

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	2	-	2

٢٠١٥ م ج لغة انجليزية (1)

English Language (1) UR015

1- Listening & Speaking:

A- (Listening): This part of the course aims at training the students for listening and understanding audio-visual material

B- (Speaking): This part helps the students to speak simple and correct short sentences fluently.

2- Reading:

This part aims at training students for correct reading, building up vocabulary and promoting grammatical structures.

3- Writing:

This part helps the students to spell English words correctly and to use the punctuation marks.

4- Grammar:

This part aims at providing the students with knowledge of the grammar of the target language, and its basic structures.

5- Translation:

This part aims at developing the students' abilities in translating scientific texts both into and from English.

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	2	-	2

٢٠٢٠ م ج لغة انجليزية (2)

English Language (2) UR020

II- English Language (2): 2 hours per week in the 2nd term

Terminology:

This course aims at introducing the students to the Morphology of the target language . The students study the structure of words. They start with understanding the meaning of a morpheme, then they learn the different types of morphemes, after that they intensively learn the use of affixes. Finally, they end with learning lists of scientific terms in the different fields of science with an increasing ability to guess the meaning of any new term, especially after studying prefixes & suffixes as mentioned above.

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	0	-	

٢٠٥٠ م ج قضايا مجتمعية

Societal Issues UR050

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	2	-	2

٢٠١١ م ج ادارة اعمال

Management UR011

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	2	-	2

٢٠١٢ م ج تاريخ العلوم

History of Science UR012

The importance of studying history of science

An overview on the science of ancient scientists

Presentation of the history of most prominent theories in mathematics and physics

Presentation of the history of the most important developments of biological sciences (embryogenesis, photosynthesis, genetic engineering, reproduction).

Philosophical reflections of modern biology.

Means of honoring scientists

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	2	-	2

١٣ م ج التغذية الصحية

Healthy Feeding UR013

- 1- A healthy diet and our body
- 2- Components of healthy diet: carbohydrates, lipids, proteins, minerals, vitamins, and fiber.
- 3- Healthy eating pyramid.
- 4- How to read and interoperate nutrition facts.
- 5- Feeding control and the factors that regulate the quantity of food intake especially Leptin and Ghrelin
- 6-Physiology of the Human digestive system (digestion, absorption, metabolism and elimination)
- 7- Anabolic and catabolic hormones.
- 8- Definition and calculation of basal metabolic rate (BMR).
- 9- Body mass index and body volume index.
- 10- Feeding abnormalities (Obesity and malnutrition)
- 11- Definition and types of food additives with E number.
- 12- Example for some popular diseases (bronchial asthma, hypertension, anemia, coronary artery disease, hepatitis, diabetes mellitus, Alzheimers)

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	2	-	2

١٤ م ج التفكير العلمي

Scientific Thinking UR014

- The nature of scientific thinking
Characteristic of scientific thinking
The importance of scientific thinking for the renaissance of societies
Obstacles of scientific thinking practices
Science and non-science
Distinguish between facts and myths
Scientists' personality
Using scientific thinking to identify and solve problems
Different scientific approaches to solving the problems

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	2	-	2

١٦ م ج لغة عربية

Arabic Language UR016

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	2	2/-	2

١٠٠ ارك الحاسب الالى

Computer Sciences MC100

- Fundamentals of programming and computer languages - Algorithm and Flowcharts - Elements of Language under case - Basic Instructions in Language under case - Control Instructions - Arrays and dimension statement - Subprograms - Some applications.

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	3	-/2	2

١٠٠ ا ر رياضيات عامة (1)

Mathematics (1) M100

- Calculus: Functions of one variable - Limits and Continuity - Derivatives - Applications of Differentiation - Taylor and McLaurin series, Indefinite and definite integrals.
Algebra: Mathematical induction - series - Partial fractions - Matrices and systems of linear equations -

Approximate solutions of non-linear equations.

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	3	-/2	2

رياضيات عامة (2) ١٠٥

Mathematics (2) M105

Calculus: Techniques of integration - Definite integrals and their properties- improper integral - numerical integration - Applications of definite integrals.

