جامعة المشرق

كلية التكنولوجيا وتنمية المجتمع

قسم /دبلوم هندسة الإتصالات

مفردات الخطة الدراسية

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1 INTRODUCTION

Mashreq University (MU) is currently offering a B.Sc. degree with honors in TelecommunicationEngineering. The aim was to build the contents of the course in accordance to the new developments in the field and the requirements of the industry and the international job market. With the above scenario in mind, the present curriculum has been developed for students to obtain the essential knowledge and skills in the broader context of a synergic approach in the fields of Telecommunication Engineeringas well as present and future applications.

2 Communication Engineering Applications

- Wireless Communication Satellite Communication and Internet Telephony
- Teleconferencing Embedded System Wireless Sensor Networks and Optical Computing
- Electrocardiograph Display Technology Advanced Optical Networks and Brain Computer Interfaces
- GPRS Fiber Optics Robotics Radar and Speaker Recognition
- Microwave Communication Earthquake Monitoring Remote Sensing Direct To Home and Wireless Communication

The curriculum is thus addresses the following learning objectives:

- Contribute to society in a broad range of careers
- Flourish professionally in an increasingly international and rapidly changing world
- Effectively build, test, operate, and develop modern telecommunications systems.

- Develop skills for clear communication and responsible teamwork, and to inculcate professional attitudes and ethics, so that one is prepared for the complex modern work environment
- Acquire sufficient breadth and depth for successful subsequent gradate study, post-graduate study, or lifelong learning
- Develop and apply critical thinking skills, enhancing the ability to address unstructured problems specific to technical specialties in telecommunication engineering
- Acquire technical and managerial skills necessary to enter careers in the design, application, and/or maintenance of telecommunication system

3 TRAINING OBJECTIVES

3.1 General Objectives

1. The curriculum aims to provide the knowledge and the essential practical skillsand abilities in order to supply the industry with well-established and capable technicians in the field of Communication Engineering.
2. It has been designed in a way which promotes competency based understanding and knowledge in order to gain confidence for working in a technology-savvy world as they develop interest in scientific & technical aspects of this technology. They shall also recognize the efficacy of applied sciences with reference to their applicability in other disciplines
3. Developing aptitudes relevant to technology such as accuracy and precision, objectivity, integrity, enquiry, initiative and insight.
4. Promoting general awareness about study and practice of science/technology as co-operative, complementary and cumulative activities that are subject to social, economic, technological, ethical and cultural influences and limitations.

5. Promoting the presentation of information and ideas appropriate for different audiences and purposes. .
6. Encouraging learners to take and sustain interest in the course of study so that they are well-prepared for suitable employment and/or for further studies beyond current level.

3.2 Specific Objectives

This 3-year diploma level curriculum on "Communication Engineering" was developed to prepare skilled manpower for employment in the Communication industries. The course covers almost all the important aspects whichrelates to the production and operation of reliable and efficient automated systems. The curriculum is intended to serve as a base for class room and laboratory instructions as well as an essential reference for use by the institutions offering this course of studies. It is intended to serve the following two purposes:

1. To provide students with a sound understanding of the basic concepts, types, applications of Communication Engineering
2. To help students develop proficiency in handling Communication equipment and systems and making rational choices regarding situations they are likely to encounter in their professional practices.

4 Study Period:

The period of study of all programs in the department is five years, ten semesters. Each academic year consist of two semesters.

5 Teaching in the Department:

Undergraduate programmes offer flexibility, allowing interdisciplinary combinations. The syllabus is continually under development and review, in

line with the requirements of various professional bodies that accredit our courses, and the latest technological needs of industry.

The quality of the teaching is achieved by recruiting the most qualified teaching staff together with providing a suitable teaching environment built on an appropriate infra structure for the college.

5.1 Facilities:

Extensive teaching laboratories and networked computer suites are available to all undergraduate students in the Department.

All electronics, communication, and computer labs are available in the college, which consist of the most efficient equipment needed to satisfy the requirements of the study.

Students of the department have the opportunity to improve their skills and capabilities in their interested engineering fields through the scientific societies available in the department and the college.

A continuous seminars and presentations are held in the department regularly to achieve these goals.

6 Courses Codes:

$C_1C_2C_3C_4C_5C_6$

C_1C_2 : Field of study.
C_3 : Year of study.
C_4 : Semester (1 or 2).
C_5 : The serial number of the course in semester (1,0 2,03…).
C_6 : (L) laboratory.

7 Degree Components and Credit Hours

Component	Code	Credit Hours	Lecture	Tutorial	Practical
Mathematics	MA	09	06	06	
Physics	PH	03	2		03
Computer System	CS	06	04		06
Electronic Eng.	EE	21	12	04	21
Comm. Eng.	CE	24	16		24
Electrical Eng.	EL	15	10		15
Engineering Science	ES	08	06	02	03
Studies & Languages	HL	14	14		
Project	PR	03			
Training	TR	04			
Total		**107-4 = 103**	**70**	**12**	**72**

- **نسب مكونات البرنامج:**

النوع	المعيار	المستحق
علوم انسانية	%20 - %10	16%
رياضيات وعلوم بحته	%20 - %15	17%
علوم هندسة اساسية	%20 - %15	17%
علوم تطبيقية وتصميم	%60 - %50	50%
المجموع		**100%**

- **مجموع ساعات المحاضرات (إتصال)= 1050**
- **مجموع المتابعه والعملي (إتصال) = 1260**

نوع الساعات	المعيار	المستحق
عدد ساعات الاتصال	2400-2200	**2310**
الساعات المعتمدة	110-90	**103**
نسبة ساعات النظري لساعات الاتصال الكلية	لا تزيد عن 45%	**45%**
نسبة ساعات المتابعة والعمليلساعات الاتصال الكلية	ما لا يقل عن 55%	**55%**

8 Degree Structure

1st Year: First Semester:

Code	Subject	Credit Hours	Lecture	Tutorial or Practical	
				Tut.	Pract.
CS1101	Introduction To Computer Science مقدمة في علوم الحاسوب	3	2	-	3
MA1102	Mathematics I1رياضيات	3	2	2	-
PH1103	Physicsفيزياء	3	2	-	3
HL1104	Arabic Language I لغة عربية1	2	2	-	-
HL1105	English Language I لغة انجليزيزية 1	2	2	-	-
HL1106	Islamic Culture-I ثقافة اسلامية-1	2	2	-	-
HL1107	Sudanese Studies دراسات سودانية	2	2	-	-
EE1108	Principle Of Electronicsمبادئ الكترونيات	3	2	-	3
EL1109	Electrical Engineering Science II علوم هندسة كهربائية	3	2	-	3
EL1110	Work Shop Practice II ورش كهرباء	1	0	-	3
Total Hours		**24**	**16**	**2**	**18**

24 **Credit hours**

SecondSemester:

Code	Subject	Credit Hours	Lecture	Tutorial or Practical	
				Tut.	Pract.
MA1201	Mathematics II رياضياتII	3	2	2	-
HL1202	Arabic Language II لغة عربية II	2	2	-	-
HL1203	English Language II لغة انجليزية II	2	2	-	-
HL1204	Islamic Culture IIII ثقافة اسلامية	2	2	-	-
ES1205	Engineering Drawing رسم هندسي	4	2	2	3
EE1206	Electrical Engineering Science II علوم هندسة كهربائية II	3	2	-	3
EE1207	Analog Electronics I الكترونيات تماثلية I	3	1	2	3
EL1208	Work Shop Practice II ورش كهرباء II	1	0	-	3
Total Hours		**20**	**13**	**6**	**12**

