

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

التغذية الصحية	م ١٣ ج
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

التفكير العلمي	م ١٤ ج
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

لغة عربية	م ١٦ ج
Arabic Language	UR016

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

الحاسب الالى	م ١٠٠ ارك
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

رياضيات عامة (1)	م ١٠٠ ارك
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.

الدرجات					الساعات		
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.

الدرجات					الساعات		
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

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

احصاء حيوى	٢٤١رأ
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			فيزياء الاهتزازات والموجات	٢١٢ ف
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	30	0	50	3	0	3	Vibrations and Waves	P212	

The simple harmonic motion in mechanical and electrical systems - The damped oscillation in mechanical and electrical systems - The forced damped oscillation in mechanical and electrical systems - Summation of the simple harmonic motions in two dimensions - Types of the waves, reflection and transmission of the waves - The ultra-sonic waves - Doppler's effect.

الدرجات						الساعات			مبادئ الفيزياء الحديثة	٢٢٥ ف
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			جيولوجيا بيئية وجيومورفولوجي	٢٠١ ج
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	٢١٠ ج
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	٢١٥ ج
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	٣٠٢ ج
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

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	رك ٣٠٠
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 اشعاعية	ف ٣٤٤
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	30	0	50	3	0	3	Radiation Physics	P344

Radiation sources – Natural radioactivity - Alpha ,beta particles and gamma rays - Interaction of radiation with matter – Radiation damage – Radiation detectors - Dose meters and survey meters – Radiation detection and protection.

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			مقرر خاص في الجيولوجيا	٣٥٥ ج
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Special Course in Geology	G305

Geological topics chosen by the Department Council

الدرجات					الساعات			جيولوجيا حقلية	٣٥٦ ج
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	2	3/-	1	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			الجيولوجيا التاريخية واصل الانواع	٣١٣ ج
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Historical Geology and Origin of Species	G313

Historical Geology: Introduction – Origin of the Earth – Geologic time scale – Major mechanisms for Global biotic, physical and climatic changes across geologic time – Main geologic history and events – Evolution of life on Earth

Origin of species: Introduction – Morphology, biology and environmental tolerance of species - Speciation - Computational Palaeontology - Cladistic analysis – Biodiversity

الدرجات					الساعات			مبادئ علم الصخور	٣٢٤ ج
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	4	3/-	3	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			ج ٣٢٧
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L	صخور رسوبية وبيئات ترسيب	
10	10	10	20	50	3	3/-	2	Sedimentary Rocks and Sedimentary Environment	

Sedimentology: Introduction – Textures- Sedimentary structures - Mineral composition – Provenance, Classification of sedimentary rocks and their diagenesis.
Sedimentary Environment: Introduction - Depositional processes – Classification and types of sedimentary environments – Details of selected sedimentary environments

الدرجات						الساعات			ج ٣٤٠
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L	ميكانيكا الصخور والجيولوجيا التركيبية	
10	10	10	20	50	4	2/-	3	Rock Mechanics and Structural Geology	

Rock Mechanics: Introduction - Mechanical properties of rocks – Forces and stress – Strain types –Stress - Strain diagrams - Factors influencing rock deformations
Structural Geology: Levels and types of structural studies
Folds and Folding: Geometric and kinematic classification -theoretical analysis of folding - Diapers and impact structures- Brittle failure- Joints and veins, Origin and tectonic interpretation of joints. **Faults and Faulting:** Geometry, characteristics of fault zone - Fault systems – Genetic classification of faults –Faulting and society. **Cleavage- Foliation and lineation**
Structural analysis techniques

الدرجات						الساعات			ج ٣٥٠
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L	علم سيزمية الزلازل والاستكشاف السيزمي	
10	10	10	20	50	3	3/-	2	Seismology and Seismo-exploration	

