



Ministry of Higher Education and Scientific Research
Scientific Supervision and Evaluation Authority
Department of Quality Assurance and Academic Accreditation

Academic Program Description Form for Colleges and Institutes

University: Middle Euphrates Technical
Faculty/Institute: Samawah Technical Institute
Scientific Department: Information and Communication Technology
File Modified Date: 17/3/2024

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Approval of the Dean

Academic Program Description

This academic program description provides a brief summary of the most important characteristics of the program and the learning outcomes expected of the student to achieve, proving what he has made the most of the available opportunities. It is accompanied by a description of each course within the program.

1. Educational institution	Al-Furt Al-Awsat Technical University
2. Scientific Department / Center	Information and Communication Technology Department/Samawah
3. Name of academic or vocational program	ICT Programme
4. Final Certificate Name	Technical Diploma
5. Academic System: Annual / Decisions / Other	annual
6. Accredited Accreditation Program	ABET
7. Other external influences	Scientific visits, summer training.
8. History of the preparation of the description	9/2/2021
9. Objectives of the Academic Program	
<p>Graduating qualified staff to work in collecting, storing, retrieving and broadcasting information after processing and distributing it using programs prepared for this purpose and by automated methods such as electronic computers.</p>	

10. Required Program Outcomes and Teaching, Learning and Assessment Methods

A. Cognitive Objectives

- A1-** Managing and operating information storage and processing programs.
- A2-** Connecting local information networks.
- A3-** Obtaining a huge amount of information by connecting computers with the information network.
- A4-** Collecting, processing and broadcasting information inside and outside the country and anywhere in the world.

B. Program Skills Objectives

- B1** – Converting many indexes into automated forms.
- B2** – Connecting computer networks.
- B3** - Linking and installing the electronic monitoring system.

Teaching and learning methods

Theoretical lectures, laboratory experiments, skill acquisition in workshops

Evaluation methods

Daily quizzes, direct questions, discussion, monthly exams

C. Emotional and value goals.

- C1-** Supports the concepts of electronic globalization
- C2-** He is proud in his work.
- C3-** The student should realize the importance of using electronic Computers, electronic devices and communication devices in the life of societies and the need to know the latest developments in this field.
- C4-** The student is interested in the rules of correct application in the use of electronic devices and various programs.

Teaching and learning methods

Theoretical lectures, laboratory experiments, skill acquisition in workshops

Evaluation methods

Daily quizzes, direct questions, discussion, monthly exams

- D.** General and qualifying skills transferred (other skills related to employability and personal development).
- D1-** The student should be able to use the computer in design and use the Internet and modern software.
- D2-** Teaching the student some of the laws and theories of mathematics that he needs in the application of laws within the specialization.
- D3-** Introducing the student to the basic international standards of human rights and introducing the student to successful democracy as in the developed world.
- D4-** Teaching the student the basics of using technical English language and in dealing with terms within the specialization and writing reports for the results obtained from the use of computers, electronic circuits and various programs.

Teaching and learning methods

Theoretical lectures, laboratory experiments, skill acquisition in workshops

Evaluation methods

Daily quizzes, direct questions, discussion, monthly exams

1 **12.**Program Architecture

Grades	Course or Course Code	Course Name	Credit Hours		
			theoretical	Exercises	practical
The first		C++ programming	2	1	2
The first		Digital Circuits	2	1	2
The first		Electrical circuits	2		2
The first		Math	2		-
The first		Engineering Drawing	-		3
The first		Computer Software (1)	1		2
The first		English Language	1		-
The first		Democracy and Human Rights	2		-

The first		Mechanical Workshops + Electronic Computer Maintenance Workshop	-		3
The second		Computer Networks	2		2
The second		Computer & Data Security	2		2
The second		Communication Systems	2	1	2
The second		Computer Architecture	2		2
The second		Programming in visual basic	1		3
The second		Information Technology & Internet	1		2
The second		Computer Applications (2)	1		3
The second		English Language	1		-
The second		Smart Systems	2		-
The second		Project	-		2

13.Planning for personal development

- Sending students of the second stage in accredited training courses outside the country within agreed programs
- Involve students in seminars
- Field visits to the fields of work within the jurisdiction

14.Admission criterion (setting regulations related to admission to a college or institute)

- 1- The student must have a preparatory certificate / scientific branch.
- 2- The top three outstanding students from the preparatory industry / computer assembly department

15.The most important sources of information about the program

- 1- International universities and institutes.
- 2- World Wide Web (Internet)

The second	Internet & Information Technology	assist ant	*					*				*	*		*				*	*
	Communication Systems	basic				*				*	*			*	*				*	*
	Visual Basic	assist ant			*			*						*						
	Intelligent Systems	assist ant				*				*			*	*					*	
	Computer Networks	basic				*			*				*	*					*	
	Computer & Data Security	basic				*			*				*	*					*	
	Computer Applications 2	assist ant					*				*			*			*			
	Computer Architecture	basic			*			*						*						
	English Language 2	assist ant	*	*				*				*	*				*	*		
	Project	assist ant						*	*	*		*								*

C++ programming

Course Description

This description of the academic program provides a brief summary of the most important characteristics of the program and the learning outcomes expected of the student to achieve, proving whether he has made the most of the available opportunities. It is accompanied by a description of each course within the program

1. Educational institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawah
2. Scientific Department / Center	Information and communication technology
3. Course Name/Code	Programming in C++ / First Stage
4. Available Attendance Forms	Daily mandatory attendance
5. Semester / Year	Academic Year 2023/2024
6. Number of Credit Hours (Total)	2 theoretical + 2 practicals + 1 exercises = 5 * 30 weeks = 150 hours per year
7. The history of preparation of this description	9/2/2021
8. Course Objectives	
The C++ programming lesson aims to provide the student with the skills of writing programs in the C++ programming language	

9. Course Outcomes and Methods of Teaching, Learning and Assessment

A. Cognitive objectives

- A1-** Identify the programming sentence and its importance through examples.
- A2-** See a detailed explanation of the programming sentence with examples.
- A3-** Studying complete programs that depend on programming sentences to solve them.
- A4-** Understands how the computer represents and implements the programming sentence inside the computer.

B. Skills objectives of the program.

B1 – Develops the skill of the concept of solving the problem and writing solution algorithms.

B2 – Trains to Install the C++ program on the computer.

B3 – Compares through programming sentences between C language and C++ language.

Teaching and learning methods

Teaching the student to write the steps to solve a problem, then write the solution algorithm represented by the arrow or semi-program diagram, then a practical example is taken on this

Evaluation methods

Daily Exams / Classroom Activity and Participation / Semester and Final Exams

C. Emotional and value goals

C1- He is aware of the importance of learning programming languages in order to keep pace with the development in the digital world and its impact on the development of his country.

C2- He is convinced of the importance of this in line with the level of his love for his country.

Teaching and learning methods

Theoretical explanation to the student about computer hardware and software Practical application in the implementation of software and finding outputs

Evaluation methods

Daily Exams / Classroom Activity and Participation / Semester and Final Exams

D. General and rehabilitative skills transferred (other skills related to employability and personal development).

D1- The use of programming languages in scientific and practical applications.

D2- The use of programming languages to program electronic control circuits of various kinds.