20 **Credit hours**

44 **Credit hours**

Basic Training (**Practical Duration→ 6 weeks)**						
WS2209	Basic Training التدريب الاساسي		2	-	-	150

Second Year: 1st semester

Code	Subject		Credit Hours	Lecture	Tutorial Or Practical	
					Tut.	Pract.
MA2101	Probability And Statistics	احصاء واحتمالات	3	2	2	-
CS2102	Programming Language	لغة برمجة	3	2	-	3
EE2103	Digital Electronics I	الكترونيات رقمية I	3	2	-	3
ES2104	Material Technology	تكنولوجيا المواد	2	2	-	-
EE2105	Analog Electronics II	الكترونيات تماثلية II	3	1	2	3
Total Hours			14	9	4	09

14 **Credit hours**

Second Semester:

Code	Subject		Credit Hours	Lecture	Tutorial Or Practical	
					Tut.	Pract.
EE2201	Digital Electronics II	الكترونيات رقمية II	3	2	-	3
EE2202	Power Electronic	الكترونيات القدرة	3	2	-	3
EL2203	Control System	انظمة تحكم	3	2	-	3
EL2204	Electrical Machines	الات كهربائية	3	2	-	3
CE2205	Analog Communication	اتصالات تماثلية	3	2	-	3
EL2206	Measurement & Instrumentation	اجهزة وقياسات	3	2	-	3
Total Hours			18	12	-	18

18 **Credit hours**

32 **Credit hours**

Advance Training (**Practical Duration→4 weeks)**						
WS2207	Advance Training	تدريب متقدم	2	-	-	100

Third Year: 1st Semester

Code	Subject	Credit Hours	Lecture	Tutorial Or Practical	
				Tut.	Pract.
CE3101	Satellite & Mobile System الفضائيات والانظمة المحمولة	3	2	-	3
CE3102	Antennas &Wave Propagation الهوائيات وانتشار الموجات	3	2	-	3
CE3103	Selective Course كورس اختياري	3	2	-	3
CE3104	Digital Communication اتصالات رقمية	3	2	-	3
CE3105	Optical Fiber Communication الالياف الضوئية	3	2	-	3
EE3106	Microprocessor And Microcontroller Applications تطبيقات المعالج والمتحكم الدقيق	3	2	-	3
Total Hours		18	12	-	18

CE312: Selective Courses:

TV System انظمة التلفاذ

2nd Semester

18 **Credit hours**

Code	Subject	Credit Hours	Lecture	Tutorial Or Practical	
				Tut.	Pract.
CE3201	Data Communication اتصالات البيانات	3	2	-	3
CE3202	Radar & Microwave System انظمة المايكرويف والرادار	3	2	-	3
ES3203	Safety & Security الامن والسلامة	2	2	-	-
PR3204	Graduation Project مشروع التخرج	3	-	-	-
Total Hours		11	6	-	6

29 **Credit hours**

11 **Credit hours**

On Job Training (**Practical Duration→8 weeks)**					
WS3205	On Job Training تدريب خارجي	4	-	-	200

TotalCreditHours (All Sem.) =103

9 Courses Description

Mathematics (MA)

MA1102 Mathematics I:

Course Title	MA1102Mathematics I
Level /Semester	1/1
Credit Hours	3
Pre-requisite(s)	None.
Objective(s)	- Understand limits, and continuous functions - Plot the graphs of the elementary function. - Find Derivatives. - Integrate by part and substitution. - Apply improper integrals.
Course Contents	Functions: graphs of elementary functions, limits, continuous functions. Derivatives of algebraic, logarithmic, exponential inverse trigonometric. High order derivatives, mean value theorem. Taylor theorem. Indefinite integral, integration by part, and by substitution. Solid volumes, Arc length and coordinates. Unbounded functions. Geometric and physical application of improper integrals.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Advanced Engineering Mathematical, by alan Jeffrey, 1 edition (June 27, 2001) 2. Engineering Mathematical, by K.A. Stroud , 2007 3. Calculus, by Earl W. Swokowski, 6 edition

MA1202 Mathematics II:

Course Title	MA1202Mathematics II
Level /Semester	1/1
Credit Hours	3
Pre-requisite(s)	MA1102Mathematics I
Objective(s)	The objectives of this course as follow: - Study integration technique - Understanding partial derivative - Using vector caraculs
Course Contents	**Course Contents:** The length along a curve if it were straightened out. **Convergent Series**: A series for which partial sums become arbitrarily close to some fixed number. **Exponential Growth**: The increase in a quantity according to an exponential function. **Harmonic Series**: The sum of the reciprocals of the positive integers. The series diverges. A Taylor series expansion of a function around zero. **Power Series**: A sum of powers of a variable. A power series is essentially an infinite polynomial. **Radius of Convergence**: Half the width of the interval inside which a power series converges absolutely. **Surface of Revolution**: A surface generated by rotating a two-dimensional curve about an axis. **Taylor Series**: The power series of a function around a given point.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Advanced Engineering Mathematical, by alan Jeffrey, 1 edition (June 27, 2001) 2. Engineering Mathematical, by K.A. Stroud , 2007 3. Calculus, by Earl W. Swokowski, 6 edition

MA2101 Probability and statistics:

Course Title	**MA2101 Probability and Statistics**
Level /Semester	2/1
Credit Hours	3
Pre-requisite(s)	**MA1201 Mathematics II**
Objective(s)	To acquaint the student with the concept of probability & statistics and their applications.
Course Contents	Statistic concepts in modern society. Frequency distribution, the normal distribution, elements of statistical inference. Estimation and hypothesis testing. Contingency tables. Linear regression and correlation. Simple analysis of variance. Fundamentals of the basic theory of probability. Sample spaces, events, basic axioms and theorems of probability, finite sample spaces with equally likely probabilities. Random variables and their distribution functions. Principles of set theory and a set of axioms for probability are used to derive some probability density and/or distribution functions.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Walpole, Myers, Myers & Ye, Probability & Statistics for Engineers and Scientists; Pearson; 9th edition, 2011. 2. Engineering mathematical by K.A stword 2007

PH1103 Physics:

Course Title	**PH1103 Physics**
Level /Semester	1/1
Credit Hours	3
Pre-requisite(s)	**None.**
Objective(s)	• At the end of this course the student willBuild a good base for further topics in light, electricitytheorems and topics.
Course Contents	Reflection and refraction of light lens systems. Light and electromagnetic waves. Electric charge and current. Electric and magnetic fields. Capacitance, inductance and resistance. Maxwell's equations. Electromagnetic oscillation and wave.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. **"Physics for Scientists and Engineers",** 9th Edition , by Raymond A. Serway, 2013

Engineering Sciences(ES)

ES1205 Engineering Drawing:

Course Title	ES1205 Engineering Drawing
Level /Semester	1/2
Credit Hours	4
Pre-requisite(s)	None.
Objective(s)	1. To provide the student with the experience of geometrical construction and sketching. 2. To provide the student with the principles of orthographic projection, sectional views, auxiliary views, and writing dimensions
Course Contents	Introduction of descriptive geometry, lines, points, curves, and use of equipment. Principal orthographic views, isometric view and surfaces. Technical sketching with précised dimensions, real examples of enclosures, and machine components. Detail and assembly drawing. Lay out and manufacturing drawing. Pipes and electric print structural elements.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Thomas, E.E., Charls, J.V., and Robert J.F., Engineering Drawing and Graphic Technology, 14th edition, McGraw-Hill, 1993. 2. Colin H., Simmons and Dennis E. Maguire, Manual of Engineering Drawing, 2nd edition, 2004, Elsevier Newnes, Linacre House, Jordan Hill, Oxford OX2 8DP, 200 Wheel Road, Burlington MA 01803.

