

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.

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.

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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.

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

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

كيمياء عضوية(1)	٢١٠ك
Organic Chemistry(1)	C210

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

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

كيمياء عضوية (2) ك ٢١٢

Organic Chemistry(2) C212

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

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

كيمياء العضوية البيئية الخضراء ك ٢١٤

Environmental and Green Chemistry C214

Agrochemistry – Environmental Organic Chemistry – Green Chemistry

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

كيمياء غير عضوية (1) ك ٢٢٠

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

كيمياء فيزيائية(1) ك ٢٣٠

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

كيمياء فيزيائية(2) ك ٢٣٢

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

مقدمة في التحليل الكمي ك ٢٤٠

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			بلورات وبصريات المعادن	ج ٢٣٤
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Mineral Crystals and Optics	G234

Crystallography:

Introduction: (types-parts-habits and forms) - Axial cross - crystal axes- Systems with symmetry of C-axis - Intercepts- axial ratios – parameters – Miller indeces - stereographic projection - Complete symmetry formula with its stereographic projection and crystal forms - Main Crystal Systems.

Optical Mineralogy:

- Polarization and polarizing microscope - Origin and nature of the minerals - physical, chemical & optical properties - Optics of isotropic crystals - Classification of the minerals - description of the important minerals - Atomic structures – Isomorphism

الدرجات					الساعات			بيولوجيا جزيئية	ن ٢١٢
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	30	0	50	2	0	2	Molecular Biology	B212

Introduction – structure and function of DNA & RNA – gene organization, cloning, structure, expression & regulation – amino acids and protein structure – expression of foreign proteins - methods for protein detection

الدرجات					الساعات			مورفولوجيا وتشريح النبات	ن ٢٢١
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Plant Morphology and Anatomy	B221

Seeds & seed germination – morphological structures of plant organs – modification – meristematic & permanent tissues – anatomical structures of plant organs – secondary thickening – ecological groups.

الدرجات					الساعات			تصنيف نباتات زهرية	ن ٢٣٢
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Taxonomy of Flowering Plants	B232

Introduction – flower structure – inflorescences – fruits – systems of classification - study of representative families of angiosperms.

الدرجات					الساعات			فسيولوجيا النبات	ن ٢٥١
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Plant Physiology	B251

Solutions – plant water relations – enzymes – photosynthesis – respiration – fat metabolism – nitrogen metabolism – hormones

الدرجات					الساعات			تصنيف فطريات (1)	ن ٢٦٢
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Systematic Mycology (1)	B262

General Characters of fungi – Fungal classifications – characteristics, occurrence, somatic structure, reproduction, classification, economic importance, representatives species and life cycles of Divisions: Myxomycota, Mastigomycota and Zygomycota

الدرجات					الساعات			علم البكتريا	ن ٢٧١
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Bacteriology	B271

Dyes and bacterial staining – ultra structure of bacterial cell – bacterial nutrition, growth and population – control of bacterial growth – important groups of bacteria – genetic recombination in bacteria – regulatory mechanisms of Gene expression enzymes in bacteria – bacteria and environment .

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

علم الطحالب	ن ٢٧٣
Phycology	B273

Introduction – taxonomic criteria of algae – representative examples of algae : [habitats, life cycles & evolutionary relationships].

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

علم الفيروسات	ن ٢٨١
Virology	B281

Historic view – definition – origin – characteristics of viruses – nomenclature & classification – composition & structure - effects of Viruses on their hosts – transmission – pathogens confused with viruses – ways of control.

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

أساسيات الوراثة	ز ٢١٥
Genetic Basis	A215

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

حزم البرامج الرياضية والاحصائية	٣٠٠ ك
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		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	10	30	0	50	3	0	3

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

الكيمياء الضوئية والوسائط النشطة	ك ٣١٣
Photochemistry & Regative Intermediates	C313

Photochemistry – Reactive Intermediates

الدرجات					الساعات		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	20	20	50	0	1	3/-	1

معمل كيمياء غير عضوية (1)	ك ٣٢٠
Inorganic Chemistry Laboratory (1)	C320

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

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

كيمياء غير عضوية (2) ك ٣٢١

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

كيمياء غير عضوية (3) ك ٣٢٤

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		
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L
10	20	20	50	0	1	3/-	0

معمل الكيمياء الفيزيائية (1) ك ٣٣١

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

بيولوجيا فطريات المياه ك ٣٦١

Biology of Aquatic Fungi B361

Aquatic microbial communities – aquatic habitats – biotic & abiotic factors, populations and periodicity – pollution – role, identity and properties of aquatic fungi associated with fish & shellfish – improvement of water quality – biodegradation of pollutants in aquatic environments – symbioses.