10. Course Structure

week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1	5	Software - What is software and its types - Stages of solving programs in C++ - Algorithm (steps) Solving problems input-processing-Output	Software	Theoretical + practical lectures	editorial & practical
2	5	Flowchart - Semi-Program Pseud code - Miscellaneous examples - Definitions	Process flow chart	Theoretical + practical lectures	editorial & practical
3	5	What is actually going on in the computer (how the computer performs and executes the code sentence inside the computer - important definitions - logical errors - grammatical errors - notes	What's actually going on in the computer	Theoretical + practical lectures	editorial & practical
4	5	Constants and variables (what are they) - why do we need constants and variables in programming - how to determine the basic constants and variables in the problem	Constants and variables	Theoretical + practical lectures	editorial & practical
5	5	Data types in C++ - How to write explicit constants in C++	Data types in C++	Theoretical + practical lectures	editorial & practical
6	5	Declaration of variables in C++ variable definitions – naming variables in C++ (Identifiers)	Announcing variables	Theoretical + practical lectures	editorial & practical
7	5	Types of variables in C++	Types of variables in C++	Theoretical + practical lectures	editorial & practical
8	5	Symbolic constant - Enumerated data - data types Rename data types	Data Types	Theoretical + practical lectures	editorial & practical
9	5	Miscellaneous examples – what actually happens in a computer when variables are defined	Miscellaneous examples	Theoretical + practical lectures	editorial & practical
10	5	Representation of integer- representation of real numbers ASCII encoding of symbols	ASCII encryption	Theoretical + practical lectures	editorial & practical

11	5	Basic I/O sentences - common mistakes - logical errors - grammar errors - definitions	Basic I/O sentences	Theoretical + practical lectures	editorial & practical
12	5	Programmatic activity-writing programs: -Calculating the perimeter and area of a known radius - Calculation of the circumference and area of an unknown radius - a program that calculates the rate of three numbers	Software activity Software activity	Theoretical + practical lectures	editorial & practical
13	5	Assignment Statement - Assignment Statement - Assignment Statement Why Use Arithmetic Expressions What - Why Use Logical Expressions What - Why Use	The customization phrase	Theoretical + practical lectures	editorial & practical
14	5	Customization and expression in C++ Assignment And Expressions General form of the assignment sentence	Customization and expression	Theoretical + practical lectures	editorial & practical
15	5	Allocation sentence and data types - arithmetic expressions - general formula for arithmetic expressions	The customization phrase & data Types	Theoretical + practical lectures	editorial & practical
16	5	Characteristics of arithmetic operations and priorities of arithmetic operations	Properties of programmatic arithmetic expressions	Theoretical + practical lectures	editorial & practical
17	5	Logical expressions- The general form of logical expressions. Priorities in logical expressions	Logical Expressions	Theoretical + practical lectures	editorial & practical
18	5	Miscellaneous examples: - Degree Transfer Program Celsius to Fahrenheit Program to calculate Total and average grades of students	Miscellaneous examples	Theoretical + practical lectures	editorial & practical
19	5	Conditional Control Statements C++ Conditional Statement Simple IF Statement	Simple IF control statement	Theoretical + practical lectures	editorial & practical
20	5	Nested IF Statement IF... ELSE... (General form of conditional control sentence IF. ELSE	Nested IF Statement	Theoretical + practical lectures	editorial & practical

21	5	Miscellaneous examples: - IF usage program – use IF.. ELSE	Miscellaneous examples	Theoretical + practical lectures	editorial & practical
22	5	Rotation and repetition clauses - definition of repetition - repetition in C++ - conditional repetition while - general form of the while sentence	Sentences of rotation and repetition	Theoretical + practical lectures	editorial & practical
23	5	Numerical repetition for – General formula Include do(...) while (condition) – for miscellaneous examples Using a sentence for.	Numerical repetition for	Theoretical + practical lectures	editorial & practical
24	5	SWITCH CONTROL STATEMENT Program using SWITCH	SWITCH CONTROL STATEMENT	Theoretical + practical lectures	editorial & practical
25	5	Functions in C++ - The general form of the function – Function declaration (general formula) -Function call - Vertical files - Mathematical function library Programming using functions - Functions without parameters	Functions in language C++	Theoretical + practical lectures	editorial & practical
26	5	Arrays – Arrays in C + +- One-dimensional Array – General Formula Him. Customize values in array elements – Enter and show single Array values.	Arrays	Theoretical + practical lectures	editorial & practical
27	5	Arithmetic and logical operation on Matrices – Miscellaneous examples.	Arithmetic and logical operations on Matrices	Theoretical + practical lectures	editorial & practical
28	5	Two-dimensional matrix – general formula to declare and initialize the two-dimensional matrix. Perform different operations on matrix Two-dimensional.	Two-dimensional Array	Theoretical + practical lectures	editorial & practical
29	5	Strings in C++ language read symbolic strings. Office function To deal with symbolic strings.	String in C++	Theoretical + practical lectures	editorial & practical

30	5	Miscellaneous examples.	Miscellaneous examples	Theoretical + practical lectures	editorial & practical
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11. Infrastructure

1 Required textbook	None
2 Main references (sources)	<ul style="list-style-type: none"> - Learn C++ programming Language - Microcomputer Technologies / Technical Institutes Authority - Brain structure up the c + + programming language. Wesley, third edition, 2004 - data structure and problem-solving using c + +, 1999. Mark Allen Weiss, (second edition). - problem solving and programming concepts , 2003.
Recommended books and references (scientific journals, reports,....)	
Electronic references, websites	

12. Course Development Plan

<ol style="list-style-type: none"> 1. Participation in the various courses related to the subject 2. See the latest modern technology in this article 3. Number of courses that develop the ability of trainers in the laboratory so that they can train students more efficiently 4. Providing laboratories with modern equipment that keep pace with scientific development in developed countries
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Digital Circuits

Course Description

Teach the student the basic physical structure and components of the electronic Computer and the foundations of logical circuits in electronic computers and how they work.

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3. Course Name/Code	Digital Circuits
4. Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2023/2024
6- Number of study hours (total)	2 Theoretical + 2 practical + 1 exercises = 5 * 30 weeks = 150 hours per year
7. Date of preparation of this description	9/2/2021
8. Course Objectives	
General Objective: Teaching the student the basic physical structure and components of the electronic Computer and the foundations of logical circuits in electronic computers and how they work.	

1.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

A1 - The student learns how to use logic gates in digital electronic circuits

B - Skills objectives of the course.

B1- Explaining the topics of digital systems by specialists in the subject with an emphasis on the use of logic gates as a basis for understanding and learning.

B2- Provides them with the skills of designing electronic circuits for digital systems.

- B3-** Emphasis is placed on electronic circuit applications
B4- Provide them with the skills of implementing designs practically and how to use them

Teaching and learning methods

Theoretical lectures + applied problems

Evaluation methods

Editorial + Discussion

C. Emotional and value goals

C1- Enable students to think and analyze topics related to digital systems.

C2- Enable students to think and analyze topics related to solving practical problems.

D. General and transferable qualification skills (other skills related to employability and personal development).

D1- Enabling students to link theories with the practical reality of electronic circuits.

D2- Enabling students to continuously develop themselves after graduation.

2 Theoretical Course Structure

week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1	2	Introduction to electronic computers (generations of computers - classification of computers - an overview of computer networks)	Introduction to Computers	Theoretical + practical lectures	Editorial + practical
2	2	Numerical systems (decimal, binary, octal, hexadecimal) - transformations between numerical systems.	Numerical systems	Theoretical + practical lectures	Editorial + practical
3	2	Arithmetic operations in binary – complements in binary – the use of complements in the subtraction process in the binary system.	Calculations in binary system	Theoretical + practical lectures	Editorial + practical
4	2	Representation of numbers in electronic Computer (BCD, 4Bit BCD, ASCII-7, EBCDIC)	Representing Numbers in an Electronic Computer	Theoretical + practical lectures	Editorial + practical
5	2	Parity Bit - representation of integers - representation of real numbers.	Parity Bit - representation of integers - representation of real numbers.	Theoretical + practical lectures	Editorial + practical
6	2	Logic gates (XNOR, XOR, NAND, NOT, OR, AND)	Logic gates	Theoretical + practical lectures	Editorial + practical
7	2	The laws of Boolean algebra and de Morcan's theorem and their use in simplifying rational equations.	Laws of Boolean algebra and de Morcan's theorem	Theoretical + practical lectures	Editorial + practical
8	2	Representation of different logic circuits using universal gates (NAND and NOR).	Represent different logic circuits using universal gates,	Theoretical + practical lectures	Editorial + practical
9	2	Methods of writing logical equations from the truth table (SOP product collection method, POS sum product method)	Methods of writing logical equations from a truth table	Theoretical + practical lectures	Editorial + practical

