



## اللائحة الدراسية:

الفصل الدراسي	الفرقة والمستوى	عدد الساعات الأسبوعية			عدد الوحدات	اسم المقرر	كود أو رقم المقرر	
		عملي	تمرين	نظري				
الأول	الأولي (بيولوجي وجيولوجي)	4	0	3	7	كيمياء عامة	104ك	
		4	0	2	6	نبات عام	101ن	
		4	0	2	6	حيوان عام	101ح	
		2	0	2	4	جيولوجيا طبيعية وتاريخه	101ج	
		2	0	2	4	ضوء وكهربية ومغناطيسية	103ف	
		0	1	2	3	تفاضل وتكامل وجبر	105ر	
		الثاني	الأولي (بيولوجي وجيولوجي)	4	0	3	7	كيمياء عامة
4				0	2	6	نبات عام	102ن
4				0	2	6	حيوان عام	102ح
2				0	2	4	بللورات ومعادن	102ج
2				0	2	4	حرارة وخواص مادة	104ف
0				1	2	3	تفاضل وتكامل وهندسة	106ر
0				1	2	3	لغة انجليزية	102ل
الأول		الثانية (جيولوجيا)		4	0	4	8	بصريات المعادن -معادن
	2			0	2	4	حفريات كبيرة	204ج
	0			0	2	2	الديناميكا الحرارية الكيميائية	205ك
	4			0	2	6	كيمياء عضوية	206ك
	2			0	2	4	ضوء فيزيائي	205ف
	0			1	2	3	رياضيات	207ر
	الثاني			الثانية (جيولوجيا)	0	0	2	2
4			0		4	8	صخور نارية -صخور رسوبية	205ج
2			0		2	4	حفريات دقيقة	206ج
4			0		2	6	كيمياء غير عضوية	207ك



		0	1	2	3	كيمياء عضوية	ك208	
		2	0	2	4	فيزياء ذرية واطياف	ف208	
		2	0	1	3	علوم الحاسب	ر208	
		0	1	2	3	لغة انجليزية	ل202	
الأول	الثالثة (جيولوجيا)	2	0	3	5	بيئة ترسيب - جيولوجيا تركيبية وميكانيكا الصخور	ج301	
		4	1	4	9	طبقات-تسجيلات ابار	ج302	
		6	0	3	9	جيولوجيا المياه -مساحة-تدريب حقلي	ج303	
		4	1	2	7	تحليلية (كمية ووزنية وخامات)	ك307	
		0	0	1	3	مبادئ علم الحاسب	ر338	
			2	0	1	3	حاسب	بدون
الثاني			2	0	3	5	صخور قاعية ومتحولة	ج304
			2	2	4	8	جيوكيمياء الصخور وتحليل معدني -جيولوجيا الدلتا- وتحت سطحية	ج305
			2	2	3	7	جيولوجيا تصويرية - صخور القاعدة في مصر	ج306
			0	0	1	1	فيزياء اشعاعية	ف326
		2	0	1	3	كيمياء البترول	ك324	
		2	1	2	5	مبادئ علم الحاسب برمجة	ر340	
		0	1	2	3	لغة انجليزية	ل302	
الأول	الرابعة (جيولوجيا)	2	0	4	6	جيولوجيا البترول	ج401	
		2	0	2	4	جيوفيزياء	ج402	
		2	0	2	4	جيولوجيا (هندسة -اشعاعية)	ج403	
		2	0	2	4	مياه ارضية تطبيقية	ج404	
		4	0	2	6	الرواسب المعدنية في مصر - جيولوجيا الشواطئ	ج405	
الثاني			2	1	2	5	جيولوجيا مصر	ج406
			2	1	2	5	جيوفيزياء	ج407
			4	0	2	6	جيومورفولوجيا تطبيقية -تدريب حقلي	ج408
			4	0	3	7	مناخ قديم- جيولوجيا بحرية - الاستشعار عن بعد	ج409



		0	0	2	2	مقرر اختياري	410ج
		0	0	2	2	بحث ومقال	بدون
		0	1	2	3	لغة انجليزية	402ل
		2	0	1	3	حاسب	بدون
		112	17	117	246	المجموع	



## محتويات المقررات

الرمز الكودي: 101 ج اسم المقرر: جيولوجيا طبيعية وتاريخية التخصص: علوم بيولوجية وجيولوجية الفرقة / المستوى: اولى

Topic
1. Introduction to Geology.
2. Origin of the Earth.
3. Internal structure of the Earth.
4. Primary and secondary sedimentary structures.
5. Mineralogy.
6. Rock types.
7. Physical, mechanical and chemical weathering.
8. Wind and sand dunes forms.
9. Oceans and Seas.
10. Underground water
11. Earthquakes, volcanoes and plate tectonic.
12. Review and open discussions.

