اللائحة الدراسية:

الفصل الدراسى	الفرقة والمستوى	عدد الساعات الأسبوعية			عدد الوحدات	اسم المقرر	كود أو رقم المقرر
		عملى	تمرين	نظرى			
الأول	أولى علوم طبيعية	4	0	4	8	كيمياء عامة غير عضويه / كيمياء عامه	101ك
		4	1	4	9	ضوء- كهربية	101ف
		0	2	3	5	تفاضل وتكامل	101ر
		0	2	4	6	هندسة- استاتيكا	102ر
		4	0	2	6	كيمياء عامة	102 ك
الثاني		0	0	2	2	كيمياء عضوية	103ك
		4	1	4	9	حرارة وخواص مادة - مغناطيسية	102ف
		0	3	4	7	تفاضل عالي - جبر	103ر
		0	2	3	5	ديناميكا	104ر
		0	0	2	3	لغة انجليزية	102ل

الفصل الدراسى	الفرقة والمستوى	عدد الساعات الأسبوعية			عدد الوحدات	اسم المقرر	كود أو رقم المقرر
		عملى	تمرين	نظرى			
الأول	ثانية رياضيات و فيزياء	0	1	2	3	معادلات تفاضلية	201ر
		0	1	2	3	مقدمة في الاحصاء	202ر
		0	2	4	6	تحليل رياضى او حقيقى - استاتيكا	203ر
		2	1	2	5	ديناميكا حرارية	201ف
		4	1	4	9	دوائر كهربيه وكهرواستاتيكيه	202ف
		0	0	2	2	حقوق الانسان والمبادئ القانونيه العامه	بدون
الثاني		0	1	2	3	جبر خطي	204ر
		0	1	2	3	هندسة فراغية تحليلية	205ر
		0	2	4	6	ميكانيكا	206ر
		4	1	2	7	جوامد والكترونيات	203ف
		2	1	4	7	فيزياء ذريه - ضوء فيزيائى	204ف
		2	0	1	3	حاسب	بدون
		0	0	2	3	لغة انجليزية	202ل

كود أو رقم المقرر	اسم المقرر	عدد الوحدات	عدد الساعات الأسبوعية			الفرقة والمستوى	الفصل الدراسى
			نظرى	تمرين	عملى		
321ر	تحليل عددى	4	3	1	0	ثالثة رياضيات وعلوم حاسب	الأول
322ر	منطق رياضى وجبر	4	3	1	0		
323ر	تحليل حقيقى او مركب	4	3	1	0		
305ر	احتمالات واحصاء	3	3	0	0		
308ر	مبادئ علم الحاسب- برمجه	9	4	1	4		
324ر	معادلات تفاضلية ـ معادلات تفاضلية جزئية	3	2	1	0		
325ر	تركيب بيانات	4	2	0	2		الثانى
326ر	حساب متغيرات	3	2	1	0		
327ر	تصميمات منطقيه	5	3	0	2		
328ر	دوال خاصة	2	2	0	0		
329ر	مقرر خاص	2	2	0	0		
302ل	لغة انجليزية	3	2	0	0		

كود أو رقم المقرر	اسم المقرر	عدد الوحدات	عدد الساعات الأسبوعية			الفرقة والمستوى	الفصل الدراسى
			نظرى	تمرين	عملى		
406ر	دوال خاصه ـ تحليل دالى	5	4	1	0	رابعة رياضيات وعلوم حاسب	الأول
420ر	توبولوجي	2	2	0	0		
421ر	احتمالات واحصاء ـ حزم احصائيه	4	2	0	2		
422ر	برمجه ـ تحليل نظم وقواعد بيانات	6	4	0	2		
423ر	تحليل عددى	3	2	1	0		
424ر	نظريه القياس- بحوث عمليات	2	2	0	0		الثانى
425ر	نظريه الحاسبات	6	2	0	4		
426ر	تألفيات ومبادئ تصميم المؤلفات	2	2	0	0		
427ر	نظريه اليات ولغات تصوريه	2	2	0	0		
428ر	قواعد البيانات	4	2	2	0		
بدون	بحث اومقال	2	2	0	0		
402ل	لغة انجليزية	3	2	0	0		

المحتوى العلمي:

الفرقة الأولى علوم طبيعية
كود أو رقم المقرر : 101 ك
اسم المقرر: كيمياء عامة
محتويات المقرر:

Part I: Physical chemistry (2h/w)
- Physical chemistry
- Gaseous state
- Thermochemistry
- Chemical equilibrium,
- Solutions and problems in physical chemistry

Part II: Inorganic chemistry (2h/w)
- Inorganic chemistry
- Chemical calculations
- Atomic structure
- Electronic configuration of atoms
- Periodic table and the general properties of representative elements
- Types of chemical bonds

Part III: Practical (4h/w)
- Introduction and safety in laboratories
- Determination of density of liquids
- Determination of viscosity of liquids
- Determination of surface tension of liquids
- Determination of empirical formula of an oxide
- Determination of hydrate
- Stoichiometric determination
- Determination of the molecular weight of volatile liquid
- Determination of the heat of formation of mgo
- Determination of heat of neutralization (strong acid and strong base)
- Determination of heat of neutralization (strong acid and weak base)
- Determination of heat of neutralization (weak acid and weak base)
- Revision

كود أو رقم المقرر : 101 ف
اسم المقرر: ضوء
محتويات المقرر:

Part I: (2h/w)
- Nature of light
- Refraction through lenses
- Optical instruments
- Dispersion
- Photometry

Part II: Practical (2h/w)
- Covex lenses
- Convex mirrors

- Liquid leses
- Triangular prism
- Jouly's photometer

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كود أو رقم المقرر : 101 ف
اسم المقرر: كهربية
محتويات المقرر:

</div>

Part I: (2h/w)
- 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 field flux and gauss's law and its applications
- Condensers
- Electric current
- Dc circuits
- Dc network analysis
- Transient current

Part II: Practical (2h/w)
- Ohm's law
- The relation between the filament's current and the applied voltage
- The sensitivity of a galvanometer
- The current leakage
- Determination the resistance of a voltmeter
- The meter bridge and measuring a small resistance

<div dir="rtl">

كود أو رقم المقرر : 101 ر
اسم المقرر: تفاضل و تكامل
محتويات المقرر:

</div>

- Reviewing of some basic concepts of functions
- Limits and the continuity
- Derivatives
- The mean value Theorem and curve sketching
- Integration
- Application of integration
- Inverse functions
- Exponential function
- Logarithmic function
- Inverse Trigonometric functions
- Techniques of Integrations

<div dir="rtl">

كود أو رقم المقرر : 102 ر
اسم المقرر: استاتيكا
محتويات المقرر:

</div>

- Vectors
- Two dimensional forces acting at a point

- Moments and couple
- The plane force acting on a rigid body
- Fraction
- Work and kinetic energy
- Potential function

<div dir="rtl">

كود أو رقم المقرر : 102 ر

اسم المقرر: هندسة

محتويات المقرر:

</div>

- Polar and cartesian coordinates in the level systems
- A straight line
- Operations on the axes of coordinates
- Pairs of lines
- The circle
- Cuttings cone
- The general equation of 2nd degree in two variables

<div dir="rtl">

كود أو رقم المقرر : 102 ك

اسم المقرر: كيمياء عامة

محتويات المقرر:

</div>

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
- Crystallographic systems

Part II: Inorganic chemistry (1h/w)
- The VSEPR model
- V.B. theory (hybridization of orbitals)
- Molecular geometry and resonance
- M.O. theory
- Oxidation- reduction reactions

Part III: Practical (4h/w)
- Introduction of acidic radicals
- Detection of dilute Hcl group
- Detection of h_2so_4 group
- Detection of miscellaneous groups
- Scheme of general investigation of acidic radicals
- Introduction of basic radicals
- Detection of groups i, ii-a, and ii-b
- Detection of groups iii and iv
- Detection of groups v and vi
- Scheme of general investigation of basic radicals

- Detection of acidic and basic radicals of unknown salts
- Analysis of cationic radicals in a mixture

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كود أو رقم المقرر : 103 ك
اسم المقرر: كيمياء عضوية
محتويات المقرر:

</div>

- Introduction to organic chemistry
- Nomenclature
- Preparation and reactions of alkanes
- Nomenclature
- Preparation and reactions of alkenes
- Nomenclature
- Preparation and reactions of alkynes
- Nomenclature
- Preparation and reactions of alcohols
- Nomenclature
- Preparation and reactions of ethers
- Nomenclature
- Preparation and reactions of aldehydes and ketones
- Nomenclature
- Preparation and reactions of carboxylic acids
- Nomenclature
- Preparation and reactions of carboxylic acid derivatives
- Nomenclature
- Preparation and reactions of amines
- Revision

<div dir="rtl">

كود أو رقم المقرر : 102 ف
اسم المقرر: حرارة و خواص مادة
محتويات المقرر:

</div>

Part I: (2h/w)

- Temperature and thermometers
- Heat estimation
- Thermal expansion
- Change of phase
- Heat transfer
- Kinetic theory of gases
- Units and dimensions fundamental units
- Derived units
- Dimension theory and its applications
- Scalar and vectors
- Linear motion
- Planer motion
- Newton`s, second law
- Simple harmonic motion
- Simpmonent of inertia for some bodies
- Simple pendulum
- Hook`s law

- Elasticity modulii
- Relation between elasticity modulii
- Stress-strain curves
- Pressure
- Pascal`s rule
- Archimede`s rule
- Bernoulli`s equation
- Surface tension and Bernoulli`s equation
- Viscosity poiseuill`s formula
- Stokes law

Part II: Practical (2h/w)
- The Joul's coefficient
- The specific heat of a solid using mixing method
- Searl's method
- The latent heat and temperature of an amorphous material
- The Newton's law for cooling
- The simple pendulum
- The Young's modulus of a wire
- The Hook's law
- The Stock's law of viscosity
- The Poissel's law of viscosity

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كود أو رقم المقرر : 102 ف
اسم المقرر: مغناطيسية
محتويات المقرر:

</div>

Part I: (2h/w)
- Magnetic elements
- The Biot-Savart law
- Ampere's law
- Applications of magnetic field's-magnetic field due to a current in a straight conductor
- Magnetic field of circular conductor
- Magnetic field of a solenoid
- Magnetic field of a toriod
- The force between two complete circuits
- Magnetic dipole
- Tangent and Helmoholtz galvanometers
- Charged particles in magnetic fields
- Orbits of charged particles in magnetic fields
- Applications on motion particles in magnetic fields
- Cyclotron
- Q/m of electrons
- Hall effect
- Mass spectrograph
- Motion of a conductor in a magnetic field
- Faraday law
- Self and mutual inductance

- Inductors connection

Part II: Practical (2h/w)
- The magnetic field distribution of a small magnet
- The horizontal component of the magnetic field of the earth,
- To compare the intensities of two magnets
- The Robson's magnet
- The inverse square law in magnetism
- The circular coil

كود أو رقم المقرر : 103 ر
اسم المقرر : تفاضل عالي
محتويات المقرر :

- Polar coordinates and its applications
- Partial derivatives
- Multiple integrals
- Improper integrals
- Taylor and Maclaurin series

كود أو رقم المقرر : 103 ر
اسم المقرر : جبر
محتويات المقرر :

- Sets theory
- Relations
- Mapping
- Some basic concepts of group theory
- Mathematical induction
- Partial fractions
- Matrices and linear equations
- Complex numbers

كود أو رقم المقرر : 104 ر
اسم المقرر : ديناميكا
محتويات المقرر :

- Kinematics of a particle (rectilinear motion)
- Simple harmonic motion
- Motion of a variable mass particle
- Motion in a resisting medium
- Projectiles motion
- Principle of virtual work
- Equilibrium stability

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

- Types of common rocks
- Writing paragraph + topic sentence
- Countable and non-countable nouns
- Animal cell structure
- Punctuation

- The use and non-use of articles + using a Relvative clause
- Solar energy - Cohesion + signaling
- Subject verb agreement + Quit & Rather
- Lightining

الفرقة الثانية رياضيات و فيزياء

كود أو رقم المقرر : 201 ر

اسم المقرر: معادلات تفاضلية

محتويات المقرر:

- Definition of differential equations and basic concepts
- First order differential equations
- Second order linear differential equations
- Systems of differential equations
- Laplace transformation
- Series solutions