ES2104 Material Technology:

Course Title	**ES2104 Material Technology**
Level /Semester	2/1
Credit Hours	2
Pre-requisite(s)	**None**
Objective(s)	The aims of the course is to give fundamental knowledge about type of materials, their usage, properties and characteristics, which are important in engineering design. It is also aimed to give a theoretical background about the analysis of behavior of engineering materials by emphasizing important relationships between internal structure and properties.
Course Contents	Structural Principles of Condensed Phases. Atomic Structure and Interatomic Bonding. The Structure of Crystalline. Imperfections in Solids. Diffusion. Mechanical Properties of Metals. Phase DiagramsDislocations and Strengthening Mechanisms. Failure. Metal AlloysPhase Transformations in Metals: Development of Microstructure and Alteration ofMechanical Properties. Thermal Processing of Metal AlloysStructures and Properties of Ceramics. Applications and Processing of Ceramics. Polymer Structures. Characteristics, Applications, and Processing of Polymers. Electrical Properties. Corrosion and Degradation of Materials. Composites. Thermal Properties. Magnetic Properties. Optical Properties.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Material for Engineering, by dohn martin , 2003 2. William D. Callister, Jr. Materials Science and Engineering: An Introduction, 5th , John Wiley and Sons, 2000. 3. Larry D. Horath, Fundamentals of Material Science, 3rd Ed., Prentice Hall, 2006

ES3203 Safety and Security:

Course Title	ES3203 Safety and Security
Level /Semester	3/2
Credit Hours	2
Pre-requisite(s)	**None.**
Objective(s)	The aims of the course are to cover the safety of installation of electrical/electronic accessories and conforming to standards & regulations for safety of the installation.
Course Contents	Electrical and Electronics Installations: This module covers the installation of electrical/electronic accessories, fixtures and fittings using specified tools, equipment and material, according to electrical layout plans, conforming with standards & regulations for safety of the installation, while ensuring safety of self, others and property. Security and communication systems Installation: This module covers the competencies required to install and test industrial security and communication systems, using specified tools, test instruments and material, conforming to manufacturer's specifications, standards and regulation, while ensuring safety of self, others and property. Faults in electrical/electronic installations: This unit covers the competencies required to inspect and test industrial electrical/electronic installations after completion of the installations. Locate faults systematically according to regulations/ standards, using specified test instruments & repair. Carryout periodic test and maintain reports for safe and optimum performance of the electrical installation, while ensuring safety of self, others and property. Estimation for Installations: This module covers the competencies required to prepare estimates for industrial wiring and communication & safety equipment wiring in accordance with the layout plan/wiring diagrams etc., ensuring cost effectiveness, conforming to standards and regulations.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	- The Handbook for School Safety and Security: Best Practices and Procedures 1st Edition by byLawrence Fennelly , Marianna Perry, 2014

Computer System (CS)

CS1101 Introduction to Computer Science:

Course Title	CS1101 Introduction to Computer Science
Level /Semester	1/1
Credit Hours	3
Pre-requisite(s)	**None.**
Objective(s)	To provide the students with skills and knowledge necessary for using computers in their future courses. Emphasis will be given to applications and independent work. Also the course helps students to pass ICDL exams.
Course Contents	Computer history. Computer system's terminology. Definitions of software and hardware. Computer main units. Computer peripherals. Digital and analog computers. Data representation in digital computer. Types of operating systems. GUI and DOS prompt commands. Overview of programming languages. Packages, word processing and spread sheets. Solving problems by computers using programming language. Main internal external commands. Examples and practice.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Glenn Brookshear, computer Science an overview, 11ed ISBN:0132569035 2. Peter Norton's, "Introduction to Computers", McGraw-Hill/Irwin; 6th edition, 2004.

CS2102 Programming Language:

Course Title	**CS2102 Programming Language**
Level /Semester	2/1
Credit Hours	3
Pre-requisite(s)	**CS1101 Introduction to Computer Science**
Objective(s)	Because programming languages are at the core of writing software, students should have a thorough understanding of how languages are designed, implemented, and manipulated.
Course Contents	Introduction to Computers and Programming. The C Language, Compilers, Numbers Systems. Program Structure, Comments and Printing. Formatting Output, Escape Sequences, Program Debugging. Variables, Constants, Arithmetic Operators and Expressions. Reading Data, Writing to Files, Single Character Data. IF Statements, Logical Operators and Expressions. Switch and IF-ELSE-IF Control Structures, Applications and Review. WHILE and FOR Loops, Applications. Function Prototypes, Definitions, and Call. Address and Pointer Variables, Applications. One Dimensional Array, Array I/O. Multidimensional Arrays, Arrays and Functions, Applications and Review. Strings and Pointers. Applications and Review.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Object oriented programming using C++, RobettLafore **,2001** 2. H.H. Tan and T.B. D'Orazio, "C Programming for Engineering & Computer Science", McGraw-Hill Science/Engineering/Math; 1st edition (September 17, 1998) 3. B.W. Kernighan and D.M. Ritchie, "The C Programming Language", 2nd edition, Prentice-Hall, 1988. 4. P.J. Plauger, "The Standard C Library", Prentice-Hall, 1992. 5. A.I. Holub, "The C Companion", Prentice-Hall, 1987.

Electrical Engineering Courses

EL1108 Electrical Engineering Science I:

Course Title	**EL1108 Electrical Engineering Science I**
Level /Semester	1/1
Credit Hours	3
Pre-requisite(s)	**None.**
Objective(s)	On completion of this course, students should be able to: • Explain the relations between charge, current, voltage, energy, power and the properties of ideal circuit elements, including resistors and voltage and current sources, and show understanding of how these differ from real elements. • Perform simple power calculations and find the maximum power available from a source. • Describe the behavior of ideal energy storage elements (inductor, capacitor).
Course Contents	Units, atom, charge, Coulomb law. Current .voltage, power, Ohm's law, resistance measuring, resistance connection; series, parallel, delta, star. Kirchhoff's laws. Coils; Magnetic Circuits,MagneticFields, flux,flux density, magnetization curve, hysteresis loop, eddy current. Capacitor : Capacitance connection , electric field , charging and discharging , energy
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Fundamentals Of Electrical Engineering, By Giorgio Rizzoni, 2009

EL1206Electrical Engineering Science II :