Geometry: Coordinate systems in the plane - Straight lines and circles in general forms - Conic sections - Geometric transformations in the plane - Coordinate systems in the space - The plane and the straight lines in the space and surfaces of revolution of second order.

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	3	3/-	2

فيزياء عامة (1) ١٠٠

Physics (1) P100

Physical quantities - Units and dimensional analysis - Vectors - The laws of motion in one- and two- dimensions and its applications - Newtown's second Law of motion and its applications. Work and energy - Heat and heat conduction - The kinetic theory of gases - Specific heat of gases - First law of thermodynamics. 12 Experiments related to the above topics.

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oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	3	3/-	2

فيزياء عامة (2) ١٠٥

Physics (2) P105

The nature and propagation of light - Reflection and refraction at plane surface - Lenses & Mirrors, Eye's structure and camera - Microscopes and Telescopes - Coulomb law and electrostatic fields - Electrostatic potential- Capacitance and dielectrics- Electric current, DC circuits and Krichhoff's Rules-Magnetic field and magnetic force - Electromagnetic induction. 12 Experiments related to the above topics.

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oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	3	3/-	2

كيمياء عامة (1) ١٠٠

Chemistry (1) C100

(A):Atomic Spectra – Electron Orbital and Quantum Numbers – Quantum Energy Levels in Atoms – Basic Concepts of Bonding Electronegativities – Lewis Structure – The Octat Rule – Dipolemoment – Resonance Hybridization in Molecules – Geometrics of Molecules – Orbital Configuration for Diatomic Molecules.

(B):State of Matter – Introduction in Surface and Colloids Chemistry – Electrolytic Cell – Electrochemical Cells – Potential of Electrode (Selected practical experimentals)

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10	10	10	20	50	3	3/-	2

كيمياء عامة (2) ١٠٥

Chemistry (2) C105

(A): Chemical Equilibrium – Ionic Equilibrium – Basic of Qualitative Analysis – Solution Chemistry.

(B):Introduction on Organic Chemistry-Bonding in Organic compounds – Hybridization in Carbon Compounds – Physical Properties of Org. Compounds – Nomenclature, Synthesis and Chemical Reactions of alkanes, alkenes and alkynes

(Practical: Selected practical experiments)

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	3	3/-	2

اساسيات الجيولوجيا ١٠٠

Principles of Geology G100

Origin of Planet Earth: Constituents of the Earth's crust (crystals, minerals, rocks) – Classification of rocks
Internal Processes: Dynamics, structures and plate tectonics – Development of structural traps and ore deposits

External Processes: Weathering – Erosion – Wind action – Geological work of waters (surface, groundwater, seas and oceans) – Formation of hydrocarbons and sedimentary ores – Development of stratigraphic traps

Time scale: Geologic timescale and fossil records

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	3	3/-	2

حيوان عام	ح ١٠٠
General Zoology	Z100

Protoplasm - Organization and function of animal cell - Study of the animal tissues - Life functions - Introduction to early development of animals - Characters and classification of the major animal phyla

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	3	3/-	2

نبات عام	ان ١٠٠
General Botany	B100

Cell structure – plant tissues – Anatomy of primary plant organs – Classification of plant kingdom – General aspects of virus, bacteria, algae and fungi – Flower structure, inflorescences and fruits – Selected families of flowering plants

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	2	-	2

اخلاقيات وأداب المهنة والسلامة المهنية	F٣٠٠
Scientific Ethics&Safety	F300

Definition of Ethics and Professional Ethics- Sources of the ethical principles- Benefits- Common mistakes about the professional ethics- Ethics of university teaching , research and authoring and supervising - Citation and Plagiarism-Intellectual property Ethics teacher pre-university- Ethics and the ethics of practicing the profession of medical laboratory- Biological ethics - Ethics of Computer and multimedia- Ethics in works in general- Professional Reports-Role models– Ethics and behavior- Vocational training- Training on the preparation and issuance of the Code of ethics in the work - Code of Ethics for certain related professions. Occupational Safety: Public safety conditions - signs extension - scientific laboratory safety –Securing facilities from fire hazards– First aid - safety in industrial buildings - a list of conditions of safety and prevention-Crisis and emergency management.