Earthquake Seismology: Definitions and Fundamentals- Recording systems - Intensity and magnitude of Earthquakes - Causes and types of earthquakes - Seismicity and seismotectonics - Locating earthquakes - Earthquake risk - Distribution of earthquakes
Seismic Prospection: Seismic wave propagation- Geometry of wave paths -Seismic Recording instruments & Energy sources -Seismic Reflection Methods - Correction of reflection records - interpretation and application - Seismic refraction methods –Correction, interpretation and application

الدرجات						الساعات			ج ٣٥١
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L	الاستكشاف التثاقلي والاستكشاف المغناطيسي	
10	10	10	20	50	3	3/-	2	Gravity and Magnetic Exploration	

Gravity prospection: Principles and instruments - Gravity field Measurements and Reduction -The Bouguer gravity anomaly map -Interpretation of gravity data (Regional- residual separation Qualitative and Quantitative interpretation) -Isostasy and crustal thickness - Study of some gravity anomalies and their geological significances (e.g. salt domes - sedimentary basin, limestone reefs, anticlines)
Magnetic Prospection: Magnetic field operations and data reduction – The source and nature of magnetic anomalies -Measurements and reduction of magnetic field –Interpretation of magnetic data - Magnetic lineaments and fault detection - Magnetic maps (second derivatives - downward continuation) - basement depth estimation

الدرجات						الساعات			ج ٣٥٣
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L	جيوفيزياء بيئية	
10	10	10	20	50	3	2/-	2	Environmental Geophysics	

Applications of environmental geophysics (Seismic reflection and refraction - Resistivity & electromagnetics - Ground penetrating radar – Gravity – Magnetic - Borehole geophysics) - Studies in groundwater - Laboratory-based studies - Theoretical modeling, and field work

الدرجات					الساعات			الاستكشاف الكهربى	٣٥٨ ج
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	2	3/-	2	Electric Explorartion	G358

Fundamental principles and instruments - Natural electric current methods (SP, Telluric, Magnetic telluric and Natural source electro magnetic methods) - Principles, Field survey, data processing, interpretation and application - Artificial current methods - Resistivity methods, EM and surface potential methods - principles, field survey, interpretation and application

الدرجات					الساعات			مساحة جيوديسية وتطبيقاتها	٣٢٠ هـ
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Geodetic Surveyig and its Applications	E320

الدرجات					الساعات			كيمياء البترول والبتروكيماويات	٤٥١ ك
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	٤٠٠ ج
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			تدريب حقلى	٤٠٥ ج
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			جيولوجيا هندسية وجيولوجيا المناجم	٤٠٧ ج
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Engineering Geology and Mining Geology	G407

Engineering geology: Introduction and new techniques in petrology - Engineering importance of faults and folds - mechanical properties of rocks and rock classifications - Physical properties of rocks and soil
Mining Geology: Historical review – Subsurface mineral deposits – Mineral deposits and weathering zone – Processes & zones of mineralization – Methods of surface & subsurface mining – Support of mineral deposits – Mines and safety tools

الدرجات					الساعات			جيولوجيا تحت سطحية	٤٠٩ ج
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Subsurface Geology	G409

Introduction – Subsurface data sources – Types of subsurface maps and sections – Interpretation of subsurface maps

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

ج ٤١٥	جيولوجية مصر
G415	Geology of Egypt

Pre-Cambrian: Basement Rocks in Egypt - Evolution & main features - Ophiolite and Island arc stage - Metavolcanic and associated volcanics - Cordillera stage – Granites - Dokhan volcanics – Katherina volcanics

Phanerozoic: Morphologic classification of Egypt – Structural framework – Details of the Stratigraphic sequences – Regional Distribution, palaeoenvironments and litho- and biostratigraphy of the Palaeozoic, Mesozoic and Cenozoic deposits – Palaeogeography and evolution of palaeobasins - Geology of selected areas

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

ج ٤٢٠	تتابعية طباقية واحواض ترسيب
G420	Sequence Stratigraphy and Sedimentary Basins