10	2	Carnot Chart (for two, three and four variables).	Karnov schemes	Theoretical + practical lectures	Editorial + practical
11	2	Simplify logical equations using the Carnot diagram.	Simplify logical equations using the Carnot diagram.	Theoretical + practical lectures	Editorial + practical
12	2	Arithmetic circles (half of the whole, the complete sum, parallel addition circles)	Computational circuits	Theoretical + practical lectures	Editorial + practical
13	2	Subtraction circles (semi-subtraction, perfect subtraction, subtraction circles using sum circles by the complementary method of 1)	Subtraction circles	Theoretical + practical lectures	Editorial + practical
14	2	Decoder – Encoder Circuit.	Code Solver Circle	Theoretical + practical lectures	Editorial + practical
15	2	Single rank digital comparator circle – digital comparator for two ranks.	Single rank digital comparator circle – digital comparator for two ranks.	Theoretical + practical lectures	Editorial + practical
16		Hoppers (overview, S-R hopper, clock timing pulses, synchronous S-R hoppers.)	Hoppers	Theoretical + practical lectures	Editorial + practical
17	2	Hopper J-K , Hopper M / S J-K , Hopper Type D , Hopper Type -, Hopper Type - , Hopper Type – T.	Hopper J-K , Hopper M / S J-K , Hopper Type D , Hopper Type - , Hopper Type - , Hopper Type – T.	Theoretical + practical lectures	Editorial + practical
18	2	Shift Register – Bidirectional offset record.	Offset logs	Theoretical + practical lectures	Editorial + practical
19	2	Counters – Asynchronous counters – Ascending counter – Countdown counter – Ascending/descending counter.	Counters	Theoretical + practical lectures	Editorial + practical
20	2	Synchronous counters – Consecutive synchronous counter – Parallel synchronous counter.	Synchronous counters	Theoretical + practical lectures	Editorial + practical

21	2	Electronic Computer arrangement (general definitions - Computer parts and function of each part - CPU)	Electronic Computer arrangement	Theoretical + practical lectures	Editorial + practical
22	2	Memories – semiconductor memories (EAPROM, EPROM, PROM, ROM) – memory vectors.	Memories	Theoretical + practical lectures	Editorial + practical
23	2	Secondary storage devices (magnetic tape - pulley and cassette - magnetic disk - laser disk)	Secondary storage devices	Theoretical + practical lectures	Editorial + practical
24	2	Input and output devices.	Input and output devices.	Theoretical + practical lectures	Editorial + practical
25	2	Digital-to-peer-to-peer converter—Digital-to-peer-type flash converter .	Convert from digital to peer	Theoretical + practical lectures	Editorial + practical
26	2	Adapter from digital to analog type network resistors - accuracy and provisions.	Adapter from digital to analog type network resistors	Theoretical + practical lectures	Editorial + practical
27	2	Conversion from peer-to-digital using the simultaneous and comparative method.	Conversion from peer-to-digital using the simultaneous and comparative method.	Theoretical + practical lectures	Editorial + practical
28	2	ADC by ascending counter method.	ADC by ascending counter method.	Theoretical + practical lectures	Editorial + practical
29	2	Integrated circuits - general idea - types of integrated circuits and the difference between them.	Integrated Circuits	Theoretical + practical lectures	Editorial + practical
30	2	Integrated circuits for logic gates. Integrated circuits for hoppers.	Integrated circuits for logic gates. Integrated circuits for hoppers.	Theoretical + practical lectures	Editorial + practical

2 Practical Course Structure

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1	2	General introduction to the subject of digital circuits - familiarizing students with the laboratory board and how to use it - directing students on how to write down the practical results and prepare Weekly report.	General introduction to the subject of digital circuits	Theoretical + practical lectures	Editorial & practical
2	2	ACHIEVE THE WORK OF THE BASIC GATES (NOT – OR – AND).	Achieving the work of the basic gates	Theoretical + practical lectures	Editorial & practical
3	2	Achieving the work of other gates (vehicle) (NOR – NAND).	Realizing the work of other portals	Theoretical + practical lectures	Editorial & practical
4	2	Connecting logic circuits using different gateways.	Connecting logic circuits using different gateways.	Theoretical + practical lectures	Editorial & practical
5	2	Achieving the work of exceptional gates (XNOR – XOR).	Achieving the work of exceptional gates (XNOR – XOR).	Theoretical + practical lectures	Editorial & practical
6	2	Design of logic circuits using comprehensive gates (NOR – NAND).	Design of logic circuits using comprehensive gates (NOR – NAND).	Theoretical + practical lectures	Editorial & practical
7	2	Realization of the laws of Boolean algebra in practice.	Realization of the laws of Boolean algebra in practice.	Theoretical + practical lectures	Editorial & practical
8	2	De Morcan legal investigation in practice.	De Morcan legal investigation in practice.	Theoretical + practical lectures	Editorial & practical
9	2	Half Collector Circle Half Adder .	Half Collector Circle Half Adder .	Theoretical + practical lectures	Editorial & practical
10	2	Half Subtractor circle.	Half Subtractor circle.	Theoretical + practical lectures	Editorial & practical
11	2	Full Adder Collector Department .	Full Adder Collector Department .	Theoretical + practical lectures	Editorial & practical

12	2	Full Subtractor circle .	Full Subtractor circle	Theoretical + practical lectures	Editorial & practical
13	2	Circle screwdriver Decoder .	Circle screwdriver Decoder	Theoretical + practical lectures	Editorial & practical
14	2	Encoder coding circuit .	Encoder coding circuit	Theoretical + practical lectures	Editorial & practical
15	2	Digital comparator circle for one rank.1-Bit Digital Comparator	Digital comparator circle for one rank.1-Bit Digital Comparator	Theoretical + practical lectures	Editorial & practical
16	2	Digital comparator circuit for two mattresses.2-Bit Digital Comparator	Digital comparator circuit for two mattresses.2-Bit Digital Comparator	Theoretical + practical lectures	Editorial & practical
17	2	Hopper circle S-R .	Hopper circle S-R	Theoretical + practical lectures	Editorial & practical
18	2	Hopper circle J-K .	Hopper circle J-K	Theoretical + practical lectures	Editorial & practical
19	2	Hopper circle type – D .	Hopper circle type – D	Theoretical + practical lectures	Editorial & practical
20	2	Circle hopper type – T .	Circle hopper type – T	Theoretical + practical lectures	Editorial & practical
21	2	The circle of the hopper master - black (Master - Slave).	The circle of the hopper master - black (Master - Slave)	Theoretical + practical lectures	Editorial & practical
22	2	Shift Register .	Shift Register	Theoretical + practical lectures	Editorial & practical
23	2	Ascending (asynchronous) ripple counter.	Ascending (asynchronous) ripple counter	Theoretical + practical lectures	Editorial & practical
24	2	Descending (asynchronous) ripple counter.	Descending (asynchronous) ripple counter	Theoretical + practical lectures	Editorial & practical
25	2	Bidirectional undulating counter coefficient – 8 .	Bidirectional undulating counter coefficient	Theoretical + practical lectures	Editorial & practical
26	2	Binary synchronous counter	Binary synchronous counter	Theoretical + practical lectures	Editorial & practical

27	2	Non-binary synchronous counter.	Non-binary synchronous counter.	Theoretical + practical lectures	Editorial & practical
28	2	Generate square waves using hoppers.	Generate square waves using hoppers.	Theoretical + practical lectures	Editorial & practical
29	2	Digital-to-analog circuit using the binary ladder method.Binary Ladder DAC	Digital-to-analog circuit using the binary ladder method.Binary Ladder DAC	Theoretical + practical lectures	Editorial & practical
30	2	Analog-to-digital circuit using the counter method.Counter-type ADC	Analog-to-digital circuit using the counter method.Counter-type ADC	Theoretical + practical lectures	Editorial & practical

1. Infrastructure

1 Required textbooks	None
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2 Main references (sources)	
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Recommended books and references (scientific journals, reports,....)	
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B Electronic references, websites	
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3 Course Development Plan

- 1- Participation in the various courses of the subject.
- 2- See the latest modern technology in the application of programs.