Course Title	EL1206Electrical Engineering Science II
Level /Semester	1/2
Credit Hours	3
Pre-requisite(s)	EL1108 Electrical Engineering Science I
Objective(s)	• Ability to apply basic laws to resistive circuits. • Ability to perform mesh and nodal analysis. • Ability to apply circuit theorems • Ability to analyze first-order circuits
Course Contents	Basic circuit laws, Ohm's Law, Nodes, Branches and Loops, Kirchoff's Laws, Voltage and Current Dividers, Circuit Analysis: Linear Equations, Nodal Analysis, Super Nodes, Mesh Analysis, Super Meshes. Circuit Theorems: Linearity, Superposition, Source Transformations, Thevenin and Norton's Theorems, Maximum Power Transfer. Transient response in DC Circuit.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Fundamentals Of Electrical Engineering, By Giorgio Rizzoni, 2009

EL211 Electrical Engineering Science II:

Course Title	EL211 Electrical Engineering science II
Level /Semester	2/1
Credit Hours	3
Pre-requisite(s)	EL121Electrical Engineering Science I
Objective(s)	It is intended both to enhance the knowledge of students with regard to AC electric circuits and to develop skills in analysis.
Course Contents	AC circuit, sinusoidal voltage and current; time-domain, frequency – domain, vector diagram, reluctance impedance,inductance, RC, RL and RLC circuit. Power, resonance, filters.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Fundamentals Of Electrical Engineering, By Giorgio Rizzoni, 2009

EL2203Control System:

Course Title	**EL2203Control System**
Level /Semester	2/2
Credit Hours	3
Pre-requisite(s)	• Linear differential equations with constant coefficients. • Laplace transforms and transfer functions for linear systems. • Elementary matrix manipulations
Objective(s)	To build an introduction to classical control theory. The course emphasizes essential concepts. These concepts are illustrated by using numerous graphics, block diagrams, and simple examples.
Course Contents	Introduction to control, main definition, open and closed loop system, Laplace transforms. Transfer function, block diagram, algebra, time domain response, signal flow diagram, Mason's gain law. Stability; characteristic equation, poles and zeros Routh criterion, design by Routh, relative stability.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. "I. J. Nagrath and M. Gopal", "Control Systems Engineering", New Age International (P) Limited, Publishers, 5th edition, 2009 2. "B. C. Kuo", "Automatic Control Systems", John wiley and sons, 8th edition, 2003. 3. "N. K. Sinha", "Control Systems", New Age International (P) Limited Publishers, 3rdEdition, 1998.

EL2204Electrical Machines:

Course Title	EL2204Electrical Machines
Level /Semester	2/2
Credit Hours	3
Pre-requisite(s)	Electrical Engineering Science I, II
Objective(s)	The aims of this course to cover the relation between electrical, mechanical, magnetic energy and the structure and operation of DC and AC machine.
Course Contents	Introduction about relation between electrical, mechanical and magnetic energy, Faraday's law, Ampere's law. DC machines; structure and work principle, EMF. Machines types,efficiency, losses, DC motor characteristic, starting. Transformer: principle, equivalent circuit, AC motors: three phase and single phase.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Electric Motors & Generators (Fundamental Series): Jack Rudman, Passbook, (2010) 2. Motors, Generators, Transformers and Energy: Pericles Emanuel (1985) 3. Electrical Machines by J. chapman

EL2206 Measurement Instrumentation:

Course Title	**EL2206 Measurement Instrumentation**
Level /Semester	2/2
Credit Hours	3
Pre-requisite(s)	Principle of Electronics, Analog Electronics I
Objective(s)	• This course aims to provide the student with the SI, the modern metric system of measurement. • Also to study different measuring instruments, their use and operation.
Course Contents	Measurement concept. SI units. Errors in measurement Measurement of electrical quantities. types and applications. Galvanometers. Moving iron and coil instruments. Bridges , Digital instruments. CRT theory and operation.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	**1.** Measurement and Instrumentation: Theory and Application: Alan S Morris and Reza Langari, 2011 **2.** Instrumentation for Engineering Measurements: James W. Dally, William F. Riley andKenneth G. McConnell, 1993 **3.** Measurement and Instrumentation in Engineering: Principles and Basic LaboratoryExperiments: Francis S. Tse and Ivan E. Morse, 1989

Electronics Courses

EE1107 Principle of Electronics:

Course Title	EE1107 Principle of Electronics
Level /Semester	1/1
Credit Hours	3
Pre-requisite(s)	Physics
Objective(s)	• This course is designed to help the student to learn about origin of electronics starting from the atomic level in solid state theory, components, circuits, and the use of electronics.
Course Contents	Solid state principal, atomic theory. Charge and conduction. Covalent bonding... Diodes: types of diodes, Zener diode, tunnel diode, light emitting diode (LED), operation curve, breakdown and other characteristics. Diodes applications, LED indicators, half and full wave rectifiers. Transistor: types of transistors, bipolar junction transistor, PNP and NPN transistors, field effect transistors (FET), metal oxide transistors (MOS), operation and regions. Q-point and characteristics, saturation, cut off regions. Comparison between bipolar and field effect transistors in power consumption, speed and cost.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Electronic devices edition 9 , Floyd 2. Microelectronic Circuits by Sedra Smith,5th edition

EE1207Analog Electronics I:

Course Title	EE1207Analog Electronics I
Level /Semester	1/2
Credit Hours	3
Pre-requisite(s)	EE1107 Principle of Electronics
Objective(s)	The goal of this course is to introduce electronic circuit analysis and design techniques with special consideration given to the operation and use of bipolar junction transistors including the analysis and design of important circuits that utilize these devices. In particular, this course will focus on practical analog circuits and more specifically on amplifiers.
Course Contents	Introduction to amplifier circuits, class A, class B, and class C circuits. Common Emitter circuit, analysis and design, circuit gain, alpha and beta calculations, common collector circuit and analysis, common base circuit. FET amplifiers, common source circuit analysis and design.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Electronic devices edition 9 , Floyd 2. Microelectronic Circuits by Sedra Smith,5th edition

EE2105 Analog Electronics II:

Course Title	**EE2105 Analog Electronics II**
Level /Semester	2/1
Credit Hours	3
Pre-requisite(s)	EE1207Analog Electronics I
Objective(s)	To focus on the design of operational amplifiers, filters.
Course Contents	Feedback in Amplifier. Loop gain determination Stability analysis. Op-Amps circuits, inverting and non-inverting op-amps, voltage follower and other op-amps amplifiers. Active Filters.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Electronic devices edition 9 , Floyd 2. Microelectronic Circuits by Sedra Smith,5th edition

EE2103 Digital Electronics I:

Course Title	**EE2103 Digital Electronics I**
Level /Semester	2/1
Credit Hours	3
Pre-requisite(s)	EE1107 Principle of Electronics
Objective(s)	• To study and Design of combinational Logic circuits. • To link these designs with applicable electronic circuits
Course Contents	Basic notions: Characteristics of digital systems, basic gates AND, OR, NOT, XOR symbols, operation and truth table revision. Combinational logic circuits, simplification techniques, Algebra and Karnaugh map simplifications, parity checker and complement circuits, half and full binary adders.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. RamakantA.Gayakward, Op-amps and Linear Integrated Circuits, IV edition, Pearson Education, 2003 / PHI. 2. D.RoyChoudhary, SheilB.Jani, Linear Integrated Circuits, II edition, New Age, 2003. 3. M. Morris Mano, Digital Logic and Computer Design, Prentice Hall of India, 2008

EE2201 Digital Electronics II:

Course Title	**EE2201 Digital Electronics II**
Level /Semester	2/2
Credit Hours	3
Pre-requisite(s)	EE2103 Digital Electronics I
Objective(s)	• To study and Design Sequential Logic circuits. • To link these designs with applicable electronic circuits.
Course Contents	Multiplexers and de-multiplexers, coders and decoders. Memory, PAL, Sequential and combinational circuit's comparison. Multi-vibrators circuit operation. RS Flip Flop, T FF, D FF, and JK Flip Flop. Serial and parallel Shift Register. Counters, a Synch and Synch Counters, Decade counters, different Mod Counters.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. RamakantA.Gayakward, Op-amps and Linear Integrated Circuits, IV edition, Pearson Education, 2003 / PHI. 2. D.RoyChoudhary, SheilB.Jani, Linear Integrated Circuits, II edition, New Age, 2003. 3. M. Morris Mano, Digital Logic and Computer Design, Prentice Hall of India, 2008

EE3106 Microprocessor and Microcontroller Applications

Course Title	EE3106 Microprocessor and Microcontroller Applications
Level /Semester	3/1
Credit Hours	3
Pre-requisite(s)	EE2103 Digital Electronics I ; CS2102Programming language
Objective(s)	This course aims to introduce the organization of a microprocessor system and the assembly language for programming the microprocessor. Students will learn the programming techniques, design techniques of memory system and input/output system for a simple microprocessor system.
Course Contents	Basic computer architecture: CPU, input/output, memory systems and buses; Structure of a CPU: ALU, accumulators, registers, stack, control unit and buses; Instruction execution, sequence and data flow, instruction cycle; Concept of address bus, data bus, control bus and bus arbitration; ASCII code; Instruction formats, operands, types and addressing modes; 8086 Assembly language programming, assembler directives and assembler operation. Introduction to microcontroller , types of microcontrollers , input and output ports description, comparison between microcontroller and microprocessor, applications of microcontroller, main units of microcontroller, internal architecture (CISC vs RISC) architecture, clock instruction cycle, pipelining process, interrupt request , interfacing of microcontroller, types of oscillators, MCLR and its function, analog to digital conversion, pulse width modulation (PWM).
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Computer architecture and Organization,William Stalling. 2. Microprocessor Fundamentals by K.John 3. Analog and Digital Circuits for Electronic Control System Applications. By: Jerry Luecke. 4. Interfacing PIC Microcontrollers Embedded Design by Interactive Simulation. By : Martin Bates.

EE222 Power Electronic:

Course Title	EE222Power Electronic
Level /Semester	2/2
Credit Hours	3
Pre-requisite(s)	EE1207Analog Electronics I, EL1206Electrical Engineering Science-I
Objective(s)	Students of this courseware will gain intense knowledge and understanding of the field of Power Electronics, and also the student will learn to design and test these circuits through the software simulation package.
Course Contents	Fundamentals of DC/ DC, AC/DC power conversion.Switch mode power supply fundamentals. basics and operation of power semi-conductor devices. Thyristors and controlled rectifiers.Power converters. SCR operation. Regulation circuits. DC choppers. Design and construct power converters and regulators to meet given objectives throughhomework, exams and a final project. Understand and analyze the concepts of soft switching of DC/DC converters. Uncontrolled Diode Rectifier Circuits, Phase controlled Converters, DC/AC Inverters.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Bhimbra. Dr.P.S., Power Electronics Khanna Publishers, 2001 2. Muhammad H. Rashid, Power Electronics – Circuits, Devices & Applications, Prentice Hall of India, New Delhi, 1995

EE3203TV system:

Course Title	**EE3203TV System**
Level /Semester	3/2
Credit Hours	3
Pre-requisite(s)	**EE1207Analog Electronics I, CE2205Analog communication**
Objective(s)	
Course Contents	Introduction: TV transmitter and receivers, synchronization. TV Signal Transmission and Propagation: Monochrome TV Receiver: RF tuner, IF subsystem, video amplifier, Sounds section, IF subsystem of Black and White receivers, Receiver sound system. Sync Separation and Detection. Digital TV: Introduction to Digital TV, Digital Satellite TV, Direct to Home Satellite TV, Digital TV Transmitter, Digital TV Receiver, Digital Terrestrial TV, LCD TV, LED TV, CCD Image Sensors, HDTV.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	K G Jackson G B Townsend, "**TV & Video Engineer's**", 1st Edition, 1991

Communication Engineering Courses

CE3105 Optical Fiber;

Course Title	CE3105 Optical Fiber
Level /Semester	3/1
Credit Hours	3
Pre-requisite(s)	Analog communication, Digital Communication
Objective(s)	To introduce fiber optics communication systems as a part of modern communication systems and its role in modern global communication networks.
Course Contents	Introduction to geometric optics. Ray theory and electromagnetic wave theory of optical propagation in fibers. Optical fibers and their transmission characteristics. Cables, connectors and couplers. Optical fiber measurements. Optical sources: Lasers, considerations and performance analysis, and fiber optic system design.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Fiber-Optics Communication Technology, Djafar K. Mynabaev and Lowell L. Scheiner

CE2205Analog Communication:

Course Title	CE2205Analog Communication
Level /Semester	2/2
Credit Hours	3
Pre-requisite(s)	Analog Electronics I
Objective(s)	On completion of this module, students should be able to: - Understand the fundamental principles underpinning any communication system; Use mathematical analysis to investigate system behavior; - Explain how one can model the various blocks in a schematic of a communication system.
Course Contents	Fourier series, Fourier transform, analog Modulation schemes, AM (DSB, DSB-SC, USSB, LSSB, VSB), FM (narrowband, wideband), and PM. Modulation index, noise effect. Transmission systems, demodulation of analog communication, Shannon's theorems andtheir implications; fundamental limits in communication systems.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Electronic Communications, Blake 2. Electronic Communication Systems, Wayne Thomasi.

CE3104 Digital Communication:

Course Title	**CE3104 Digital Communication**
Level /Semester	3/1
Credit Hours	3
Pre-requisite(s)	CE2205Analog Communication
Objective(s)	To identify the functions of various parts in a communication system chain. Appreciate the physical limitations in a practical design.
Course Contents	Concepts &Signals_Spectra, PCM and delta modulation, PAM, ISI, Condition of No ISI, Nyquist Channel, Digital Modulation, Binary (ASK, FSK, PSK, DPSK), M-ary(ASK, FSK, PSK, DPSK, QAM). Synchronization.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Digital Communication By By John G.Proakis. Fourth Edition.