Sequence Stratigraphy: Analysis of siliciclastic and carbonate sediments and the effect of global sea-level changes

Basin Analysis: Introduction – Principles of basin Analysis - Development of sedimentary basin analysis – Types and classification of sedimentary basins

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

ج ٤٢١	علم الرسوبيات التطبيقى ومعادن الطين
G421	Applied Sedimentology and Clay Minerals

Applied Sedimentology: Introduction - Weathering Economic significance - Particles ,pores and permeability-Transportation and sedimentation

Environmental applications - Fossil fuels (Petroleum, tar sand and oil shales, coal)

Clay Mineralogy: Definitions -Composition of clay minerals -Classification and nomenclature of clay minerals -Structure and x-ray diffraction of clay minerals

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

ج ٤٣٠	جيوتكتونية وجيولوجيا النظائر المشعة
G430	Geotectonics & Isotope Geology

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	2/-	2

ج ٤٣٤	الجيولوجيا الاقتصادية (جيوفيزياء)
G434	Economic Geology

Objectives and reasons for the approach of mineral deposits studies - classification scheme for ore deposits - Major theories of ore genesis - Magma and metallogeny - Mineralization processes in mafic magma - Formation of magmatic aqueous phase - Formation of metamorphic ores and their related ore minerals - Magmatic hydrothermal solutions - Mineralogy, alteration zones, exploration - Examples of the most famous deposits - Modern analysis of hydrothermal ore forming processes - Volcanic massive sulfide exhalative deposits - Strata bound and stratiform deposits - Sedimentary formed deposits - Supergene enrichment processes - Formation of fossil fuels - Metamorphic ore forming deposits - Global tectonics and metallogeny, crustal evolution and distribution of ore-mineral deposits in relation to plate-tectonic theory -

Metallogeny through time - Factors affecting exploration programs

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

استكشاف معدنى ومعادن وصخور صناعية ج ٤٣٥

Mineral Exploration and Industrial Minerals and Rocks G435

Mineral Prospection: Methods of prospections –Geochemical and geophysical Methods

Industrial Minerals and Rocks: Industrial minerals and rocks used in the following purposes: Catalysts – Abrasives – Fluxes - Ceramics – Fillers – Insulators – Pigments – Fertilizers - Building materials – Cement materials – Pharmaceuticals – Transistor

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

مقدمة فى الجيولوجيا الطبية و علم البراكين ج ٤٣٦

Introduction to Medical Geology and Volcanology G436

Introduction to Medical Geology: Basics of medical geology - Mineral and health of human and animals - Volcanic emissions and health - Soils and Health (Iodine and Selenium deficiencies) - Water pollution and Health (Arsenic and Fluoride in the natural environment) - Air pollution and Health (Radon and environmental health)

Volcanology: Introduction – Definition of magma – How and where magmas are generated? – Magma rise – Magma chamber – Compositionally zoned magma reservoirs- Rheology, magmatic gases - Bubbles and Triggering - Mid-ocean ridge volcanoes - Seamount and volcanic islands - Continental intraplate volcanoes - Subduction zone volcanoes - Volcanic edifices and volcanic deposits - Strombolian, Hawaiian and Plinian eruptions - Volcanic hazards and Disaster mitigation - Volcanoes and Climate

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

جيولوجيا تصويرية واستشعار عن بعد ج ٤٤٥

Photogeology and Remote Sensing G445

Photogeology: Introduction and characteristics of aerial photographs- Stereoscopic vision - Parallax and height difference formula- Analysis of aerial photographs (Geomorphologic, lithologic and structural interpretation) - Geologic mapping using aerial photographs.