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	3	-/2	2

تفاضل وتكامل متقدم	٢١١ر
Advanced Calculus	M211

Functions of several variables - Partial Derivatives and their applications - Multiple integrals (double – triple) and their applications - Line and Surface integrals - Using Mathematica, and Matlab programs for graphing some Surfaces and calculate some integrals.

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	3	-/2	2

معادلات تفاضلية لغير طلاب الرياضيات	٢١٤ر
Differential Equations for non-Mathematics students	M214

Formation of ordinary differential equations (ODE's) - ODE's of first order and first Degree – ODE's of first order and higher degrees – Applications – Numerical solution of ODE's of the first order and the first Degree – Linear ODE's of higher Orders with constant Coefficients - Linear ODE's of higher orders with Variable Coefficients (Euler and Lagrange methods) .Applications.

الدرجات					الساعات			إحصاء حيوى	٢٤١رأ
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	30	0	50	3	0	3		
									Biostatistics MS241

Some basic probability concepts – Some important sampling distributions – Estimation Hypothesis testing – Analysis of variance - Regression and correlation – Multiple regression and correlation – Goodness of fit test.

الدرجات					الساعات			مبادئ الفيزياء الحديثة	٢٥ف
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2		
									Principles of Modern Physics P225

Principles modern physics - Black-body radiation - Planck's law of radiation, photo-electric effect - The Hydrogen atom, Rutherford model of the atom - Bohr's theory, Sommerfeld's theory - Compton effect - Dual nature of matter, De Broglie waves, the uncertainty principle. Introduction to the special theory of relativity.

الدرجات					الساعات			كيمياء عضوية(1)	٢١٠ك
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	4	3/-	3		
									Organic Chemistry(1) C210

Organic Reactions Mechanisms – Chemistry of Carbonyl Compounds
Practical : (Selected practical experiments)

الدرجات					الساعات			كيمياء عضوية (2)	٢١٢ك
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	4	3/-	3		
									Organic Chemistry(2) C212

Aromatic Compounds – Heterocyclic Compounds
(Practical : Selected practical experiments)

الدرجات					الساعات			الكيمياء العضوية البيئية الخضراء	٢١٤ك
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	30	0	50	3	0	3		
									Environmental and Green Chemistry C214

Agrochemistry – Environmental Organic Chemistry – Green Chemistry

الدرجات					الساعات			كيمياء غير عضوية (1)	٢٢٠ك
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	30	0	50	2	0	2		
									Inorganic chemistry (1) C220

Chemistry of the main groups (S, P- block elements): General properties of the main group elements of the first group to the seven group element- use of main group elements in industry. (in a glasses, conductors, and semiconductors – fertilizers

الدرجات					الساعات			كيمياء فيزيائية(1)	٢٣٠ك
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	30	0	50	3	0	3		
									Physical Chemistry (1) C230

Chemical thermodynamics: Thermodynamics concepts- First law of thermodynamics- second law- Entropy changes of enthalpy and entropy with temperature-Gibb's free energy function and chemical potentials. Chemical kinetics: Concept and terminologies of chemical kinetics- Reaction rate laws- Effect of temperature on reaction rates- Theory of reaction rates

الدرجات						الساعات			كيمياء فيزيائية (2)	٢٣٢ ك
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	30	0	50	3	0	3	Physical Chemistry (2)	C232	

Phase rule: Concept and terminologies of phase rule, phase rule equation, One , Two, Three component systems and their applications. Colloids: Preparation, properties- The stability of hydrophilic and hydrophobic sols. gels- Emulsions and Foams. Electrochemistry(I): Ionic conductivity and applications- Electrochemical cells and electrode potentials- The Nernst equation- Primary and secondary cells- Fuel cells.