الرمز الكودي: 104 ك اسم المقرر: كيمياء عامة الفرقة: ا

Topic
Gaseous state
Thermochemistry
Chemical equilibrium
Solutions
Problems in physical Chemistry
Chemical Calculations
Atomic spectra and Quantum numbers
Properties of of periodic table
Chemical bonding
Determination of density
Determination of viscosity
Determination of surface tension
Determination of empirical formula of an oxide
Determination of hydrate
Stoichiometric determination
Determination of the molecular weight of volatile liquid
Determination of the heat of formation of MgO
Determination of heat of neutralization (strong acid and strong base)
Determination of heat of neutralization (strong acid and weak base)
Determination of heat of neutralization (weak acid and weak base)

الرمز الكودي: 101 ن اسم المقرر: نبات عام الفرقة / المستوى

Topics
General characters of monocot and dicot plants.
Types of seeds and germination
Different shapes of plant organs and their modifications.
Adaptation of plants to different habitats.
Studying the organisms' diversity.
Classification the organisms in Plant kingdom according to their specific characters



Studying the general characters for each group in the classification using an example for each one.

الرمز الكودي: 101 ح اسم المقرر: حيوان عام الفرقة: الأولى

Topic
Introduction to zoology (physiology, cytology and histology).
Bases of anatomy and essential physiological processes of human digestive, cardiovascular, respiratory and renal systems-Essential processes of human neurophysiology and renal systems.
General and Functional cytology
General and descriptive animal histology
Safety Statement of Lab. work and microscopial
external features and musculature of the experimental
Anatomy of nervous system of Egyptian toad
Skeleton of Egyptian toad
General histology (connective, muscular and nervous animal tissues
Respiratory, endocrine, reproductive, skin, circulatory and excretor

الرمز الكودي: 103 ف	اسم المقرر: ضوء وكهربيه ومغناطيسيه	الفرقة: الأولى
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	Topics
Geometrical optics	Nature of light
	Refraction through lenses
	Optical instruments
	Dispersion
	Photometry
Electricity and magnetism	Charge and matter, Electric current
	Electric field for a group of point charges
	Electric field of continuous charges
	Electric potential and applications, Condensers
	Coulomb's law, Electric field
	Electric dipole and transient current
	Dielectric current and Static magnetism
Electromotive forces and induction	
Practical	convex lenses
	concave lenses

الرمز الكودي: 105 ر اسم المقرر: تفاضل وتكامل وجبر الفرقة: الأولى

Topic
Inequality part 1.
Inequality part 2.



Limits and the continuity part 1.
Limits and the continuity part 2.
Derivatives part 1.
Derivatives part 2.
Application of Derivatives part 1.
Application of Derivatives part 2.
Application of Derivatives part 3.
Mathematical Induction part 1.
Mathematical Induction part 2.
Mathematical Induction part 3.
Partial fraction.

الرمز الكودي: 102 ج اسم المقرر: بلورات ومعادن الفرقة: الأولى

Topic
Introduction to crystal elements, symmetry and how crystals formed.
Crystal, Elements of crystals: Faces, Edges, Solid angles, Interfacial angles, Law of constancy of interfacial angles, Contact goniometer & Reflection goniometer, Crystal habit, Crystal form "Order", Crystal elements, Axial cross, Crystallographic axes, Crystallographic angles
Crystal symmetry, Elements of symmetry: Axes, Plane, Centre-of symmetry, Rotation symmetry axes & Rotation inversion symmetry axes, Axial ratio, Parameters, Indices, Miller indices, Crystal system & Crystal classes, Orthogonal projection & Clinographic parallel perspective
Crystal systems (I): Cubic "Isometric", Tetragonal, Hexagonal, Trigonal.
Crystal systems (II): Orthorhombic, Monoclinic, Triclinic.
Introduction to formation of minerals and chemical formula of mineral.
Physical Properties of Minerals, Optical, Cohesive Electrical, Magnetic, Thermal, Radioactivity properties.
Density and Specific Gravity, Taste, Odor, Feel, Isomorphism, Polymorphism, Pseudomorphism.
Origin of Minerals, Classification of Minerals, Chemical Classification, Silicates Subclasses, Determinative Mineralogy
Rocks, Rock cycle, Igneous-, Sedimentary-, Metamorphic- rocks, Minerals and Gemstones.
Review and open discussions.

الرمز الكودي: 105 ك اسم المقرر: كيمياء عامة الفرقة: الأولى

Topic
Physical Chemistry
The Phenomena of electrolysis, Faraday's laws
Electrical Conductance, EMF.
Electrode Potential, Chemical and electrical energy.
Cell reaction and electrochemical series
Solid state and Crystallographic systems. Inorganic Chemistry
The VSEPR model
V.B. Theory (Hybridization of orbitals)
Molecular geometry and Resonance
M.O. Theory
Oxidation- Reduction reactions
Practical part



الرمز الكودي: 102 ن اسم  
المقرر: نبات عام  
الفرقة: الأولى

Topic
Colloids
Plant cell
Diffusion, Osmosis and Permeability
Plant water relationships
Enzymes
Photosynthesis
Respiration
Plant Growth
Plant cell components (living and on-living)
Cell wall
Simple tissues (Meristematic and permanent)
Epidermal tissues and complex tissues
Plant organs (monocot & dicot), stem, root and leaves
Secondary structures in plant, Periderm, Tylosis, Lenticels