CE3104Data Communication:

Course Title	CE3104 Data communication
Level /Semester	3/1
Credit Hours	3
Pre-requisite(s)	Analog communication, Digital Communication
Objective(s)	To understand various type of computer networks and how they work.
Course Contents	1. Overview of computer networks, the Internet, the OSI model and TCP/IP stack. 2. Ethernet, Token Ring, and Wireless and the methods they use of connecting to the physical layer. 3. Data Link Layer responsibilities. 4. Internet protocols on the Network layer and subnetting LANS. 5. Router hardware and configuration. 6. Routers, routed and routing protocols. 7. TCP/IP segment, IP packet and Data Link frame formats. 8. Network timing and Congestion Control. 9. Peer-to-peer and client-server programming using sockets in TCP or UDP. 10. Reliability, Connection-Oriented and Connectionless protocols on the Transport Layer, namely TCP and UDP. 11. Applications used in every-day network-related tasks. 12. Wireless and Mobile networks.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Computer Networks: A Systems Approach (The Morgan Kaufmann Series in Networking) 5th Edition, 2011

CE3102Wave Propagation & Antennas:

Course Title	CE3102Wave Propagation & Antennas
Level /Semester	3/1
Credit Hours	3
Pre-requisite(s)	Electromagnetic Filed
Objective(s)	• To provide the student with the basic and advanced characteristics of antenna and wave propagation theory and operation. • To clarify the link between antenna and transceivers.
Course Contents	Maxwell equation, Antenna parameters. Small and finite size dipoles. Radiation from a quarter-wave monopole and a half-wave dipole.patren multiplication. Loop and Helix antennas. Reflector antenna, horn antenna Analysis and synthesis of linear, planar and circular arrays. Aperture antennas. Micro-strip antennas. Receiving antennas theory. Antenna coupling to transmitters and receivers.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Antenna Theory Analysis And Design by Constantine A. Balanis, 2005

CE3101 Satellite and Mobile System:

Course Title	CE3101 Satellite and Mobile System
Level /Semester	3/1
Credit Hours	3
Pre-requisite(s)	Analog Communication, Digital Communication
Objective(s)	- To introduce the principles of Cellular System - To introduce the principles of Satellite Communications.
Course Contents	Introduction to mobile communication systems (DSS,FH,CDM ,PN code generator, frequency synthesizer); basic planning of a cellular system, elements of cellular radio design system; propagation characteristics of mobile radio channels; antenna type use in GSM frequency management, channel allocation and handoff mechanisms; specifications of mobile communication systems in specific examples; wireless networks. Introduction and BackgroundOrbital Aspects and LaunchingSpacecraft SubsystemsLink Budgets ;ModulationMultiple Access & On-board Processing ;Coding ;Frequency & Propagation Aspects; Earth Station Technology & VSATs; Non-Geosynchronous Orbits (NGSO); Applications (GPS, Mobile, Internet, etc.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Satellite Communications, Fourth Edition (Professional Engineering) 4th Edition, by Dennis Roddy, 2006 2. Dharma Prakash Agrawal : "Introduction to wireless and mobile systems", 2010

CE3202 Radar and Microwave System:

Course Title	**CE3202 Radar and Microwave System**
Level /Semester	3/2
Credit Hours	3
Pre-requisite(s)	Analog communication, Digital communication
Objective(s)	On completion of this module, students should be able to Understand the principles underpinning Radar and microwave communication system.
Course Contents	RADAR equation, radar parameter, antenna gain, radar cross section area, noise figure, antenna polarization, radar type, CW radar, pulse radar mono pulse radar ,range resolution, barker code, electronic scanned radar, phase array antenna, digital phase shifter; Waveguiding structures: Rectangular and circular waveguides. Propagation of TEM, TE and TM models in guiding structures. Impedance concepts attenuation factor and Transmission- line analogy of propagation modes in waveguides. Cavity resonators. S-parameters. Passive reciprocal devices, ferrites and non-reciprocal devices. Microwave tubes and solid state devices, TWT, magnetron, Phase shifter, amplifier.
Teaching Method	30 hours for lectures. 45 hours for Lab. 10 office hours for revision.
Evaluation	- Class Assignments, Mid-Term Test and Final exam.
Reference(s)	1. Fundamental of Microwave & Radar Engineering, By K K Sharma, 2011

PR3204 Graduation Project:

Course Title	**PR3204 Graduation Project**
Level /Semester	3/2
Credit Hours	3
Pre-requisite(s)	All courses.
Objective(s)	1. Enable students to implement the knowledge & skills gathered through various theoretical and laboratory courses 2. Introduce students to conduct independent literature survey for contemporary problems and issues related to implementation of the allotted project. 3. Encourage the students to acquire a comprehensive understanding about design, operation, simulation, data collection and analysis on the important areas of the project.
Course Contents	Choose a project that makes usage of the acquired knowledge& skillsand in line with current needs of prospective employers. Projects shall incorporate the technological advancements while applying Information Communication Technology (ICT)extensively. **Suggested Fields:** - **Telecommunication filed** - **Electronics filed** - **Any related disciplines**
Teaching Method	Weekly meeting with supervisor
Evaluation	- Supervisor :40 mark and committee: 60
Reference(s)	The students should select recent references depend on the project area

Workshop Training

WS2209 Basic Training:

Course Title	WS1209 Basic Training
Level /Semester	1/2
Credit Hours	-
Pre-requisite(s)	None.
Objective(s)	To familiarize with: 1. The basics of tools and equipment are used in fitting, carpentry, sheet metal, welding and smithy. 2. The production of simple models in the above trades.
Course Contents	**FITTING** Tools &Equipment's – Practice in Filing and Drilling.Making Vee Joints, Square, dovetail joints, Key Making. **CARPENTARY** Tools and equipment's- Planning practice. Making Half Lap, dovetail, Mortise &Tenon joints, a mini model ofa single door window frame. **SHEET METAL** Tools and equipment's - Fabrication of a small cabinet, Rectangular Hopper, etc. **WELDING** Tools and equipment's - Arc welding of butt joint, Lap Joint, Tee Fillet. Demonstration of Gas welding, TIG &MIG. **SMITHY** Tools and equipment's –Making simple parts like hexagonal headed bolt, chisel.
Teaching Method	The student divided into a group, and each one assigns work in the workshop according to the above contents.
Evaluation	A: Excellent job, B+: V. good Job, B: Good, C: Pass, F: Fail
Reference(s)	1. Gopal, T.V., Kumar, T., and Murali, G., "A first course on workshop practice – Theory, practice andwork book", Suma Publications, 2005. 2. Kannaiah,P. &Narayanan,K.C. Manual on Workshop Practice, Scitech Publications, Chennai, 1999. 3. Venkatachalapathy, V.S. First year Engineering Workshop Practice, Ramalinga Publications, Madurai,1999.

WS2207Advance Training:

Course Title	**WS2207Advance Training**
Level /Semester	2/2
Credit Hours	-
Pre-requisite(s)	
Objective(s)	To familiarize with: - The advance tools and equipment are used in electrical and electronics engineering discipline.
Course Contents	- Electrical measurement - Electrical machines - Machine control - Others
Teaching Method	The student divided into a group, and each one assigns work in the workshop according to the above contents.
Evaluation	A: Excellent job, B+: V. good Job, B: Good, C: Pass, F: Fail
Reference(s)	

Languages &Studies (HL)

اسم المقرر	رمز المقرر	عدد ساعات الاتصال		
		نظري	تطبيقات	المعتمدة
الثقافة الاسلامية 1	HL1105	2	-	2

الهدف العام :-

ان يتعرف المتعلم على مفهوم الثقافة الإسلامية ، مصادرها ، خصائصها. ،عناصر الثقافة الاسلامية وآثارها في الفرد والمجتمع، مفهوم العبادة في الإسلام.

مخرجات التعلم (ما يتوقع من المتعلم اكتسابه بعد دراسة المقرر)

ان يطبق المتعلم ثقافته الاسلامية في شؤون حياته

مفردات المقرر (المحتوى – الموضوعات)

- الوحدة الأولى : مقدمات في الثقافة الإسلامية:

تعريف الثقافة الإسلامية – مصادرها– خصائصها – موقف المسلم من الثقافات الأخرى.

