Ministry of Higher Education and Scientific Research

University of Baghdad

College of Science

Department of Geology

Course Syllabus Description

Bologna Process

Geology Department

College of Science / University of Baghdad

2024 – 2025

Level One (UGI)

Semester One

Module Information معلومات المادة الدراسية			
Module Title	**Physical Geology**	**Module Delivery**	
Module Type	**Core**	☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**GEO1101**		
ECTS Credits	**9.00**		
SWL (hr/sem)	**225**		
Module Level	**UGI**	**Semester of Delivery**	**One**
Administering Department	**Geology Dept.**	**College**	**College of Science**
Module Leader	**Dr. Mustafa Ali Hassan**	**e-mail**	**Dr.musstafali@gmail.com**
Module Leader's Acad. Title	**Assistant Professor**	**Module Leader's Qualification**	**Ph.D.**
Module Tutor	**Dr. Mohammad Hassan**	**e-mail**	**Mohammad Hassan @sc.uobaghdad.edu.iq**
Peer Reviewer Name	**Dr. Aiad Ali Hussein**	**e-mail**	**aiad.hussien@sc.uobaghdad.edu.iq**
Scientific Committee Approval Date	**01/09/2024**	**Version Number**	**2.0**

Relation with other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	**None**	**Semester**	
Co-requisites module	**GEO-1204**	**Semester**	**Two**

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims **اهداف المادة الدراسية**	**1. Physical geology is defined as one of the branches of earth science that specializes in the study of the solid, non-living features of the planet Earth and other planets. It is done by studying the various rocks, minerals and materials that formed the earth and the processes related to it through time, and employing scientific tools and combined techniques to find out the approximate ages of the rocks on and in the earth's interior, and using this information to determine the history of the earth and the terres it passed through.** **2. Providing students with an appropriate amount of information and expertise in the field of geoscience in a functional manner that contributes to the acquisition of a scientific culture and contributes to academic preparation and helps them to identify the natural resources in their country**
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	**1. Gaining the ability and skill in field interpretation and deduction.** **2. Acquiring the skill of distinguishing between different geological features.** **3. Dealing with the basic laws of various earth sciences.** **4. Using the principle of the past is key to the present**

Indicative Contents **المحتويات الارشادية**	**1. Physical geology is defined as one of the branches of earth science that specializes in the study of the solid, non-living features of the planet Earth and other planets. It is done by studying the various rocks, minerals and materials that formed the earth and the processes related to it through time, and employing scientific tools and combined techniques to find out the approximate ages of the rocks on and in the** **2. earth's interior, and using this information to determine the history of the earth and the terres it passed through.** **3. Providing students with an appropriate amount of information and expertise in the field of geoscience in a functional manner that contributes to the acquisition of a scientific culture and contributes to academic preparation and helps them to identify the natural resources in their country** **4. Gaining the ability and skill in field interpretation and deduction.** **5. Acquiring the skill of distinguishing between different geological features.** **6. Dealing with the basic laws of various earth sciences.** **7. Using the principle of the past is key to the present**
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	**1. Fieldwork and Hands-on Experience. Hands-on experience allows students to develop observational skills, make connections between theoretical concepts and real-world examples, and enhance their understanding of stratigraphic principles.** **2. Visual Aids: Utilize visual aids, such as diagrams, charts, maps, and photographs, to help students visualize and comprehend stratigraphic concepts. Use geological maps to demonstrate the distribution and relationships between different rock units and incorporate stratigraphic columns to illustrate the vertical succession of strata.** **3. Virtual Resources: Take advantage of virtual resources, such as interactive online modules, virtual field trips, and digital simulations. These resources can provide students with immersive experiences, allowing them to explore stratigraphic principles and study geological features virtually.** **4. Case Studies and Real-life Examples** **5. Laboratory Work: Conduct laboratory exercises that involve the description and interpretation of rock samples, including the identification of lithology, sedimentary structures, and fossil content. Encourage students to create stratigraphic logs or cross-sections based on the laboratory data, promoting critical thinking.** **6. Collaborative Learning: Foster collaborative learning environments where students can work in groups or pairs to solve problems, analyze data, or interpret stratigraphic information. This approach encourages active engagement, promotes discussions, and allows students to learn from one another's perspectives and insights.** **7. Multimedia Resources: Incorporate multimedia resources, such as videos, animations, and online lectures, to supplement traditional teaching methods. Multimedia resources can help reinforce key concepts, illustrate geological processes, and provide additional visual and auditory learning opportunities.** **8. Continuous Assessment and Feedback: Implement regular assessments,**

	such as quizzes, assignments, or class discussions, to gauge student understanding and provide timely feedback. This allows students to monitor their progress, identify areas of improvement, and reinforces learning.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	80	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	145	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	9
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	225		

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

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Introduction- physical geology
Week 2	The importance of geology A brief summary of history of geology
Week 3	Branches of the geology Relationship between geology and other sciences
Week 4	The earth and the Solar System
Week 5	Crystals and crystallography(Crystals: (Introduction, Lattices Crystal,Crystals properties)
Week 6	Crystal symmetry, Elements of symmetry, Crystallographic axes, Crystal systems, System of the crystals)
Week 7	Crystals and crystallography(Crystals: (Introduction, Lattices Crystal,Crystals properties)Crystal symmetry, Elements of symmetry, Crystallographic axes, Crystal systems, System of the crystals)
Week 8	Midterm Exam
Week 9	Minerals: (Introduction, Minerals groups,Physical properties of minerals) Economic use of Minerals
Week 10	Petrology I Igneous rocks (Introduction to
Week 11	Petrology II Sedimentary rocks (Introduction to sedimentary rocks, Types of sedimentary rocks, Sedimentary environments

Week 12	**Petrology III Metamorphic rocks (Introduction to metamorphic rocks, Agents of metamorphism, Textural and mineralogical changes)**
Week 13	**Surface Water**
Week 14	**Groundwater**
Week 15	**Preparatory Week**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	**Lab 1: Crystals**
Week 2	**Lab 2: Crystals properties**
Week 3	**Lab 3: Crystal symmetry, Elements of symmetry, Crystallographic axes, Crystal systems, System of the crystals**
Week 4	**Lab 4 Crystal symmetry, Elements of symmetry, Crystallographic axes, Crystal systems, System of the crystals**
Week 5	**Lab 5: Crystal symmetry, Elements of symmetry, Crystallographic axes, Crystal systems, System of the crystals**
Week 6	**Lab 6: Physical properties of minerals**
Week 7	**Lab 7: Physical properties of minerals**
Week 8	**Midterm Exam**
Week 9	**Lab 9: Igneous rocks**
Week 10	**Lab 10: Igneous rocks**
Week 11	**Lab 11: Sedimentary rocks**
Week 12	**Lab 12: Sedimentary rocks**
Week 13	**Lab 13: Metamorphic rocks**
Week 14	**Lab 14: Metamorphic rocks**
Week 15	**Lab 15: Preparatory Week**

Learning and Teaching Resources مصادر التعلم والتدريس		
References	**Text**	**Available in the Library?**
Required Texts	**Physical Geology First University of ٩102Saskatchewan Edition, Physical geology–Laboratory manuals.**	**Yes**
Recommended Texts	**مبادئ علم االرض للدكتور سعد الدهان. 2015**	**No**
Websites		

Module Information معلومات المادة الدراسية			
Module Title	**Crystallography**	**Module Delivery**	
Module Type	**Core**	☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**GEO1102**		
ECTS Credits	**9.00**		
SWL (hr/sem)	**225**		
Module Level	**UGI**	**Semester of Delivery**	**One**
Administering Department	**Geology Dept.**	**College**	**College of Science**
Module Leader	**Dr. Hasan Kattoof Jasim**	**e-mail**	**Hasan.jasim@sc.uobaghdad.edu.iq**
Module Leader's Acad. Title	**Lecturer**	**Module Leader's Qualification**	**Ph.D.**
Module Tutor		**e-mail**	
Peer Reviewer Name	**Dr. Aiad Ali Hussein**	**e-mail**	**aiad.hussien@sc.uobaghdad.edu.iq**
Scientific Committee Approval Date	**01/09/2024**	**Version Number**	**2.0**

Relation with other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	**None**	**Semester**	
Co-requisites module	**GEO-1205**	**Semester**	**Two**