الرمز الكودي: 102 ح اسم  
المقرر: حيوان عام  
الفرقة: الأولى

Topic
Instruments in taxonomy
Bases of taxonomy
Five kingdoms theory
General characters and taxonomy of Sarcodina and Ciliophora
General characters and taxonomy of Zoomastigophora and Apicomplexa
General characters and taxonomy of Porifera
General characters and taxonomy of Hydrozoa and Scyphozoa
General characters and taxonomy of Anthozoa
General characters and taxonomy of turbellarians
General characters and taxonomy of monogeneans
General characters and taxonomy of Cestoda

الرمز الكودي: 104 ف اسم  
المقرر: حرارة وخواص مادة  
الفرقة: الأولى

Topic
Temperature and thermometers
Heat estimation
Thermal expansion
Change of phase
Heat transfer
Kinetic theory of gases
Units and dimensions (Fundamental units - Derived units - Dimension theory and its applications)
Scalar and vectors -Linear motion - Planer motion - Newton`s second law
Simple harmonic motion -SimpMonent of inertia for some bodies- Simple pendulum - Some experiments
Hook`s law-Elasticity modulii-Relation between elasticity modulii-Stress-Strain curves- Some exp
Pressure-Pascal`s rule-Archimede`s rule- Bernoulli`s equation - Surface tension- Some ex



Bernoulli`s equation - Viscosity( Poiseuill`s formula- Stokes law)-Some experiments	
الرمز الكودي:	106 ر
اسم المقرر:	تفاضل وتكامل وهندسة
الفرقة:	الاول
Topic	
المتباينات	
النهايات والاتصال	
المشتقات	
تطبيقات على المشتقات	
الاستنتاج الرياضي	
المسور الجزئية	
الحجم	
الخط المستقيم	
الدائرة	

الرمز الكودي: 102 ل اسم المقرر: لغة انجليزية الفرقة: الاولى

Topic	
Types of common rocks	
Writing paragraph + topic sentence	
Countable and 1.	
Animal cell structure	
Punctuation	
The use and 1. مقابلات فردية -use of articles + using a Relative clause	
Subject verb agreement + Quit & Rather	
Lightening	
الرمز الكودي:	203 ج
اسم المقرر:	بصريات المعادن - معادن
الفرقة:	الثاني

Topic		
Optical Mineralogy	13. Introduction to optical mineralogy.	
	14. Nature of light and the polarizing microscope.	
	15. Istropic substance and properties in plane polarized light.	
	16. Properties between crossed nicols.	
	17. Uniaxial minerals and Biaxial minerals.	
	18. Interference figures.	
	19. Scheme of identification mineral groups.	
	Mineralogy	20. Introduction to mineralogy.
		21. Groups of olivine, zircon, sphene and beryl minerals
22. Groups of pyroxene and amphibole minerals.		
23. Groups of mica, serpentine, talc and chloride minerals.		
24. Groups of feldspars and silica minerals.		

الرمز الكودي: 204 ج اسم المقرر: حفريات كبيرة الفرقة: الثانية

Topic	
Preservation and collection of fossils	
Describing single specimens.	
Ontogentic variations	
Evolution and fossil record	
Protozoa, Foraminifera	
Coelentrata	
Bryozoa and Porifera	





Brachiopoda				
Bivalvia.				
Gastropoda				
Cephalopoda.				
Echinodermata.				
الرمز الكودي: 205ك	اسم المقرر:	الديناميكا الحرارية الكيميائية	الفرقة:	الثانية
<b>Topic</b>				

Introduction of thermodynamics  
First law of thermodynamics  
Second law of thermodynamics  
Third law of thermodynamics  
Chemical equilibrium in solids  
Entropy relations

الرمز الكودي: 207 ف	اسم المقرر:	ضوء فيزيائي	الفرقة:	الثانية
<b>Topic</b>				

armonic motion part 1
armonic motion part 2
nce part 1-3
nce part 4
nce part 5
on of light part 1
on of light part 2
on of light part 3
ion of light part 1
ion of light part 2
ion of light part 3
ion of light part 4

الرمز الكودي: 207ر	اسم المقرر:	الرياضيات	الفرقة:	
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<b>Topic</b>				
Polar coordinates and its applications part 1.				
Polar coordinates and its applications part 2.				
Polar coordinates and its applications part 3.				
Partial derivatives part 1.				
Partial derivatives part 2.				
Partial derivatives part 3.				
Multiple integrals part 1.				
Multiple integrals part 2.				
Multiple integrals part 3.				
Improper integrals part 1.				
Improper integrals part 2.				
Taylor and Maclaurin series part 1.				
Taylor and Maclaurin series par 2.				