Electrical circuits

Course Description

Student education. On the application of general electrical laws, theories of electrical networks, analysis of single-phase electrical circuits as well as circuits equipped from three-phase sources.

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Department of Information and Communication Technology
3. Course Name/Code	Electrical circuits
4. Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2023/2024
6- Number of study hours (total)	2 Theoretical + 2 Practical = 4 * 30 weeks = 120 annual hours
7. Date of preparation of this description	9/2/2021
8- General Objective: The student is able to apply general electrical laws, theories of electrical networks, analysis of single-phase electrical circuits in addition to circuits equipped from three-phase sources.	
Special Objective: <ul style="list-style-type: none">1- Application of general electrical laws when analyzing electrical circuits.2- Choose the most appropriate application when analyzing DC and alternating circuits.3- Identify the various basic electrical theories and make mathematical applications on them4- Single-phase and three-phase equipping connection and handling of various types of loads	

3. Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

- A1-** The student should know the basic principles of the electrical components involved in communication systems.
- A2-** To know the basic principles of the design of electrical circuits that support the transmitters and receivers of the telecommunications system.
- A3-** The student should know the basic principles of succession and parallel resonance circuits and their uses
- A4-** The student should know the uses of important electrical circuits and how to use them in the practical aspect in various aspects of life (in homes - factories - various workshops)

B - Skills objectives of the course.

- B1** – The student should be able to design and implement some electrical circuits that are used in communications.
- B2** – The student should be able to use and design electrical circuits in the antenna system and how to maintain them

Teaching and learning methods

Theoretical lectures , solving examples, workshop, laboratory, graduation project, summer training)

Evaluation methods

(Oral tests, written tests, practical tests, laboratory reports, semester exams, final exams, daily evaluation)

C. Emotional and value goals

- C1-** The student is interested in designing electrical appliances.
- C2-** The student is interested in maintaining the electrical appliances system.
- C3-** The student should realize the importance of using electrical systems in the life of societies and the need to know the latest developments in this field.
- C4-** The student is interested in the correct drawing rules for different electronic circuits .

Teaching and learning methods

(Theoretical lecture, solving examples, workshop, laboratory, graduation project, summer training)

Evaluation methods

(observation, interview, student's cumulative record)

D. General and rehabilitative skills transferred (other skills related to employability and personal development).

D1- Teaching the student the uses of important electrical systems and how to use them in the practical aspect in various aspects of life (in homes - factories - various workshops)

D2- Teaching the student some laws and mathematical theories that he needs in the application of laws within the jurisdiction.

D3- Teaching the student the correct methods in drawing various electronic and electrical systems and circuits.

D4- Teaching the student the basics of using the technical English language and in dealing with terms within the specialization and writing reports for the results obtained from the use of various communication systems.

4 .Course Structure - Theoretical

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1	2	The system of units used in electricity and units of measurement for each material (its parts and multiples) - Mathematical applications for converting values using units - Definition of basic units of voltage, current and resistance - Components of the electrical circuit - Ohm's law - Factors affecting the value of resistance - Specific resistance of the conductive and insulating material - The effect of temperature on the value of resistance - Thermal coefficient of resistance with solving practical examples.	System of units used in electricity - definition of basic units - factors affecting the value of resistance	Theoretical + practical lectures	Editorial + practical
2	2	DC circuits include: 1. Connecting resistors in series with examples 2. Connecting resistors in parallel with examples . 3. Mixed connection of resistors with examples 4. Stellar and triangular connection of resistors and conversion from one to the other with examples.	DC circuits	Theoretical + practical lectures	Editorial & practical
3	2	Kirchhoff's laws – Kirchhoff's laws of current and voltage with practical examples.	Kirchhoff's Laws	Theoretical + practical lectures	Editorial & practical
4	2	Melvan's theory – definition of the theory – how to apply it in direct current.	Melvan's theorem	Theoretical + practical lectures	Editorial & practical
5	2	Thevenin's theorem – definition of the theory – is the greatest power transmitted to the load. How to apply them in DC .	Thiffen's theorem	Theoretical + practical lectures	Editorial & practical

6	2	Norton's theory – definition of the theory – how to apply it in direct current.	Norton's theorem	Theoretical + practical lectures	Editorial & practical
7	2	Congruence theory – definition of theory – steps to apply it in solving DC circuits that contain more than one source – solving definitional examples of current and voltage source (constant power distributor) and how to convert from one to the other – the theory of transferring the greatest possible power – defining the theory – defining the theory and deriving its relationships – examples.	Congruence theory	Theoretical + practical lectures	Editorial & practical
8	2	Alternating quantities The definition of alternating current properties – how to generate alternating current and its wave graph and its relationships – includes the definition of the effective value of RMS, the average value and its relationships to find the form factor and the value factor of irregular waveforms with practical examples.	Alternating quantities	Theoretical + practical lectures	Editorial & practical
9	2	Alternating vector quantities - their definition - phase and graph representation - phase angle and how to find them - finding the resultant vector quantities includes multiplication, division, addition and subtraction with practical examples.	Vector Alternating Quantities	Theoretical + practical lectures	Editorial & practical
10	2	The effect of alternating current on a circuit containing only resistance – a circuit containing only pure inductance – a circuit containing only pure capacitance – finding the phase angle between current and voltages for each circuit with examples.	AC effect	Theoretical + practical lectures	Editorial & practical
11	2	The effect of alternating current on a circuit containing (resistance and inductance respectively -	Vector Alternating Quantities	Theoretical +	Editorial & practical

		resistance and dilation respectively -resistance, inductance and dilation respectively) - finding the relationship between current and voltage in the three cases phase angle - total resistance of the circuit with applied examples.		practical lectures	
12	2	The effect of alternating current on a circuit containing (resistance and inductance - resistance and amplitude - resistance, inductance and amplitude) in parallel - finding the relationship between voltages and current in the three cases - phase angle - total resistance of the circuit with applied examples.	AC effect	Theoretical + practical lectures	Editorial & practical
13	2	Use the characterization J-OPERATOR or composite factor to find the total impedance, total tolerance, current, voltage and phase angle of impedance interconnection circuits in series and parallel with the solution of examples.	USING THE J-OPERATOR PROFILE	Theoretical + practical lectures	Editorial & practical
14	2	Resonance circuits, including the series resonance circuit and parallel resonance (definition of the resonance state and how to reach it - calculation of current, voltages, impedance, phase angle and frequency at resonance - finding the beam width - quality factor - drawing the relationship between inductive and capacitive reactance with frequency - solving examples of both cases)	Resonant circuits	Theoretical + practical lectures	Editorial & practical
15	2	Apply theorems such as Norton and Thevenin theorems and congruence to alternating current circuits with solving examples.	Application of theories	Theoretical + practical lectures	Editorial & practical
16	2	Power in alternating current circuits includes the calculation of power on circuits containing (resistance only - inductance only - amplitude only resistance, inductance and dilated respectively and in parallel)	Define effective and passive capacity and how to calculate them	Theoretical + practical lectures	Editorial & practical

		Definition of effective and inactive power and how to calculate them.			
17	2	Total apparent power (definition) - how to draw a power triangle - power factor - definition and its effect on alternating current circuits - how to improve the power factor with practical examples.	Total apparent capacity	Theoretical + practical lectures	Editorial & practical
18	2	The theory of transferring the greatest possible power in alternating current circuits – deriving its relationship with practical examples.	Power in AC circuits	Theoretical + practical lectures	Editorial & practical
19	2	Analysis of electrical networks by node voltage method - introduction - node voltages - number of node voltage equations - node voltage equations by examination - joint forgiveness - transition tolerance.	Analysis of electrical networks	Theoretical + practical lectures	Editorial & practical
20	2	Practical examples of the analysis of electrical networks by the node method.	Network Analysis	Theoretical + practical lectures	Editorial & practical
21&22	2	Three-phase alternating current circuits - its definition and how to generate alternating current (one phase - two phases - three phases) with each circuit drawing connections of the star and triangular shape in three-phase alternating current circuits and special relationships to calculate the current and voltage of the line and phase, the total power and the power of the line - the capacity of the phase - the advantages of each connection when used in balanced and unbalanced loads with examples.	Three-phase alternating current circuits	Theoretical + practical lectures	Editorial & practical
23	2	Solve practical examples of three-phase alternating current and triangular and stellar connections from balanced and unbalanced loads.	Three-phase alternating current circuits	Theoretical + practical lectures	Editorial & practical