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims **اهداف المادة الدراسية**	**1. Crystals aims to define how minerals crystallize in nature and what are the methods of crystallization that occur in nature through which minerals will be formed and these minerals will form rocks in nature Training students on how to take field models and convert them into applied products used in making geological maps.** **2. Training students to identify the types of bodies that crystals take upon crystallization, and try to benefit from them in diagnosing minerals**
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	**1. Gain experience in the process of studying the shapes of crystals.** **2. Attempting to diagnose crystal parts and crystal systems.** **3. Training to identify the elements of symmetry in the crystal** **4. Benefit from the study of crystallography and its use in the processes of diagnosing minerals**
Indicative Contents **المحتويات الارشادية**	**1- Crystallography aims to know how and how crystals are formed in nature** **2- Crystallography is closely related to mineralogy, as it is considered one of the branches of mineralogy, and this science is important, especially in mineral diagnostic processes that have many applications,**

	especially in the classification of rocks, as well as the diagnosis of minerals of economic importance 3- Crystallography has many important applications, especially in the detection and determination of crystalline and amorphous chemical substances

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. Identify the models of crystals that are used in the laboratory and their relationship with real crystals of minerals in nature 2. Understand the ways in which minerals crystallize, which will vary according to the processes by which the types of igneous, sedimentary, and metamorphic rocks are formed. 3. After understanding the crystallization processes and the different bodies and shapes of the crystals, the link is made with the crystals of natural minerals, which will be seen in field work and in nature sometimes. 4. Absorbing and understanding crystallography will have many industrial and economic applications, as it is possible to go to what is known as industrial minerals and how to crystallize them in a laboratory.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	80	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	145	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	9
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	225		

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

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Introduction to Crystallography
Week 2	Methods of Crystallization
Week 3	Form and Habits of Crystals
Week 4	Parts of Crystals

Week 5	**Symmetry of Crystals**
Week 6	**Face intercepts**
Week 7	**32 Crystal Classes**
Week 8	**Midterm Exam**
Week 9	**Triccinic and monoclinic Systems**
Week 10	**Orthorhombic and tetragonal Systems**
Week 11	**Hexagonal and Trigonal Systems**
Week 12	**Cubic System**
Week 13	**Streographic Projection of Crystals**
Week 14	**Crystal Drawings**
Week 15	**Internal Structure of Crystals**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	**Lab 1: Introduction to Crystallography**
Week 2	**Lab 2: Parts of Crystals**
Week 3	**Lab 3: Crystallographic Systems**
Week 4	**Lab 4: Symmetry of Crystals, Elements and Operation of Crystals**
Week 5	**Lab 5: Forms of Crystals**
Week 6	**Lab 6: 32 Crystal Classes**
Week 7	**Lab 7: Pinacoidal Class – Triclinic System and Prismatic Class – Monoclinic System**
Week 8	**Midterm Exam**
Week 9	**Lab 9: Orthorhombic Dipyramidal Class – Orthorhombic System**
Week 10	**Lab 10: Ditetragonal Dipyramidal Class – Tetragonal System**
Week 11	**Lab 11: Dihexagonal Dipyramidal Class – Hexagonal System**
Week 12	**Lab 12: Scalenohedral class – Trigonal System**
Week 13	**Lab 13: Hexaoctahedreal Class – Cubic System**
Week 14	**Lab 14: Hexahetraderal Class – Cubic System**
Week 15	**Lab 15: Diploidal Class – Cubic System**

Learning and Teaching Resources
مصادر التعلم والتدريس

References	Text	Available in the Library?
Required Texts	**Philip, F. C., 1971, An Introduction**	**Yes**

	to Crystallography, 4th edition, Longman Group Ltd, United Kingdom, 349P.	
Recommended Texts	**Al-Kufaishi, F, A,. and Mahmood, M, M,.1989, Crystallography, Mosul University Prints, (In Arabic), 352P.**	**Yes**
Websites	**www.Mindat.com**	

Module Information معلومات المادة الدراسية			
Module Title	**Chemistry**	**Module Delivery**	
Module Type	**B**	☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**GEO1103**		
ECTS Credits	**5.00**		
SWL (hr/sem)	**225**		
Module Level	**UGI**	**Semester of Delivery**	**One**
Administering Department	**Geology Dept.**	**College**	**College of Science**
Module Leader	**Dr.Shurooq Badri Al-badri**	**e-mail**	**s.b.albadr@sc.uobaghdad.edu.iq**
Module Leader's Acad. Title	**Assistant professor**	**Module Leader's Qualification**	**Ph.D.**
Module Tutor		**e-mail**	
Peer Reviewer Name	**Dr. Aiad Ali Hussein**	**e-mail**	**aiad.hussien@sc.uobaghdad.edu.iq**
Scientific Committee Approval Date	**01/09/2024**	**Version Number**	**2.0**

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

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims **اهداف المادة الدراسية**	**1. Provide students with a comprehensive understanding of the fundamental principles underlying volumetric analysis and quantitative analysis methods. As well as general knowledge in bath Organic Chemistry and Biochemistry.** **2. Develop specialists in the field of general chemistry and its practical applications, preparing them to fulfill the country's developmental and industrial needs.** **3. Foster a scientifically literate generation that recognizes the value of science as a catalyst for transformative change. This includes cultivating critical thinking skills, promoting analytical thinking, and facilitating adaptability to evolving technologies and societal demands.** **4. Strengthen the connection between the university and society by offering advisory counseling, training programs, and professional development opportunities for faculty and staff, ensuring that academic knowledge is effectively applied to real-world contexts.** **5. Contribute to the country's overall progress by producing chemistry graduates who possess the skills and knowledge to actively contribute to its development.**

	6. Address the increasing demand for highly qualified professionals in various sectors that require specialized expertise in chemistry. 7. Encourage exceptional students to serve as teaching assistants within the department, nurturing their potential to become future members of the academic teaching staff and fostering the growth of a knowledgeable and skilled workforce
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	**A. Cognitive goals** 1- Introduce students to the fundamental principles of volumetric analysis and quantitative analysis methods, establishing a solid foundation in the field. 2- Foster an understanding of the theoretical principles and practical applications of titration, enabling students to detect both inorganic and organic compounds effectively. 3- Provide students with a comprehensive knowledge of volumetric analysis, with a specific focus on titration, and its extensive range of applications in various scientific disciplines. 4- Provide students knowledge of definition of organic chemistry, the classification of organic compounds, how to distinguish between them, and a method. As well as how given the name to organic compound. 5- Provide students' knowledge of biochemistry, the basic elements of life, and the structure and components of a cell.as well as the types of carbohydrates, fats, proteins and nucleic acids. **A. The skills goals special to the program** 1- Enhance students' research skills by encouraging them to engage in scientific exploration and facilitating constructive discussions where informed opinions are shared. 2- Develop proficiency in the use and development of laboratory techniques and equipment, enabling students to conduct experiments effectively and obtain accurate results. 3- Cultivate critical thinking skills that allow students to analyze and solve scientific problems related to the laws of chemistry, promoting a deeper understanding of the subject. 4- Foster the development of practical skills and the ability to apply theoretical and empirical scientific knowledge gained through their studies in real-life situations, taking into account industrial and commercial constraints.
Indicative Contents **المحتويات الارشادية**	- The course aims to provide students with a comprehensive understanding of classical titration methods in analytical chemistry. It covers the fundamental principles of acid/base titration, complexometric titration, redox titration, and precipitation titration. Students will delve into the theory behind these methods and explore their wide-ranging applications. In addition to theoretical knowledge, the course emphasizes practical skills. Students will learn how to calculate pH values for various acids, bases, salts, and buffers, enabling them to make accurate determinations in real-world scenarios. They will also develop the ability to evaluate and interpret the results obtained from titration experiments, enhancing their analytical capabilities. Throughout the course, selected classical quantitative analytical methods will be highlighted, giving students a deeper understanding of their importance and practical use. By the end of the course, students will have gained the necessary knowledge and skills to apply classical titration methods effectively in analytical chemistry, both in theory and practice.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	- The module will be conducted using a student-centered approach, placing emphasis on active participation and the cultivation of critical thinking skills. Through a combination of classes, interactive tutorials, and purposeful experiments, students will be actively engaged in the learning process, fostering the development of their critical thinking abilities. The aim is to create an interactive and dynamic learning environment that encourages students to actively participate, think critically, and attain a profound comprehension of the subject matter. By adopting this strategy, students will have the opportunity to apply their knowledge, engage in analytical discussions, and enhance their overall learning experience.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	80	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	45	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	General introduction, what is chemistry and its branches? Branches of analytical chemistry, Quantitative analysis, Qualitative analysis.
Week 2	Weight and concentration unites, Concentration, The mole, Examples, Molarity, Normality. Perce concentrations, Part per million,
Week 3	Calculations of equivalent weight, Converting of percentage to molarity. The dilute solution Preparation of solid materials solutions, Preparation of liquid materials solutions
Week 4	Chemical equilibrium, Types of equilibrium, Equilibrium constants (Ionic -product constant water. Solubility and Solubility product constant, examples, calculations.
Week 5	Dissociation of a weak acid or base, Hydrolysis constant (KH),
Week 6	Volumetric Methods of Analysis, Requirements for a primary standard, Volumetric Calculations for Acid-Base Titrations.
Week 7	Equilibrium in acid-base solutions, Calculating the pH of weak acids and base solutions, Calculating the pH of salts solutions, 1-Salt differential from strong acid and