كود أو رقم المقرر : 202 ر

اسم المقرر: مقدمة في الإحصاء

محتويات المقرر:

- 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 : 203 ر

اسم المقرر: استاتيكا

محتويات المقرر:

- Vector analysis
- Centroid
- Moment

- Products of inertia
- Fluid static

كود أو رقم المقرر : 203 ر
اسم المقرر: تحليل رياضي أو حقيقي
محتويات المقرر:

- The real number system
- Countability
- Properties of sequences of real numbers
- Properties of infinite series
- Tests for convergence of real series
- Sequences and series of functions

كود أو رقم المقرر : 201 ف
اسم المقرر: ديناميكا حرارية
محتويات المقرر:

Part II: (2h/w)
- Fundamental concepts of thermodynamics
- Thermodynamic systems
- Thermodynamic equilibrium
- Equation of state
- Internal energy
- Work, heat
- Heat capacity and heat enthalpy and est.
- First law of thermodynamics
- Second law of thermodynamics
- Reversible and Kelvin temperature
- Entropy
- Combined first and second laws of thermodynamic
- Engines and heat pumps
- Third law of thermodynamics

Part II: Practical (2h/w)
- Determination of the thermal conductivity of wood by Lee's method
- Verification of the Stefan's law of radiation
- Mechanical equivalent of heat
- Determination of Stefan's constant of radiation
- Determination of the thermoelectric force (EMF)
- Determination of the thermal conductivity of a rubber tube

كود أو رقم المقرر : 202 ف
اسم المقرر: دوائر كهربية و كهرواستاتيكية
محتويات المقرر:

Part I: (4h/w)
- Inductor-Capacitance-Series-parallel combination-Natural response of RL and RC circuits
- Step response of RL and RC circuits
- Natural and step response of parallel and series RLC circuits
- Induced Emf in a rotating coil
- Phase and phase difference
- Average value
- Root mean square value

- Resistance-capacitance-inductance in AC circuit
- Series connections: RC-RL-RLC square value
- Resistance-capacitance-inductance in AC circuit
- Series connections: RC-RL,-RLC series circuits
- Parallel Ac Circuits
- Types of filters: low -pass and high -pass filters- band-pass and band-stop filters
- Power and corrections of power factor
- R-L-C resonance in series circuits
- R-L-C resonance in parallel circuits-quality factor
- AC bridges: Wheatstone-Owen-Maxwell-Robison
- Mutual inductance bridge
- Sharing bridge
- Mutual inductance bridge-She circuits
- Step response of RL and RC circuits-natural and step
- Response of parallel and series RLC circuits ring bridge
- Transient current in electric circuits
- Complex impedance
- Solutions of AC circuits

Part II: Practical (4h/w)
- Determination of the thermal conductivity of wood by Lee's method
- Verification of the Stefan's law of radiation
- Mechanical equivalent of heat
- Determination of Stefan's constant of radiation
- Determination of the thermoelectric force (EMF)
- Determination of the thermal conductivity of a rubber tube

كود أو رقم المقرر : قرار
اسم المقرر: حقوق الإنسان و المبادئ القانونية العامة
محتويات المقرر:

- 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 : 204 ر
اسم المقرر: جبر خطي
محتويات المقرر:

- System of linear equations and matrices
- Vector space
- Solving linear system
- Eigen- values and Eigen vectors
- Linear transformations

كود أو رقم المقرر : 205 ر
اسم المقرر: هندسة فراغية تحليلية
محتويات المقرر:

- Cartesian and parametric equation of line in space
- Cartesian and parametric equation of plane in space

- Relation between lines
- Planes and spheres in space
- General theory of quadratic surface
- Sphere
- Ellipsoid
- Hyperboloid and parabolic
- Cylinder
- Cone
- Tangent plane of surfaces in space
- The general equation of 2_ed degree in 3 variable

كود أو رقم المقرر : 206 ر
اسم المقرر: ديناميكا
محتويات المقرر:

- The small oscillation
- Central orbits
- Constrained motion
- Plane motion of a rigid body
- Motion of a particle in three dimensions

كود أو رقم المقرر : قرار
اسم المقرر: مبادئ علم الحاسب
محتويات المقرر:

