Al-Furat Al-Awsat Technical University

Sl. No.	Code	Course Type	Course Title	L*	P*	T*	C*
1	AVTE 111	Core	Electrical Circuits Analysis (AC&DC)	3	2	5	8
2	AVTE 112	Core	Engineering Physics & Electronic	3	2	5	8
3	AVTE 131	Core	Mechanics (Statics & Dynamic)	2	0	2	6
4	CREQ 141	Secondary	Eng. Drawing & Descriptive Geometry	0	3	3	3
5	CREQ 142	Secondary	Programming I	1	2	3	4
6	CREQ 143	Secondary	Workshop	0	6	6	6
7	MATH 151	Secondary	Mathematics-I	3	0	3	6
8	UREQ 161	General	Human Right & Democracy	2	0	2	4
9	UREQ 162	General	Environment	1	0	1	-
10	UREQ 163	General	English	1	0	1	-
Total				16	15	31	45

The percentage of core hours = 40%	The percentage of theory hours = 52%
The percentage of Secondary hours = 48%	The percentage of practical hours = 48%
The percentage of general hours = 12%	

***L is (theoretical hours), P is (practical hours), T is (total hours), C is (credit)**

Subject Number: AVTE 111
Subject : Electrical Circuits Analysis (AC&DC)
L T P C
3 0 2 8

Objective of the course:
To provide an introduction to the fundamentals of circuits analysis with emphasis on fundamental quantities and components of electricity, basic electricity laws and network theorems.

Theoretical syllabus

Week	Contents
1-2	**Introduction to D.C circuits** Elect. Quantities - Charge - Elect. Force - Conductors and insulators - Current - Elect. potential and voltage - Energy and power- Efficiency
3- 4	**Fundamentals of electrical circuits** Resistance & resistively - conductance & conductivity - Effect of temp. on resistance - Sources (voltage & current sources) - Ohms low - Circuits.
5-7	**Principles of electrical circuits** - Series circuits - Voltage divider rule - Voltage rule in the series - Parallel circuits - Current divider rule - Current source in parallel - Source transformation - Short & open circuit analysis of series-parallel networks - Kirchhoffs lows -
8 -10	**Method of analysis and network theorems** Branch current method - Mesh analysis - Nodal analysis - Star-delta and delta-star conversion - Superposition theory - Thevenins theorem - Maximum transfer theorem
11-12	**Capacitor and inductors** - Electric field - Capacitance - Capacitors in series and parallel - Faradays low - Lenzs low - Self inductance - Inductors in sires and parallel - Self inductance - Inductors in sires and parallel
13 - 14	**Magnetic circuits** - Magnetic field - Flux density - Permeability - Reluctance flux magneto motive force - Series magnetic circuits - Series-parallel magnetic circuits
15 - 17	**A.C. fundamentals** - Generation of alternating voltage and current - Equations of the alternation voltage and current - Average value - Effective(RMS) value - Series A.C. circuits - Parallel A.C. circuits - Series parallel A.C. circuits
18 - 19	**A.C. power** - Instantaneous - Average power - Complex power - Real power and reactive power - Apparent power - Power factor - Power factor correction
20 - 21	**Resonance** Series resonance - Quality factor - Selectivity - Bandwidth - Parallel resonance.
22 - 25	**3-Phase system** -3-phase generation - phase sequence - Inter connection of 3-phase - Star and delta connections - The Y-Y, Y-delta, delta-delta system - Power in 3-phase system
26 - 28	**Two-port network** Introduction - Terminal equations - Two-port parameters(z, y, h and ABCD), Equivalent circuits, Interconnected two-port.
29 - 30	**Electric transients (classical method)** The natural and forced response of series and parallel circuits - Circuits with zero and non zero initial conditions.

Practical syllabus

1	Studying the working manner in the lab, the devices using and report writing.
2	Understanding the using of AC and DC voltage measurements device, AD and DC

	current measurements devices, resistance measurements devices.
3	Ohms' Law
4	Parallel and series resistance connections
5	Star and delta connections
6	Kirchhoff laws
7	Thevenins and Norton theories
8	Superposition theory
9	Substituting theorem
10	Maximum power transfer theory
11	Oscilloscope devices, comparison between maximum, effective, and average values. Calculation the peak and r.m.s. values
12	Series RL circuit and series RC circuit
13	Parallel RL circuit and parallel RC circuit
14	Measurement of polar angle for series and parallel RLC circuits.
15	Series and parallel resonance
16	Transfer maximum power in the AC circuit
17	Power and power factor measurements using Wattmeter.
18	Enhancement of power factor
19	Voltage and current in the three phase circuits connected in star and delta
20	Time constant of RL and RC circuits

Recommended Books:

Text Books:

- Engineering Circuit Analysis by Willian Hayt & Kemmerly.