24&25	2	Methods of measuring the power of three-phase loads - the wattmeter device - how to link it to the circuit to measure the effective power and calculate the inactive power and apparent capacity with an example solution - measuring the power using a wattmeter and voltage - how to find the total power in this way and in the case of stellar and triangular connection - using two wattmeters - three wattmeters.	Three-phase alternating current circuits	Theoretical + practical lectures	Editorial & practical
26&27	2	Electrical filters - types - conversion functions.	Transcircuit Status RL - RC - RLC	Theoretical + practical lectures	Editorial & practical
28	2	LPF –HPF –BPF – cascade section	Self-induction	Theoretical + practical lectures	Editorial & practical
29	2	Applications on filters and their design	Filters	Theoretical + practical lectures	Editorial & practical
30	2	Current growth and decay curves from the induction circuit – Explanation of this circuit and its effect on direct current – Public relations for the growth and decay of current in the coil – Drawing current and calculating the constant time – Solving examples – Charging and discharging capacitors The use of amplitudes in DC circuits includes the general relationship of charging and discharging the capacitor and drawing current The effect of constant time and its calculation – Solving examples.	Current growth and decay curves from an inductive circuit	Theoretical + practical lectures	Editorial & practical

2 Course Structure - Practical

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1	2	Learn about the way the laboratory works, the way reports work, and the use of devices	Learn about laboratory tools	Theoretical + practical lectures	Editorial & practical
2	2	5. Calculation of resistors in colors - resistance measuring device (ohmmeter) Calculation of resistance in colors - calculation of error rate.	Calculation of resistors in color	Theoretical + practical lectures	Editorial & practical
3	2	The use of continuous and alternating voltage measuring devices - the use of direct and alternating current measuring devices (represented by the fomometer) - the use of a continuous power equipment.	Continuous and alternating voltage meters	Theoretical + practical lectures	Editorial & practical
4	2	Measurement of the electromotive force and internal resistance of the battery - the study of the thermal coefficient of resistance.	Measurement of the electromotive force and internal resistance of the battery	Theoretical + practical lectures	Editorial & practical
5	2	Determination of the specific resistance of some conductors – Realization of Ohm's law in practice	Determination of specific resistance	Theoretical + practical lectures	Editorial & practical
6	2	Connecting resistors (succession - parallel - mixed) multiple exercises.	Connecting resistors	Theoretical + practical lectures	Editorial & practical
7	2	Achieving equivalence of the circles of the star and triangular shape of the direct current (multiple exercises).	Star and trigonometric connection	Theoretical + practical lectures	Editorial & practical
8	2	Realization of Kirchhoff's first and second laws in practice.	Kirchhoff's first and second laws	Theoretical + practical lectures	Editorial & practical
9	2	Investigation of theorems (Thevenen and Norton).	Theoretical (Thiffenon and Norton)	Theoretical + practical lectures	Editorial & practical

10	2	Achieving two theories (congruence and exchange).	My theorem (congruence and exchange)	Theoretical + practical lectures	Editorial & practical
11	2	Power distributor – the theory of transferring the greatest power of direct current – the realization of the theory with its three possibilities.	Capacity Distributor	Theoretical + practical lectures	Editorial & practical
12	2	Osloscope – comparison between the maximum and average value in practice and calculation of the coefficient of formation and the peak (multiple exercises).	Signal Plotter	Theoretical + practical lectures	Editorial & practical
13	2	Connecting the series and parallel to (RC - RL).	Connecting Straight and Parallel to (RC - RL)	Theoretical + practical lectures	Editorial & practical
14	2	Phase angle measurement (RLC) sequentially - (multiple exercises) .	Phase angle measurement (RLC) sequentially	Theoretical + practical lectures	Editorial & practical
15	2	Phase angle measurement (RLC) is parallel to (multiple exercises).	Phase angle measurement (RLC) parallelism	Theoretical + practical lectures	Editorial & practical
16	2	Consecutive resonance – parallel resonance.	Consecutive resonance – parallel resonance	Theoretical + practical lectures	Editorial & practical
17	2	Realization of the theories (Thevenen and Norton) of alternating current.	Thevenen and Norton's theories of alternating current	Theoretical + practical lectures	Editorial & practical
18	2	Comparison between ordinary and electronic voltmeter in measuring continuous and alternating voltages (multiple exercises).	comparison between ordinary and electronic voltmeters,	Theoretical + practical lectures	Editorial & practical
19	2	Transfer the greatest possible power in alternating current – the realization of the theory with its three possibilities.	Transmit the greatest possible power in alternating current	Theoretical + practical lectures	Editorial & practical
20	2	Measuring power using voltmeters and three ammeters is a multi-exercise.	Measuring power using three voltmeters and ammeters	Theoretical + practical lectures	Editorial & practical

21	2	Measurement of power and power factor using YTR (multiple exercises).	Measurement of power and power factor using watem ytr	Theoretical + practical lectures	Editorial & practical
22	2	Improve the power factor (multiple exercises).	Power Factor Optimization	Theoretical + practical lectures	Editorial & practical
23	2	Voltages and current in current circuits Three phase connections (star - triangular)	Connections (stellar - triangular) in alternating current	Theoretical + practical lectures	Editorial & practical
24	2	Resistance using a Taskon bridge (multiple exercises).	Resistance using a Withstoon arch	Theoretical + practical lectures	Editorial & practical
25	2	Loaded voltage divider – Non-loaded-voltage divider.		Theoretical + practical lectures	Editorial & practical
26	2	Measuring resistors using an ammeter and a voltmeter (multiple exercises).	Measuring resistors using an ammeter and voltmeter	Theoretical + practical lectures	Editorial & practical
27	2	Using the magnifier to measure high-value resistors (insulators) – (multiple exercises).	Magnifier for measuring high-value resistors (insulators)	Theoretical + practical lectures	Editorial & practical
28	2	Increase the measurement range of the ammeter device – calibration of the ammeter device using another device.	Calibration of the meter device	Theoretical + practical lectures	Editorial & practical
29	2	Increase the measurement range of the voltmeter – calibration of the voltmeter.	Voltmeter calibration	Theoretical + practical lectures	Editorial & practical
30	2	Time constant study of inductive circuit - (RL)Study of the time constant of a capacitive circuit (RC).	Study of the time constant of an inductive circuit	Theoretical + practical lectures	Editorial & practical

3 Course Development Plan

The curriculum for electronic measuring devices - the second stage for the current academic year 2020-2021 was developed and according to sectoral directives by 42%, where some subjects were deleted and added.

Sources :

Principles of Electrical Engineering - Written by Muhammad Zaki - Dr. Muzaffar Anwar.

- 1- Electrical Technology(Edward Hughes).
- 2- Basic Circuit (A.M. Brooks). Pergam Press.
- 3- Introduction To Electric Circuit (M.Romanwltz) John Willey .
- 4- Basic Electrical Engineering(Fitzgerald& Rlgginbothan). Graw

Math

Course Description

Teaching the student to develop the student's ability to use mathematics in practical applications and benefit from it in other engineering lessons.

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3. Course Name/Code	mathematics
4. Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2023/2024
6- Number of study hours (total)	2 theoretical + 1 exercise = 3 * 30 weeks = 90 hours per year
7. Date of preparation of this description	9/2/2021
8. Course Objectives	
Help the student understand the laws and mathematical problems necessary for computer applications.	

1.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

A1- The student should know the correct mathematical methods in the solution.

A2- The student should know the principles of calculus to link them with other scientific subjects.

A3- The student should know the drawing of functions.

B. Skills objectives of the course.

B1 – The student should be able to analyze mathematical problems.

B2 – The student should be able to use logical methods of solution.

B3- The student should be able to calculate the results by the correct scientific methods.

B4- The student should be able to use the electronic Computer to calculate some values.