الدرجات						الساعات			مقدمة فى التحليل الكيمياءى الكمى	٢٤٠ ك
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	3/-	2	Introductory Quantitative Analysis	C240	

Statistical treatment of Analytical Data, Activity and Systematic Treatment of Equilibrium, Acid-Base equilibrium, Types of titration in volumetric analysis, Gravimetric analysis, Fundamentals of potentiometry & Principles of UV, Vis-Spectrophotometry
(Practical: Selected practical experiments)

الدرجات						الساعات			ج ٢٠١ جيولوجيا بيئية وجيومورفولوجى
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Environmental Geology & Geomorphology	G201

Environmental Geology: An overview of our planetary environment - Internal processes (general principles of plate tectonics – Earthquakes, earthquake-related hazards and their reduction – Volcanoes, volcanoes-related hazards and predictions); Surface processes (Stream and flooding – Coastal Zones and process – Mass movements – Geology and climate: (Glaciers, Deserts, Global climate trends) – Natural resources - Hazard assessment; Hazard management.
Geomorphology: The scope of geomorphology - Some fundamental concepts & principles - The fluvial geomorphologic cycle - Karsting & karst topography - Arid landscapes - Influence of geologic structures upon topography - Applied geomorphology

الدرجات						الساعات			علم الطبقات	ج ٢١٠
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	2/-	2	Stratigraphy	G210	

Principles of Stratigraphy – laws and guidelines – Stratification – Lithostratigraphy –Sequence stratigraphy – Unconformities – The geologic column -Geochronology – Chronostratigraphy of Crypto- & Phanerozoic – Boundary stratigraphy - Stratigraphic Correlation (biological, chemical, magnetic and geophysical)

الدرجات						الساعات			حفريات لافقارية	ج ٢١٥
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	2/-	2	Invertebrate Palaontology	G215	

Introduction - Fossil and fossilization - Mode of preservation – Fossil -record – Taxonomy and evolution - Description and geologic importance of major invertebrate fossil groups

الدرجات						الساعات			المعادن المكونة للصخور	ج ٣٠٢
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	2/-	2	Rock Forming Minerals	G230	

Introduction, Basic mineralogy - Atomic structures - Isomorphism and polymorphism - Continuous and discontinuous reaction series - Silicate and non-silicate minerals - The identification and classification of minerals

Chemistry and Geology

الدرجات						الساعات			علم البلورات	ج ٢٣٣
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	2	3/-	1	Crystallography	G233	

Introduction - Elements of symmetry Indices and stereographic projections - Crystal forms - Crystal systems and classes

الدرجات						الساعات			بصريات المعادن	ج ٢٣٥
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	2/-	2	Mineral Optics	G235	

Introduction - Polarization and polarizing microscope - Optics of isotropic crystals - Optics of uniaxial and biaxial crystals

الدرجات						الساعات			نظم المعلومات الجغرافية (GIS)	ج ٢٤٠
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	2/-	2	Geographic Information Systems (GIS)	G240	

Introduction- Map and map data handling- Components of GIS- Functions of GIS- Advantages of digitized storage – Data manipulation- Planning for GIS

الدرجات						الساعات			اساسيات الجيوفيزياء	ج ٢٥٠
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	2	2/-	1	Principles of Geophysics	G250	

Introduction - Principles of different geophysical methods (Gravity - Magnetic - Seismic - Electric)

الدرجات						الساعات			مساحة مستوية	هـ ٢٠٠
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	2/-	2	Plane Surveying	E200	

الدرجات						الساعات			حزم البرامج الرياضية والاحصائية	٣٠٠ رك
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	2/-	2	Mathematical and Statistical Packages	MC300	

Using the mathematical and statistical packages (Matlab, Mathematica, Min Tab, SPSS, ...etc) for matrices – Functions – Graphics – Data Fitting – Applied Statistics

الدرجات						الساعات			فيزياء حيوية	ف ٣٢٣
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	30	0	50	3	0	3	Biophysics	P323	

Studying DNA and biopolymers - Cell membranes and membrane potentials - Electrical activity of nerve cells - Fundamentals of measuring circuits and systems - Temperature and pressure measurements - Measuring cell potentials.

الدرجات					الساعات			مبادئ فيزياء الجوامد	٣٥٠ ف
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	3/-	2	Introduction to Solid State Physics	P350

Crystal structure - Reciprocal lattice, X-ray diffraction in crystals - Lattice vibrations and thermal properties - Defects in crystals (point defects and 1-d, 2-d and 3-dimensional defects) - Free electron mode and electric properties – Theory of dielectrics.