- الوحدة الثانية : العقيدة الإسلامية:

مفهوم العقيدة الإسلامية – أهميتها – أركان الإسلام الخمسة – أثر هذه العقيدة على الفرد والمجتمع .

عقيدة أهل السنة والجماعة في السمع والطاعة لولاة الأمر – خطورة الخروج عليهم وعقوبة ذلك – أهمية الجماعة ووجوب لزومها.

- الوحدة الثالثة : العبادة في الإسلام:
  - حقيقة العبادة في الإسلام – خصائصها – أنواعها – حكم ومقاصد أركان الإسلام الخمسة.
  - الغلو – مفهومه –أنواعه – حكمه – و خطره – المنهج النبوي في معالجة الغلو – مصير الغلاة – نماذج من الغلاة (الخوارج).

توصيف المهام والتكاليف:

المهمة	الوصف	الاسبوع
بحث	موضوع في مفردات المقرر	الرابع
اختبار فصلي		السابع
اختبار نهائي		نهاية الفصل

استراتيجيات تدريس المقرر

المحاضرة

استراتيجيات (طرق) التقييم

بحث 10%

اختبار فصلي 10%

اختبار نهائي80%

المراجع :-

1 –الثقافة الإسلامية – الشيخ عبدالمجيد بن عزيز الزنداني– إدارة المطلوبات جامعة الخرطوم،

2 –الوسطية والاعتدال وأثرها على حياة المسلمين للشيخ صالح بن عبد العزيز آل الشيخ.

3 – الموافقات للإمام الشاطبي.

4 –مقاصد الشريعة للشيخ الطاهر بن عاشور.

		عدد ساعات الاتصال		
اسم المقرر	رمز المقرر	نظري	تطبيقات	المعتمدة
لغة عربية 1	HL1204	2	–	2

الهدف العام :-

ان يتعرف المتعلم مسائل في اللغة وآدابها لتوظيفها في استعمالاته اللُغوية، وتدريبه على بعض قواعد النحو الأساسية،وبعض قواعد الضبط الإملائي وتنمية مهارات الطلاب اللغوية من خلال (الاستماع،والكلام،والقراءة،والكتابة) .

مخرجات التعلم (ما يتوقع من المتعلم اكتسابه بعد دراسة المقرر)

ان يطبق المتعلم مهارات اللغة العربية في شؤون حياته

مفردات المقرر (المحتوى – الموضوعات)

المسائل النحوية:

1. مراجعة لبعض القواعد النحوية التالية:

- الإعراب والبناء (الأسماء، والأفعال، والحروف) .
- الجملة الاسمية (المبتدأ والخبر، والأفعال الناسخة، والحروف الناسخة) .
- الجملة الفعلية (الفاعل ونائبه، وبناء الفعل للمجهول،والأفعال اللازمة والمتعدية، والمفاعيل) .
- العدد وأحكامه (صياغته، وإعرابه) .

2. المعاجم العربية (التعريف، والأهمية، والأنواع، وطريقة الاستخدام) .

توصيف المهام والتكاليف:

المهمة	الوصف	الاسبوع
بحث	موضوع في مفردات المقرر	الرابع
اختبار فصلي		السابع
اختبار نهائي		نهاية الفصل

استراتيجيات تدريس المقرر

المحاضرة (الكتروني)

استراتيجيات (طرق) التقييم

الكتروني

المراجع :

1 –النحو الجامعي، محمد شريف أبو الفتوح، مكتبة الشباب، مصر، 1974 م.

2 –فن التحرير العربي، محمد صالح الشنطي، دار النفائس، بيروت، 2004 م.

3 –المنجد في اللغة والاعلام – المكتبة الشرقية، بيروت.

		عدد ساعات الاتصال		
اسم المقرر	رمز المقرر	نظري	تطبيقات	المعتمدة
الثقافة الاسلامية 11	HL2202	2	-	2

الهدف العام :-

ان يتعرف المتعلم على العقيدة السليمه ضد انحرافات وشبهات المذاهب الفكرية والاجتماعية المعاصرة للقيام بواجبه الديني في بناء ذاته وأسرته ووطنه المشاركة في النهضة المعاصرة للأمة في مختلف مجالات الحياة.

مخرجات التعلم (ما يتوقع من المتعلم اكتسابه بعد دراسة المقرر)

ان يطبق المتعلم ثقافته الاسلامية في شؤون حياته

مفردات المقرر (المحتوى – الموضوعات)

مسائل و قضايا معاصرة:

أولا: الجهاد:تعريفه – حكمه – أنواعه – الرد على الجماعات الجهادية المعاصرة – بيان ما جنته هذه الجماعات على الأمة الإسلامية من الشرور.

ثانيا: محاسن الإسلام و أبرز مزاياه:

التمام و الكمال – الاتساع والشمول – الصلاحية لكل زمان و مكان – الوسطية والاعتدال– اليسر والسعة ورفع الحرج – العدل – الرحمة – المحبة – الوفاء بالعهود و المواثيق – الأمر بالصلاح والإصلاح والنهي عن الفساد والإفساد – حسن الخلق – الحكمة والبصيرة في الدعوة

توصيف المهام والتكاليف:

المهمة	الوصف	الاسبوع
بحث	موضوع في مفردات المقرر	الرابع
اختبار فصلي		السابع
اختبار نهائي		نهاية الفصل

استراتيجيات تدريس المقرر

المحاضرة

استراتيجيات (طرق) التقييم

بحث 10%

اختبار فصلي 10%

اختبار نهائي80%

المراجع :-

1 –الثقافة الإسلامية – الشيخ عبدالمجيد بن عزيز الزنداني– إدارة المطلوبات، جامعة الخرطوم

2 –الوسطية والاعتدال وأثرها على حياة المسلمين للشيخ صالح بن عبد العزيز آل الشيخ.

3 –الموافقات للإمام الشاطبي.

4 –مقاصد الشريعة للشيخ الطاهر بن عاشور.

		عدد ساعات الاتصال		
اسم المقرر	رمز المقرر	نظري	تطبيقات	المعتمدة
لغة عربية 11	HL1202	2	–	2

الهدف العام :-

ان يتعرف المتعلم مسائل في اللغة وآدابها لتوظيفها في استعمالاته اللُغوية، وتدريبه على بعض قواعد النحو الأساسية،وبعض قواعد الضبط الإملائي وتنمية مهارات الطلاب اللغوية من خلال (الاستماع،والكلام،والقراءة،والكتابة)

مخرجات التعلم (ما يتوقع من المتعلم اكتسابه بعد دراسة المقرر)

ان يطبق المتعلم مهارات اللغة العربية في شؤون حياته

مفردات المقرر (المحتوى – الموضوعات)

أولاً: التحرير العربي:

- ضوابط عامة حول التحرير والكتابة العربية .
- كتابة التلخيص (التعريف، والأهمية، والخطوات، والمبادئ، والتطبيق) .
- كتابة التقرير (التعريف، والأهمية، والأنواع " الإداري، والطبي، والهندسي "، والتطبيق).
- كتابة الرسالة (التعريف، والمقومات، والأنواع " الأدبية، والرسمية "، والتطبيق) .

