

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

لغة انجليزية (1)	م ١٥ ج
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

لغة انجليزية (2)	م ٢٠ ج
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	-	

قضايا مجتمعية	م ٥٠ ج
Societal Issues	UR050

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

ادارة اعمال	م ١١ ج
Management	UR011

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

تاريخ العلوم	م ١٢ ج
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.

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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.

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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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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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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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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)

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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

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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	0	3

احصاء حيوى	رأ ٢٤١
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		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	10	20	50	3	3/-	2

كيمياء عضوية لغير طلاب الكيمياء	ك ٢١١
Organic Chemistry for non Chemistry Students	C211

Chemistry of Aliphatic Compounds – Chemistry of Selected Aromatic Compounds (Practical :Selected practical experiments)

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

حفريات	ج ٢١١
Palaeontology	G211

Introduction to paleontology - Fossil and fossilization - Mode of preservation - Basis of taxonomy - Scientific namng (Binomial names) - Classification, Description and Geologic importance of some selected Vertebrate and invertebrate fossil groups - Huminoid evolution.

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

ميكروبيولوجيا عامة ٢٩١

General Microbiology B291

Taxonomy of Prokaryotes – benefit and harmful effect of bacteria – bacterial cell structure – growth of bacteria – general characters of fungi – Fungal classifications – Myxomycota, Mastigomycota and Zygomycota

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

علم الخلية ٢١٠

Cytology Z210

The cell theory. Membranous organelles. Non-membranous organelles. The cell inclusions. The nucleus. Cell division. The phases of mitosis. Meiosis. DNA & RNA synthesis.

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

علم الانسجة ٢١٢

Histology Z212

Detailed study of different types of animal tissues. Histological study of different types of animal systems. Macroscopical and microscopical views of a lesion. Cellular damage. Causes of cellular damage. Responses to cellular damage. Diseases of organ systems.

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	1	0	2

تطور ٢١٣

Evolution Z213

Scope and historical development of evolutionary theory -Microevolution and macroevolution -Population dynamics and genetic -Natural selection, drift and other forces of evolution -Systemic and the species problem (species formation).

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

ح ٢١٧ فسيولوجيا الحيوان (1)

Animal Physiology (I) Z217

Nutrition -Membranes and transport -Muscular system –Circulation -Respiration -Excretion - Osmoregulation and buffering system.

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

علم السموم الحيوانية ٢١٩

Animal Toxins and Venoms Z219

Biology of venomous animals. Sources of animal venoms. Chemistry of venoms. Differences between venoms and toxins. LD50 of some venoms. How do animal venoms work? Antivenom. Biological importance of animal venoms.

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

ح ٢٢٠ لافقاريات (1)

Invertebrates (I) Z220

Explanation of the classification of animal kingdom into the major Phyla. Characters of the major phyla: Protozoa, Porifera, Cnidaria, Platyhelminthes, Nematoda, Annelida and their classes.

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

ح ٢٢٢	لافقاريات (2)
Z222	Invertebrates (II)

Classification of the major Phyla into Classes and the characters of each Class. Explanation of the characters of the major phyla: Arthropoda, Mollusca, and Echinodermata.

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

ح ٢٢٥	بيئة حيوان
Z225	Animal Ecology

An introduction to ecology and its importance. Study of important physical ecological factors and their effects on living animals. Study of organisms and the interrelationships. Studies of biotic factors. Community and Ecosystem. Production in Ecosystems. Ecological Pyramids: Community Succession. Energy Flow Relationships. Food Chains. Food Webs. An introduction to environmental pollution; the effect of man and his activities on the environment.

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

ح ٢٣٢	فقاريات (1)
Z232	Vertebrates (I)

Introduction to organization of chordates and the main groups of vertebrates. Emphasis also will be on the following: classification from class through species taxa, morphology, structure and function of organs, systems, developmental pathways, and fundamental concepts characteristic of this diverse group of animals from protochordates till Amphibia.

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

ح ٢٤٠	حشرات عامة
Z240	General Entomology

I- External Insect Morphology. II- Internal Anatomy. III- Molting and Metamorphosis. Introduction to insect classification.