Remote Sensing: Fundamental Considerations - Electromagnetic spectrum -Satellite imagery and image characteristics – Common remote sensing techniques- Digital image processing and enhancement applications of remote sensing in geology, environmental science, mineral and petroleum exploration

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

مقررات خاصة فى الجيوفيزياء ج ٤٥٠

Specical Course in Geophysics G450

Geophysical topics chosen by the Department Council

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

الجيوفيزياء الهندسية ج ٤٥١

Engineering Geophysics G451

Surface geophysical methods: Seismic refraction and reflection - Ground penetrating radar - Electromagnetic conductivity profiling / sounding - 2D resistivity imaging - Resistivity sounding – Microgravity - Electrokinetic sounding - Borehole geophysical methods: Cross hole seismic - Seismic tomography and wireline logging

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

الطرق الحرارية والاشعاعية ج ٤٥٢

Radiometric and Geothermal Methods G452

Geothermics: Thermal properties of rocks - Temperature within the earth and its origin - Terrestrial heat flow - Thermal prospecting methods - Measuring techniques - Data processing and interpretation - Some geological applications of geothermal methods

Radiometric Techniques: Fundamentals of Radioactive disintegration - Radiometric dating methods - Geological time scale - Precambrian chronology. Instruments and Field procedure. Example of radioactive survey.

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

ج ٤٥٣ جيورادار و مغناطيسية قديمة

Georadar and Paleomagnetism G453

Georadar: Electromagnetic wave propagation- Velocity- Wavelength - Dispersion – Georadar applications on rocks- soils and fluids - Electric properties- magnetic properties- Environmental influences

Palaeomagnetism: The physics of magnetism - The geomagnetic field - Induced and remnant magnetism- Magnetic anisotropy - Magnetic domains - Supraparamagnetism- How rock get & stay magnetized- Applied rock magnetism- Getting a palaeomagnetic direction- Palaeointensity- Apparent polar wander paths & tectonic applications

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

ج ٤٥٦ الطرق الاحصائية فى الجيوفيزياء

Statistical Methods in Geophysics G456

Statistical Methods applied in Geophysics - SPSS Package

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

ج ٤٥٨ جيولوجيا الآثار

Geoaerchology G458

Introduction - Basic principles and importance - Archaeological record - Quaternary chronology -Stratigraphy and dating techniques – Soil features - Geoarchaeological techniques - Human impacts on ancient environments - Artifact geochemistry and mineralogy - Geological context of archaeological sites and their preservation - Case studies (site visits to some Egyptian tombs - strato-structural & hydrogeological setting of the monuments in the alluvial plain of the Nile).

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

ج ٤٥٩ البترفيزياء وسجلات الآبار

Petrophysics and Well Logyng G459

Petrophysics: Introduction – Reservoirs characteristics - Porosity of rocks and factors influencing porosity - Assessment of volumetric proportions of rock constituents - Measurements used to quantify effective porosity, saturation, and permeability of the reservoir – Relative permeability and oil-water system - Relationship between resistivity and salinity - Contact phenomena between water and rock capillarity - Absolute permeability – Resistivity & conductivity

Well logging: Principles, tools, measurements, corrections and normalization of well log data - Graphical display of data - Temperature and caliper logs - Spontaneous potential and resistivity logging - Natural and spectral gamma ray logs - Density and Neutron logs - Sonic logging - Assessment of Volumetric proportions of rock constituents - measurements used to quantify effective porosity, saturations, and permeability of the reservoir

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) وجيولوجيا 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 - Groundwater management

Petroleum Geology I: Origin and characteristics of petroleum oil and gas - Petroleum migration- Source, reservoir and sealing 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

ج ٤٦٢	جيولوجيا المياه (2) و جيولوجيا البترول (2)
G462	Hydrogeology (2) and Petroleum Geology (2)

Hydrogeology II: Design of wells – Pumping tests – Data analysis and calculation of aquifers parameters – Modeling – Underground water in Egypt

Petroleum Geology II: Formation and migration of oil – Reservoirs and traps – Modern techniques of well logging - Data analysis and aquifer's parameters – Quantitative estimates and correlation of subsurface reservoirs

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

هـ ٤٢٠	هيدروولوجيا
	Hydrogeology