الرمز الكودي:	206ك	اسم المقرر:	: كيمياء عضوية	الفرقة:	الثانية
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Topic

- Introduction of organic compounds.
- Nomenclature of organic compounds.
- Chemistry of hydrocarbons.
- Chemistry of alkyl halides.
- Chemistry of Alcohols.
- Chemistry of Aldehydes and ketones.
- Chemistry of Acids.
- Chemistry of acids derivatives.
- Chemistry of amines.
- Chemistry of ethers

الرمز الكودي:	205 ج	اسم المقرر:	صخور نارية – صخور رسوبية	الفرقة:	الثاني
Igneous Rocks	Topic				
	Introduction: fundamental concepts.				
	Forms of extrusive and intrusive igneous rocks				
	Textures of extrusive and intrusive igneous rocks.				
	Composition of igneous rocks: rock-forming elements, rock-forming minerals.				
	Structures of igneous rocks				
	Magma differentiation.				
	Classification of igneous rocks.				
	Evolution of igneous rocks according to the descriptions of appearance, field and microscopic studies				
	Methods of collecting the samples.				
	The Arabian-Nubian Shield and the occurrence of the main igneous rocks				
Sedimentary Rocks	Introduction of Sedimentary Rocks				
	Clastic sedimentary rocks				
	Conglomerates				
	Sandstones				
	Mudstones				
	Diagenesis of Clastic sedimentary rocks				
	1. مقابلات فردية Clastic sedimentary rocks				
	Limestones				
	Dolomites				
	Evaporites				
	Diagenesis of 1. مقابلات فردية Clastic sedimentary rocks				

الرمز الكودي:	206ج	اسم المقرر:	حفريات دقيقة	الفرقة:	الثانية
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Topic

- Introduction
- Importance of microfossils.
- Collection, preparation and examination
- The living foraminifera
- Test morphology and wall composition
- Factors controlling the distribution of foraminifera
- Classification of foraminifera



Suborder Fusulina and Miliolina
Suborder Rotaliina
Superfamily Globigerinacea.
Superfamily: Cassidulinacea, 1. مقابلات فردية. ionacea and Carterinacea.
General history of foraminifera and their applications.

الرمز الكودي: 207 ك اسم المقرر: كيمياء غير عضوية الفرقة: الثاني

Topic
1-Introduction to S-P block
2- Hydrogen and hydrides
3- Group I to VII
4- Group 0
Introduction of volumetric analysis
Preparation of standard solutions, Standardization of HCl
Titration of strong acid against strong base
Titration of strong acid against weak base
Titration of weak acid against strong base; determination of the % of acetic acid in vinegar.
Analysis of Carbonate and bicarbonate mixture
Analysis of $H_3PO_4 + CH_3COOH$ mixture
Analysis of $H_3PO_4 + HCl$ mixture
Introduction of Redox reactions; Standardization of oxalic acid
Determination of $H_2O_2$
Determination of Fe(II)
Iodometric and Iodimetric titrations
Precipitation titrations

الرمز الكودي: 208 ك اسم المقرر: كيمياء عضوية الفرقة: الثانية

### a: Aromatic Compounds

- 1- Nomenclature of aromatic compounds.
- 2- Methods for preparation of benzene and its derivatives.
- 3- Reaction of benzene ring.
- 4- Phenols.
- 5- Aromatic alcohols.
- 6- Aromatic aldehydes and ketones.
- 7- Aromatic carboxylic acids.
- 8- Aromatic amines.

### ounds

- 1- Introduction and classification.
- 2- Nomenclature of the bi-functional compounds.
- 3- Diol, preparation and properties.
- 4- Diketones, preparation and properties.
- 5- Hydroxy aldehydic compounds, preparation and properties.
- 6- Hydroxy acid compounds, preparation and properties.
- 7- Dicarboxylic acid compounds, preparation and properties.
- 8- Diamine compounds, preparation and properties.
- 9-  $\beta$ -keto ester compounds, preparation and properties.

الرمز الكودي: 208 ف اسم : فيزياء ذرية الفرقة: الثاني



		المقرر: واطيف	
<b>Topic</b>			
1- Cathode ray			
2- Electromagnetic radiation			
3- Spectra			
4- Atomic models			
5- Atomic hydrogen spectra			
6- Bohr theory & hydrogen atom			
7- Sommerfeld theory			
8- Spectra of hydrogen like ions			
9- Fine structure spectra of alkali atom			
10- Photo electric effect			
11- X-ray			
الثاني	الفرقة:	اسم المقرر: مبادئ حاسب	208ر
<b>Topic</b>			
Introduction to high level programming Language.			
Data types.			
Handling errors.			
Statements and tools.			
Dealing with arrays.			
Functions and subroutines.			
Dealing with files.			
Other topics (e.g. Design menu).			
الثانية	الفرقة:	اسم المقرر: حقوق الانسان	بدون
<b>Topic</b>			
Identification of human rights and its international importance			
Types of human rights			
Human rights in Islam religion and comparative legislation			
Mechanisms of human rights protection			
الثانية	الفرقة:	اسم المقرر: لغة انجليزية	202 ل
<b>Topic</b>			
Calculating: Liquids and gases.			
Reporting: the origins of life.			
Describing: the universe.			
Predicting: the weather.			
Experimenting: Electricity and magnetism part 1.			
Experimenting: Electricity and magnetism part 2.			
Giving evidence: smoking, drugs, and alcohol part 1.			
Giving evidence: smoking, drugs, and alcohol part 2.			
Giving evidence: smoking, drugs, and alcohol part 3.			