Part I: (1h/w)
- Introduction to OOP language
- Data type in OOP
- Writing a program and Variables in an OOP
- Flow control and more variables
- 3-functions and debugging
- Intro to OOP and classes
- Class members and more classes
- Events and using windows and controls and review

Part II: Practical (2h/w)
- GUI of the software and menus
- The first program
- Using controls in the language
- Built in functions
- Design functions
- Introduction to class and more class

كود أو رقم المقرر : 203 ف
اسم المقرر: جوامد و الكترونيات
محتويات المقرر:

Part I: (2h/w)
- Introduction
- The structure of atom
- Band theory of solids
- Intrinsic semiconductor
- The Doping of Semiconductors

- P- and N- Type Semiconductors
- P-N junction
- Light emitting diodes
- The Zener effect
- Some other diodes
- Rectification introduction and half wave rectifier
- Rectification full wave rectifier
- Filters capacitor filter
- Transistors construction and operation
- The common-emitter circuit
- The common-emitter amplifier
- The common-collector amplifier
- Transistor bias
- Crystal structure and crystal geometry
- Ceramic crystals
- Planar and linear density unit cell
- Crystal structure analysis

Part II: Practical (4h/w)
- P - n junctions (si diode)
- P - n junctions (Gr diode)
- P-n junctions (LED diode)
- P-n junctions (Zener diode)
- Half wave rectifier
- Full wave rectifier
- Bridge rectification
- Filters
- Young's modulus by using bending rod
- Young's modulus by using Searl's method
- Shearing modulus by using Searl's method
- Shearing modulus by using torsional pendulum
- Forced oscillation

كود أو رقم المقرر : 204 ف
اسم المقرر: فيزياء ذرية
محتويات المقرر:

- Cathode ray
- Electromagnetic radiation
- Atomic models
- Atomic hydrogen spectra
- Bohr theory& hydrogen atom
- Summer field theory
- Fine structure
- Fine structure spectra of hydrogen like ions
- Spectra of alkali atom
- Schrodinger wave equation
- Simple one-electron atom model
- Photo electric effect

Part I: (2h/w)
- Simple harmonic motion
- Interference
- Diffraction of light
- Polarization of light

Part II: Practical (2h/w)
- Determination of the wavelengths of a mercury lamp using a diffraction grating
- Determination of the wavelength of a sodium lamp using Newton's rings
- Determination of the wavelength of a monochromatic light using Michelson interferometer
- Specific rotation (Polarimeter)
- Abbe's refract meter
- Microwave optics
- Diffraction of laser

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

- Calculating: Liquids and Gases
- Reporting: The origins of life
- Describing: The Universe
- Predicting: The weather
- Experimenting: Electricity and magnetism
- Giving evidence: Smoking, Drugs, and Alcohol
- Cause and Effect: Color, Light, and Sound
- Comparing: The Elements
- Classifying: The Composition of Matter

الفرقة الثالثة رياضيات وعلوم الحاسب

كود أو رقم المقرر : 321ر

اسم المقرر: تحليل عددي

محتويات المقرر:

- Mathematical preliminaries and error analysis
- Solutions of equations in one variable
- Interpolation and polynomial approximation
- Numerical differentiation and integration
- Solutions of linear systems

كود أو رقم المقرر : 322ر

اسم المقرر: منطق رياضي أو جبر

محتويات المقرر:

- Introduction to Rings
- Integral Domians
- Ideal and Factor Rings
- Homomorhisms
- Sentence Composition
- The Basic Logical Operations
- Truth values
- Converse and Contrpositives
- Logical Forms and Truth Tables
- Boolean Algebra
- Operations
- Axioms for a Bollean Algebra
- Subalgrbra
- Isomorhisms
- Bollean algebra and propsitional Logic

كود أو رقم المقرر : 323ر

اسم المقرر: تحليل مركب

محتويات المقرر:

- Algebraic of complex numbers
- Complex functions and some mappings
- Limits, continuity
- Derivative and analytic functions with applications
- Elementary functions (exponential, logarithmic, complex exponents)
- Complex integration
- Cauchy integral theorems
- Liouville's theorem and morris theorem
- Power series
- Taylor series and laurent series
- Classification of singularities
- Residue theorem with applications to evaluate real integrals
- Some additional topics such as conformal mapping