Reference Books:

- Engineering Circuit Analysis by James W. Nilsson.
- Introduction to Electric Circuits by Richard C. Dorf.

Subject Number: AVTE 112
Subject : Engineering Physics & Electronic
L T P C
3 0 2 8

Objectives of Course:
To review the fundamental concepts of physics to form basis for engineering subjects taught subsequently. In additive, the concepts of electronic are reviewed as an application of physics in electrical engineering.

Theoretical syllabus

Week	Contents
1	**Introduction to Physics** Units - Dimensional analysis - Experimental error
2 - 3	**Motion** Newton's laws of motion and their applications - Circular motion and gravitation - Work and energy - Impulse and Momentum - Rotational motion - Equilibrium of rigid body - Periodic motion.
4 - 5	**Properties of Matter** Elasticity – Types of module of elasticity – Stress-Strain diagram – Young‘s modulus of elasticity – Rigidity modulus – Bulk modulus – Factors affecting elasticity – Twisting couple on a wire – Tensional pendulum – Determination of rigidity modulus of a wire – depression of a cantilever – Young‘s modulus by cantilever – Uniform and non-uniform bending - Viscosity – Ostwald‘s viscometer – Comparison of viscosities.
6 - 7	**Acoustics and Ultrasonics** Classification of sound – Characteristics of musical sound – Intensity - loudness – Weber Fechner law – Decibel – Reverberation – Reverberation time - Derivation of Sabine‘s formula for reverberation time(Jaeger‘s method) – Absorption coefficient and its determination – Factors affecting acoustics of building (Optimum reverberation time, loudness, focusing, echo, echelon effect, resonance and noise) and their remedies. Ultrasonics - Production – Magnetostriction and Piezoelectric methods – Properties – Applications of ultrasonics with particular reference to detection of flaws in metal (Non – Destructive testing NDT) – SONAR.
8 - 10	**Crystal Physics, Non- Destructive Testing, Modern Engineering Materials and Superconducting Materials** Crystal Physics: Lattice – Unit cell - Bravais lattice – Lattice planes – Miller indices – d‘ spacing in cubic lattice – Calculation of number of atoms per unit cell – Atomic radius – coordination number – Packing factor for SC, BCC, FCC and HCP structures. Non Destructive Testing: Liquid penetrate method – Ultrasonic flaw detection – ultrasonic flaw detector (block diagram) – X-ray Radiography – Merits and Demerits of each method. Modern Engineering Materials: Metallic glasses: Preparation properties and applications. Shape memory alloys (SMA): Characteristics, applications, advantages and disadvantages of SMA. Nano Materials: Synthesis –Properties and applications. Superconducting Materials: Superconducting phenomena – Properties of superconductors – Meissner effect – Type I and Type II superconductors – High Tc superconductors (qualitative) – uses of superconductors.
11-16	**Semiconductors** Atoms, Molecules and Solids - Combination of atoms - Bonding force in solids - Si and Ge crystals and other semi conductor materials - Energy bands in solids - Direct and indirect semiconductors - Effective mass of electron and hole. Intrinsic and extrinsic semiconductors - Energy band diagrams - Fermi Dirac statistics - Dopant diffusion techniques - Critical temperature of extrinsic semiconductors - Drift of carriers - conductivity and mobility of electrons and holes - Diffusion of carriers - Diffusion and draft of carriers - P-N junction - Space charge at a junction - Avalanche Breakdown - P-N junction capacitance - Zener breakdown.