Teaching and learning methods

- Theoretical lectures
- Solve examples
- Practical examples related to specialization

Evaluation methods

- Written tests
- Solve a set of exercises after the end of each topic
- Quarterly Exams
- Final Exams
- Daily Assessment

C. Emotional and value goals

C1- The student is interested in mathematical skills.

C2- The student is interested in intellectual skills.

C3- The student is interested in the mechanical skills of the solution.

C4- The student understands the importance of mathematics and its interference with other basic subjects.

Teaching and learning methods

- Theoretical lectures
- Solve examples
- Feedback

Evaluation methods

- Daily tests.
- Record daily notes

D. General and rehabilitative skills transferred (other skills related to employability and personal development).

D1- Teaching the student the mathematical methods and laws that he needs within the specialization.

2 Course Structure

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1	2	Introducing the student to matrices/ determinants	Arrays / Determinants	Theoretical lectures	editorial
2	2	Solving Linear Equations – Kramer Method – Applications of Determinants to Evaluate Currents in Electrical Circuits	Linear equations	Theoretical lectures	editorial
3	2	Vectors / Vector Analysis / Vector and Scalar Quantities – Vector Algebra – Calculations in Triple Space Some applications on vectors	Vector	Theoretical lectures	editorial
4	2	Orthogonal vectors - vector scale - scalar and directional product - and applications to vectors	Orthogonal vectors	Theoretical lectures	editorial
5	2	Complex Numbers – Addition, Subtraction, Multiplication and Division of Complex Numbers	Complex Numbers	Theoretical lectures	editorial
6	2	The polar formula of a complex number, exponential and general, and how to convert from one formula to another / Using Demoger's theorem of complex numbers / Electrical applications on complex numbers	Polar, exponential and general formula	Theoretical lectures	editorial
7	2	Groups / Subgroups C / Union and intersection of groups / Homologous and homogeneous groups / Multiplying the set with itself or another group	Groups	Theoretical lectures	editorial
9	2	Series / Types of Series - Arithmetic - and Geometric - Find any term of the arithmetic series / Find the sum of the arithmetic series / Find any	Series	Theoretical lectures	editorial

		term of the geometric series / Find the sum of the geometric series			
10	2	differentiation / derivative of algebraic functions by definition and differentiation by rules and applications on differentiation to find velocity and acceleration	Calculus	Theoretical lectures	editorial
11	2	Derivation of implicit functions, trigonometric functions, logarithmic functions, exponential functions, and some applications of differentiation,	Derivation of functions	Theoretical lectures	editorial
12	2	differentiating hyperbolic functions, calculating the time constant, finding the equation of tangent and tangent to tangent, velocity, and acceleration,	Differentiation of redundant functions	Theoretical lectures	editorial
13	2	draw the curve of a function using differentiation and find the limits of the maximum and minor, regions of increment and decrease, inflection points, regions of concavity, and convexity,	Graph the Curve of the Function	Theoretical lectures	editorial
14	2	General physical and engineering applications and some applications on the Computer in general	General Physical and Engineering Applications	Theoretical lectures	editorial
15	2	Integration / Indefinite Integration - Definition of Integration - Characteristics of Integration and Some Applications on Integration	Integration	Theoretical lectures	editorial
16	2	Integration of exponential and trigonometric functions	Integration of functions	Theoretical lectures	editorial
18	2	Definite integral – Applications of definite	Definite Integral	Theoretical lectures	editorial

		integrals – Subcurved area – and area between curves			
19	2	Rotational volumes – arc length – calculation of electrical capacity	Rotational volumes	Theoretical lectures	editorial
20	2	find work, momentum, momentum, and moment of inertia,	Work, determination and momentum	Theoretical lectures	editorial
21-22	2	General methods of integration including substitution, fragmentation, and the use of subfractions , exponential and logarithmic fractions	General methods of integration	Theoretical lectures	editorial
23-24	2	Numerical methods of integration - trapezoidal rule - Simson's rule and finding velocity and acceleration and finding the value of current	Trapezoidal Rule – Samson Base	Theoretical lectures	editorial
25-26	2	Solve Differential Equations Preferred and Homogeneous – Linear and Cogent	Solving Differential Equations	Theoretical lectures	editorial
27	2	Mathematical logic	Mathematical logic	Theoretical lectures	editorial
28	2	Algorithm – Finding the Greatest Common Denominator of Two Positive Numbers	Algorithm	Theoretical lectures	editorial
29-30	2	Relation & digraphs relations	Relation & digraphs relations	Theoretical lectures	editorial

3. Infrastructure

1 Required textbooks	There isn't any
2 Main references (sources)	<p>1- From the Shum series (electrical circuit solution). Written by Joseph A.</p> <p>2- Methods for solving differential equations. Written by: Ahmed Al-Samarrai and Yahya Abd Saeed.</p> <p>3 – Calculus ((Thomas)).</p> <p>4 – Laplace transformation.</p>

Recommended books and references (scientific journals, reports,....)	
B Electronic references, websites	

4. Course Development Plan

- Involve students in seminars.
- Using Matlab software to solve mathematical problems and graphics.

Engineering Drawing

Course Description

Teaching the student the correct foundations of engineering drawing and cartography work and reading them

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3. Course Name/Code	Engineering Drawing
4. Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2020/2021
6- Number of study hours (total)	3 Practical = 3 * 30 weeks = 90 hours per year
7. Date of preparation of this description	9/2/2021
8. Course Objectives	
General Objective: Training the student on the correct foundations of all engineering drawing and cartography work and reading them.	
Special Objective: To train the student and make him able to: Using AutoCAD software for engineering and electrical drawing, understanding maps, drawing their landscapes and engineering projections.	

2. .Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

A1- The student knows the basics of engineering drawing.

A2- The student should know the basic principles of electronic and electrical components, their uses and applications.

A3- The student should know the basic principles of designing basic electronic circuits and their uses.

A4- The student should know the uses of the important Computer and how to draw engineering with the computer.

B - Skills objectives of the course.

B1 – The student should be able to draw electronic and electrical circuits.

B2 – The student should be able to use and design the AutoCAD program in engineering drawing.

Teaching and learning methods

Theoretical + Practical

Evaluation methods

(Practical tests, daily assessment, semester exams, final exams)

C. Emotional and value goals

C1- The student is interested in designing

C2- The student is interested in maintaining computers .

C3- The student should realize the importance of using the Computer in the life of societies and the need to know the latest developments in this field.

C4- The student is interested in clarifying his ideas using the appropriate drawing program.

Teaching and learning methods

(Theoretical lecture, solving examples, laboratory)

Evaluation methods

(Note, interview, student cumulative record)

D. General and qualifying-transfer skills (other skills related to employability and personal development).

D1- Teaching the student to express his ideas in the artistic language of the technician, which is drawing.

D2- Teaching the student an important program within the specialization, which is AutoCAD.

3. Course Structure

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1	3	Know About Engineering Drawing	The importance of engineering and industrial drawing - repair drawing sizes - painting sizes - drawing drawing data table - point definitions line and surface.	Practical application in the laboratory	Editorial & practical
2	3	Know About AutoCAD	Auto-cad program Identify the different program environment for the screen Menus, screen, scroll bars, tool bars, properties	Practical application in the laboratory	Editorial & practical
3	3	Knows how to run AutoCAD	Preparing a drawing sheet to open a new file, drawing borders, drawing units - grid - jump - storage.	Practical application in the laboratory	Editorial & practical
4	3	Learn about drawing commands	Identify the different drawing commands Point ,coordinafes. ... etc. Identify editing-move-copy-offset-mirrores commands	Practical application in the laboratory	Editorial & practical
5	3	Learn about drawing commands	Osnap Accurate Drawing and Add Dimension	Practical application in the laboratory	Editorial & practical
6	3	Control the drawing specifications.	Add text and sectors to control drawing specifications.	Practical application in the laboratory	Editorial & practical
7	3	Three-dimensional drawing	Introduction to three-dimensional drawing Ucs - vports-elev-thickness	Practical application in the laboratory	Editorial & practical
8	3	Create three-dimensional surfaces	Create three-dimensional surfaces and three-dimensional objects	Practical application in the laboratory	Editorial & practical
9	3	Draw line types	Draw line types : hidden line, hidden line, center line, clipping line, trim line for small parts, trim line for large parts, cutting level line, dimension line, and spanning line (painting drawing).	Practical application in the laboratory	Editorial & practical