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

ح ٢٤٢	مورفولوجيا الحشرات
Z242	Insect Morphology

External Morphology in different insect orders. Arthropodization - The Integument. - The head (Segmentation and evolution, primitive insect head, general pterygote head, appendages) - The thorax (General structure, appendages, mechanisms of flight). - The abdomen and external genitalia.

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

ح ٢٨٠	بيولوجيا الاسماك
Z280	Fish Biology

Definition of fields in Fish Biology. Fish external features, internal anatomy, endoskeleton and musculature. Methods of fish identification, concepts of systematic of fishes and the major groups of fishes (relationship and diversification). Fish habitats and aquatic ecosystems. Fish migrations. Food, feeding, nutrition and growth. Blood, circulation and respiration. Osmoregulation, reproduction, integration and behavior. Ecology and zoogeography. Fishes as resources. Egyptian fishes.

الدرجات					الساعات			استزراع سمكى	ح ٢٩٥
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	2	2/-	2	Fish Farming	Z295

Introduction to aquaculture. Preliminary notes on evolution of fish culture and requisite conditions for fish suitable for fish culture. Construction, layout, maintenance and improvement of ponds. Natural food and growth of cultivated fish. Techniques and methods of fish breeding and cultivation. Management of fish farm. Enemies and diseases of fish. Cultivation of tilapias or African catfish as example. Aquaculture in Egypt.

الدرجات					الساعات			أساسيات الوراثة	ز ٢١٥
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Genetic Basis	A215

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	٣٢٣ ف
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			جيولوجيا تاريخية (لغير طلبة الجيولوجيا)	ج ٣١١
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Historical Geology for Non-Geologists	G311

Origin and history of the Earth - Geologic Time - Geologic Time Scale - Methods of determining age - The Geologic Record - Correlation- Origin and evolution of the life - Organic Evolution (Factors – Evidences) - Geological units & Geological events - Details of the largest segments of geologic time and characteristic types of life throughout the geological time.

الدرجات					الساعات			فسيولوجيا الحيوان 2	ح ٣١٠
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	3/-	2	Animal Physiology	Z 310

Endocrinology (hormones biochemistry, hormone receptors, hormone action mechanism, control of hormone secretion, dysfunction of endocrine gland). Nervous system (Central and peripheral nervous system, sympathetic and parasympathetic system, neurotransmitters). Sensory system (sensory receptors and transduction, sense organs).

الدرجات					الساعات			بيولوجية جزيئية	ح ٣١١
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	2	3/-	1	Molecular Biology	Z 311

DNA structure - Genome organization in prokaryotic and eukaryotic cell - DNA replication and repair - Translation - Gene expression in eukaryotes Recombinant DNA techniques - Postranslational protein modification.

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

ح ٣١٢ بيولوجية الخلية

Cell Biology Z 312

Cell growth and proliferation. The cell cycle Apoptosis and its mechanism. Cellular aging and related terms.

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

ح ٣١٣ سلوك الحيوان

Animal Behaviour Z 313

Schools of the study animal behavior -Characteristic and components of innate behavior -Animal learning - Animal communication -Protective behavior - Social behavior.

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

ح ٣١٤ هندسة وراثية

Genetic Engineering Z 314

Biotechnology and recombinant DNA- Restriction enzymes and basic cloning- DNA sequencing and PCR- Animal genetic engineering -Human genome project- regulations and ethics- Genetic testing for diseases- DNA technology in criminal cases - Gene therapy to treat diseases –Cloning-New drugs based on genetic your profile - Genetically engineered food - Genetic engineering in the future

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

ح ٣١٦ كيمياء الانسجة

Histochemistry Z 316

Study of chemical components of carbohydrates, proteins, lipids, nucleic acids, etc. in the cells and tissues including methods for their detection. Detecting methods of some enzymes in animal tissues.

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

ح ٣١٧ تقنية مجهرية

Microscopical Techniques Z 317

Methods and tools used in the study of the cell and tissues of animals. Different types of microscopes. Principles of electron microscopes. Resolution of electron microscopes. Specimen preparation for transmission electron microscope. Specimen preparation for scanning electron microscope. Application of electron microscopes.