17-20	**Diodes** Semiconductor diodes - Special purpose diodes - Diode applications.
21-25	**Basic Transistors** Bipolar junction transistor - Transistor operation - Types of transistor -Biased transistor - Transistor biasing configurations - Common emitter - Common base - Common collector -
26-28	**Other Transistors** Field effect transistor - FET biasing techniques - common drain - common source and gate - fixed bias and self bias configurations.
29-30	MOSFET - IGFET-DMOSFET - MOSFET applications
Practical syllabus	
1	Measuring the rotation of plane of polarization of light through sugar solution
2	Studying the photo electric current as a function of intensity of light
3	Determination of the ratio of electron's charge and mass(e/m) by magnetron experiment
4	Learning how to use the electronic devices
5	The properties of diodes in forward and reveres bias
6	Half wave rectifiers
7	Full wave rectifier by bridge
8	Full wave rectifier by transform
9	Clipper circuit (positive, negative, complex)
10	Doublers DC voltage circuit (triple and quarter)
11	Zinger diode properties in forward and reverse bias
12	Using zinger diode of voltage divider with constant resistance load and changed resistance load
13	Common base transistor properties
14	Common emitter transistor properties
15	Common base amplifier (finding voltage gain and current gain)
16	Common emitter amplifier (finding voltage gain and current gain) and drawing the frequency response curve.
17	H-parameters measurements for common emitter
18	H-parameters measurements for common base
19	Using transistors in orgnizeing voltage circuits
20	Field Effect Transistor (FET) properties
21	Common source amplifier
22	Common drain amplifier
23	Light Emitting diode
24	MOSFET

Recommended Books:

Text books:

- Microelectronic Circuits by Adel S. Sedra & Kenneth C. Smith.
- University Physics by Sears & Zemansky (4th Edition).

Reference:

- Physics by Robert Renick & David Halliday.
- Circuit Analysis by John R. O'Malley.
- Electronics Circuits Discrete & Integrated by Schilling and Belove.

Subject Number: AVTE 131
Subject : Mechanics (Statics & Dynamic)
L T P C
2 1 0 4

Objectives of Course:
To understand general principles of bodies at rest and at equilibrium under the action of forces. Then, developing the ability to visualize physical configurations in terms of real materials, actual constraints and practical limitations which govern the behavior of machines and structures.

Theoretical syllabus

Week	Contents
1	**Introduction to Statics**
2 - 5	**Vectors- Forces - Force in 3D - Moments - Couples - Resultant**
6-9	**Equilibrium - Planes Trusses - Joint Method - Section Method - Trusses in 3D**
10-11	**Frames and Machines - Friction - Wedges and Screws - Belts**
12	**Application of friction on bearings**
13-15	**Centered of line , area and volume - Moment of inertia - Theory of parallel axes - Problems**
16	**Rectilinear motion**
17	**Curvilinear motion** -x-y coordinates -Normal – Tangential coordinates -Polar – coordinates
18	**Relative motion** -Motion relative to a frame in translation
19	**Kinetics of particles** -Newton's 2nd law - Rectilinear motion - Curvilinear motion
20	**Work and energy of particles** -Work of a force
21	**Impulse and momentum of particles** -Impulsive motion -Angular momentum of a particle
22	**Conservation of liner momentum** -Liner impact
23	**Conservation of momentum** -Conservation of angular momentum -Impact - Impulse and momentum of particles
24	**Angular momentum** -Rate of changed of angular momentum -Conservation of angular momentum
25	**Kinematics of rigid bodies** -Translation of rigid bodies -Rotation of rigid bodies
26	**Absolute motion** -General motion -Absolute and relative velocity in plane motion -Instantaneous center of rotation -Absolute and relative acceleration
27	**Moment of inertia** -Mass moment of inertia
28	**Force/mass/acceleration** -Force/mass/acceleration for rigid bodies
29	**Work and energy** -Work for rigid bodies -Energy for rigid bodies
30	**Impulse and momentum** -Impulse for rigid bodies -Momentum for rigid bodies

Recommended Books:

Text Books:

- Engineering Mechanics by J L Meriam and L.G. Kraige.
- Engineering Mechanics (Dynamics) by J.L. Meriam & G Kraige.

Reference Books:

- Engineering Mechanics by Irving H. Shames.
- Engineering Mechanics (dynamics) by R. C. Hibbeler
- Engineering Mechanics by Higdon and Stiles.

Subject Number: CREQ 141
Subject : Eng. Drawing &Descriptive Geometry
L T P C
0 0 3 3

Specific Objectives of course:
To introduce basic concepts of engineering drawing with emphasis on orthographic drawings, drafting principles and practices.