الدرجات					الساعات			حيود الأشعة وتطبيقاتها	٣٥٢ ف
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	30	0	50	3	0	3	Diffraction of Waves and its Applications	P352

Basic idea of diffraction - Review of crystalline Structure - Reciprocal space - X-rays, production & detection - X-ray cameras - Models For diffracted intensity - Small-angle scattering of X-rays - Electron and neutron diffraction- Analysis of X-ray diffraction patterns. Determination of the unit cell parameters using computer programs.

الدرجات					الساعات			الكيمياء الضوئية والوسائط النشيطة	٣١٣ ك
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	30	0	50	3	0	3	Photochemistry & Regative Intermediates	C313

Photochemistry – Reactive Intermediates

الدرجات					الساعات			معمل كيمياء غير عضوية (1)	٣٢٠ ك
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	20	20	50	0	1	3/-	1	Inorganic Chemistry Laboratory (1)	C320

Preparation of simple and double salts – preparation of metal complexes – characterization by spectrophotometric and conductometric methods.

الدرجات					الساعات			كيمياء غير عضوية (2)	٣٢١ ك
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	30	0	50	3	0	3	Inorganic Chemistry (2)	C321

Transition elements: An introduction to transition elements – general properties of the first transition series and their compounds.

Coordination compounds: Coordination compounds and double salts – application of coordination compounds –nomenclature – preparation – isomerism – stability – oxidation states – nature of bonding- Huggin's suggestion – investigation of structures. Coordination polymer.

الدرجات					الساعات			كيمياء غير عضوية (3)	٣٢٤ ك
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	30	0	50	3	0	3	Inorganic Chemistry(3)	C324

Inner transition elements: Relation between lanthanides and actinides - f-block elements and d-block elements – chemistry of some important elements – method of separation – properties of the compounds – oxidation state – Spectral and magnetic properties

Coordination chemistry: Crystal field theory complexes of weak and strong field ligands – ligand field and molecular orbital theories – stability constant of complexes – Jochen Toiller effects.

الدرجات					الساعات			معمل الكيمياء الفيزيائية (1)	٣٣١ ك
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	20	20	50	0	1	3/-	0	Physical Chemistry Laboratory (1)	C331

Experiments based on: Chemical kinetics, Phase rule, and electrochemistry.

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	3	0	3

كيمياء فيزيائية (3) ك ٣٣٢

Physical Chemistry (3) C 332

Quantum chemistry: Pre-Schrödinger equation- Schrödinger equation and its application to translational, vibrational, and rotational motion of a particle.
Theory of gases: The kinetic molecular gas model- numerical values of molecular velocities and their distribution in three dimensions – Average quantities from the distribution law – equipartition principle - the molecular gas collisions and the mean free path, Transport properties.
Molecular spectroscopy: Types and patterns of free energies of gas molecules- experimental and theoretical treatment for studies on rotational vibrational, Raman and electronic spectra- spectral analysis using NMR and ESR.

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	3	2/-	2

مقرر خاص في الجيولوجيا ج ٣٠٥

Special Course in Geology G305

Geological topics chosen by the Department Council

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	2	3/-	1

جيولوجيا حقلية ج ٣٠٦

Field Geology G306

A- Introduction – Definitions, terminology and field equipments – Devices of geological surveying – Sampling procedures – Field characteristics of rocks – Field relations – Types of contacts – Geological cross-sections and mapping – recognition of geological features – Geological reporting
B- Short field excursion (1-2 days) to non-distant areas and ten days field excursion to a chosen Egyptian region: The trip should concentrate on field techniques, data recording and interpretation. Practical skills will be gained in mapping and logging sedimentary sequences- field recording and interpretation including structural data, current directions, construction of cross-sections, reconstruction of palaeoenvironments and field palaeontology

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	3	2/-	2

طباقية زمنية وكيميائية ج ٣١٩

Chronostratigraphy and Chemostratigraphy G319

Chronostratigraphy: Geochronology - Time scales - Derivation & origin of names of fundamental chronostratigraphic units - Global Stratotype Sections and Points (GSSPs) - Biochrons & geomagnetic polarity reversal history of the Phanerozoic- Global stratigraphic correlation - Astronomical time scale - Problems in Chronostratigraphy and updating of the GSSP and the stratigraphic guide
Chemostratigraphy: Geochemical signatures on sedimentary sequences - Geochemical and Mineralogical Signatures as stratigraphic markers – Oxygen and Carbon and isotopes and palaeoclimatology - Searching for geochemical signatures in stratigraphic records - Major and trace elements determination - Documentation and techniques