	strong base.
Week 8	**Mid Term Exam**
Week 9	**2-Salt differential from weak acid and strong base, 3-Salt differential from strong acid and weak base, 4-Salt differential from weak acid and weak base.**
Week 10	**Buffer Solutions, Calculating the pH of Buffer solutions, Buffer capacity, Acid – Base Titration, Acid – Base Indicators, Methyl Orange, Phenolphthalein .**
Week 11	**Titrating a Weak Acid with a Strong base, Differential titration, Titration mixtures of two acids, Titration one Base or Mixture of two Bases with Strong Acid.**
Week 12	**Introduction to Organic Chemistry, and Classes of Organic compound.**
Week 13	**Chemistry of the Functional Groups (Alcohols ,Aldehydes and Ketones, and Carboxylic Acids)**
Week 14	**General introduction, in Biochemistry**
Week 15	**Preparatory Week**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	**Learn about laboratory tools and equipment and how to use them**
Week 2	**Learn the principles of descriptive analysis and the descriptive interactions of the first group of ions**
Week 3	**A test on the analysis of information samples for the first group, based on the descriptive analysis**
Week 4	**A test on the analysis of the anonymous samples of the first group, based on the descriptive analysis**
Week 5	**Characteristic descriptive interactions of the second group ions**
Week 6	**A test on the analysis of the known samples of the second group**
Week 7	**A test on the analysis of anonymous samples of the second group**
Week 8	**Calculations of volumetric analysis, preparation of approximately (0.1N) HCI and (0.IN) sodium carbonate, Standardization of HCl solution with standard solution of Na_2CO_3.**
Week 9	**Unknown solution: Practical exam.**
Week 10	**Analysis of a mixture (sodium hydroxide + sodium carbonate)**
Week 11	**Analysis of a mixture (sodium bicarbonate + sodium carbonate)**
Week 12	**Oxidation-reduction reactions, A: Preparation of 0.1N potassium permanganate, Preparation of 0.1 N sodium oxalate ($Na_2C_2O_4$).**
Week 13	**Determination the concentration of ferrous ion.**
Week 14	**Complexometric titration, Determination of total hardness (permanent and temporary) of water**
Week 15	**Preparatory Week**

Learning and Teaching Resources
مصادر التعلم والتدريس

References	Text	Available in the Library?
Required Texts	**Fundamental of analytical chemistry by Skoog, West, Holler & Crouch, 8th , 2004.**	**Yes**
Recommended Texts	**1- Fundamental of analytical chemistry by Skoog, West, Holler, 6th , 1992.** **2- Principles of instrumental analysis by Skoog, West, Holler & Crouch, 8th, 2004.** **3-K. Burger D, Sc, "Organic regents in metal analysis", 1st,New York, 1973.** **4- General Chemistry: The Essential Concepts 5th Edition by Raymond Chang**	
Websites	**https://www.goodreads.com/book/show/1568659.General_Chemistry**	

Module Information معلومات المادة الدراسية			
Module Title	**English Language I**	**Module Delivery**	
Module Type	**Supportive**	☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**UOB102**		
ECTS Credits	**2.00**		
SWL (hr/sem)	**50**		
Module Level	**UGI**	**Semester of Delivery**	**One**
Administering Department	**Geology Dept.**	**College**	**College of Science**
Module Leader	**Lamees Nazar Abdulkareem**	**e-mail**	**Lames.nazar@sc.uobaghdad.edu.iq**
Module Leader's Acad. Title	**Lecturer**	**Module Leader's Qualification**	**Ph.D.**
Module Tutor		**e-mail**	
Peer Reviewer Name	**Dr. Aiad Ali Hussein**	**e-mail**	**aiad.hussien@sc.uobaghdad.edu.iq**
Scientific Committee Approval Date	**01/09/2024**	**Version Number**	**2.0**

Relation with other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	**None**	**Semester**	
Co-requisites module	**UOB-237**	**Semester**	**Three**

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims **اهداف المادة الدراسية**	**1. Raise the level of English language for the students, and help the student to improve their English language(speaking and writing).** **2. Helping students to speak in English.** **3. Training the student on writing different geologic subjects in English.**
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	**1. Increasing the ability of student to apply what they learned from the grammar lecture in their writing.** **2. Increasing the ability of student to apply what they learned from the grammar lecture in their speaking.** **3. Encourage students to read and understand geologic papers in English.**
Indicative Contents **المحتويات الارشادية**	**1. Learning English Can Help student to think More Creatively** **An additional language will increase your creativity levels. In the fifth benefit on our list, we pointed out the fact learning a second language can make the brain becomes more flexible thereby making it easier to switch between different tasks, promoting creativity** **2. Learning English Can Help studentsIn Academia** **A science-based article recently revealed that the number of scientific papers written in English is now outnumbering those written in the researcher's native language.**

	Therefore, having an understanding of the English language opens up a vast amount of knowledge that can be drawn upon during their studies.

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	**- One of the primary benefits of learning English is that it is often considered the language of global business. The international business community often uses it for communication, even among people who do not speak the same native language. Speaking and understanding English can let a person more easily communicate with others and find more job opportunities not only in his or her home country, but around the world as well. There are also many professional informative publications printed in English, which means it is often an essential language for anyone working in science or research.** **- Different learning styles could be applied in the class to improve the english language for the student.** **1. Divide the students into a number of groups and choose a geologic subject to discuss in English.** **2. Listen to different types of lectures recorded in English to improve the students listening** **3. Ask the student to prepare a short geologic report written in English in the class to evaluate their level in writing.**

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

Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	**33**	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	**2**
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	**17**	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	**1**
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 8**
	Projects / Lab.	**1**	**10% (10)**	**Continuous**	**All**
	Report	**1**	**10% (10)**	**13**	**LO # 5, 8 and 10**
Summative assessment	**Midterm Exam**	**2hr**	**10% (10)**	**8**	**LO # 1-7**
	Final Exam	**2hr**	**50% (50)**	**16**	**All**
Total assessment			**100% (100 Marks)**		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	**Present perfect simple** **Explain the structure of this tense and when to use it with examples**
Week 2	**Past perfect simple** **Explain the structure of this tense and when to use it with examples**

Week 3	**Words used with the present perfect** **ever, never, before**
Week 4	**Present perfect continuous** **Explain the structure of this tense and when to use it with examples**
Week 5	**Past perfect continuous** **Explain the structure of this tense and when to use it with examples**
Week 6	**Speaking lesson** **In this lecture students are divided into two groups and we discuss any geological subject in English to practice their speaking.**
Week 7	**Quantifiers:** **much/many/a lot of**
Week 8	**Midterm Exam**
Week 9	**Linking words in writing** **Define the types of linking word and when to use each word**
Week 10	**Writing Lesson** **Each student chooses a geological subject and the write a short paragraph.**
Week 11	**Preposition** **This lecture include two types of preposition word with different examples**
Week 12	\
Week 13	\
Week 14	\
Week 15	**Preparatory Week**