Week	Contents
1	**Introduction to engineering drawing and eng. drawing equipment** - Introduction to engineering drawing and its importance to the engineer - History of eng. drawing - The standard drawing equipment
2	**Lettering** - The lettering and circles kind - The paper type and design with title table - Draw eng. Lines type and circles
3 - 5	**Applied geometry** - Applied geometry in eng. Drawing - Draw important eng. geometry - Exercise in engineering geometry - Exercise in engineering geometry
6 - 8	**Pictorial drawing (Real model in true dimension)** - Draw cube shape with ovals by used four center method. - Non standard letters - Exercise in pictorial drawing - Exercise in pictorial drawing
9	**Orthographic projection** - Projection theory with definition standard planes (Horizontal and Vertical) - Exercise in projection
10	**First angle projection** - Three projection definition (front, top and side view) - Draw in first angle - Exercise in projection
11 - 12	**Dimensions** - Main rules in dimensions position and details in drawing - Exercise in applied dimension on projection view - Rules in dimension position for arcs and circles - Exercise in applied dimension on projection view
13 - 14	**Orthographic** - Exercise in projection - Exercise in projection
15 - 19	**Sections** - Sections definition - Find sections and section planes and half section projection - Exercise in sections - Exercise in sections - Exercise in sections - Exercise in sections - Exercise in sections
20 - 24	**Third view estimate** - Important steps to estimate third unknown projection depending on the known two projection - Estimate real model - Exercise in estimate third unknown projection - Exercise in estimate third unknown projection - Exercise in estimate third unknown projection - Exercise in estimate third unknown projection - Exercise in estimate third unknown projection
CAD I -	
Week	**Contents**
1	**Introduction to CAD packages** - Menus - Tool bars
2	**Drawing area** - Command window / Command line - Status bar

3 - 6	**Coordinate system (absolute and relative Coordinate)** - Cartesian - Cylindrical - Spherical - Setting up drawing limits
7 - 8	**Two dimensional drawing** - Drawing bar (line, circle, rectangle, …etc) - Modify bar (erase, copy, mirror,…etc
9 - 12	**Drawing aids** - Grid - Snap mode - Object snap - Object snap tracking - Orthogonal mode - Polar tracking
Descriptive Geometry	
Week	**Contents**
1 - 2	**Descriptive geometry** - Descriptive geometry and methods of projection - Descriptive geometry and methods of projection
3 - 6	**Projection of point** - Projection of point - Exercise in projection of point - Exercise in projection of point - Projection of straight line - Exercise in projection of straight line - Exercise in projection of straight line
7 - 8	**Auxiliary planes** - Auxiliary planes - Exercise in auxiliary planes - Exercise in auxiliary planes
9 - 10	**Applications** - Exercise in projection of straight line by rotation method - Exercise in projection of straight line by rotation method
11 - 12	**Development of surface** - Introduction and describe development of surface - Exercise in projection triangular shape - Exercise in projection triangular shape

Recommended Books:

- Fundamentals of Engineering Drawing by French & Vierck.
- Getting started with Sold Edge. Version 12, by Unigraphics Solution Inc.
- Fundamentals of drafting with AutoCAD LT by Paul Wallach, Dean Chowenhill & James Cullen.

Subject Number: CREQ 142
Subject : Programming I
L T P C
1 0 2 4

Objective of Course:
Introduction and familiarization with the working and understanding of computer and its use/applications in various engineering subjects in particular and society in general.

Theoretical syllabus

Week	Contents
1-6	**Computer Fundamentals** Introduction – Evolution of Computers – Generations of Computer – Classification of Computers – Application of Computers - Components of a Computer System – Hardware - Software - Starting a Computer (Booting) – Number Systems.
7-13	**Computer Programming and Languages** Introduction - Problem-Solving Techniques: Algorithms, Flowchart, Pseudocode - Program Control Structures – Programming Paradigms – Programming languages – Generations of Programming Languages – Language Translators – Features of a Good Programming Languages
14-16	**Programming With C** Introduction to C - Arrays Definition - Declaration and initialization of one dimensional array - Accessing array elements - Displaying array elements - Sorting arrays - Arrays and function - Two-Dimensional array - Declaration and Initialization - Accessing and Displaying - Memory representation of array [Row Major, Column Major] - Multidimensional array.
17-18	**Pointers** Definition and declaration - Initialization - Indirection operator - Address of operator - Pointer arithmetic - Dynamic memory allocation - Arrays and pointers - Function and pointers
19-21	**Strings** Definition - declaration and initialization of strings - standard library function: strlen(), strcpy(), strcat(), strcmp() - Implementation without using standard library functions.
22-24	**Structures** Definition and declaration - Variables initialization - Accessing fields and structure operations - Nested structures Union: Definition and declaration - Differentiate between Union and structure.
25-27	**Introduction C Preprocessor** Definition of Preprocessor - Macro substitution directives - File inclusion directives - Conditional compilation **Bitwise Operators** Bitwise operators - Shift operators - Masks - Bit field
28-30	**File handling** Definition of Files - Opening modes of files - Standard function: fopen(), fclose(), feof(), fseek(), fewind() - Using text files: fgetc(), fputc(), fscanf()