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

ح ٣٢١ طفيليات

Parasitology Z 321

Principles of parasitology. Introduction to parasitism history and evolution of parasitism, types of parasitism; host-parasite relationships. Parasitic Protozoa, trematodes, cestodes, nematodes and ectoparasites.

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

ح ٣٢٣ بيئة مائية

Aquatic Environment Z 323

Basic knowledge of the structure and the functioning of freshwater ecosystems. The abiotic (physical and chemical) characteristics of lakes and rivers, as well as the qualitative and quantitative composition of the different biological communities as reviewed components. Describing and illustrating the fundamental concepts and general processes governing marine ecosystems. Types of shores and the main components of animals with case study to the Red-Sea.

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

ح ٣٣٠ فقاريات (2)

Vertebrates (2) Z 330

Classification, morphology, structure and function of organs, systems, developmental pathways, and fundamental concepts characteristic of amniotes (reptiles, birds and mammals).

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

ح ٣٣٤ اساسيات علم الاجنة

Fundamentals of Embryology Z 334

Introduction – Gametogenesis – Fertilization – Cleavage – Blastulation – Gastrulation - Axis formation- Early embryonic development of Amphioxus, Amphibians, Chick and Mammals.

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

ح ٣٢٨ ديناميكية العشائر

Population Dynamics Z 328

Historical development. The raw material of population dynamics. Animal communities and ecosystems. Evaluation, causes, and impacts of the rates of change in survival, growth, reproduction, and recruitment for Animal populations. Drawings and examples for the above mentioned.

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

ح ٣٣٣ الطيور

Aves Z 333

Structure, classification, distribution, life histories, economic importance, techniques of field study, method of collection, and preservation of different taxonomic groups of birds on a world-wide basis, with detailed examination of Egyptian species. Exploration of the biological and ecological life requirements of important groups of Egyptian birds.

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

ح ٣٣٦ الثدييات

Mammals Z 336

Structure, classification, distribution, life histories, economic importance, techniques of field study, method of collection, and preservation of different taxonomic groups of mammals on a world-wide basis, with detailed examination of Egyptian species.

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

ح ٣٤٠ تصنيف الحشرات

Insect Taxonomy Z 340

History of insect taxonomy. - Importance of insect taxonomy. - Modern taxonomy (origin and evolution). taxonomic categories. - The international rules of insect nomenclature. - Vernacular name. - Description of specimen - Classification and phylogeny of insects. -Types of references. - How to present taxonomic data in a scientific paper.

الدرجات					الساعات			حشرات طبية	ح ٣٤٤
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Medical Entomology	Z 344

Diseases and harms caused by insects. Insects as vectors for protozoa and parasitic worms (Their mode of infection and Life cycles) – Protection and control. Mechanical, physical, and chemical injuries. Microbial and non-microbial diseases. -Genetic diseases. Epidemic of insect diseases.

الدرجات					الساعات			كيمياء تحليلية لطلاب البيولوجي	ك ٤٦٠
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	3/-	2	Analytical Chemistry for Biology Students	C 460

Acid –Base Titration, Precipitation Titrations, Complexometric Titrations, Redox Titration, Gravimetric Analysis, Potentiometric Titrations, Ultraviolet/Visible Spectrophotometry, Atomic Spectrometry, Conductometry and Modern Voltammetric techniques, Analytical Separations, HPLC, Electrophoresis (Practical: Selected practical experiments)

الدرجات					الساعات			مقال او بحث	ح ٤٠٠
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	0	0	0	90	2	0	2	Research Project or Article	Z 400

A short research or an essay project must be prepared as a year-extended course.