ثانياً : التدريبات اللغوية :

- تدريبات على مهارات اللغة (السماع، والحديث، والقراءة، والكتابة) .
- تدريبات على استعمال قواعد اللغة، والمعاجم اللغوية .
- تدريبات على استعمال الهمزات وعلامات الترقيم .
- تدريبات على الأخطاءاللغوية الشائعة، وكيفية معالجتها.

توصيف المهام والتكاليف:

المهمة	الوصف	الاسبوع
بحثاختبار	موضوع في مفردات المقرر	الرابع
فصلي		السابع
اختبار نهائي		نهاية الفصل

استراتيجيات تدريس المقرر

المحاضرة (الكتروني)

استراتيجيات (طرق) التقييم

الكتروني

المراجع :-

1 –محمد عيد ،النحو المصفى، مكتبة الشباب، مصر، 2000 م.

2 –عبد العليم إبراهيم، الإملاء و الترقيم في الكتابة العربية، مكتبة غريب، القاهرة، 1995م.

اسم المقرر	رمز المقرر	عدد ساعات الاتصال		
		نظري	تطبيقات	المعتمدة
الدراسات السودانية	HL3107	2	-	2

الهدف العام :-

ان يتعرف المتعلم على القضايا الاجتماعية والسياسية والاقتصادية للمجتمع السوداني.. وتعميق الإحساس بالسودانية عند الطالب. وتقديم رؤية فكرية عن السودان بوصفه جزء من العالم العربي والأفريقي والإسلامي.

مخرجات التعلم (ما يتوقع من المتعلم اكتسابه بعد دراسة المقرر)

ان يناقش المتعلم في مكونات الثقافة السودانية.

مفردات المقرر (المحتوى – الموضوعات)

يشتمل المقرر علي الآتي:

البلاد وسكانها وعصورها التاريخية وتشمل الجغرافية الطبيعية والبشرية والحضارات السودانية (النوبة – المسيحية – الإسلام) العلاقات الدولية – المهدية والقومية السودانية – السودان والحكم الثنائي – الحركة الوطنية والاستقلال . الآداب والفنون – جمعيات القراءة والمناقشة – المجلات – أشهر الأدباء والفنانين – الفنون التشكيلية – الثقافة الشعبية السودانية والفلكلور السوداني (الأغاني – الأمثال الشعبية – الأحاجي). التعليم الأهلي (فلسفته – مؤسساته – بنيانه).

يستعان ببعض الشخصيات لمناقشة القضايا مع زيارة المعالم الوطنية والمتاحف، كتابة بحوث ومقالات قصيرة بواسطة الطلاب.

توصيف المهام والتكاليف

المهمة	الوصف	الاسبوع
بحثاختبار	موضوع في مفردات المقرر	الرابع
فصلي		السابع
اختبار نهائي		نهاية الفصل

استراتيجيات تدريس المقرر

المحاضرة(الكتروني)

استراتيجيات (طرق) التقييم

الكتروني

المراجع :

1 –بروفيسور محمد عمر بشير ، دراسات سودانية معاصرة،

2 –معتصم محمد الحاج ،دراسات سودانية معاصرة ،

3 –زينب الزبير الطيب، الدراسات السودانية ،جامعة الخرطوم ،2010م

4 –أماني الطويل : مستقبل السودان : واقع التجزئة وفرص الحرب –المركز العربي للأبحاث ودراسة السياسات2011م

عدد ساعات الاتصال				
المعتمدة	تطبيقات	نظري	رمز المقرر	اسم المقرر
2	-	2	HL1105	English Language I

الهدف العام :-

This course aims to enable students to realize the basic skills of language.

مخرجات التعلم (ما يتوقع من المتعلم اكتسابه بعد دراسة المقرر)

After this course the student may able to read some simplified book or benefit the media the student also can practice speaking English to his /her teacher classmates or other English speakers.

مفردات المقرر (المحتوى– الموضوعات)

1. Family and family tree , vocabulary +exercise
2. Simple present +form and use +exercises
3. Vocabulary concern job and career +speaking (talking about your job and occupation).
4. Application letter writing +Drill
5. Exercise +5–Future simple tense
6. Conditional 0,1,2, and 3
7. Vocabulary of Nationalities , languages, countries and rigors
8. Simple past g) present continues.

متطلبات المقرر

Suitable classroom, microphone,chalk or marker

توصيف المهام والتكاليف

المهمة	الوصف	الاسبوع
تطبيقات	موضوع في مفردات المقرر	الرابع
ورقة بحثية		السابع
اختبار نهائي		نهاية الفصل

استراتيجيات تدريس المقرر

- Lecture
- Exercises and drills

استراتيجيات (طرق) التقييم

- Exercises and drills 10%
- Mid-term test 20%
- Final examination 70%

المراجع :-

1. C-E- Eckersley ,J-M-Eckersley,(1985), comprehensive English Grammar , Longman ,Hong Kong .
2. A-J-Thomson , A-V-Martinet, (1982) A practical English Grammar ,third edition ,Oxford University press ,Oxford.
3. Romand Murphy , Ronan Altman ,(1998) , Grammar in use- Reference and practice for intermediate students of English ,Cambridge University press, Cambridge.
4. Michael McCarthy,Felicity O'Dell ,(1998) , English Vocabulary in use, Cambridge university press ,Cambridge.
5. www. E now-com.
6. https //web-Facebook-com-Daily English Grammar.
7. www.Vdyautube.com.

	عدد ساعات الاتصال			
اسم المقرر	رمز المقرر	نظري	تطبيقات	المعتمدة
English Language II	**HL1203**	2	-	2

الهدف العام :-

This course aims to enable students to realize the basic skills of language.

مخرجات التعلم (ما يتوقع من المتعلم اكتسابه بعد دراسة المقرر)

After this course the student may able to read some simplified book or benefit the media the student also can practice speaking English to his /her teacher classmates or other English speakers.

مفردات المقرر (المحتوى – الموضوعات)

1. Vocabulary, Word used in grammar.-parts of speech; Noun, verb, adverb .prepositions and yet. For and since+Practices.
2. Present Perfect; Definition and useJust
3. Past Perfect Tense; form and use +past participle form-Reported speech – direct and indirect speech +conditional3.
4. How to use preposition correctly; some tips in preposition in place expression and in time expression +Exercises.

متطلبات المقرر

Suitable classroom, microphone, chalk or marker

توصيف المهام والتكاليف

المهمة	الوصف	الاسبوع
سمنار	موضوع في مفردات المقرر	الرابع
ورقة بحثية		السابع
اختبار نهائي		نهاية الفصل

استراتيجيات تدريس المقرر

- Lecture
- Exercises and drills

استراتيجيات (طرق) التقييم

- Exercises and drills 10%
- Mid-term test 20%
- Final examination 70%

المراجع :-

1. C-E- Eckersley ,J-M-Eckersley,(1985), comprehensive English Grammar , Longman ,Hong Kong .
2. A-J-Thomson , A-V-Martinet, (1982) A practical English Grammar ,third edition ,Oxford University press ,Oxford.
3. Romand Murphy , Ronan Altman ,(1998) , Grammar in use- Reference and practice for intermediate students of English ,Cambridge University press, Cambridge.
4. Michael McCarthy,Felicity O'Dell ,(1998) , English Vocabulary in use, Cambridge university press ,Cambridge.
5. www. E now-com
6. 6-https//web-Facebook-com-Daily English Grammarcom.
7. www.Vdyautube.com.