Practical syllabus

1-5	Internal command (Dir - Del - Time - Date - Cls - RD- CD - MD - Echo - Prompt - Ren - Copy - Vol - Ver - Path) External Command (Edit - tree - xcopy - format - chkdsk - Diskopy).
5-10	Windows
11-13	standard library function: strlen(), strcpy(), strcat(), strcmp() - Implementation without using standard library functions.
14-15	Variables initialization - Accessing fields and structure operations - Nested structures -
16-17	Union: Definition and declaration - Differentiate between Union and structure.
18-19	Macro substitution directives - File inclusion directives - Conditional compilation

20-21	Bitwise operators - Shift operators - Masks - Bit field
22-24	Opening modes of files - Standard function: fopen(), fclose(), feof(), fseek(), fewind()
25-26	Using text files: fgetc(), fputc(), fscanf()

Recommended Books:

Text Book:

- Computer Programming, by ITL Education Solution Limited, Ashok Kamthane, Pearson Education Inc 2007 (Unit: I to V).

References:

- Programming with C, by Byron S. Gottfried, Second Edition, Tata McGraw Hill 2006.
- Programming in C - A Complete introduction to the C programming language, by Stephen G.Kochan, Pearson Education, 2008.
- Computer Programming Theory and Practice, by T.JeyaPoovan, Vikas Pub, New Delhi.

Subject Number: CREQ 143
Subject : Workshop
L T P C
0 0 6 6

Objectives of Course:
To introduce students different workshops types (electronics and mechanics) workshops, tools used in each workshop, and manufacturing techniques of different workshops.

Mechanics (6 hours)	
Week	**Contents**
1-4	**Occupational Safety**
5-9	**Foundry Workshop**
10-14	**Files type Workshop**
15-19	**Carpentry Workshop**
20-25	**Turnery workshop**
26-30	**Welding types Workshop**
Electronics (6 hours)	
Week	**Contents**
1	Learn how to use different measuring devices in the workshop
2	Learn how to use caustic, types of caustic, welding by using caustic
3	Types of welding, Auxiliary materials for welding, wires welding between them and with other components.
4	Sucker solder and Solder removal, Training to remove some of the electronic components of the printed board
5-6	Learn different types of printing board through printing method, drilling operation, Install the various components.
7-9	Different types of electronics components through manufacturing for example the resistance and its power, measure the value of resistance in different methods, rheostat
10-12	Parallel resistance circuit - series resistance circuit - parallel and series resistance circuits - and check it.
13	Types of capacitance
14-15	Parallel capacitance circuit - series capacitance circuit - parallel and series capacitance circuit - check it on the board.
16	Switch types
17	Fuses types
18	Inductor types
19	Transformer types
20-22	Semi conductor (diode -transistor, ….) through manufacturing, material used in its manufactured, its numbering methods, its equivalent circuits, checking, determination the faults
23-26	Electrical installation
27	Integrated circuit
28	Caustic used in integrated circuit welding
29	Learn how to read electronic board
30	Students learn to design electronic board on the printed board, install the component on the board, and welding the components on the board.

Subject Number: MATH 151
Subject : Mathematics - I
L T P C
3 0 0 6

Objectives of The Course:
To provide comprehensive foundation of applied algebra and calculus with emphasis on vectors, complex numbers, matrices, limits, differentiation, integration, and coordinate systems.

