



اللائحة الدراسية:

د- مقررات البرنامج :
السنة الأولى : يلتزم 66 وحدة موزعة على النحو التالي :

الفصل الدراسي	الفرقة والمستوى	عدد الساعات الأسبوعية			عدد الساعات	اسم المقرر	كود أو رقم المقرر
		تمرين	عملي	نظري			
الأول	الأولى	0	4	3	7	كيمياء عامة	104ك
		0	4	2	6	نبات عام	101ن
		0	4	2	6	حيوان عام	101ح
		0	2	2	4	جولوجيا طبيعية وتاريخيه	101ج
		0	2	2	4	ضوء وكهربية ومغناطيسية	103ف
		1	0	2	3	تفاضل وتكامل وجبر	105ر
		1	0	2	3	لغة انجليزية	101ل
الثاني		0	4	3	7	كيمياء عامة	105ك
		0	4	2	6	نبات عام	102ن
		0	4	2	6	حيوان عام	102ح
		0	2	2	4	بلورات ومعادن	102ج
		0	2	2	4	حرارة وخواص مادة	104ف
		1	0	2	3	تفاضل وتكامل وهندسة	106ر
		1	0	2	3	لغة انجليزية	102ل

السنة الثانية: يلتزم 68 وحدة موزعة على النحو التالي :

الفصل الدراسي	الفرقة والمستوى	عدد الساعات الأسبوعية			عدد الساعات	اسم المقرر	كود أو رقم المقرر
		تمرين	عملي	نظري			
الأول	الثانية	0	4	3	7	حيليات وحشرات	201ح
		0	4	3	7	نبات اقتصادى وطحالب وبكتريا	201ن
		1	0	2	3	الديناميكا الحرارية الكيميائية	205ك
		0	4	2	6	كيمياء عضوية	206ك
		0	2	2	4	ضوء فيزيائي	207ف
		1	0	2	3	رياضيات	207ر
		0	0	2	2	حقوق الانسان والمبادئ القانونية العامه	بدون
الثاني		1	0	2	3	لغة انجليزية	201ل
		0	4	3	7	لافقاريات وحشرات	202ح
		0	4	3	7	بيئة وفسولوجيا البذور وتصنيف زهري	202ن
		0	4	2	6	كيمياء غير عضوية	207ك
		1	0	2	3	كيمياء عضوية	208ك
		0	2	2	4	فيزياء ذرية واطياف	208ف
		0	2	1	3	علوم الحاسب	208ر
1	0	2	3	لغة انجليزية	202ل		



السنة الثالثة: يلتزم 57 وحدة موزعة علي النحو التالي:

الفصل الدراسي	الفرقة والمستوى	عدد الساعات الأسبوعية			عدد الساعات	اسم المقرر	كود أو رقم المقرر
		تمرين	عملي	نظري			
الأول	الثالثة	0	0	2	2	علوم بحار فيزيائية وصفية	101ع ب
		0	2	2	4	علوم بحار جيولوجية عامة	102ع ب
		0	4	4	8	لاقاريات بحرية (سبيلوميه) /نبات بحري عام	103ع ب
		0	4	4	8	بيولوجيا علم الاسماك/ بيولوجيا احياء بحريه	104ع ب
		0	2	2	4	مقرر اختياري	105ع ب
الثاني		0	0	1	1	احتمالات واحصاء	339ر
		0	4	4	8	عوالق بحرية / تكنولوجيا المصايد	106ع ب
		0	2	4	6	بيولوجية اشعاعية / كيمياء بحرية	107ع ب
		0	4	4	8	احصاء بيولوجي /ميكروبيولوجي عامة	108ع ب
		0	0	2	2	مقرر اختياري	109ع ب
	1	1	1	3	مبادئ علم الحاسب	338ر	
	1	1	2	3	لغة انجليزية	302ل	

السنة الرابعة: يلتزم 52 وحدة موزعة علي النحو التالي:

الفصل الدراسي	الفرقة والمستوى	عدد الساعات الأسبوعية			عدد الساعات	اسم المقرر	كود أو رقم المقرر
		عملي	تمرين	نظري			
الأول	الرابعة	0	3	4	7	احياء قاع تدريبات بحريه	401ع ب
		0	3	2	5	ميكروبيولوجيا بحريه	402ع ب
		0	2	2	4	اجهزه بحريه واستخدامها	403ع ب
		0	2	2	4	كيمياء حيويه	401ك ح
		0	0	2	2	مقرر اختياري	405ع ب
الثاني		0	2	2	4	بيولوجيا المصايد	406ع ب
		0	4	2	6	استزراع الكائنات المائية	407ع ب
		0	4	2	6	كيمياء تحليليه لماء البحر	408ع ب
		0	0	2	2	بيئه بحريه	408ع ب
		0	0	2	2	تلوث البيئه البحريه	409ع ب
	0	0	2	2	مقرر اختياري	410ع ب	
	0	0	2	2	بحث او مقال	بدون	
	1	1	2	3	لغه انجليزيه	402ل	
0	2	1	3	حاسب	بدون		



المحتوى العلمى:

محتويات مقررات السنة الأولى:

كود أو رقم المقرر: 104ك
اسم المقرر: كيمياء عامة 1
المحتويات:

Part I: Physical Chemistry (2h/ w)

Introduction of physical chemistry, Gaseous state, Thermochemistry, Chemical equilibria, Solutions, Problems in physical Chemistry.

Part II: Inorganic Chemistry (1h/w)

Introduction of inorganic chemistry, Chemical calculations., Atomic spectra and atomic structures, Electronic configuration of atoms.

كود أو رقم المقرر: 101ن
اسم المقرر: نبات عام
المحتويات:

Part I: Theoretical (2h/w)

- General characters of monocot and dicot plants, Types of seeds and germination, Different shapes of plant organs and their modifications, Adaptation of plants to different habitats, Study the organisms' diversity, Classification the organisms in Plant kingdom according to their specific characters, Study the general characters for each group in the classification using an example for each one.

كود أو رقم المقرر: 101ح
اسم المقرر: حيوان عام
المحتويات:

Part I: Theoretical (2h/w)

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

كود أو رقم المقرر: 101ج
اسم المقرر: جيولوجيا طبيعية وتاريخه
المحتويات:



Part I: Theoretical (2h/w)

مقدمة فى علم الجيولوجيا، نشأة الكون ، التركيب الداخلى للأرض، التراكيب الأولية و الثانوية فى الصخور الرسوبية، علم المعادن، علم الصخور، التجوية الفيزيائية و الميكانيكية و الكيميائية، العوامل الهدمية و البنائية للرياح والكثبان الرملية واشكالها، البحار و المحيطات ، المياة الجوفية، الزلازل والبراكين ونظرية الألواح التكتونية، مراجعة عامة

كود أو رقم المقرر: 103ف
اسم المقرر: ضوء وكهربية ومغناطيسية
المحتويات:

Part I: Geometrical optics

Nature of light, Refraction through lenses, Optical instruments, Dispersion, Photometry

Part II: Electricity

Charge and matter, Coulomb's law, Electric field, Electric field for a group of point, Electric field of continuous charges, Electric dipole, Electric potential and applications, Electric potential and applications, Condensers, Coulomb's law, Electric field, Electric dipole and transient current, Dielectric current and Static magnetism, Electromotive forces and induction

كود أو رقم المقرر: 105ر
اسم المقرر: تفاضل وتكامل وجبر
المحتويات:

المتباينات - النهايات والاتصال - المشتقات - تطبيقات على المشتقات - الاستنتاج الرياضي - الكسور الجزئية

كود أو رقم المقرر: 105ك
اسم المقرر: كيمياء عامة 2
المحتويات:

Part I: Physical Chemistry (1h/ w)

Physical chemistry, The Phenomena of electrolysis, Faraday's laws, Electrical conductance, EMF., Electrode Potential, Chemical and electrical energy., Cell reaction and electrochemical series, Solid state and crystallographic systems.

Part II: Inorganic Chemistry (2h/ w)

1 Periodic table and the general properties of representative elements., Types of chemical bonds, The VSEPR model, Lewis acids structure and formal charge, Theories of bonding – valence shell electron pair repulsion (VSEPR), Valence bond theory (VBT), molecular orbital theory (MOT) and molecular geometry, Oxidation-reduction reactions.