Cause and effect: color, light, and sound part 1.

Cause and effect: color, light, and sound part 1.

Comparing the elements.

Classifying the composition of matter part.

الرمز الكودي: 301 ج اسم المقرر: بيئة ترسيب - جيولوجيا تركيبية وميكانيكا الصخور الفرقة: الثالثة

### Topics

#### Sedimentary Environment

Introduction to depositional sedimentary environments.  
Sedimentology environments: fundamental controls and concepts  
sedimentary basins.  
Facies, facies associations, facies models and architectural analysis.  
Continental sedimentary environment.  
Transitional sedimentary environments.  
Marine sedimentary environments  
Introduction to Structural Geology.

#### Stress and Strain:

Definition and notation of stress, Types of stress, Definition of strain.

#### Elasticity and Strength of Rocks:

Failure, state of stress, Stress-Strain Curve, Types of Rock behavior, Dilatancy (Dilation) explanation (fracture propagation), The factors affecting the Mechanical Properties and Types of Fractures

#### Time Dependent effect:

Definition and importance of time dependent effect.

Creep curve.

#### Laboratory Testing:

#### Geotechnical Properties:

**Mechanical properties:** Specimen Preparation, Compressive strength, Stress – strain curve, Shear strength, Tensile strength, Young' modulus, Poisson's ratio, The triaxial compression tests and determination of Mohr's Envelope

**Physical properties:** Density, Porosity

#### Some Geotechnical Classifications of Rock Materials:

- Handin Classifications of Rock Materials.
- Stapledon Classifications of Rock Materials.

#### Faults:

- Fault types.
- Principle of brittle and ductile faults.
- Faults in subsurface and surface mapping.

#### Folds:

- The fold nomenclatures.
- Determination of fold types.
- Application of folds in structural mapping.
- Folds and faults in geological maps.
- Superimposed folds.

#### Shear zones:

- General properties and characteristics.

#### Tectonics:

#### Structure Geology and Rock Mechanics



- Theory of plate tectonics.
- Application to structural geology.

الرمز الكودي: 302 ج اسم المقرر: طبقات - تسجيلات ابار الفرقة: الثالثة

Topic	
Stratigraphy	Introduction, sea level changes, sedimentary cycles.
	Stratigraphic contacts and nature of vertical succession.
	Facies (Lithofacies, biofacies and microfacies).
	The basic principles of stratigraphy and Stratigraphic classification and nomenclature of various stratigraphic units.
	Lithostratigraphy, Biostratigraphy, Chronostratigraphy and Chemostratigraphy
	Various types of correlation in stratigraphy.
	The geologic time scale (Division of Archean and Proterozoic Eons) and their characteristic fossil.
	Division of Paleozoic and Mesozoic Era and their characteristic fossils.
	Division of Cenozoic Era and their characteristic fossils.
	Well Logging
Porosity logs	
Resistivity logs	
Water saturation and volume of shale content evaluation models	
Graphical interpretation of well logs	
Irreducible water saturation and reservoir performance	
الرمز الكودي: 303 ج اسم المقرر: جيولوجيا المياه - مساحة - تدريب الفرقة: الثالث	
Topics	
Hydrology	Course overview; groundwater in the hydrological cycle; origin of groundwater; utilization of groundwater.
	Physical and chemical properties of rock as water-bearing formations.
	Vertical distribution of groundwater; types of aquifers .
	Groundwater movement; darcy's law; determination of hydraulic conductivity.
	Groundwater flow with flow nets; pumping tests.
	Groundwater chemistry and contamination; groundwater sampling; sources of salinity; physical-, chemical-, biological-analyses.
	Hydrographs; graphic representations; evaluation of groundwater.
	Groundwater explorations; water wells .
	Methods for drilling wells; well design and construction; well development .
	Environmental impact on groundwater quality; groundwater overdraft and saltwater intrusion.
Groundwater resources in Egypt .	
Plane surveying	Introduction; basic concepts, definition of Surveying and types of Surveying.
	Types of maps; Topographic, Cadastral, Geologic, Geophysical, etc...
	Principles of Survey Observations and Errors; types of measurements made in surveying and their units, Sources of errors and types of errors.
	Distance Measurement.
	Angle measurements
	Angle measurements
	Transverse theory; Traversing technique.
	leveling
	Introduction to topographic Survey



الفرقة: الثالثة	اسم المقرر: تحليلية (كمية و وزنيه وخامات)	الرمز الكودي: 307 ك
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**a: Analytical chemistry**

- 1- Solvent extraction
- 2- Chromatography
- 3- Efficiency of separation
- 4- Potentiometry
- 5- Reference electrodes
- 6- Membrane indicator electrodes
- 7- Potentiometric techniques and applications in ore analysis
- 8- Principles of electrolysis
- 9- Coulometry in ore analysis

**b: Electroanalytical chemistry**

- 1- Potentiometry - Reference electrodes - Indicator electrodes.
- 2- Membrane indicator electrodes - measuring electrode potential.
- 3- Potentiometric techniques and applications - Potentiometric titrations.
- 4- Principles of electrolysis - Applies voltage required for electrolysis.
- 5- Predicting electrode reactions - Current voltage behavior during electrolysis.
- 6- Electrodeposition (Electrogravimetry - Separation at Mercury cathode.
- 7- Coulometry - The Faraday constant - Constant potential coulometry.
- 8- Polarography (Polarograms - Properties of the dropping mercury electrode)
- 9- Applications of electroanalytical techniques in ore analysis.