Week	Details
1	**General Concepts, Slope** - Cartesian Coordinates - Slope of a line - Equations and distances
2	**Graphing of functions, Limits** - Graphs of equations - Limits and intervals
3	**Continuity** - Domain and Range - Continuity test
4-7	**MATRICES** Review: Basic concepts of matrices-addition, subtraction, multiplication of matrices – adjoint –inverse – solving cubic equations. Characteristic equation – Properties of Eigen values – Eigen values and Eigen vectors – Cayley Hamilton theorem (without proof) – Verification and inverse using Cayley Hamilton theorem. Diagonalisation of matrices – Orthogonal matrices– Quadratic form – Reduction of symmetric matrices to a Canonical form using orthogonal transformation – Nature of quadratic form.
7-8	**Complex Numbers** - Introduction to complex numbers - Argrand diagrams and product quotients
9	**Demaiver's Theorem** - Powers and roots
10-11	**Trigonometric and inverse trigonometric functions** - Trigonometric functions- Properties- Rules- Graphing- Applications- Rules- Properties
12	**Logarithmic and exponential functions** - Logarithmic and exponential functions - Properties - Rules
13-14	**Hyperbolic and inverse hyperbolic functions** - Graphing- Properties- Rules- Properties- Rules- Graphing
15-19	**Derivatives of functions (logarithmic, exponential, trigonometric, hyperbolic functions) and its applications:** - Rules of derivatives- Chain rule- Implicit derivatives- Rules of derivatives of logarithmic and exponential functions- Derivatives of trigonometric and inverse trigonometric functions- Derivatives of hyperbolic and Inverse hyperbolic functions- L'Hapital rule- Velocity and acceleration- Max. and Min. - Point of inflection
20-22	**Indefinite Integrals** - Integration formulas- Integration of logarithmic and exponential functions- Trigonometric and inverse trigonometric functions
23	**Methods of Integration** - Integration by parts- Integration for odd and even powers of sine and cosine
24	**Integration of Trigonometric** Substitutions - Trigonometric Substitutions - Integral involving a x2 + b x + c
25	**Integration of Partial fractions and Rational functions** - Partial fractions - Rational functions of sinx and cosx and other trigonometric functions
26	**Applications of Integration** - Definite integral and area

27	**General Substitutions** - Length of the curve and surface area
28	**Triple Integrals (volume)** - Triple Integrals (volume)
29	**Double Integrals** - Area between two curves
30	**General Substitutions and quiz** - Quiz, answers and solutions

Recommended Books:

Text Books:

- Calculus and Analytic Geometry by Thomas.
- Advanced Engineering Mathematics by Kreyszig.

Reference Books:

- Analytic Geometry and calculus with Vectors by Agnew.
- Practical Mathematics Vol-I & II by Toft & Mckay.
- Advanced Calculus for Application by Hildebrand.
- Vector Calculus by Bedford F W & Dwivedi.

Subject Number: UREQ 161
Subject : Human Right & Democracy
L T P C
2 0 0 4

Objective of course:
To study the laws and principle of the human right & democracy from the perspective of Islamic religion and other religions.

Week	Contents
1	**Freedom & Democracy** - An introduction to freedom and democracy in multiple societies and on different ages, its types and how changes in regime occurred
2	**Relativity in freedom** - Freedom is not an absolute idea but it is variable with respect to time, place regime…etc.
3	**General Freedom guaranties** - Freedom has political and legal guaranties.
4	**General freedom divisions** - Natural freedoms, private freedoms, intellectual freedoms, collective freedoms and political freedoms
5	**Individual Freedoms** - Opinion freedom, expression freedom, press freedom…etc.
6	**Democracy & political systems** - Overview about democracy and its history
7	**Democracy types** - Direct and indirect
8	**Dictatorship and its specification** - Overview and specification
9	**Concepts about democracy** - Traditional meaning and modern meaning.
10	**Democracy in Greek Civilization VS. Current democracy**
11	**Current crisis of democracy** - Economical, social, cultural and political difficulties
12	**Civil & political rights** - Which includes life right, personal freedom, possessing, contracting family…etc.
13	**Individual importance and its relation with nation and regime**
14	**Importance and specifications of sovereignty**
15	**Main portions of a country** - People, land, government and sovereignty
16	**Human rights in human history** - Human rights in ancient ages like Mesopotamian, Greek, and Roman civilizations
17	**Human rights in divine religions** - In Christian and Islamic
18	**Human rights** - Overview, properties and types
19	**International confession of human rights**
20	**Territorial confession of human rights** - international and legal resources from international agreements
21	**NGO and its role in the protection of human rights**
22	**Women rights** - In Islamic time