كود أو رقم المقرر: 102ح
اسم المقرر: حيوان عام
المحتويات:

Part I: Theoretical (2h/w)

Instruments in taxonomy, Bases of taxonomy, Five kingdoms theory, General characters and taxonomy of Sarcodina and Ciliophora, General characters and taxonomy of Zoomastigophora and Apicomplexa, General characters and taxonomy of Porifera, General characters and taxonomy of Hydrozoa and Scyphozoa, General characters and taxonomy of



Anthozoa, General characters and taxonomy ofturbellarians, General characters and taxonomy of monogeneans, General characters and taxonomy of Cestoda, General characters and taxonomy of Nematoda.

كود أو رقم المقرر: 102 ن
اسم المقرر: نبات عام
المحتويات:

Part I: Theoretical (2h/w)

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

كود أو رقم المقرر: 104 ف
اسم المقرر: حرارة وخواص مادة
المحتويات:

Part I: Heat

Temperature and thermometers, mHeat estimation , Thermal expansion , Change of phase, Heat transfer , Kinetic theory of gases

Part II: Propeties of matter

- 1- Units and dimensions Fundamental units - Derived units - Dimension theory and its applications Scaler and vectors -Linear motion - Planer motion - Newton`s second law
- 2- Simple harmonic motion –Simple Monent of inertia for some bodies- Simple pendulum.
- 3- Hook`s law-Elasticity modulii-Relation between elasticity modulii-Stress-Straincurves.
- 4- Pressure-Pascal`s rule-Archimede`s rule- Bernoulli`s equation - Surfacetension.
- 5- Bernoulli`s equation - Viscosity Poiseuill`s formula- Stokes law.

كود أو رقم المقرر: 106 ر
اسم المقرر: تفاضل وتكامل وهندسة
المحتويات:

مجموع تكامل ريمان - تكامل ريمان - طرق التكامل - تكامل الدوال المثلثية - تطبيقات التكامل - المساحة - طول المنحني - الحجم - الخط المستقيم - الدائرة

كود أو رقم المقرر: 102 ل
اسم المقرر: لغة انجليزية
المحتويات:

Writing paragraphs, topic sentence, countable and non-countable nouns, , punctuation, the use and non-use of articles, using a relvative clause, Some selected topics (Types of common rocks, animal cell structure , solar energy , cohesion energy, signals and lighting.

كود أو رقم المقرر: 102 ج
اسم المقرر: بلورات ومعادن
المحتويات:

Part I: Theoretical (2h/w)



1. Crystallography, External structure of crystals, X-Ray crystallography & Mineralogy, its applications.
2. Crystal, Elements of crystals: Facies, Edges, Solid angles, Interfacial angles, Law of constancy of interfacial angles, Contact goniometer & Reflection goniometer, crystal habit, Crystal form "Order", crystal elements, Axial cross, Crystallographic axes, Crystallographic angles.
3. Crystal symmetry, Elements of symmetry: Axes, Plane-, Centre-of symmetry, Rotation symmetry axes & Rotation inversion symmetry axes, Axial ratio, Parameters, Indices, Miller indices, Crystal system & Crystal classes, Orthogonal projection & Clinographic parallel perspective.
4. Crystal systems (I): Cubic "Isometric", Tetragonal, Hexagonal, Trigonal.
5. Crystal systems (II): Orthorhombic, Monoclinic, Triclinic.
6. Hemihedral & Holohedral forms, Hemimorphism & Pyroelectricity, Enantiomorphism & Optical active, Zone & Zone axis, Crystal aggregates (regular & irregular), Twinned crystals, Introduction to mineralogy, Physical properties of minerals, Classification of minerals, Silicate minerals structure

Revision.

محتوى مقررات السنة الثانية:

كود أو رقم المقرر: 205
اسم المقرر: الديناميكا الحرارية الكيميائية
المحتويات

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

كود أو رقم المقرر: 206
اسم المقرر: كيمياء عضوية (1)
المحتويات

Part I: Theoretical Part (2h/w)

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

كود أو رقم المقرر: 207
اسم المقرر: ضوء فيزيائي
المحتويات

Part I: Physical optics

Simple harmonic motion, Interferences, Diffraction of light, Polarization of light.