Learning and Teaching Resources
مصادر التعلم والتدريس

References	**Text**	**Available in the Library?**
Required Texts	**Research methodology, method and techniques,C.R.Kothari**	**Yes**
Recommended Texts		
Websites		

Module Information معلومات المادة الدراسية			
Module Title	**Computer Skills Basic I**	**Module Delivery**	
Module Type	**Basic**	☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**UOB103**		
ECTS Credits	**3.00**		
SWL (hr/sem)	**75**		
Module Level	**UGI**	**Semester of Delivery**	**One**
Administering Department	**Geology Dept.**	**College**	**College of Science**
Module Leader	**Dr. Omar Fitian**	**e-mail**	**omar.f@sc.uobaghdad.edu.iq**
Module Leader's Acad. Title	**Lecturer**	**Module Leader's Qualification**	**Ph.D.**
Module Tutor	**Abdallah A. Ibrahim**	**e-mail**	**Abdullah.i@sc.uobaghdad.edu.iq**
Peer Reviewer Name	**Dr. Aiad Ali Hussein**	**e-mail**	**aiad.hussien@sc.uobaghdad.edu.iq**
Scientific Committee Approval Date	**01/09/2024**	**Version Number**	**2.0**

Relation with other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	**None**	**Semester**	
Co-requisites module	**UOB-235**	**Semester**	**Three**

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims **اهداف المادة الدراسية**	**This module provides an introduction to essential computer skills. In this module, students will learn,** • **computer literacy, including hardware and software fundamentals in theory as well as practical.** • **various office applications (Microsoft Word, Excel, and PowerPoint), where students will use these software applications to create a current resume, and slide presentation.** **basic computer knowledge and skills required to obtain an understanding of computer hardware, software, Internet, and web search.**
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	**By the end of this module, students should be able to:** 1. **Understand computer hardware, software components, and peripheral devices, enabling them to use computers confidently.** 2. **Manage and organize files and folders on a computer effectively, including creating, renaming, moving, and deleting files and folders.** 3. **Efficiently employ Microsoft Office to execute fundamental tasks with**

	ease. **4. Navigate the internet and communicate via email, while understanding internet safety.** **Upon finishing the course, students will be aware of the ethical and security considerations when using computers, promoting safe and responsible digital behavior.**
Indicative Contents **المحتويات الارشادية**	**Part A: Understanding Computer Components** Starting with an introduction to computers, the first part introduces learners to identify computer peripherals, internal components, and the operation of the Windows operating system. **Part B: Exploring Microsoft Office** In this part, the student will learn how to work with Microsoft Office package to create Word documents and Excel spreadsheets and get ideas to create a PowerPoint presentation. **Part C: Navigating the Internet** In this part, the student will learn the knowledge of harnessing the power of the internet to search for information through web browsers. **Part D: Computer Ethics** In this part, the student will learn to address issues related to the misuse of computers and how they can be prevented
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	**1. Providing lectures to explain essential principles related to computer skills.** **2. Projects and activities shared among students.** **3. Examinations to gauge students' understanding and identify areas where additional support may be needed.** **Providing guidance on textbooks, online resources, and supplementary references that can aid students in their studies more efficiently.**

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

Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	**50**	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	**3**
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	**25**	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	**1**
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	**75**		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	**2**	**10% (10)**	**5, 10**	**LO #1, 2, 10 and 11**
	Assignments	**2**	**10% (10)**	**2, 12**	**LO # 3, 4, 6 and 8**
	Projects / Lab.	**1**	**10% (10)**	**Continuous**	**All**

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

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	**Computer Fundamentals. Characteristics of Computers, Block Diagram of Computer: Input Unit, Storage Unit, Memory size, Output Unit, Arithmetic Logical Unit, Control Unit, Central Processing Unit, Data Representation: Binary Number System.**
Week 2	**Memory: Types, Units of memory, RAM, ROM, Secondary storage devices – HDD, Flash Drives, Optical Disks: DVD I/O Devices – Keyboard, Mouse, LCDs, Scanner, Plotter, Printer and Latest I/O devices in market**
Week 3	**MS Windows: Desktop, My Computer, Files and folders using windows explorer; Control Panel, Searching Files and folders**
Week 4	**MS Word: Introduction, Environment, Help, Creating and Editing Word Document. Saving Document, Working with Text: Selecting, Formatting, Aligning and Indenting**
Week 5	**MS Word: Finding Replacing Text, Bullets and Numbering, Header and Footer, Working with Tables, Properties Using spell checker, Grammar, AutoCorrect Feature, Synonyms and Thesaurus**
Week 6	**MS Word: Graphics: Inserting Pictures, Clipart, Drawing Objects, Using Word Art. Setting page size and margins; Printing documents. Mail Merge Practical**
Week 7	**MS-Excel: Environment, Creating, Opening, and Saving Workbook. Range of Cells. Formatting Cells, Functions: Mathematical, Logical, Date, Time, Auto Sum**
Week 8	**Mid Exam**
Week 9	**MS-Excel: Formulas. Graphs: Charts. Types and Chart Tool Bar. Printing: Page Layout, Header and Footer Tab**
Week 10	**MS PowerPoint: Environment, Creating and Editing presentation, Auto content wizard, using built-in templates**
Week 11	**MS PowerPoint: Types of Views: Normal, Outline, Slide, Slide Sorter, Slide Show, Creating customized templates; formatting presentations Graphics: AutoShapes, adding multimedia contents, printing slides**
Week 12	**Internet: Basic Internet terms: Web Page, Website, Home page, Browser, URL, Hypertext, ISP**
Week 13	**Web Server Applications: WWW, e-mail, Instant Messaging, Internet Telephony, Videoconferencing, Web Browser and its environment**
Week 14	**Computer Ethics and Societal Impact: Computer ethics encompass a collection of moral principles that regulate the utilization of computers. It reflects society's perspectives regarding the use of computer hardware and software. These ethical considerations address a range of critical issues, including privacy concerns, intellectual property rights, and the broader societal impact of computer technology.**
Week 15	**Preparatory week**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered

Week 1	**Introduction to windows 10** **Desktop Components** **The start menu (its functions and properties)** **Task bar (its functions and properties)**
Week 2	**Windows 10 File Explorer:** **Files and Folders: All operations on files and folders**
Week 3	**Windows 10 Settings:** **System Settings, Devices Settings, Network & Internet Settings, Personalization Settings, Apps Settings, Accounts Settings, Time & Language Settings, Privacy Settings, Update & Security Settings**
Week 4	**Microsoft Word 2016** **Introduction to Word 2016 Interface** **File Tab** **Home Tab**
Week 5	**Microsoft Word 2016** **Insert Tab** **Table Design & Layout Tabs**
Week 6	**Microsoft Word 2016** **Design Tab** **Layout Tab** **References Tab**
Week 7	**Microsoft Word 2016** **Review Tab** **View Tab** **Quiz (4, 5, 6, 7) Word only**
Week 8	**Mid Exam**
Week 9	**Microsoft Excel 2016** **Introduction to Excel 2016 Interface** **File Tab** **Home Tab**
Week 10	**Microsoft Excel 2016** **Insert Tab** **Chart Design & Layout Tabs**
Week 11	**Microsoft Excel 2016** **Formula Tab** **Data Tab**
Week 12	**Microsoft Excel 2016** **Review Tab** **View Tab**
Week 13	**Microsoft PowerPoint 2016** **Introduction to PowerPoint 2016 Interface** **Home Tab** **Insert Tab** **Design Tab**
Week 14	**Microsoft PowerPoint 2016** **Transition Tab** **Animation Tab** **Slide Show**
Week 15	**Preparatory Week**

Learning and Teaching Resources مصادر التعلم والتدريس		
References	**Text**	**Available in the Library?**
Required Texts	\	
Recommended Texts	• Wallace Wang, Absolute Beginners Guide to Computing, Apress, 2016. • Michael Miller, Absolute Beginner's Guide to Computer Basics, Que, 2022. • Chris Ewin, Carrie Ewin, Cheryl Ewin, Computers for Seniors: Email, Internet, Photos, and More in 14 Easy Lessons, William Pollock, 2017.	No
Websites	**Youtube Channel:** **https://youtu.be/egyyIFlbrvU?si=EVZL-IAJDX3Yw-UP**	