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	3	2/-	2

الجيوكيمياء البيئية ج ٣٣٠

Environmental Geochemistry G330

1- Introduction; 2-Distribution of elements and minerals chemistry; 3- Biogeochemical cycle; 4- Heavy metals in the environment; 5- Geochemistry of Mercury in the environment; Water pollution and Health (Arsenic and Fluoride in the natural environment); 6- Environmental Geochemistry of radioactive contamination; 7- The

medical geochemistry of dust, soils and other earth materials; 8- Groundwater and air contamination.

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	4	3/-	3

مبادئ علم الصخور ج ٣٢٤

Principles of Petrology G324

Introduction – Textures and structures of igneous rocks – Mineral composition – Classification of igneous rocks – Origin of magma – Metamorphic rocks and definitions - Textures and structures of metamorphic rocks – Contact metamorphism – Regional metamorphism – Dynamic metamorphism – Textures, structures and classification of sedimentary rocks – Depositional processes and diagenesis

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	1	0	1

بيئات وأحواض ترسيب ج ٣٣٥

Sedimentary Basins and Depositional Environments G335

Introduction to Igneous, Metamorphic and sedimentary Rocks:

- * Igneous Rocks: Recognition, Structures and classification of Igneous rocks; Magma genesis.
- * Metamorphic Rocks: Definitions, agents and types of metamorphism; Structures, texture and Classification of metamorphic rocks; contact metamorphism; regional metamorphism; dynamic metamorphism.
- * Sedimentary Rocks: Structures, Textures, compositions and classification of sedimentary rocks; sedimentary provenance, processes and diagenesis.

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	2	2/-	1

مبادئ الجيولوجيا التركيبية ج ٣٤٥

Principles of Structure Geology G345

Rock deformation – Classification of geologic structures – Folds – Faults – Joints and cleavage

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	3	2/-	2

بيولوجيا جزئية وخلية ج ٣١٨

Cell and Molecular Biology Z 318

The cell theory. Membranous organelles. Non-membranous organelles. The cell inclusions. The nucleus. Cell division. DNA & RNA synthesis and structure. DNA structure- Genome organization in prokaryotic and eukaryotic cell- DNA replication and repair - Translation - Gene expression in eukaryotes Recombinant DNA techniques.

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	0	0	0	90	2	0	2

مقال او بحث ك ٤٠٠

Research projector article C400

An essay or research article in one of the different fields of chemistry

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	3	3/-	2

كيمياء الجزيئات الحيوية ك ٤١٣

Chemistry of biomolecular C413

Biochemistry (II): Lipids – Nucleic acids – Enzymes.

Medicinal Chemistry

(Practical: Microanalysis, Detection and estimation of Carbohydrates, Amino acids, Proteins, Lipids, Nucleic acids Ect.)

Chemistry and Geology

الدرجات					الساعات			معمل كيمياء عضويه متقدمه	ك ٤١٥
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	20	20	50	0	1	3/-	0	Advanced organic chemistry laboratory	C415

Advanced organic synthesis – Estimation of functional group.

الدرجات					الساعات			موضوعات مختارة فى الكيمياء التحليلية	ك ٤٤٤
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	30	0	50	3	0	3	Special topics in Analytical Chemistry	C444

الدرجات					الساعات			طرق التحليل الآلي	ك ٤٤٥
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	3/-	2	Instrumental Method of Analysis	C445

Introduction To Atomic Spectrometry (Absorption, Florescence and Emission Spectrometry. Ultraviolet/Visible Spectrophotometry and Infrared Spectrometry, Polarography & Amperometry, Conductometry & Coulometer and Modern Voltammetric Techniques, Analytical Separation.)
(Practical: Selected practical experiments)

الدرجات					الساعات			كيمياء البترول والبتروكيماويات	ك ٤٥١
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	3/-	2	Petroleum Chemistry and Petrochemicals	C 451