كود أو رقم المقرر: 207
اسم المقرر: رياضيات
المحتويات:

Polar coordinates and its applications - The function of two variables, continuity, the derivation and applications - Study of double integration in different coordinates - Improper integrals - Leibniz's, Taylor and Maclaurin theories

كود أو رقم المقرر: بدون
اسم المقرر: حقوق الانسان والمبادئ القانونية العامة
المحتويات:



Identification of human rights and its international importance, Types of human rights, Human rights in Islam religion and comparative legislation , Mechanisms of human rights protection

كود أو رقم المقرر: 201 ن
اسم المقرر: نبات اقتصادى وطحالب وبكتريا
المحتويات

Part I: Theoretical (3h/w)

Introduction to economic plants and their classification on the basis of their use., Fibers and fibrous plants, Drink plants and Latex and Gum, Medicinal plants, drugs and antibiotics and Volatile and non-volatile oils, Spices and Condiments, Gums and Resins and Tannins and Dyes, Introduction to bacteria, The bacterial cell shapes, sizes and arrangement), Chemical composition of bacterial cell, Bacterial nutrition, Bacterial endospore, Reproduction of bacteria, Bacterial growth, physical and chemical factors affecting the bacterial growth, Phytoplankton, Reproduction and life history in algae., Benthos, Utilization of algae, Algal nutrition., Classification of algae, Different groups of algae

كود أو رقم المقرر: 201 ح
اسم المقرر: حبيبات وحشرات
المحتويات

Part I: Theoretical (3h/w)

1-Basis of chordates taxonomy, Cephalochordata, General Characters and taxonomy of Agnatha, Characters and taxonomy of Chondrichthyes, Characters and taxonomy of Osteichthyes, Characters and taxonomy of Amphibia, Characters and taxonomy of Reptilia, Characters and taxonomy of Aves, Characters and taxonomy of Mammalia, Introduction to insects, Systematic position and general characters of 10- Introduction to insects, General insect morphology ,General insects anatomy (notes about all systems in insect, Bionomics and Metamorphosis of locust or 13-Cockroach

كود أو رقم المقرر: 207 ك
اسم المقرر: كيمياء غير عضوية
المحتويات

Part I: Inorganic Chemistry (2h/ w)

1-Introduction to S,P- block, Hydrogen and hydrides, Chemistry of Group I to VII, Chemistry of Group 0.

كود أو رقم المقرر: 208 ك
اسم المقرر: كيمياء عضوية (2)
المحتويات

I: Theoretical Part (2h/w):

a: Aromatic Compounds (1h/ w)

Nomenclature of aromatic compounds, Methods for preparation of benzene and its derivatives, Reaction of benzene ring, Phenols, Aromatic alcohols, Aromatic aldehydes and ketones, Aromatic carboxylic acids, Aromatic amines.

b: Bi-functional compounds (1h/ w)

1- Introduction and classification, Nomenclature of the bi-functional compounds, Diol, preparation and properties, Diketones, preparation and properties, Hydroxy aldehydic compounds, preparation and properties, Hydroxy acid compounds, preparation and properties, Dicarboxylic acid compounds, preparation and properties, Diamine compounds, preparation and properties, β -keto ester compounds, preparation and properties.

Part II: Tutorial (1h/ w)

كود أو رقم المقرر: 208 ف
اسم المقرر: فيزياء ذرية واطياف
المحتويات

Part I : Atomic physics



Cathode ray, Electromagnetic radiation, Spectra, Atomic models, Atomic hydrogen spectra, Bohr theory & hydrogen atom, Sommerfeld theory, Spectra of hydrogen like ions, Fine structure spectra of alkali atom, Photo electric effect, X-ray

كود أو رقم المقرر: 202ن
اسم المقرر: بيئة (غطاء نباتي وتربة وفسولوجيا البذور وتصنيف زهري)
المحتويات

Part I: Theoretical (3h/w)

Chemical composition of seed, Toxins in seeds, Dormancy, Physiology of seed germination, Utilization of food reserves for seedling growth, Phytohormon, Definition of Plant Ecology – Population, Community and Ecosystem- Ecological amplitude, Factors of the Environment, Origin and Development of Vegetation–Succession of Vegetation: hydrosere, xerosere, Field Studies of Vegetation, Soil Physical & chemical properties, Soil organic matter and humus, Plant Taxonomy: Principles of plant taxonomy, Types and Structure of flowers, inflorescence and fruits, Pollination / Fertilization, Representative families of Monocots, Representative families of Dicots.