كود أو رقم المقرر : 305ر

اسم المقرر: احتمالات واحصاء

محتويات المقرر:

- Joint probability density functions for discrete and continuous random variables
- Marginal probability density functions for discrete and continuous random variables
- Bivariate cumulative distribution functions
- Marginal cumulative distribution functions
- Conditional probability density functions for discrete and continuous random variables
- Conditional cumulative distribution functions
- The mean and variance for sum-product-quotient random variables
- The covariance and correlation coefficient for discrete and continuous random variables
- Conditional expectation and conditional variance for discrete and continuous random variables,
- Joint moment generating function and joint moments (raw- about the means)
- Application of Bivariate probability distribution function for discrete random variables as Trinomial distribution
- Application of Bivariate probability distribution functions for continuous random variables as Bivariate normal distribution
- Distribution of functions of normal variables
- Distribution of functions of random variables

كود أو رقم المقرر : 308 ر

اسم المقرر: مبادئ علم الحاسب ـ برمجه

محتويات المقرر:

الجزء الأول: مبادئ علم الحاسب

- Introduction to computer evolution
- Inter connection and Basics of PCI bus
- Characteristics: Hierarchy and Cache memory
- Principles, Cache design and Locality of reference
- Static RAM and Dynamic RAM
- Some Types of ROM, Magnetic disk
- Basics of RAID
- Optical memory and Magnetic tapes
- INPUT & OUTPUT
- Interrupt
- Driven I\O and DMA
- I\O channels and processors and COMPUTER ARITHMETIC: Floating point representation and Arithmetic
- INSTRUCTION SET
- Organization of processors of registers
- Instruction cycle
- Instruction pipe lining and Pentium processor,
- Characteristic – Large register cycle and Register optimization and Architecture
- RISE V\S CISE characteristic and pipe ling

الجزء الثاني: برمجة

- Introduction to linear programming problem (lpp)
- Graphical method for solving lpp
- Simplex method
- Special cases of simplex method
- Artificial variable technique
- Duality in linear programming
- Integer programming problem
- Parametric programming
- Revised simplex method

كود أو رقم المقرر : 324ر

اسم المقرر: معادلات تفاضلية- تفاضلية جزئية
محتويات المقرر:
الجزء الأول: معادلات تفاضلية

- Existence and unique of solutions
- System of first order linear equations
- Series solutions of second order differential equations
- Basic stability theory
- Oscillation of second order equations
- Boundary value problems

الجزء الثاني: معادلات تفاضلية جزئية

- Basic concepts of partial differential equations.
- Linear partial differential equations of first order.
- Nonlinear partial differential equations of first order.
- Homogeneous linear partial differential equations with constant coefficients
- Nonhomogeneous linear partial differential equations with constant coefficients
- Linear partial differential equations of order two with variable coefficients
- Nonlinear partial differential equations of order two with variable coefficients

كود أو رقم المقرر : 325 ر
اسم المقرر: تركيب بيانات
محتويات المقرر:

- Introduction to data structures
- Abstraction and algorithms
- Deal with string and text
- Linear list and its operations
- Linked lists
- Stacks and its applications
- Queues and its applications
- Sorting Algorithms
- Trees and Tree Traversal Algorithms
- Binary Search Trees
- Graph and matrix
- Graph and linked list

- Hash Tables and Hash Functions

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كود أو رقم المقرر : 326 ر
اسم المقرر: حساب المتغيرات
محتويات المقرر:

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- Absolute extremum
- Conditional extremum
- The variation of a functional and its properties
- An elementary problem in the calculus of variations Euler's equation
- Generalizations of the elementary problem of the calculus of variations
- Invariance of Euler's equation
- Field of extremals, Sufficient conditions for the extremum of a functional
- Conditional extremum
- Moving boundary problems
- Discontinuous problems (one sided variations)
- The Hamilton Jacobi theory (the variational principles of mechanics)
- Euler's finite difference method
- Ritz method
- Kantorovich method and Variational methods for finding eigenvalues and eigenfunctions

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كود أو رقم المقرر : 327 ر
اسم المقرر: تصميمات منطقيه
محتويات المقرر:

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- Number systems and codes
- Logic gates
- Inverting logic gates
- Reduction logic gates
- Exclusive or and exclusive nor gates
- Arithmetic circuits
- Comparator
- Decoding
- Encoding
- Code converters
- Gray code
- Multiplexers and demltiplexers and flip – flops

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كود أو رقم المقرر : 328ر
اسم المقرر: دوال خاصة
محتويات المقرر:

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- Gamma and Beta functions
- Legendre Polynomials
- Bessel Function
- Hermit Polynomials

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كود أو رقم المقرر : 329 ر
اسم المقرر: مقرر خاص
محتويات المقرر:

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- Some review of probability theory and general concept of Stochastic
- Processes general concept of Stochastic Processes
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- Classification of Stochastic processes
- Stationary Stochastic Processes
- Definitions of Stationary of order n, Strictly stationary, Covariance stationary,
- Auto-correlation and Cross-correlation; Spectral density functions- Examples
- Bernoulli processes - Definitions of Bernoulli processes as an example of stochastic process-Random walk as an example of Bernoulli processes
  -
- Deducing the binomial process as the distribution of the number of successes in the first n- Bernoulli trials- Definition of the times at which the successes of a Bernoulli process occur- Relation between the times of successes and the number of successes in the first n- Bernoulli trials.
- Discrete-time Markov chain Definitions and Examples -Higher transition probabilities- Determination of Higher transition probabilities
  -
- Classification of States and Chains-Stability of a Markov chain: Limiting Behaviour
- Markov Processes with Discrete State Space: Poisson Process
- Poisson Process and related Distributions
- Generalizations of Poisson Process Champagne
- Pure Birth, and Birth and Death processes
- Markov Processes with Discrete State Space (Continuous time Markov chains)

كود أو رقم المقرر : 302 ل
اسم المقرر: لغة انجليزية
محتويات المقرر:

- The migration of birds (Reading)
- Coral reefs (Reading)
- Smuggling of Nuclear materials (Reading)
- 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)
- Cause and Effect Research Paper (Writing)

- Laguerre polynomials
- Chebyshev polynomials
- Gegenbauer and Jacobi polynomials
- Hypergeometric functions
- Other special functions

الجزء الثاني: تحليل دالي

- Metric spaces.
- Complete metric spaces

- Contraction mapping. The fixed point theorem.
- Completion of metric spaces
- Normed spaces, Banach spaces.

- Linear operator. Inverse operator

- Bounded and continuous linear operator
- Linear functional
- Normed spaces of operators. Dual space

- Hahn-Banach Theorem.

كود أو رقم المقرر : 420 ر
اسم المقرر: توبولوجي
محتويات المقرر:

- Topology of the line and plane
- Topological spaces
- Bases and sub bases
- Continuity and topological equivalence
- Topological properties
- Countability
- Separation axioms

كود أو رقم المقرر : 421ر
اسم المقرر: احتمالات و احصاء
محتويات المقرر:
الجزء الأول: احتمالات و احصاء

- Introduction in statistical inference: sampling distribution for statistical population and means sample.
- Central limits theorem for sample proportion
- Sampling distribution of two independent statistical populations, the difference between two means and difference between two proportions

- Estimation statistical point estimation by the method of moments and maximum likelihood.
- Confidence intervals for mean, variance proportion, difference between means, difference between proportion, ratios of two variances
- Tests of statistical hypotheses, test concerning mean, difference between means, and standard mean population, two standard mean population.
- Test concerning proportions, concerning variances and ratios two variances
- Test x^2 chi- square, chi-square of fit test, independent, homogeneous.
- Non-parametric test: sign test of one sample, pair of sample, sign ranks test, rank sums test, test of Kruskal-Wallis
- Analysis of variance: one and two vectors

الجزء الثاني: حزم احصائية

- Introduction about statistical package
- Data handing
- Dealing with New Variables
- Compute the estimator Statistic value
- Correlations analysis
- Regression analysis
- Multivariate Statistics(confidence intervals)
- Multivariate Statistics(hypotheses)
- Non-parametric Testing
- Solve open problems**.**

كود أو رقم المقرر : 422ر
اسم المقرر: برمجه - تحليل نظم وقواعد البيانات
محتويات المقرر:
الجزء الأول: برمجه