Module Information معلومات المادة الدراسية			
Module Title	**Democracy & Human rights**	**Module Delivery**	
Module Type	**Supportive**	☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**UOB104**		
ECTS Credits	**2.00**		
SWL (hr/sem)	**50**		
Module Level	**UGI**	**Semester of Delivery**	**One**
Administering Department	**Geology Dept.**	**College**	**College of Science**
Module Leader	**Ansam Faik Abdul - Rezzak Al-Obidi**	**e-mail**	**ansam.faik@sc.uobaghdad.edu.iq**
Module Leader's Acad. Title	**Lecturer**	**Module Leader's Qualification**	**M.Sc.**
Module Tutor	**None**	**e-mail**	
Peer Reviewer Name	**Dr. Aiad Ali Hussein**	**e-mail**	**aiad.hussien@sc.uobaghdad.edu.iq**
Scientific Committee Approval Date	**01/09/2024**	**Version Number**	**2.0**

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

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims **اهداف 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 الارشادية**	**1. Developing the student's analytical and critical skills regarding the reality and future of human rights and democracy.** **2. 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.** **3. 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) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
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 8
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	Midterm Exam	2hr	10% (10)	8	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	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**

Learning and Teaching Resources
مصادر التعلم والتدريس

References	**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**	

Level One (UGI)
Semester Two

Module Information معلومات المادة الدراسية			
Module Title	**Historical Geology**	**Module Delivery**	
Module Type	**Core**	☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**GEO1204**		
ECTS Credits	**9.00**		
SWL (hr/sem)	**225**		
Module Level	**UGI**	**Semester of Delivery**	**Two**
Administering Department	**Geology Dept.**	**College**	**College of Science**
Module Leader	**Dr. Mustafa Ali Hassan**	**e-mail**	**Dr.musstafali@gmail.com**
Module Leader's Acad. Title	**Assistant Professor**	**Module Leader's Qualification**	**Ph.D.**
Module Tutor	**Dr. Mohammad Hassan**	**e-mail**	**Mohammad Hassan @sc.uobaghdad.edu.iq**
Peer Reviewer Name	**Dr. Aiad Ali Hussein**	**e-mail**	**aiad.hussien@sc.uobaghdad.edu.iq**
Scientific Committee Approval Date	**01/09/2024**	**Version Number**	**2.0**

Relation with other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	**GEO-1101**	**Semester**	**One**
Co-requisites module	**None**	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims **اهداف المادة الدراسية**	**1- Historical geology is the use of the principles of geology to reconstruct and understand the history of the Earth. It focuses on the geological processes that change the Earth's surface and core, and uses stratigraphy, structural geology, and paleobiology to identify the sequence of these events.2- Providing students with an appropriate amount of information and expertise in the field of geoscience in a functional manner that contributes to the acquisition of a scientific culture and contributes to academic preparation and helps them to identify the natural resources in their country** **2- It includes the study of the changes that occurred on the earth's surface in terms of water distribution and land areas since its inception Earth from about 6.4 billion years ago until now.** **3- The study of the Earth's relations with the solar system and the universe, as this section means by studying the effects and remains of ancient life on Earth since the emergence of life about two billion years ago to the**

	present time
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	1- Gaining the ability and skill in field interpretation and deduction. 2- Acquiring the skill of distinguishing between different geological features. 3- Dealing with the basic laws of various earth sciences. 4- Using the principle of the past is key to the present 5- Field and laboratory description 6- investigation and exploration 7- Scientific reports
Indicative Contents **المحتويات الارشادية**	1- It includes the study of the changes that occurred on the earth's surface in terms of water distribution and land areas since its inception Earth from about 6.4 billion years ago until now. 2- Studying the Earth's relations with the solar system and the universe, as this section means by studying the effects and remnants of ancient life on Earth since the emergence of life about two billion years ago to the present time 3- Providing students with an appropriate amount of information and expertise in the field of earth science in a functional manner that contributes to their acquisition of a scientific culture and contributes to academic preparation and helps them to identify the natural resources in their country.
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	1- Fieldwork and Hands-on Experience. Hands-on experience allows students to develop observational skills, make connections between theoretical concepts and real-world examples, and enhance their understanding of stratigraphic principles. 2- Visual Aids: Utilize visual aids, such as diagrams, charts, maps, and photographs, to help students visualize and comprehend stratigraphic concepts. Use geological maps to demonstrate the distribution and relationships between different rock units and incorporate stratigraphic columns to illustrate the vertical succession of strata. 3- Virtual Resources: Take advantage of virtual resources, such as interactive online modules, virtual field trips, and digital simulations. These resources can provide students with immersive experiences, allowing them to explore stratigraphic principles and study geological features virtually. 4- Case Studies and Real-life Examples 5- Laboratory Work: Conduct laboratory exercises that involve the description and interpretation of rock samples, including the identification of lithology, sedimentary structures, and fossil content. Encourage students to create stratigraphic logs or cross-sections based on the laboratory data, promoting critical thinking. 6- Collaborative Learning: Foster collaborative learning environments where students can work in groups or pairs to solve problems, analyze data, or interpret stratigraphic information. This approach encourages active engagement, promotes discussions, and allows students to learn from one another's perspectives and insights. 7- Multimedia Resources: Incorporate multimedia resources, such as videos, animations, and online lectures, to supplement traditional

	teaching methods. Multimedia resources can help reinforce key concepts, illustrate geological processes, and provide additional visual and auditory learning opportunities.

Student Workload (SWL) **الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	**80**	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	**5**
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	**145**	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	**9**
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	**225**		

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

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Introduction- Historical geology
Week 2	Relative Time and Geologic Time scale
Week 3	Geologic Laws
Week 4	Faunal succession and index fossils1
Week 5	Faunal succession and index fossils)2
Week 6	Absolute Time Parent Atom, Potassium-Argon Dating,
Week 7	Absolute Time Radiometric Dating, Uranium Dating
Week 8	Midterm Exam
Week 9	Interior of the earth
Week 10	Earth's magnetic field
Week 11	Plate tectonics
Week 12	Structural geology1
Week 13	Structural geology2

Week 14	**Maps**
Week 15	**The history of the earth**

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
Week	**Material Covered**
Week 1	**Lab 1: Geologic Laws**
Week 2	**Lab 2: Geologic Laws**
Week 3	**Lab 3: difference between fossil and index fossil**
Week 4	**Lab 4: superposition and faunal fossil**
Week 5	**Lab 5: magnetic field**
Week 6	**Lab 6: Folding**
Week 7	**Lab 7: Faulting and Fracturing**
Week 8	**Lab 8: Topographic map, Structural map**
Week 9	**Lab 9: geologic map**
Week 10	**Lab 10: index fossil**
Week 11	**Lab 11: Map of isochatel and isobach**
Week 12	**Lab 12: Geological section**
Week 13	**Lab 13: compass and field tools**
Week 14	**Lab 14: hydraulic properties**
Week 15	**Lab 15: Comprehensive laboratory review**

Learning and Teaching Resources **مصادر التعلم والتدريس**		
References	**Text**	**Available in the Library?**
Required Texts	**1. Physical Geology First 2. ٩102Saskatchewan Edition, ٤102Historical geology**	**Yes**
Recommended Texts	**اساسيات الجيولوجيا التاريخية هو كتاب علمي من تأليف أ.د.محمد أحمد حسن هيكل - د. عبد الجليل عبد الحميد هويدي ٧٠٠٢**	**No**
Websites		

Module Information معلومات المادة الدراسية			
Module Title	**Mineralogy**	**Module Delivery**	
Module Type	**Core**	☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**GEO1205**		
ECTS Credits	**9.00**		
SWL (hr/sem)	**225**		
Module Level	**UGI**	**Semester of Delivery**	**Two**
Administering Department	**Geology Dept.**	**College**	**College of Science**
Module Leader	**Hasan Kattoof Jasim**	**e-mail**	**Hasan.jasim@sc.uobaghdad.edu.iq**
Module Leader's Acad. Title	**Lecturer**	**Module Leader's Qualification**	**Ph.D.**
Module Tutor		**e-mail**	
Peer Reviewer Name	**Dr. Aiad Ali Hussein**	**e-mail**	**aiad.hussien@sc.uobaghdad.edu.iq**
Scientific Committee Approval Date	**01/09/2024**	**Version Number**	**2.0**