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

تصنيف فطريات (2) ك ٣٦٢

Systematic Mycology (2) B362

General characteristics, occurrence, somatic structure, reproduction, economic importance, representative species & life cycles of Ascomycota, Basidiomycota and Deuteromycota

الدرجات						الساعات			ن ٣٦٣	فسيولوجيا الفطريات
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	2/-	2		Physiology of Fungi	
									B363	

Chemical composition of fungal cell – cultivation and preservation of fungi – phases and measuring fungal growth – factors affecting fungal growth – primary & secondary metabolism in fungi – metabolites .

الدرجات						الساعات			ن ٣٦٤	فطريات ممرضة للنبات
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	2/-	2		Plant Pathogenic Fungi	
									B364	

Symptoms of plant diseases – blights of seedlings, rots of the roots, vascular wilt diseases, fungal spots and blights of foliage – Downy mildew, Powdery mildews, rusts diseases and smuts fungi and plant diseases they cause.

الدرجات						الساعات			ن ٣٦٦	علاقة العائل بالطفيل
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	30	0	50	1	0	1		Host-parasite Relationships	
									B366	

Disease cycle – phenomenon of infection – penetration of pathogen – effect of infection on physiology of the host - defence mechanisms in plants.

الدرجات						الساعات			ن ٣٩٢	ايض ميكروبي
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	2/-	2		Microbial Metabolism	
									B392	

Fungal metabolism (carbon, nitrogen & sulfur metabolism – macromolecular synthesis) – Bacterial metabolism (energy-generating metabolism – respiration – autotrophic metabolism – energy-yielding pathways and biosynthesis – Prokaryotic metabolism – macromolecular synthesis in bacteria).

الدرجات						الساعات			ن ٣٩٣	سموم ميكروبية
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	2/-	2		Microbial Toxins	
									B393	

Bacterial toxins (proteinaceous and non-proteinaceous toxins) – Phycotoxins (freshwater & marine algal toxins) – Mycotoxins (fungal toxins, factors affecting production, effect on health, biosynthesis & control of mycotoxins)

الدرجات						الساعات			ن ٣٩٦	ميكروبيولوجيا صناعية
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	2/-	2		Industrial Microbiology	
									B396	

Regulation of microbial growth – screening techniques – fermentation – yeast, alcohols, glycerol & organic acids bioproduction – steroids biotransformations – antibiotics .

الدرجات						الساعات			ح ٣٢٤	علم الأوليات والطفيليات
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L			
10	10	10	20	50	3	2/-	2		Protozoa & Parasities	
									Z324	

Characters and classification of free-living and parasitic Protozoa. 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			تصميم تجارب	٣١٦ ز
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Design of Experiments	A316

الدرجات					الساعات			مناعة	٣١٨ ط
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Immunology	MED318

الدرجات					الساعات			مقال او بحث	٤٠٠ ك
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	0	0	0	90	2	0	2	Research projector article	C400

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

الدرجات					الساعات			كيمياء الجزيئات الحيوية	٤١٣ ك
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	3/-	2	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.)

الدرجات					الساعات			معمل كيمياء عضويه متقدمه	٤١٥ ك
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	٤٤٤ ك
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 الالى	٤٤٥ ك
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	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 او بحث	٤٠٠ ن
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	0	0	0	90	2	0	2	Research Projector Article	B400

الدرجات					الساعات			تحليلات قياسية	٤٥٣ ن
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Biotechnical analysis	B453

Bioassays – Immunoassays – Spectrophotometry – Chromatography –PCR

الدرجات					الساعات			بيئة ميكروبية	٤٩٤ ن
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Microbial Ecology	B494

Microbial communities and ecosystems – microbial habitats – microbes-environments interactions – microbial distribution – adaptations of microorganisms to their environments – microbial degradation of pollutants – biodegradation of Xenobiotic compounds – biogeochemical cycling.

الدرجات					الساعات			ميكروبيولوجيا الغذاء	٤٩٨ ن
oral	ACT	Mid_T	Prac	Wr.	CH	P/T	L		
10	10	10	20	50	3	2/-	2	Food Microbiology	B498

Environmental parameters governing food spoilage by fungi – isolation, enumeration and identification of food fungi – mycotoxins and mycotoxicosis – xerophiles – Yeasts – spoilage of foods – isolation, enumeration and characterization of food bacteria – taxonomy and toxins of food bacteria – food preservation – other control methods.