10	3	Writing Latin letters and numbers	Writing Latin letters and numbers - a panel that includes writing numbers and letters vertically and then diagonally at an angle of 75° in size of four mm up to ten mm.	Practical application in the laboratory	Editorial & practical
11	3	Engineering Operations	Engineering operations include: 1- Straight division in equal and unequal proportions2- Straight halving3- Establishing a column on a line or arc from a point inside and a point outside it4- Drawing a line parallel to a known line at a known distance5- Angle halving6- Finding a known arc center or circle7- Drawing a circle that touches the sides of a floating triangle from the inside and outside (drawing one painting).	Practical application in the laboratory	Editorial & practical
12	3	Drawing diamonds for the circle	Drawing diamonds for the circle: 1- Drawing an arc that touches two known circles from the inside2- Drawing an arc that touches two known circles from the outside3- Drawing a straight that touches two known circles from the outside5- Drawing an arc for a known radius that touches a line and a known circle.	Practical application in the laboratory	Editorial & practical
13	3	Drawing a Regular , Pentagonal, and Regular Hexagon,	Draw a regular polygon given the length of the side in general way, draw a regular pentagon given the diameter of a circle, draw a regular hexagon given the diameter of the circle-draw the perspective of a circle at an angle of 30.	Practical application in the laboratory	Editorial & practical
14	3	Explanation of electrical and electronic symbols	Explanation of electrical and electronic symbols	Practical application in the laboratory	Editorial & practical

15	3	Drawing of electrical and electronic code board	Drawing of electrical and electronic code board	Practical application in the laboratory	Editorial & practical
16	3	Electrical installations-	Electrical installations - drawing a special panel for electrical installations of a room with an attached store.	Practical application in the laboratory	Editorial & practical
17	3	Drawing a plate for the complete connections of a fluorescent tube	Drawing a plate for the complete connections of a fluorescent tube	Practical application in the laboratory	Editorial & practical
18	3	Drawing an electronic connection board	Drawing an electronic connection board containing a set of electronic circuits.	Practical application in the laboratory	Editorial & practical
19	3	Drawing a simple holographic shape	Draw a simple hologram at angles 30 and 45.	Practical application in the laboratory	Editorial & practical
20	3	explain the placement of dimensions on the drawing in a geometric way,	Explain the placement of dimensions on the drawing in a geometric way, drawing a painting that includes two perspectives with all dimensions in a geometric way.	Practical application in the laboratory	Editorial & practical
21	3	Drawing the complex perspective	Drawing a complex perspective containing cylindrical shapes or cavities - drawing a painting that includes two perspectives with dimensional writing in a geometric way.	Practical application in the laboratory	Editorial & practical
22	3	Drawing a board for an electronic circuit	Drawing a board for an electronic circuit containing gates of gates.	Practical application in the laboratory	Editorial & practical
23	3	Drawing a board for an electronic circuit	Drawing a board for an electronic circuit containing integrated circuits	Practical application in the laboratory	Editorial & practical
24	3	Drawing a board for an electronic circuit	Drawing a board for an electronic circuit containing gates and integrated circuits	Practical application in the laboratory	Editorial & practical

25	3	Applications on drawing projections	Applications on drawing projections from different perspectives.	Practical application in the laboratory	Editorial & practical
26	3	Applications on drawing projections	Drawing perspective from the three projections	Practical application in the laboratory	Editorial & practical
27	3	Drawing panel to control the speed of the drive	Drawing a plate to control the speed of a three-phase motor	Practical application in the laboratory	Editorial & practical
28	3	How to read a map	How to read a map or set of maps of electrical circuits.	Practical application in the laboratory	Editorial & practical
29-30	3	Electrographic Applications	Electrographic applications on the electronic Computer.	Practical application in the laboratory	Editorial & practical

4. Infrastructure

1 Required textbooks	There isn't any
2 Main references (sources)	<p>1- Descriptive Geometry - Medhat Faisal Fadil - Al-Zaman Press 1977</p> <p>2- Descriptive Engineering - Mohamed Amin Waheeb - Faculty of Engineering, Ain Shams University 1979</p> <p>3-Engineering Drawing Technology((A.W-Wander William))MC-Graw-Hill 1977</p> <p>4-Engineering Drawing Graphic Techologl by: Frend MC-Graw-Hill 1976</p>
Recommended books and references(scientific journals, reports,....)	
B Electronic references, websites	Technical drawing book for students of electronics and computers

5. Course Development Plan

Computer Applications

Course Description

Introducing the student to the Computer with an idea of its horizons and use in different fields and the principles of programming and providing him with skill in using the Computer to implement programs prepared previously for application in his field of specialization.

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3. Course Name/Code	Computer Applications / First Stage
4. Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2023/2024
6- Number of study hours (total)	1 Theoretical + 2 Practical = 3 * 30 weeks = 90 annual hours
7- Date of preparation of this description	9/2/2021
8- Course Objectives	
General Objective: For the purpose of teaching some of the vocabulary of the digital culture curriculum for computers and the Internet IC3, which is adopted in all developed countries, as it includes an overview of the computer, its components, operating systems used in most devices and applications of the program (Microsoft Office)	

2.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

- A1-** Introducing the student to the constituent parts of the Computer and how to use it.
- A2-** Introducing the student to the most important programs used in engineering applications such as Word , Excel .
- A3-** Training the student to use AutoCAD in mapping ..

B - Skills objectives of the course.

- B1 – The skill of using the electronic Computer.**
- B2 – Acquire the skill of using the AutoCAD program in engineering mapping.**
- B3 – Acquire the skill of printing laboratory reports using the Word program.**

Teaching and learning methods

Theoretical lectures + practical applications + scientific films

Evaluation methods

Written + Practical + Oral + Discussion

C. Emotional and value goals

- C1-** The student should know the modern operating systems of different types, importance and tasks that he performs.
- C2-** Instilling confidence in the student to use office application programs.
- C3-** The student should pay attention to the correct rules in using the computer.
- C4-** Making the student communicate with the outside world.
- C5-** The student should learn computer maintenance.
- C6-** The student realizes the importance of computers in various fields.

D. General and transferable qualification skills (other skills related to employability and personal development).

- D1-** Applied skills within laboratories, workshops and laboratories.
- D2-** Scientific films.
- D3-** Computational skills and the ability to use scientific theories in electronic programs.

3 Course Structure

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1-3	3	Computer System: Hardware Physical Components: External parts: Main unit - screen - keyboard etc Internal parts: motherboard - CPU - compute unit - control unit - memory module - storage unit - storage capacity measurement unit. . Input and output devices. Software Software: . Operating Systems . Application Software . Programming Languages	Computer System: Hardware Physical Components: External parts: Main unit - screen - keyboard etc Internal parts: . Input and output devices. Software Software:	Theoretical + practical lectures	Editorial & practical
4-6	3	General introduction to computers - operating systems - versions - privileges - running and terminating the program (Windows XP), recognition of the desktop and all icons such as (start-my computer-internet explorer...), recognition of all start menu commands	General introduction to computers	Theoretical + practical lectures	Editorial & practical
7-8	3	Change desktop properties (themes- desktop-screen saver.....), window management on the desktop, window elements function description (tool bar- status bar- title bar-menu bar- horizontal...), arrange open windows, move inside the window, move the window from one place to another, deal with the dialog box.	Change desktop properties (th	Theoretical + practical lectures	Editorial & practical
9-10	3	Files and folders, browsing files and folders using My computer , choosing files and folders, creating a new folder on the desktop and My document , opening a file or folder, changing the name of a file or folder, deleting a file or folder, retrieving deleted files or folders, exchanging data between documents and	Files and folders	Theoretical + practical lectures	Editorial & practical