الدرجات					الساعات			موضوعات مختارة في علم الحيوان(1)	ح ٤٠١
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	30	0	50	3	0	3	Selected Topics in Zoology (1)	Z 401

To be determined by the department

الدرجات					الساعات			موضوعات مختارة في علم الحيوان(2)	ح ٤٠٢
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	30	0	50	3	0	3	Selected Topics in Zoology (2)	Z402

To be determined by the department

الدرجات					الساعات			فسيولوجيا التكاثر	ح ٤١١
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	30	0	50	3	0	3	Reproduction Physiology	Z 411

History of reproduction-Male reproductive system-Composition of seminal fluid -Female reproductive system-The estrous cycle and hormonal regulation -Mating behavior-Causes of reproductive failure -Comparative reproductive physiology (Fishes- Amphibia-reptiles- birds and mammals)

الدرجات					الساعات			علم المناعة	ح ٤١٢
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	30	0	50	3	0	3	Immunology	Z 412

-Functional organization of the immune system -Organs and cells of the immune system -Molecules in immune reaction -The immune response -Regulation of the immune processes -The Immunological methods.

الدرجات					الساعات			علم الدم	ح ٤١٣
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Haematology	Z 413

-Body fluids analysis-Composition and formation of blood.-Blood grouping-Hemostasis and tests related to the detection of bleeding and thrombotic problems.
-Anemias and leukemia -Routine procedure used in the hematology laboratory.

الدرجات					الساعات			فسيولوجيا التأقلم	ح ٤١٤
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	30	0	50	3	0	3	Adaptation Physiology	Z 414

Basic understanding of physiological response to natural and man made environmental conditions. Physiological effect of abnormal and atmospheric pressure. Physiological response to heat stress and low temperature exposure. Physiology of tissue adaptation to injury. Disorder of the stress response

الدرجات					الساعات			تنوع بيولوجي	ح ٤٢٢
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Biodiversity	Z 422

Definition of biodiversity with special reference to animals. Studies of minor Phyla and their characteristics. Studies of conservation of species.

الدرجات					الساعات			تشریح مقارن للفقاريات	ح ٤٣٢
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Comparative Anatomy of Vertebrates	Z 432

An integrated comparative study of vertebrate structure and development with emphasis on relationships between form, function, and evolution and the similarities of anatomy and phylogenetic relationships of major vertebrate groups. This comparative study includes different vertebrate body systems.

الدرجات					الساعات			تصنيف فقاريات	ح ٤٣٣
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Vertebrate Taxonomy	Z 433

Principles of systematic: evolutionary, phenetic, and cladistic techniques. Classification of vertebrates, identification of vertebrate species using keys and field observation. Collecting, preserving, and storage of vertebrate specimens.

الدرجات					الساعات			بيولوجيا النمو	ح ٤٣٧
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	3/-	2	Biology of Growth	Z 437

Cellular and molecular mechanisms that regulate animal development. Induction and cell communication. Development of different body systems. Limb development. Axis formation. Morphogens and stem cells. Development and oncogenes.

الدرجات					الساعات			علم الاجنة التجريبي	ح ٤٣٨
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	2	3/-	1	Experimental Embryology	Z 438

Introduction - Basic requirements- Experimental models – Experiments on induction- Transplantation. Regeneration.

الدرجات						الساعات			موضوعات مختارة في علم الحشرات (2)	ح ٤٥٧
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	30	0	50	3	0	3	Selected Topics of Entomology (2)	Z 457	

To be determined by the department

الدرجات						الساعات			مصادر الاسماك	ح ٤٩٤
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	2/-	2	Fisheries	Z 494	

Introduction to types of fisheries and work of fishery scientists. Population analysis of unexploited and exploited populations. Fisheries management techniques and principles. Recreational and commercial fisheries managements. Fishery development in Egypt.

الدرجات						الساعات			تقييم المخزون السمكي	ح ٤٩٦
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	2/-	2	Assessment of Fish Stock	Z 496	

Introduction including the primary objective of fish stock assessment, the stock concept, models. Estimation of growth parameters. Estimation of mortality rates, the concept of a cohort and some basic notation, the dynamics of a cohort, the exponential decay model, and other models. Fishing and natural mortality estimation. Virtual population methods. Gear selectivity. Prediction models.

الدرجات						الساعات			وراثة عشائر	ح ٤٠٢
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	2/-	2	Population Genetics		