Relation with other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	**GEO-1102**	**Semester**	**One**
Co-requisites module	**GEO-2309**	**Semester**	**Three**

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims **اهداف المادة الدراسية**	**1- Mineralogy aims to introduce the student to this very important science, which has many applications, as rocks are composed in nature of minerals, and therefore the earth's crust will also be composed of minerals, which will affect many of the events that occur in the earth's crust, as well as the economic importance of minerals, which are included in Lots of industries** **2- Mineralogy also aims to recognize that minerals are the main source of chemical elements, which are considered the basic element of many sciences, especially chemistry, physics and engineering branches.**
3- Module Learning Outcomes **4- مخرجات التعلم للمادة الدراسية**	**1- Learn about the physical properties of minerals** **2- Training on the physical and chemical properties, which will help in the process of distinguishing between minerals according to their properties** **3- Training in the diagnosis of minerals in the laboratory, and this will be of importance in geological work, especially in mines and field work** **4- Training on the types of minerals and understanding the differences between them will have great economic importance, especially in the field of industrial minerals**
Indicative Contents	**1- Mineralogy aims to know how and how Minerals are formed in nature** **2- Mineralogy is the main branch of geology , , and this science is important,**

المحتويات الارشادية	especially in mineral diagnostic processes that have many applications, especially in the classification of rocks, as well as the diagnosis of minerals of economic importance 3- Mineralogy has many important applications, especially in the identification of minerals for many purpose especially in industrial uses

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	1- Identify the minerals are used in the laboratory and their relationship with real crystals of minerals in nature 2- Understand the ways in which minerals crystallize, which will vary according to the processes by which the types of igneous, sedimentary, and metamorphic rocks are formed. 3- The study of minerals is very important, as many industrial and engineering applications are based on it, such as construction supplies and various industries 4- Minerals are considered the backbone of the economy for many countries, as they are considered a natural wealth, just like crude oil, and minerals are found in all countries of the world because they make up the earth's crust.

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

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	80	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	145	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	9
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	225		

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

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Introduction to Mineralogy
Week 2	Methods of Minerals Crystallization in the nature
Week 3	Steps of Discovering and naming a new Mineral
Week 4	Physical properties of Minerals - Optical and Cohesive Properties

Week 5	**Classification of Minerals**
Week 6	**Form and Habits of Minerals**
Week 7	**Important of Minerals**
Week 8	**Midterm Exam**
Week 9	**Hazards of Minerals**
Week 10	**Classes and Groups of Minerals**
Week 11	**Non- Silicates Minerals**
Week 12	**Bowen Reaction Series**
Week 13	**Silicates Minerals**
Week 14	**Structure of Silicate minerals – Types of Silica Tetrahedron Connection**
Week 15	**Minerals in Iraq**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	**Lab 1: Introduction to Crystallography**
Week 2	**Lab 2: Methods for Identification of Minerals**
Week 3	**Lab 3: Physical properties of minerals (Optical Properties)**
Week 4	**Lab 4: Color of Minerals**
Week 5	**Lab 5: Luster of Minerals**
Week 6	**Lab 6: Streak of Minerals**
Week 7	**Lab 7: Transparency of Minerals**
Week 8	**Lab 8: Physical properties of Minerals (Cohesive Properties)**
Week 9	**Lab 9: Hardness of Minerals**
Week 10	**Lab 10: Fracture of Minerals**
Week 11	**Lab 11: Cleavage of minerals**
Week 12	**Lab 12: Other properties of identification (Electrical , Magnetic, Thermal, Test Properties)**
Week 13	**Lab 13: Form and Habit of Minerals**
Week 14	**Lab 14: Classes of Minerals**
Week 15	**Lab 15: Final practical Examination of Minerals**

Learning and Teaching Resources
مصادر التعلم والتدريس

References	Text	Available in the Library?

Required Texts	**Berry, L, G., and Meson, B., 1959, Elements of Mineralogy, W. H. Freeman and Co., USA, 550P.**	**Yes**
Recommended Texts	**Nesse, W. D., 2000, Introduction to Mineralogy, Oxford University Press, New York, 442P.**	**No**
Websites	**www.Mindat.com**	

الفيزياء العامة – المرحلة الاولى / الفصل الثاني

Module Information **معلومات المادة الدراسية**			
Module Title	**General Physics**	**Module Delivery**	
Module Type	**Basic**	**☒ Theory** **☐ Lecture** **☒ Lab** **☐ Tutorial** **☐ Practical** **☐ Seminar**	
Module Code	**GEO1206**		
ECTS Credits	**6.00**		
SWL (hr/sem)	**150**		
Module Level	**UGI**	**Semester of Delivery**	**Two**
Administering Department	**Geology Dept.**	**College**	**College of Science**
Module Leader	**Dr. Ali Hassan Khidhir**	**e-mail**	**ali.khidhir@sc.uobaghdad.edu.iq**
Module Leader's Acad. Title	**Asst. Professor**	**Module Leader's Qualification**	**Ph.D.**
Module Tutor		**e-mail**	
Peer Reviewer Name	**Dr. Aiad Ali Hussein**	**e-mail**	**aiad.hussien@sc.uobaghdad.edu.iq**
Scientific Committee Approval Date	**01/09/2024**	**Version Number**	**2.0**

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

Module Aims, Learning Outcomes and Indicative Contents **اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية**	
Module Aims **اهداف المادة الدراسية**	**1. Teaching students the basic principles of physics.** **2. Preparing specialists in the field of general physics and its practical applications, which bears the responsibility of studying the country's need for development and progress and capable of meeting the needs of the job market in state institutions and industry sectors.** **3. Preparing an educated generation armed with science and adopts it as a sound basis to bring about radical changes and assign scientific knowledge**

	and scientific methods in thinking, analysis and adaptation with the development of technologies, to keep up with the expansion of human needs. 4. Effective contribution for deepening and documenting the connection of the university with the society through the implementation of advisory counseling, training and development of teaching and administrative staff. 5. The service of preparing graduates specialized in physics who contribute to development in the country. 6. Meeting the needs of various sectors with highly qualified personals in the field of physics. 7. Encouraging the distinguished in this field to work as teaching assistants in the department to be part of the academic teaching staff in the future.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- enable students to obtain knowledge and understanding of the concept of physics. 2- Enable students to obtain knowledge and understanding of the scientific laws of physics. 3- Enable students to keep pace with scientific development in all scientific fields of physics.
Indicative Contents المحتويات الارشادية	- This course contains a lot of vocabulary, which is a branch of physics concerned with the nature and properties of matter and energy. - It includes an introduction to understanding natural phenomena, the forces and movement affecting their course, and the formulation of knowledge into laws that do not only explain the aforementioned processes, but also predict the course of natural processes with models that gradually approach reality. - The topic of general physics includes an introduction to physics, vector analysis, Newton's laws in linear motion, circular motion, and rotational motion. Also, gravitational force, work, energy, torque, angular momentum, laws of motion with constant or uniform acceleration of linear and rotational motion, dynamic fluids, static fluids, particle stability, electric charge, electric field, and electric potential in electrical circuits and ray optics.
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	- The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**80**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	**5**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**70**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	**4**
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 8
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	Midterm Exam	2hr	10% (10)	8	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	A brief summary of the vectors, scalar and vector quantities, addition of vectors, unit vector, component of vectors, dot product and cross product. With examples for all these topics.
Week 2	Motion on a straight line: Displacement, Average velocity, Instantaneous velocity, Average acceleration, and Instantaneous acceleration. With examples for all these topics.
Week 3	Application of Motion with a constant acceleration: Freely falling bodies, and Projectile of motion. With examples for all these topics.
Week 4	Equilibrium of a particle: Understanding of forces, Newton's first law, Newton's second law, Newton's third law, and mass and weight. With examples for all these topics.
Week 5	Friction force, inclined plane, Torque of force, Center of gravity of the body, Center of mass, Motion of a system of particle, and Newton's law of universal gravitation. With examples for all these topics.
Week 6	Circular and Rotational motion: Motion in a circle, uniform circular motion, central or radial force, non-uniform circular motion, Central or radial acceleration, Central force, tangential acceleration, and tension in circular motion. With examples for all these topics.
Week 7	Rotational motion, angular displacement, angular velocity, and angular acceleration. With examples for all these topics.
Week 8	Midterm exam
Week 9	Rotational motion with a constant angular acceleration, relation between angular and linear velocity and acceleration, torque, angular acceleration, and moment of inertia. With examples for all these topics.
Week 10	Elasticity: The street and strain, elastic modulus, Hook's law, tensile and compressive stress and strain, Young's modulus, bulk stress and strain, bulk modulus, compressibility, shear stress and strain, Poisson's ratio, and force constant. With examples for all these topics.
Week 11	Static fluids: Density, specific gravity, pressure in a fluid, atmospheric pressure, pressure-depth-Pascal's law, buoyancy, Archimedes principle, and define the surface tension. With examples for all these topics.
Week 12	Dynamic fluids: Ideal fluid, the continuity equation, Bernoulli's equation, Venturi meter, and define the viscosity. With examples for all these topics.
Week 13	Electric charge and electric field: Conductor, insulator, and induced charges. Coulomb's law, electric field, intensity of electric field, electric potential energy, electric potential energy in a uniform field, electric potential energy of two point charges, potential difference, potential gradient, equipotential surfaces, and electric potential. With examples for all these topics.
Week 14	Geometric optics: Nature and propagation of light, wave front, properties of light, types of