كود أو رقم المقرر: 208ر
اسم المقرر: علوم الحاسب
المحتويات

Theoretical Part (1h/w):

Introduction to high level programming language, Data type part 1, Data type part 2, Handling errors, Statements and tolls part 1, Statements and tolls part 2, Dealing with arrays part 1, Dealing with arrays part 2, Functions and subroutines part 1, Functions and subroutines part 2, Dealing with files part 1, Dealing with files part 2, Other topics (e.g. design, menu, events,) part 1, Other topics (e.g. design, menu, events,) part 2,

كود أو رقم المقرر: 202ح
اسم المقرر: لافقاريات وحشرات
المحتويات:

Part I: Theoretical (3h/w)

Introduction to coelomic invertebrates, Phylum Annelida, Phylum Arthropoda part 1, Phylum Arthropoda part 2, Phylum Mollusca, Phylum Echinodermata part 1, Phylum Echinodermata part 2, Importance of coelomic invertebrates, Position of head capsule and head appendages, Forms of thoracic segment and types of appendages, The abdomen and its appendages (visceral, caudal and genital appendages), Types of metamorphosis, larvae and pupae

كود أو رقم المقرر: 202ل
اسم المقرر: لغة انجليزية
المحتويات:

Some selected topics, namely, liquids and gases, the origins of life, the universe, the weather, electricity and magnetism, smoking, drugs, alcohols, colors, light, sound, elements and the composition of matter.



الفرقة الثالثة

كود أو رقم المقرر : 101 ع ب
أسم المقرر : علوم بحار فيزيائية وصفية
المحتويات :

Course introduction, projections, ocean topography. Objects of study in physical oceanography, the geographical framework, Properties of seawater, the concept of salinity. The global oceanic heat and mass (freshwater) budgets. Depth distribution of temperature, salinity and nutrients. stratification. Aspects of Geophysical Fluid Dynamics. Thermohaline processes, water masses. The ocean and climate. Wave classification, dispersion, wind waves. Long waves: tsunamis, seiches, internal waves. Long waves: tides. Estuaries. Oceanographic instrumentation.

كود أو رقم المقرر : 102 ع ب
أسم المقرر : علوم بحار جيولوجية عامة
المحتويات :

Introduction, Morphology of Ocean floor, Principal Topographic features of Ocean and continental margin, Oceanic Ridges, Abyssal Plains, marginal trenches, seamounts, fracture zones, Methods of Studying ocean floor, Sea Level Changes, Importance and causes, Quaternary Sea Level Changes, Near shore Geological Processes, Lagoons, Deltas, Beaches. Coastal zones, Types of Currents, Continental shelves, Deep sea Sediments, terrigenous, gravity transport of sediments, and Submarine Canyons.

كود أو رقم المقرر : 103 ع ب
أسم المقرر : لافقاريات بحرية (سبيلومية)-نبات بحري عام
المحتويات :

Introduction to invertebrate phyla, Porifera, Cnidaria, and Ctenophora (and, briefly, Bryozoa)., Annelida, Platyhelminthes, Nematoda, Nemertea, Sipuncula, Echiura, Chaetognaths, Enteropneusts, Mollusca, Arthropods, Urochordata, and Echinodermata. Introduction of marine Botany, Marine Macro algae. Marine flowering plants in Egypt. Sea grass bed and coral reefs, Halophytes, Psammophytes in Egypt, and Mangle vegetation.

كود أو رقم المقرر : 104 ع ب
أسم المقرر : بيولوجيا علم الأسماك / بيولوجيا أحياء بحريه
المحتويات :

Introduction of marine biology, Physical characters of marine environment, Chemical characters of marine environment, Energy Transferee. Biological factors (plankton, Nekton Benthos), Coral reefs.

General characters , classification , evolution and phylogeny of fishes. Agnatha, ostracoderms and cyclostomes. Placoderms and Elsmobranches. Bony fishes: external features and internal anatomy. Integumentary system, Digestive system, Respiratory system , Blood vascular system ,Color , light , sound and electricity in fishes. Osmoregulation. Reproduction. The relationships between fishes and man, and Fish Behavior Assignment

كود أو رقم المقرر : 105 ع ب
أسم المقرر : مقرر اختياري
المحتويات :

Introduction to mirotechnique, Tissue preparation and fixation, Classification of fixatives, Post-fixation treatments , Dehydration and clearing, Types of embedding media, Microtome and section cutting, Problems in section cutting and overcome, Staining theory and methods of staining, Classification and structure of dyes



كود أو رقم المقرر: 339
أسم المقرر : احتمالات واحصاء
المحتويات :