الفرقة:	اسم المقرر: حاسب الى	338	الرمز الكودي: 304 ج
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Topics
Introduction to database concepts
Create tables and Identify keys, relationships between tables
deleting with different queries1
deleting with different queries2
deleting with forms
deleting with reports
deleting with macros
Dealing with SQL part 1
Dealing with SQL part 2
Dealing with SQL part 3
Apply Visual Basic modules part1.
Apply Visual Basic modules part 2.
Explain and demonstrate Internet features of Access.

الفرقة: الثالثه	اسم المقرر: صخور قاعية و متحولة	304 ج
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Topics
Introduction, Limits and types of metamorphism.
Metamorphic processes.
Metamorphic grade and facies.
Metapelites and semi-metapelites.
Metabasites.





Metamorphism of carbonate rocks and marls.
Metamorphism of ultramafic rocks.
Rocks formed in divergent plate boundary.
Rocks formed in convergent plate boundary.
Rocks formed within plate.
Different granite types.

الرمز الكودي: 305 ج	اسم المقرر: جيوكيمياء الصخور وتحليل معدني - جيولوجيا الدلتا وتحت سطحية	الفرقة: الثالثة
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Topics	
جيوكيمياء الصخور وتحليل معدني	Introduction & History of the earth
	The relation between the Earth and the Universe · Interior structure of the Earth
	Crystal Chemistry, REE (Rare Earth Elements chemistry)
	Geochemistry of igneous rocks and age dating
	Geochemistry of atmosphere
	Weathering Process
	Revisions
جيولوجيا الدلتا وتحت سطحية	Introduction in Sequence Stratigraphy.
	Basics of Seismic Sequence Stratigraphic analysis.
	High-resolution Sequence Stratigraphic analysis by using well logs.
	Geology of Deltas (definition, types, depositional setting).
	Geology of the Nile Delta (tectonic, structure, stratigraphy, hydrocarbon system). Subsurface Geology of the Nile Delta using sequence stratigraphic analyses (case study).

الرمز الكودي: 306 ج	اسم المقرر: جيولوجيا تصويرية	الفرقة: الثالثة
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Topics	
Main Terminology & General Characteristics of Aerial Photographs.	
Overlap & Sidelap and Types and characteristics of Aerial Photographs.	
Basic Geometrical Characteristics of Aerial Photographs.	
Quantitative Measurements, Vertical Exaggeration, Spatial & System resolution of aerial photographs.	
Photogrammetry and the concepts of photographic scale; Image Motion (or Movement).	
Determining horizontal ground lengths (distances, directions and angles) from photo coordinate measurements on an aerial photograph taken over varied terrain; Area Measurements from aerial photographs.	
Principles of Aerial Photograph Interpretation, Recognition of Lithology or Rock Type on Aerial Photograph; Recognition of Structural Features on Aerial Photographs	
Drainage Patterns and Textures; Landforms (Fluvial Landforms, Shoreline Features, Aeolian Features)	

الرمز الكودي: 326 ف	اسم المقرر: فيزياء اشعاعية	الفرقة: الثالثة
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Topics	
The vector atom model and quantum numbers associated with it	
Magnetic moments due to orbital and spin motions.	
The Stern- Gerlach experiment.	





Spin - orbit coupling and the total angular  
Fine structure - selection rules - Intensity rules.  
X- rays.

الثالث : الفرقة : كيمياء عضوية (البتترول) اسم المقرر: 324 ك الرمز الكودي:

#### Topics

- 1- Introduction. What is the crude oil and natural gas.
- 2- Genesis of oil, Biogenic and inorganic theories, Oil deposits and their development.
- 3- physical properties of petroleum and its products (Specific and API gravity-Refractive index-Molecular weight-Flash and fire points-Sulphur content-Aniline point –Diesel index and Ceyane number – Octane number) Chemical constituents of oil.
- 4- Manufacturing processes (Separation process-Conversion processes- treating processes).
- 5- Distillation basics-solvent treatment- absorption – adsorption.
- 6- Cracking – Reforming..
- 7- Petroleum reforming.
- 8- Main oil products
- 9- Some Petrochemical industries.

الثالث : الفرقة : الثالثه اسم المقرر: 339 ك الرمز الكودي:

#### Topics

- Descriptive statistics: frequency tables - measures of central tendency.  
Measures of dispersion.  
Standards sprains and kurtosis.  
Regression and correlation.  
Introduction to probability theory.  
The definition of probability.  
Probability axioms.  
Fundamental principles of harmonic analysis.  
The conditional probability and independence.  
The law of total probability and Bayes.

