.2 Digital cartography - elements of digital cartography Relation between digital Cartography, RS & GIS
Week 3	1.3 Conventional mapping VS Digital mapping 1.4 Scale, reference and coordinate system
Week 4	**Unit – 2** 2.1 Cartographic transformations and reasons for transforming cartographic data
Week 5	2.2 Map Projection – concept and classification 2.3 Azimuthal, cylindrical, conical and rectangular projection system
Week 6	2.4 Choice of map projection – Satellite image and map projection
Week 7	**Unit – 3** 3.1 Mechanics of map construction - Principles of drawing, Base materials -Instruments
Week 8	3.2 Cartographic design - map design principles, symbolisation and lay out
Week 9	3.3 Study of different types of maps, Survey of Iraq maps, layout and Numbering of topographical maps 3.4 Thematic maps and base maps

Week 10	**Unit – 4** 4.1 Representation of natural and cultural features, relief representations
Week 11	4.2 Map digitization and Map Compilation 4.3 Fair drawing and editing of maps 4.4 Map reproduction process
Week 12	**Unit – 5** 5.1 Introduction to Global Positioning System (GPS) – Fundamental concepts
Week 13	5.2 GPS system elements and signals
Week 14	5.3 GPS measurements and accuracy of GPS 5.4 Classification of GPS receivers
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	none
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	1) Anji Reddy, M. 2004: Geoinformatics for environmental management.B.S. Publications 2) Mishra R.P and Ramesh A. 1989: Fundamentals of Cartography. Concept publishing	Yes
Recommended Texts	1) company Nag P. and Kudrat M. 1998: Digital Remote Sensing. Concept Publication 2) Rampal K.K. 1993: Mapping and compilation. Concept publication 3) Robinson A., Morrison, J.L., Muehrcke P.C., Guptil S.C. 2002: Elements of Cartography. 4) John Wiley Taylor,D.R.F. 1985: Education and Training in contemporary cartography, John Willey	Yes
Websites		

GRADING SCHEME

مخطط الدرجات

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

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(0 – 49)	**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.