Crude Oils – Evaluation of Crude Oils - Refining of Petroleum – Petrochemicals Derived from Petroleum Fractions
(Practical: Selected practical experiments)

الدرجات					الساعات			مقال و بحث	ك ٤٠٠
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	0	0	0	90	2	0	2	Research Projector Article	G400

Research Project: The student chose one of the subjects offered by the Department Council

الدرجات					الساعات			احصاء جيولوجى	ك ٤٠١
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Geostatistics	G401

Introduction – Data collection - Variance & Covariance - Basic Statistics - Univariate Statistics - Multivariate (ordination) statistics (Detrended correspondence analysis (DCA) - Principal component analysis (PCA) – Redundancy analysis (RDA) – Canonical correspondence analysis (CCA) - Cluster analysis) – Spatial aspects of data

الدرجات					الساعات			تدريب حقلى	ك ٤٠٥
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	20	20	50	0	1	3/-	1	Freid Training	G405

Field Training (10 days field work): field training applying different techniques and methods using stratigraphical, petrological, palaeontological and structural principles. Each student should prepare an oral presentation besides a geological report which is evaluated as a practical paper

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	2	2/-	1

ج ٤١٠ خريطة مصر الجيولوجية

Geological Map of Egypt G410

Morphologic classification of Egypt; Origin of the Oases; General Stratigraphic section, Geological History and Evolution of the Egyptian lands; Details and distribution of the stratigraphic sequences and associated deposits bearing Oil & Gas in Egypt.

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	3	2/-	2

ج ٤٣٠ جيوتكتونية و جيولوجيا النظائر المشعة

Geotectonics & Isotope Geology G430

Geotectonics: Introduction – Internal structure of the Earth - Continental drift - Sea floor spreading - The framework of plate tectonics - Ocean ridges; Transform and transcurrent faults - Subduction Zones - Mountain ranges - Continental rifts and continental margins - Implications of plate tectonics
Isotope Geology: Introduction – Atomic structure – Decay of atoms – Radioactive decay – Absolute measuring of geological time – Application of isotope geology in rocks, water, sulphide minerals and oil

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	3	3/-	2

ج ٤٣٣ جيوكيمياء

Geochemistry G433

Geochemistry of Sedimentary Rocks: Meteorites and geochemistry - Geochemical structure of the Earth - Geochemical classification of the elements -Geochemistry of REE - Chemical weathering and formation of sediments - Geochemical classification of sediments and their derivatives - Geochemical factors controlling the distribution of trace elements in sediments - Geochemistry of biosphere – Geochemistry of Island Arcs, hot spots, Moon, Mars – Isotopic applications in geochemistry
Geochemistry of igneous rocks: Geochemistry of the Core, the Mantle, and the Crust- Physical and chemical methods of sample treatment - Chemical methods of analyses (conventional and new methods) - Distribution of elements in the different rock units - The relation between geochemistry, environment and human health

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	2	3/-	1

ج ٤٣٨ عمليات تكوين الخامات

Processes of are Mineral Formation G438

Outline of the Processes of Ore Formation - Classification of Ores - Magmatic, metamorphic, sedimentary and hydrothermal ore forming processes

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	3	3/-	2

ج ٤٦٠ جيولوجيا المياه (1) و جيولوجيا البترول (1)

Hydrogeology (1) and Petraleum Geology (1) G460

Hydrogeology I: Introduction - Water Cycle in Nature- Climates- Water Falls & Surface Water- Hydrogreology of groundwater reservoirs – Groundwater flow properties - Aquifer properties - Water wells - Well tests - Groundwater flow laws - Groundwater exploration - Groundwater quality - Groundwater pollution - Ground water management
Petroleum Geology I: Origin and characteristics of petroleum oil and gas - Petroleum migration- Source, reservoir and seeling rocks, Oil Traps, Crude Oil Reserves- Regional accumulations - Formation evaluation - Oil & Gas in Egypt - Oil exploration techniques

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	3	2/-	2

ه ٤٢٠ هيدروولوجيا

Hydrogeology



محتويات مقررات برنامج

Courses' Content

الكيمياء والجيولوجيا

Chemistry and Geology



كلية العلوم