الثالثه : الفرقة : الثالثة اسم المقرر: 302 ل الرمز الكودي:

#### Topic

- Vocabulary Skills  
Words in context  
Roots  
Words for size  
Idioms, confusing Expressions and word pairs  
Writing Skills  
Structure and cohesion  
Description: Process and procedure  
Definitions  
Exemplification  
Classification



Reading comprehension			
Doing Science			
الرمز الكودي:	401 ج	اسم المقرر:	جيولوجيا البترول
الفرقة:	الرابعة		
<b>Topic</b>			
1. Origin of petroleum.			
2. Source rock evaluation.			
3. Primary and secondary oil migration.			
4. Oil and gas accumulation and reservoir rocks.			
5. Reservoir characters.			
6. Types of Oil & gas traps and cap rocks.			
7. Oil and gas drive mechanism.			
8. Methods of oil exploration			
9. Well logging analysis.			
الرمز الكودي:	402 ج	اسم المقرر:	جيوفيزياء
الفرقة:	الرابعة		
<b>Topic</b>			
Introduction of Geophysical prospecting			
Define the principles of gravity technique, Newtonian gravitation for a point mass, density of rocks and minerals, units for gravity measurements			
Factors affecting change in gravity			
Gravity anomalies of some simple shapes			
Instrumentation and field procedures			
Gravity processing and Interpretation			
Applications of gravity technique			
Introduction of magnetic prospecting and basics of geomagnetism			
The internal component of the Earth's magnetic field			
Magnetic anomalies produced by simple geological structures			
Instrumentation and field procedures.			
Processing and Interpretation of magnetic anomalies and its application			
الرمز الكودي:	403 ج	اسم المقرر:	هندسية- اشعاعية
الفرقة:	الرابعة		
<b>Topic</b>			
Introduction to radiometric.			
U, Th and K mineralization and their geochemical behavior.			
Interaction of gamma rays with matter.			
Types of detectors and radiometric instruments.			
Field survey and data processing and corrections.			
Interpretation of radiometric data and its applications.			
Uranium mineralization in Egypt.			
Radioelements exploration case study in Egypt.			
الرمز الكودي:	404 ج	اسم المقرر:	مياه ارضية تطبيقية
الفرقة:	الرابعة		
<b>Topics</b>			
Course overview; review of basic physical hydrogeological concepts; hydrologic cycle, porosity, effective porosity, permeability, hydraulic conductivity, aquifer, aquitard, water table, potentiometric surface, vadose zone hydraulic head, hydraulic gradient, Darcy's law, applications of groundwater flow, specific yield.			



Aquifer and aquitard tests; specific yield, specific retention, transmissivity, storativity, slug tests, pumping tests, tracer tests, well hydraulics, well design, piezometers.
Chemical hydrogeology; water chemistry, ion exchange, collection of water samples, major ion chemistry, presentation of results of chemical analyses.
Water quality and water quality standards; groundwater contamination.
Groundwater contamination, groundwater monitoring, groundwater restoration, groundwater management.
Surface and subsurface investigations of groundwater; geologic methods, geophysical methods of prospecting.
Remote sensing for exploration of groundwater resources.
The use of hydrogeological information to overcome problems such as; saline water intrusion in aquifers, upcoming of saline water.
The use of hydrogeological information to overcome problems such as; irrigation return flow, dewatering, rising of water table and waterlogging.
Groundwater resources in Egypt; groundwater in the Nile Delta and Nile Valley. Hydrogeology of the west and east of the Nile Delta; Groundwater in the Northwestern coast.
Groundwater in the Western Desert (Nubian Sandstone aquifer) and the Eastern Desert.
Water resources in Sinai.

الرمز الكودي: 405 ج اسم المقرر: الرواسب المعدنية في مصر – جيولوجيا الشواطئ الفرقة: الرابعة

Topics	
Mineral Deposits	Introduction, Role of minerals in society and minerals industry.
	Classification of mineral deposits.
	Oxides and native metals.
	Sulfides.
	Alteration mineralogy
	Porphyry deposits
	Epithermal deposits
	Gold deposits in Egypt.
	Mesothermal deposits.
	Stratiform & stratabound deposits: VHMS.
	Sediment-hosted Cu deposits.
	Placer deposits, residual deposits and weathering.
Coastal Geology	Introduction to coastal geomorphology.
	Coastal geomorphology.
	Sea level fluctuations and changes.
	Wind-generated waves.
	Waves - wave theory and wave dynamics.
	Surf zone circulation.
	Coastal sediment transport.
	Beach and nearshore systems.
	Coastal sand dunes.
	Barrier systems.
Coral reefs and atolls.	
Cliffed and rocky coasts.	

الرمز الكودي: 406 ج اسم المقرر: جيولوجيا مصر الفرقة: الرابعة

### Topics



Introduction and general overview.
Precambrian tectonism.
The Pan-African tectonism in Egypt.
The Paleozoic stratigraphy of Egypt.
The Paleozoic tectonism of Egypt.
The Mesozoic stratigraphy of Egypt.
The Mesozoic tectonism of Egypt.
The Cenozoic stratigraphy of Egypt.
The Cenozoic tectonism of Egypt.
Geology and stratigraphy of selected areas.
Geology and structures of selected areas.
Geologic evolution of the River Nile in Egypt.