- Introduction to artificial intelligent
- intelligence agents
- Solving problems by searching
- Introduction to statistical learning theory
- Fuzzy logic

الجزء الثاني: تحليل نظم وقواعد البيانات

- Overview of Database Management System
- Entity and Relationship Model
- Relational Model
- The roles of Database Design
- Introduction of system analysis
- System characteristics and classifications
- System Development Life Cycle
- Project Planning and System Analysis Tools

كود أو رقم المقرر : 423 ر
اسم المقرر: تحليل عددي
محتويات المقرر:

- Numerical solutions of ordinary differential equations
- Euler's method
- Heun's Method
- Taylor series methods
- Runge kutta methods
- Predictor-corrector methods
- Numerical solution of systems of ordinary differential equations
- Numerical solutions of Boundary value problems
- Linear shooting method
- Finite difference method
- Numerical solutions of partial differential equations
- Hyperbolic equations
- parabolic equations
- Elliptic equations

كود أو رقم المقرر : 424 ر
اسم المقرر: نظرية القياس- بحوث العمليات
محتويات المقرر:
الجزء الأول: نظرية القياس

- Measurable sets
    - Properties of measurable sets
    - Measurable functions
    - Lebesgue integral
    - Further property of Lebesgue integral
- Measurable sets
    - Properties of measurable sets

الجزء الثانى: بحوث العمليات

- Non-linear programming: Single variable Optimization
- Non-linear programming: Multivariable Optimization without constrains (Local and global maxima, Gradient vector and Hessian matrix and The method of steepest ascent)
- Non-linear programming: Multivariable Optimization with constrains: (Standard forms, Lagrange multipliers and Kuhn-Tucker conditions)
- Network analysis(Networks, Shortest-route problems and Maximal-flow problems)
- Quadratic programming, Geometric programming

كود أو رقم المقرر : 425 ر
اسم المقرر: نظريه الحاسبات
محتويات المقرر:

- Mathematical Preliminaries
- Automata (DFAs and NFAs)
- Regular Languages and Grammars
- Properties of Regular Languages
- Context-Free Languages
- Simplification of Context-Free Grammars and Normal Forms

- Properties of Context-Free Languages, Computability and Computational Complexity

كود أو رقم المقرر : 426ر
اسم المقرر: تألفيات- مبادئ تصميم المؤلفات
محتويات المقرر:

الجزء الأول: تألفيات

- Counting and binomial coefficients
- Sequences (special numbers)
- Generating functions
- Recurrence relations
- The inclusion-exclusion principle
- Pigeonhole principle with ramsey numbers

الجزء الثاني: مبادئ تصميم المؤلفات

- Introduction
- Lexical analysis
- Syntax analysis
- Syntax-directed translation
- Intermediate code generation
- Review

كود أو رقم المقرر : 427 ر
اسم المقرر: نظريه آليات- لغات تصوريه
محتويات المقرر:

الجزء الأول: نظريه آليات

- [Introduction](#)
- NN
- Clustering
- [Feature](#) selection

الجزء الثاني: لغات تصوريه

- [Introduction](#)
- Image filters
- Image segmentation
- Stero vision
- Tracking & motion estimation

كود أو رقم المقرر : 428 ر
اسم المقرر: قواعد بيانات
محتويات مقرر:

- Query optimizer
- Security and recovery
- Physical database
- OODBMS
- Distributed and parallel DBMS

- Data Mining and DBMS
- Recent challenges in DBMS

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كود أو رقم المقرر : بدون
اسم المقرر: بحث و مقال
محتويات المقرر:

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- Introduction to an essay or research
- Choosing the subject of the essay or research
- Main topics of the essay or research
- Collecting materials
- Revisions of the collected materials
- Collection of references in the essay
- Writing the essay
- Revisions of the written materials
- Editing of the materials and an overall revision for presentation

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كود أو رقم المقرر : 402 ل
اسم المقرر: لغة انجليزية
محتويات المقرر:

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

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كود أو رقم المقرر :
اسم المقرر: التدريب الصيفي
محتويات المقرر:

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- Mathematics package
- One of the Programming Language
- Web design
- Application software