23	**Children Rights** - In old civilizations - In divine religions - In international agreement on 1989
24	**Elections and human rights** - Human rights is a concept of free elections
25	**Human rights resources in Iraq** - Basics of human rights in Iraq from the Iraqi constitution, year 2005
26	**Legal resources for human rights** - All national legal and foreign legal
27	**Human rights resources** - In United Kingdom, France and USA
28	**Civil Rights** - Equality, life freedom rights and house and personal privacy
29	**Political & economical rights** - Election rights government critique
30	**Social & cultural rights** - This includes the right of family creation, social and health care, and the right of clean environment

Subject Number: UREQ 162
Subject : Environment
L T P C
1 0 0 0

Objective of course:

Week	Contents
1	تعريف البيئة وعناصرها وعلم البيئة والتنبؤ
2	المحيط والتنوع البايولوجي
3-4	المنظومة البيئية ومكوناتها البيئة وعلاقتها بالانسان
5-6	التلوث البيئي ومستوياته وانواعه تلوث الهواء وانواع ملوثاته
6-8	مصادر تلوث الهواء ومخاطره علاقة التلوث بالمتغيرات المناخية والاحتباس الحراري
9-10	اسباب تلوث المياه ومخاطره
11-12	اسباب ومخاطر تلوث التربة
13-14	التلوث الاشعاعي التلوث بالضوضاء واثاره
15	التلوث البصري والضوئي والداخلي
16-17	سبل معالجة التلوث البيئي والحد منه التخطيط البيئي والتنمية المستدامة
18	الطاقات الجديدة والمتجددة
19-20	الاتفاقيات والمعاهدات ودورها في الحفاظ على البيئة وحمايتها اتفاقية كيوتو ورامسار
21-23	بعض التشريعات البيئية العربية والدولية قانون حماية البيئة العراقي
24	مؤسسات الدولة والمواطن ومنظمات المجتمع المدني ودورها في الحفاظ على البيئة
25-27	دور الاديان في المحافظة على البيئة وحمايتها تعليمات وارشادات في المحافظة على البيئة وحمايتها
28-30	دروس وتصائح في حب البيئة والحفاظ عليها ومنع تلوثها

1- زينب منصور, المعجم البيئي, دار اسامة للنشر والتوزيع , الطبعة الاولى , الاردن, عمان , 2011

2- Cunningham W. P., Cunningham M. A., Saigo B. W., Environmental science A Global Concern, 9th Edition, McGraw-Hill, New York, 2007.

Subject Number: UREQ 163
Subject : English
L T P C
1 0 0 0

Objective of course:

Week	Contents
1-4	**Basics of Grammar** **Parts of speech and use of articles** **Sentence structure, active and passive voice** **Practice in unified sentence** **Analysis of phrase, clause and sentence structure** **Transitive and intransitive verbs** **Punctuation and spelling**
5	**Comprehension** Answers to questions on a given text
6-7	**Discussion** General topics and every-day conversation (topics for discussion to be at the discretion of the teacher keeping in view the level of students)
8-10	**Listening** To be improved by showing documentaries/films carefully selected by subject teachers
11-12	**Translation skills** Urdu to English
13-15	**Paragraph writing** Topics to be chosen at the discretion of the teacher
16-18	**Paragraph writing** Practice in writing a good, unified and coherent paragraph
19	**Essay writing** Introduction
20-21	**CV and job application**
22-24	**Translation skills** Urdu to English
25-26	**Study skills** Skimming and scanning, intensive and extensive, and speed reading, summary and précis writing and comprehension
27-28	**Academic skills** Letter/memo writing, minutes of meetings, use of library and internet
29-30	**Presentation skills** Personality development (emphasis on content, style and pronunciation

Recommended books:
Functional English

a) Grammar

1. Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 1. Third edition. Oxford University Press. 1997. ISBN 0194313492
2. Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 2. Third edition. Oxford University Press. 1997. ISBN 019431350661

b) Writing

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1. Reading. Upper Intermediate. Brain Tomlinson and Rod Ellis. Oxford Supplementary Skills. Third Impression 1992. ISBN 0 19 453402 2.

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