الرمز الكودي:	407 ج	اسم المقرر:	جيوفيزياء	الفرقة:	الرابعة
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### Topics

Basic principles of geophysics and Seismic Exploration.
Elastic moduli.
Refraction method.
Reflection method.
Seismic data acquisition, processing and interpretation.

الرمز الكودي:	408 ج	اسم المقرر:	جيومورفولوجيا تطبيقية	الفرقة:	الرابعة
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### Topics

Course overview; introducing Geomorphology, historical geomorphology, applications of geomorphology, review of basic concepts.
Classification of the geomorphic processes, land-forming processes and geomorphologic systems, the water cycle, the rock cycle, the biogeochemical cycle, denudation (weathering & erosion), mass movements .
Tectonic and structural landforms, plate tectonic processes, landforms related to tectonic plates, passive-, active margins landforms, volcanic & plutonic landforms.
Tectonic and structural landforms, landforms associated with folds, and drainage patterns, landforms associated with faults and joints .
Physical-, chemical-, and biological- processes weather rocks, weathering and related landforms.
Karst landscapes, what is karst, karren, cone karst, fluvial karst, subterranean karst forms, karst geomorphology and hydrology .
Fluvial landscapes, runoff, the drainage basins, running water as an agent of erosion and deposition, water constructed landforms .
Glacial and periglacial landforms, glaciers, landforms created by ice (ice erosion and deposition) and by meltwater, permafrost, ground ice .
Aeolian landscapes, wind as a geomorphic agent, wind erosion, wind transport, wind deposition, Aeolian erosional forms Aeolian depositional forms, dune formation, dune types, the problems of the erosion of soils and the activation of sand dunes .
Coastal landscapes, wave, tides, currents, coastal erosional landforms, coastal depositional landforms, beach profile, beach erosion and beach nourishment, deltas .



## Geomorphology of Egypt.

الرمز الكودي: 409 ج	اسم المقرر: مناخ قديم وجيولوجيا بحرية واستشعار عن بعد	الفرقة: الرابعة
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Topics	
Paleoclimat & Marine Geology	Earth interior
	Types of sediments
	Ocean's bathymetry
	Sedimentation in the ocean
	Properties of Ocean Water
	Marine ecology
	Coral reefs
	Tools of studying climatic change.
	Climate analysis using planktonic foraminifera.
	Climate analysis using benthic foraminifera.
	Ostracod as a proxy of paleoenvironment
Waves	
Remote Sensing	Introduction: The role and purpose of remote sensing.
	General physical principles electromagnetic radiation (EMR).
	Interaction of EMR with Earth surface materials.
	Satellites and Sensors.
	Digital Images.
	Image Enhancement.
	Image Classification.
	Image interpretation part 1.
	Image interpretation part 2.
	Thermal Sensing.
	RADAR Sensing.
Applications.	

الرمز الكودي: 410 ج	اسم المقرر: مقرر اختياري	الفرقة: الرابعة
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Topics	
Introduction of seismic methods and geophysics.	
Interpretation of shallow and deep seismic methods.	
Collecting digital data from seismic lines and map drawings.	
Reservoir evaluation.	
Relation between time and depth of different formations.	

الرمز الكودي: بدون	اسم المقرر: بحث ومقال	الفرقة: الرابعة
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Introduction to an essay
Choosing the subject of the essay
Main topics of the essay
Collecting materials
Revisions of the collected materials
Collection of references in the essay
Writing the essay
Revisions of the written materials
Editing of the materials
An overall revision for presentation



الرمز الكودي: 402ل	اسم المقرر: لغة انجليزية	الفرقة: الرابعة
<b>Topic</b>		
Reading		
Skimming		
Scanning		
Finding the pattern of organization		
Earthquakes		
Pollution		
The effects of oil on submarins		
Force and pressure		
Modals		
Adjective clauses		
Adverb clauses		
Noun clauses		
Conjunctions and prepositions		
Linking ideas		
Structure and cohesion		
Learner- centered approach		
Communicative approach		
Lecturing		
Discussion on groups		
الرمز الكودي: بدون	اسم المقرر: حاسب	الفرقة: الرابعة
<b>Topics</b>		
WORLD WIDE WEB (WWW) - History, Working, Web Browsers and their versions, Its functions, URLs, web sites, Domain names, Portals. Concept of Search Engines, Search engines types, searching the Web and Web Servers, client and server techniques.		
Internet basics: 1- Internet Protocols 2- Internet Services –USENET, GOPHER, WAIS, ARCHIE and VERONICA, IRC WORLD WIDE WEB		
HTML Basics: - Introduction to HTML elements, Basic tags, Attributes, creating HTML page, formatting, HTML links, List types and its tags. Creating HTML tables, adding pictures. HTML and page accessibility, colors & background.		
Advance HTML: - Use of Frames and Forms in web pages, formatting web pages by using GIF, JPEG getting web and clip arts. Use of interlinks		
Introduction to Dreamweaver		
More Features of Dreamweaver		
Different applications to build homepages using HTML and Dreamweaver		