	reflection, index of refraction, laws of reflection and refraction, total internal reflection, real and apparent depth, refraction by prism.
Week 15	**mirrors & lenses: Spherical mirrors, image formations, spherical aberration, types of simple lenses, converging lens, diverging lens, properties of lenses, image formation by thin lenses,**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	**Moment of inertia for flywheel**
Week 2	**Simple pendulum**
Week 3	**Surface tension**
Week 4	**Speed of sound**
Week 5	**Glass refractive index**
Week 6	**diffraction grating**
Week 7	**Equilibrium forces**
Week 8	**Midterm exam.**
Week 9	**Ohm's law**
Week 10	**Viscosity**
Week 11	**Wheatstone bridge**
Week 12	**inclined plane**
Week 13	**Archimedes principle**
Week 14	**focal length of the lens**
Week 15	**standing waves**

Learning and Teaching Resources
مصادر التعلم والتدريس

References	Text	Available in the Library?
Required Texts	**Fundamental of Physics (Halliady, Resnick, and Walker).**	**Yes**
Recommended Texts		
Websites		

Module Information معلومات المادة الدراسية			
Module Title	**Mathematic**	**Module Delivery**	
Module Type	**Basic**	☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**GEO1207**		
ECTS Credits	**4.00**		
SWL (hr/sem)	**100**		
Module Level	**UGI**	**Semester of Delivery**	**Two**
Administering Department	**Geology Dept.**	**College**	**College of Science**
Module Leader	**Rana A. Mohammed**	**e-mail**	**Rana.a@scuobaghdad.edu.iq**
Module Leader's Acad. Title	**Lecturer**	**Module Leader's Qualification**	**PH.D.**
Module Tutor		**e-mail**	
Peer Reviewer Name	**Dr. Aiad Ali Hussein**	**e-mail**	**aiad.hussien@sc.uobaghdad.edu.iq**
Scientific Committee Approval Date	**01/09/2024**	**Version Number**	**2.0**

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

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims **اهداف المادة الدراسية**	**1. Training the student to benefit from the properties of real numbers with related concepts.** **2. Employed the mathematical concepts in the academic aspects that the student needs.** **3. Enhancing students' mental fitness and maintaining mental acuity.**
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	**1. Basic concepts: Students will be able to recognize the relation among real numbers and other it's subsets** **2. Mental abilities: Students will understand how to reach the solution through simple and brief methods as well as he will able to solve various problems in the fields of general mathematics.** **3. The student will be able how to employed mathematical concepts that he learns in his specialization field.**
Indicative Contents **المحتويات الارشادية**	**Indicative contents of learning General mathematics:** **1. Real numbers and their properties** • **Subsets of real numbers** • **Intervals**

	• **Inequalities** • **Absolute value** • **Coordinates in the plane** 2. **Functions** • **Domain an Range for the functions** • **Graph of functions** • **Types of functions** • **Operations on functions** 4. **Limits** 5. **Continuity** 6. **Trigonometric functions** 7. **Derivatives** • **Derivative rules** • **The chin rule**
Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	1. **Hands-on Practice: Emphasize practical exercises and hands-on activities where learners actively engage with the manual solution. Provide step-by-step instructions and guided practice opportunities to ensure learners gain experience.** 2. **Demonstration: Start by demonstrating mathematical concepts with examples to show learners how to solve related tasks,** 3. **Interactive Tutorials: Utilize interactive tutorials and simulations that allow learners to interact in a simulated environment. These resources provide guided instructions and immediate feedback, enabling learners to practice and reinforce their skills.** 4. **Scenario-based Learning: Present real-life scenarios where learners can apply their knowledge to solve problems or complete specific tasks. Encourage critical thinking and problem-solving skills by challenging learners to find solutions using the various mathematical concepts they have learned.** 5. **Group Activities and Discussions: Foster collaboration and peer learning by incorporating group activities and discussions. Encourage learners to share their experiences, ask questions, and help each other troubleshoot issues or explore advanced features.** 6. **Multimedia Resources: Supplement traditional instruction with multimedia resources such as video tutorials, interactive e-learning modules, and online resources. These resources can provide additional explanations, demonstrations, and visual aids to enhance understanding and retention of the content.** 7. **Practice Projects and Assignments: Assign practical projects or assignments that require learners to apply their skills to create documents, presentations, or other tasks. Provide clear objectives and guidelines, and encourage creativity to promote active learning.** 8. **Assessments and Feedback: Use formative and summative assessments to gauge learners' understanding and progress. Provide constructive**

	feedback on their work to highlight areas for improvement and reinforce correct practices. 9. Adaptability and Differentiation: Recognize the diverse needs and learning styles of learners and adapt the instruction accordingly. Provide differentiated instruction, additional resources, or alternative learning paths to cater to individual learners' abilities and preferences.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	35	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	65	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Real numbers and their properties Subsets of real numbers Properties of real numbers
Week 2	Intervals Graph of intervals on real line
Week 3	Inequalities
Week 4	Absolute value
Week 5	Coordinates in the plane Slope Equation of the line
Week 6	Functions Domain an Range for the functions
Week 7	Graph of functions Types of functions Operations on functions
Week 8	Midterm Exam

Week 9	**Limits**
Week 10	**Continuity**
Week 11	**Trigonometric functions** **Graph of geometric functions**
Week 12	**Derivatives** **definition with examples**
Week 13	**Derivative rules**
Week 14	**The chin rule**
Week 15	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	**Real numbers and their properties** • **Subsets of real numbers** • **Properties of real numbers**
Week 2	**Intervals** **Graph of intervals on real line**
Week 3	**Inequalities**
Week 4	**Absolute value**
Week 5	**Coordinates in the plane** **Slope** **Equation of the line**
Week 6	**Functions** **Domain an Range for the functions**
Week 7	**Graph of functions** **Types of functions** **Operations on functions**
Week 8	**Midterm Exam**
Week 9	**Limits**
Week 10	**Continuity**
Week 11	**Trigonometric functions** **Graph of geometric functions**
Week 12	**Derivatives** **definition with examples**
Week 13	**Derivative rules**
Week 14	**The chin rule**
Week 15	**Preparatory week before the final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

References	Text	Available in the Library?
Required Texts	1.Thomas calculus any edition	Yes
Recommended Texts		
Websites	https://youtube.com/playlist?list=PL7nhsj3rJk8OjBJf0w6ge2C0rvp_eI3QT&si=KCNeCkPt8MnCFEP1	

Module Information معلومات المادة الدراسية			
Module Title	**Arabic Language I**	**Module Delivery**	
Module Type	**Supportive**	☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**UOB101**		
ECTS Credits	**2.00**		
SWL (hr/sem)	**50**		
Module Level	**UGI**	**Semester of Delivery**	**Two**
Administering Department	**Geology Dept.**	**College**	**College of Science**
Module Leader	**Dr. Leqaa faleh owdaa**	**e-mail**	**leqaa.falih@ircoedu.uobaghdad.edu.iq**
Module Leader's Acad. Title	**Lecturer**	**Module Leader's Qualification**	**Ph.D.**
Module Tutor		**e-mail**	
Peer Reviewer Name	**Dr. Aiad Ali Hussein**	**e-mail**	**aiad.hussien@sc.uobaghdad.edu.iq**
Scientific Committee Approval Date	**01/09/2024**	**Version Number**	**2.0**