Introduction on probability: the sample space – events and type of events- Diagram Venn, The definition of probability, harmonic analysis, Conditional probability and independence, Law of total probability, the theory of Bayesian and its applications, Random variables (discrete and continuous), Probability mass functions, probability density function, Mathematical expectation, variances and standard deviation, Cumulative distribution function and its properties and how derived from the probability distributions, Some probability distributions(discrete): binomial distribution, Poisson distribution, Geometric and hyper geometric distributions, Continuous distributions: exponential distribution, regular distributions, Gamma distribution, beta distribution Negative binomials, Normal distribution and standard normal distribution, Probability generating function, Moments generating function, Characteristic function

كود أو رقم المقرر :
أسم المقرر : حاسب
المحتويات :

Introduction about statistical package , Data handing, Dealing with New Variables , Compute the estimator Statistic value1, Compute the estimator Statistic value2, Correlations analysis , Regression analysis1, Regression analysis2, Multivariate Statistics(confidence intervals), Multivariate Statistics(hypotheses)1, Multivariate Statistics(hypotheses)2, Non-parametric Testing 1,Non-parametric Testing 1

كود أو رقم المقرر : 106 ع ب
أسم المقرر : عوالق بحرية / تكنولوجيا المصايد
المحتويات :

Introduction to phytoplankton and zooplankton, Sampling design and current methods of investigation, Phytoplankton (Diatoms and Dinoflagellates), Protozoa (tintinnids), Coeleonterata (Medusa and Siphonophores), Arthropods, Meroplankton , Chaetognatha and Larvacea, Plankton Ecology, Plankton Physiology.

Types of Fisheries (Methods, Gears, nets and Vessels). Fisheries assessment (biomassdynamic models), Understanding fisheries systems, Governance and management systems. Quantitative surveys, Economics of fisheries management, Habitat in fisheries management, Spatial fisheries management and marine spatial planning, Ecosystem-based management, Hatchery programs in fisheries enhancement and restoration.

كود أو رقم المقرر : (107 ع ب)
أسم المقرر : بيولوجية إشعاعية / كيمياء بحرية
المحتويات :

Introduction to radiobiology., Radiobiology as a subject, Historical Background of radiobiology. Radio sensitivity, Physical characteristics of ionizing radiations. Radiolysis of water, Modification of Phenomenon of Radio sensitivity, Methods of estimation, Dependence and limits of application of RBE, Mechanism of the biological effect of ionizing radiations. Introduction to Marine chemistry, The chemical and physical properties of pure, water molecule, Chemical composition of sea water, Source of organic matter in marine environment, Primary production in Seawater, Chemistry of the marine interfaces, Equilibrium models of sea water. Gas exchange, Trace metals. Distribution of chemical species in sea water, Processes regulate the composition and Benthos of sea water, Biological



chemistry of sea water, Chemistry of Mediterranean and red seas, and Marine Natural products.

كود أو رقم المقرر : (108 ع ب)

أسم المقرر : إحصاء بيولوجي / ميكروبيولوجي عامة
المحتويات :

Common sampling techniques, Sampling and basic statistics, Mean, median, mode, standard deviation, variance, Significant figures. Sampling designs, Distributions. Terminology. Histograms. Value in sampling. Normality. Tests for normality, Transformations, Outliers, Number of samples, Comparing distributions, Age structure, Chi-square analysis, Statistical methods , and Variable selection techniques (forward-backward-stepwise).

Introduction to microbiology, Virus structure and principles of taxonomy, Introduction to Bacteria, Fungal taxonomy and physiology, and Applied microbiology.

كود أو رقم المقرر : (109 ع ب)

أسم المقرر : مقرر اختياري
المحتويات :

Introduction to Molecular biology, Experiments that showed that DNA is the genetic material, Contributions of researchers towards solving the structure of DNA molecule, Trials of Watson and Crick to solve DNA helix, Chemical composition, DNA molecule and its features. Relation between DNA and chromosomes, Forms of DNA and characteristics of RNA, Overview of DNA replication. Differences between replication in pro-and Eukaryotes, The different models proposed for DNA replication. Experiment supporting the correct model of DNA replication, Mechanism of DNA replication. Overview about DNA transcription in different organisms, The detailed mechanism of gene transcription in eukaryotes, Types of modifications of RNA transcripts, Overview of Translation, Structure of tRNA, Ribosomes and their interaction, and Mechanics of translation.