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

Module Aims, Learning Outcomes and Indicative Contents اهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims **اهداف المادة الدراسية**	١. تهدف إلى تنمية روح الإعتزاز باللغة العربيَّة للمحافظة على الهوية العربيَّة. ٢. تهدف إلى تأهيل الطلبة بالمعارف والمخرجات الخاصة علم النحو، والصرف، والإملاء؛ لتمكنه من الكتابة الصحيحة والتعبير السليم وتقويم لسانه. ٣. تهدف إلى تنمية ذوق الطالب الأدبي وإثراء تحصيله وإغناء زاده من الفكر العربي والإسلامي. ٤. تهدف إلى تطوير مهارات الطلاب اللغويَّة التي تؤهلهم للإبداع المتميز. ٥. تهدف إلى تنمية مهارات التحدث بـ (اللغة العربيَّة). ٦. تهدف إلى الارتقاء بمستوى الطلبة من الجانب المهني والبحثي.
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	١-التعرف على أهم خصائص اللغة العربيَّة وأهميتها في مجال العلم كونها أداة نقل العلم والمعرفة. ٢-التعرف على أقسام الكلمة وعلامات كل منها كونها المحور الرئيسي الذي يتألف منها الكلام. ٣-التمييز بين المبني والمعرب وعلامات كل منها وتوضيحها بالأمثلة. ٤-التعرف على المبتدأ والخبر من حيث تعريفهما وحكمهما وبيان ذلك بالأمثلة التوضيحية. ٥-التمييز بين الفاعِل ونائب الفاعِل من حيث تعريفهما وأحكامهما وبيان ذلك بالأمثلة التوضيحية. ٦-التعرف على الأعداد وبيان العلاقة بين العدد والمعدود من حيث المطابقة والمخالفة أو الاستعمال بلفظ واحد، ومعرفة التقديم والتأخير بين العدد والمعدود، فضلاً عن معرفة أحكام العدد والمعدود في كل منها. ٧-التعرف على المشتقات والذي تعد من أبرز خصائص اللغة العربية التي تميزت بها عن اللغات الأخرى، وبيان حيويتها وقدرتها على استيعاب العلوم والتعبير عنها، وذلك بدراسة أنواع المشتقات واشتقاقاتها واستعمالاتها كـ (اسم الفَاعِل، اسم المَفْعُول، صيغة المبالغة ...).

٨-التعرف على جمع التكسير ، وأنواعها (جمع القلة وجمع الكثرة) وأوزانها . ٩-التعرف على قواعد كتابة التاء المربوطة والمفتوحة في آخر الألفاظ، وذلك بذكر مواضع كل منها، والتمييز بين الهاء والتاء المربوطة، مع ضبط كتابة التاء المربوطة وفق القاعدة. ١٠- التمييز بين الضاد والظاء كون مشكلة الفرق بين الضاد والظاء تكمن في النطق والكتابة وذلك بدراسة محاور الفرق بين الضاد والظاء من حيث الاسم والرسم والنطق والمعنى وغير ذلك. ١١- التعرف على الهمزة كونها أحد حروف اللغة العربيَّة والتمييز بين همزة الوصل والقطع، وذلك بذكر مواضع كل منها، فضلاً عن قواعد كتابة همزة القطع وصورها المختلفة. ١٢- تمكن الطالب من استعمال علامات الترقيم في كتابة البحوث والتقارير أو أي نص آخر واستعمالها استعمالاً صحيحاً، لما لها من أثر في توضيح النص بين المتكلم والمتلقي. ١٣- التعرف على أهم الأغلاط اللغويَّة الشائعة: النَّحويَّة والصرفيَّة، والإملائيَّة. ١٤- التعرف على الشاعر العراقي محمد مهدي الجواهري كونه رمز من رموز الشعر العمودي في العراق، والشاعر بدر شاكر السياب كونه أحد رواد الشعر الحر في العراق.	
اللغة العربيَّة: خصائصها، مميزاتها، أهميتها. - أقسام الكلمة: الاسم والفعل والحرف. - المبني والمعرب: علامات البناء وعلامات الإعراب. - المبتدأ، الخبر. - الفاعِل، نائب الفاعِل: أحكام الفاعِل ، أحكام نائب الفاعِل . - العدد: أحكام العدد. - المشتقات: اسم الفَاعِل، اسم المَفعُول، صيغة المبالغة... - جمع التكسير: جمع القلة، جمع الكثرة. - التاء المربوطة والتاء المفتوحة في أخر الألفاظ: التاء المربوطة (القصيرة) في آخر الألفاظ ، التاء المفتوحة (الطويلة، المبسوطة) في آخر الألفاظ. - الفرق بين الضاد والظاء: صوت الضاد – حرف الضاد، صوت الظاء – حرف الظاء. - الهمزة وقواعد كتابتها: همزة الوصل وهمزة القطع. - علامات الترقيم: مواضع علامات الترقيم ، علامات التنقيط. - الأغلاط اللغويَّة الشائعة: الأغلاط اللغوية، النحوية، الصرفية، الإملائية. - الشاعر محمد مهدي الجواهري: حياته، مؤلفاته. - الشاعر بدر شاكر السياب: حياته، مؤلفاته.	**Indicative Contents** المحتويات الارشادية

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

- الاستراتيجية الرئيسية التي سيتم تبنيها في تقديم هذه الوحدة هي تشجيع الطلاب على المشاركة في التمارين والتطبيقات النحوية والإملائية، مع تحسين مهارات التفكير والتحليل في الوقت نفسه. ويتم تحقيق ذلك عن طريق الفصول والبرامج التعليمية التفاعلية والنظر في أنواع التطبيقات التي تتضمن بعض الأنشطة التي تهم الطلبة.	**Strategies**

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

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**33**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	**2**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**17**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	**1**
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 8
	Projects / Lab.	1	10% (10)	Continuous	All

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

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	اللغة العربيَّة : خصائصها وأهميتها.
Week 2	أقسام الكلمة والمبني والمعرب منها.
Week 3	العدد وأحكامه.
Week 4	المشتقات: ومنها (اسم الفَاعِل، اسم المفْعُول، صيغ المبالغة ...).
Week 5	قواعد كتابة التاء المربوطة والمفتوحة في آخر الألفاظ.
Week 6	الهمزة وقواعد كتابتها.
Week 7	امتحان نصف الفصل.
Week 8	المبتدأ والخبر.
Week 9	الفاعِل ونائب الفاعِل.
Week 10	جمع التكسير وأنواعه.
Week 11	علامات الترقيم: تعريفها وأنواعها ومواضع كل منها.
Week 12	الفرق بين الضاد والظاء.
Week 13	الأغلاط اللغويَّة الشائعة.
Week 14	الأدب: الشعراء العراقيون: - الشاعر العراقي محمد مهدي الجواهري. - الشاعر العراقي بدر شاكر السياب.
Week 15	مراجعة للمنهج قبل الامتحان النهائي.

Learning and Teaching Resources
مصادر التعلم والتدريس

References	Text	Available in the Library?
Required Texts	القرآن الكريم. اللغة: التطبيق الصرفي: د. عبده الراجحي. جامع الدروس العربيَّة: الشيخ مصطفى الغلاييني. السلامة اللغويَّة: د. علاء حسن مشكور. شرح ابن عقيل: ابن عقيل، تحقيق: محمد محي الدين عبد الحميد. فقه اللغة العربيَّة وخصائصها: د. إميل بديع يعقوب. كيف تكتب بحثاً أو رسالة : د. أحمد شلبي. الوجيز في اللغة العربيَّة: أ.د. محيي هلال السرحان. الأدب العربي:	Yes

	- ديوان بدر شاكر السياب: بدر شاكر السياب. - ديوان الجواهري: محمد مهدي الجواهري. - الشعر العراقي الحديث مرحلة وتطور: د. جلال الخياط.	
		Recommended Texts
		Websites