كود أو رقم المقرر : (338)

أسم المقرر : مبادئ علم الحاسب
المحتويات :

Introduction to database concepts, Create tables and Identify keys, relationships between tables, deleting with different queries, deleting with forms, deleting with reports , deleting with macros , Dealing with SQL , Apply Visual Basic modules part, and Explain and demonstrate Internet features of Access.

كود أو رقم المقرر : 302

أسم المقرر : لغة انجليزية
المحتويات :

The migration of birds (Reading), Coral reefs (Reading), Smuggling of Nuclear materials and Chemical Reactions (Reading), Enquiry (Reading), Argument (Reading), Roots (Vocabulary), Prefixes (Vocabulary), Suffix (Vocabulary), Relative Clauses (Grammar), Adjectives and Adverbs (Grammar), Writing A summary (Writing), Summarizing process (Writing), The summary Report (Writing), and Cause and Effect Research Paper (Writing).

التدريب الميداني: تدريب صيفي في الهيئة القومية للثروة السمكية ومعهد علوم البحار والمفرخات ومزارع الأسماك. التدريب لمدة ثمانية أسابيع بواقع 5 أيام أسبوعيا وذلك في الأجازة الصيفية بعد الانتهاء من أداء الامتحانات للسنة الثالثة.



الفرقة الرابعة

كود أو رقم المقرر: 401 ع ب
أسم المقرر : احياء قاع/ تدريبات بحريه
المحتويات :

Introduction to marine benthos, research history of benthic ecosystems, Typology and properties of the bottom sediments, Near-bottom water layer and its peculiarities, Nutrient recycling and other geochemical processes in the benthic environment. Taxonomy of the benthic fauna and their adaptations, Functional classification of the macrozoobenthos; phytobenthos and its functional characteristics, Traditional and modern research approaches in benthic ecology, Structure of the zoobenthic, Zoobenthic communities of the Mediterranean and Red Sea, Functions and interactions of the benthic organisms, long-term and short-term anthropogenic impacts on the benthic communities, and Benthic species as ecological quality indicators.

Basic equipment, Ear and sinus, Circulatory and respiratory, Suffocation and drowning, Stress and protective clothing, Auxiliary equipment and survival equipment, The nature of the gases, Archimedes law and air cylinders, Deliverance, Clothing and Equipment buoyancy, Pulmonary explosion and emergency ascent, Poisoning by second and carbon monoxide, Signals and training surface, and Diving in open water

كود أو رقم المقرر: 402 ع ب
أسم المقرر : ميكروبيولوجيا بحريه
المحتويات :

Introduction to marine microbiology, Seawater. Environmental factors and their influence in microorganism development, Differential physiological aspects of marine microorganisms, Sampling techniques. Isolation of microorganisms, Culture medium and culture conditions for marine microorganisms, Molecular methods for microbial identification, Diversity of marine microorganisms, characteristics of marine bacteria, Viruses in marine environments, Life in extreme environments, Role of microorganisms in marine trophic networks, Cycles of elements at sea: production and decomposition of organic material, and Interactions of microorganisms with the environment and other aquatic organisms.

كود أو رقم المقرر : 403 ع ب
أسم المقرر : اجهزه بحريه واستخدامها
المحتويات :

Course introduction (Lecture rules and contract, Definition of marine instrumentation in general), Basic principal of electronic instrumentation design for marine and fisheries, Definition of measurement, Electronic measurement tools, Error, in measurement. Instruments of water and sediments analysis, Transducers., Filters, Grab samplers and fishing gears, Ultrasounds, Fishing ships and equipments, Boat Handling / Seamanship, and Submarine vessels .

كود أو رقم المقرر : 401 ك
أسم المقرر : كيمياء حيوية
المحتويات :

Function, Classification & Nomenclature of Carbohydrates, Physical properties of Monosaccharides, Chemical properties of Monosaccharides, Cyclic structure of sugars, Disaccharides and their enzymatic Hydrolysis, Oligosaccharides & Cellobiose, Classification



of Polysaccharides, Heteroglycans, Glycolysis & Citric acid cycle, Gluconeogenesis and Glycogen metabolism, Pentose Phosphate Pathway, Monosaccharide & Disaccharides metabolism, Glycosaaminoglycans & glycoproteins metabolism, and Regulation & disorders of carbohydrates metabolism

كود أو رقم المقرر : 405 ع ب
أسم المقرر :مقرر اختياري
المحتويات :

Natural of fish diseases, Bacterial diseases of fish, Mycotic diseases of fresh water and marine fish, Parasitic diseases of fresh water and marine fish, Non infective disease, Viral diseases, and Prevention and control of fish diseases

كود أو رقم المقرر : 406 ع ب
أسم المقرر : بيولوجيا المصايد
المحتويات :

Course introduction, Food and feeding habits. Feeding habits: Predators, Grazers, Strainers, Suckers and Parasites, Age and growth., Age determination using the fish hard parts (Scales, Otoliths), Factors affecting the growth rate of fish. Length weight relationship. Condition factors, Fish marking and tagging, Fishing nets, Fecundity, Investigation of mortalities in the Wild, Fisheries trouble, and Understanding fisheries systems.

كود أو رقم المقرر : 407 ع ب
أسم المقرر : استزراع الكائنات المائية
المحتويات :

Course introduction, Aquaculture and the Environment. Water Quality, Installing an aquaculture system, Microalgae used in aquaculture, Introduction to freshwater and marine hatcheries, Operating an aquaculture farm, and Integrated Fish farming.

كود أو رقم المقرر : 408 ع ب
أسم المقرر : كيمياء تحليليه لماء البحر
المحتويات :

Introduction to Marine analytical chemistry, The major constituents of seawater; The cycling of elements, Statistics of analytical errors and sampling, Principles of spectrophotometry, fluorometry, segmented flow injection, flame photometry plasma, emission (ICP) and atomic absorption spectrophotometry (AAS), Electrochemical techniques including polarography and ion selective electrodes, Chromatography methods and application, Mass spectroscopy and application, and Application on different marine water samples.

كود أو رقم المقرر : 408 ع ب
أسم المقرر : بيئة بحريه
المحتويات :

Course Introduction, Scheduling, and other Logistics, Primary Producers in Marine Environments, Factors Affecting Primary Production, Consumers and Dynamics of Consumer Populations, Competition for Resources Among Consumers, Feeding and Responses to Food Abundance, Food Selection by Consumers, Processing of Consumed Energy, Trophic Structure, Development of Structure: Colonization and Succession, Biological Invasions, Climate Change, conservation, and Marine Ecosystems



كود أو رقم المقرر: 409 ع ب
أسم المقرر : تلوث البيئة البحرية
المحتويات :

Introduction, Domestic effluents. Eutrophication, Industrial effluents, Pollution of the sea by ships, Oil pollution, Thermal pollution: Sources, effects on marine organisms, Radioactive materials: Sources, effects on marine organisms, Marine pollution by heavy metals , and Pollution control

كود أو رقم المقرر : 410 ع ب
أسم المقرر :مقرر اختياري
المحتويات :

Introduction, definitions., Integumentary system of marine vertebrates, Respiratory system of marine vertebrates, External and internal gills, swim bladder and lungs, Circulatory system of marine vertebrates, Sense organs of marine vertebrates, and Skeletal system of marine vertebrates.

كود أو رقم المقرر : بدون
أسم المقرر : بحث ومقال
المحتويات :

Introduction to an essay or research, Choosing the subject of the essay or research, Main topics of the essay or research, Collecting materials, Collection of references in the essay, Writing the essay, Editing of the materials, and An overall revision for presentation.

كود أو رقم المقرر : 402ل
أسم المقرر : لغة انجليزية
المحتويات :

Meteorology, Physics, Chemistry, Matter, Mass and Molecules, For & Against Essays , Opinion Essays, Providing solution to problems Essays, Assessing good and bad points, Gerund and infinitive, Noun Clauses, Conjunctions and prepositions , Linking ideas , and Structure and cohesion

كود أو رقم المقرر : بدون
أسم المقرر : حاسب
المحتويات :

Introduction to WORLD WIDE WEB , Internet basics: Internet Protocols and Internet Services, HTML Basics: - Introduction to HTML elements, Basic tags, Attributes, creating HTML page, Creating HTML tables, adding pictures., and Advance HTML , formatting web pages by using GIF, JPEG getting web and clip arts. Use of interlinks, Introduction to Dreamweaver , More Features of Dreamweaver, and Different applications to build homepages using HTML and Dreamweaver.