		different programs, searching for files or folders, copying and pasting.			
11-12	3	A detailed study of the start menu , including: My computer- My document- All programs- Run- Control panel..... and access to the details of each of them.	Detailed study of the Start menu	Theoretical + practical lectures	Editorial & practical
13-14	3	Play and print CDs, add programs such as Word or Excel to the start list , retrieve or delete files and folders from the Recycle bin, use Paint and Word pad, use the Windows media player, Help & Support.	Play and print CDs, add programs such as Word or Excel to the start list , retrieve or delete files and folders from the Recycle bin, use Paint and Word pad, use the Windows media player, Help & Support.	Theoretical + practical lectures	Editorial & practical
15-17	3	-Work with other Windows add-ons (Computer - time - date) -Get help and support	Work with other Windows add-ons (Computer - time - date) Get help and support	Theoretical + practical lectures	Editorial & practical
18	3	Typical testing of operating systems and computer components and questions for review.	Typical testing of operating systems and computer components and questions for review.	Theoretical + practical lectures	Editorial & practical
19-20	3	Hierarchy of Word word processing program and its purpose, running the program, opening a new file, toolbars such as (menu bar - tool bar - drawing bar....), Control Menu, shortcuts, creating a new document, writing text, storing the document, opening and closing the document.	Hierarchical Word word processing software and its purpose,	Theoretical + practical lectures	Editorial & practical
21-22	3	Select or shade text Select, update process (cut, copy , paste , replace, page setup, print preview, print.	Select or shade text Select, update process (cut, copy , paste , replace, page setup, print preview, print.	Theoretical + practical lectures	Editorial & practical
23-24	3	Header & footer, Page numbering, time insertion, date, symbols, etc., Fonts, Paragraph formatting, Boarder & Shading borders, Numbering & Bullets , Multicolumn texts , Spelling & grammar.	Header & footer, Page numbering, time insertion, date, symbols, etc., Fonts, Paragraph formatting, Boarder & Shading borders, Numbering & Bullets , Multicolumn texts , Spelling & grammar.	Theoretical + practical lectures	Editorial & practical
25-26	3	Create and work with tables, add Delete cells , merge and split cells , sorting in table ,	Create and work with tables, add Delete cells , merge and split cells , sorting in table , automatic table formatting .	Theoretical +	Editorial & practical

		automatic table formatting .		practical lectures	
27-28	3	Create mathematical equations and how to deal with them and change the formula according to demand.	Create mathematical equations and how to deal with them and change the formula according to demand.	Theoretical + practical lectures	Editorial & practical
29	3	Create spaces- Work with multiple pages- Change master page- Specify page source- Create designs- Use automatic header and footer update- Create multiple header and footer in one document- Bullet lists- Remove bullets.	Create spaces- Work with multiple pages- Change master page- Specify page source- Create designs- Use automatic header and footer update- Create multiple header and footer in one document- Bullet lists- Remove bullets.	Theoretical + practical lectures	Editorial & practical
30	3	Typical test on the computer machine for Microsoft Word word processing software and questions for review.	Typical test on the computer machine for Microsoft Word word processing software and questions for review.	Theoretical + practical lectures	Editorial & practical

4 Infrastructure

1 Required textbooks	There isn't any
2 Main references (sources)	Computer Applications
Recommended books and references (scientific journals, reports,....)	Books in the Central Library
B Electronic references, websites	Different sources of the Internet

5 Course Development Plan

- 1- Participation in the various courses of the subject.
- 2- See the latest modern technology in the application of programs.
- 3- The number of courses developed from the ability of trainers in the laboratory to be able to train students more efficiently.
- 4- Providing laboratories with modern programs that keep pace with scientific development in developed countries.

English Language

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the description of the programme.

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3. Course Name/Code	English Language
4. Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2023/2024
6- Number of study hours (total)	1 theoretical = 1 * 30 weeks = 30 annual hours
7. Date of preparation of this description	9/2/2021
8. Course Objectives	
A- To provide the student with knowledge of scientific terminology in both general and scientific English. B- Teaching the student the basic principles of English grammar for speaking and writing. C- Teaching the student how to correctly pronounce scientific and technical terms. D- Training the student to use the library and dictionary and extract sources from the Internet. Teaching the student to write laboratory reports in English.	

1.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

A1- The student should know the scientific and technical terms in his specialization.

A2- To know the basic rules of the English language.

A3- To understand the basic subjects and specialization taught in English.

A4- To understand the exam questions in English.

A5- To know the scientific and technical terms used in writing reports and the project.

A6- To know the scientific terms reduced in his specialization.

B - Skills objectives of the course.

B1- The student should be able to write laboratory reports correctly.

B2- To be able to take theoretical information from scientific sources, periodicals and the Internet.

B3- To be able to use the Computer to find scientific sources.

B4- To be able to write scientific research and arrange information according to sequence and write the sources used.

Teaching and learning methods

(Theoretical lecture, library to extract sources, Internet, reading scientific pieces in the student's specialization by students and in front of the rest of the students, correct pronunciation of scientific terms.

Evaluation methods

Oral exam, written exam, daily tests, annual evaluation, quarterly exams, final exams.

C. Emotional and value goals

C1- Instilling confidence in the student to use scientific and technical terms in his studies.

C2- Making the student communicate emotionally with the outside world and open to the sciences in English.

A3- The student should be interested in the correct rules for writing laboratory reports and research.

A4- To be familiar with English terminology.

D. General and rehabilitative skills transferred (other skills related to employability and personal development).

D1- Teaching the student to write technical reports for the results obtained from practical experiences in his specialization.

D2- Enable the student to read plans, maps and symbols in English.

2 .Course Structure

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1-4	1	Unit -1- Introduction and Review to English language Introduction to parts of speech. Sentence Patterns.	Unit -1-	Theoretical lectures	editorial
5-6	1	Unit -2- Reading Comprehension and structure. (selected scientific passages general to all specializations)	Unit -2-	Theoretical lectures	editorial
7-8	1	Unit -3- Scientific Attitude (Simple present).	Unit -3-	Theoretical lectures	editorial
9-10	1	Mathematics(passive).	Mathematics(pas sive).	Theoretical lectures	editorial
11-12	1	Scientific Methods (simple past)	Scientific Methods (simple past)	Theoretical lectures	editorial
13	1	Test	Test	Theoretical lectures	editorial
14-15	1	Unit -4- Conversation (from daily life Meeting people	Unit -4-	Theoretical lectures	editorial
16-17	1	Talking about your job	Talking about your job	Theoretical lectures	editorial
18-21	1	Unit -5- The use of library ,Dictionary of information technology and Internet.	Unit -5-	Theoretical lectures	editorial
22	1	Unit -6- Translation Selected topics from internet to be translated	Unit -6-	Theoretical lectures	editorial
23-25	1	Unit -7- Writing Technical Reports	Unit -7-	Theoretical lectures	editorial
26-29	1	Unit -8- Terminology Selected Passages according to specializations	Unit -8-	Theoretical lectures	editorial
30	1	Final Test	Final Test	Theoretical lectures	editorial

D3- Can read the instructions, operating steps and information written on electronic and electrical devices.

D4- Enable the student to read and understand the repair, maintenance and safety manual for the device he is working on.

3 Infrastructure

1 Required textbooks	There isn't any
2 Main references (sources)	Unified Book
Recommended books and references (scientific journals, reports,....)	Books in the Central Library
B Electronic references, websites	Different sources of the Internet

4.Course Development Plan

- 1- Participation in the various courses of the subject
- 2- See the latest findings of modern technology in the study of this article

Democracy and Human Rights

Course Description

Teaching the student human rights laws and teaching how to apply the concept of freedom and democracy

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3. Course Name/Code	Democracy and Human Rights
4. Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2023/2024
6- Number of study hours (total)	2 Theoretical = 2 * 30 weeks = 60 annual hours
7. Date of preparation of this description	9/2/2021
8. Course Objectives	
Introducing the student to human rights, their objectives and development in different eras and the role of international organizations and public opinion in respecting and protecting human rights .	

1. Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

A1- Introducing the student to the laws of human rights and democracy.

A2- Introducing the student to how to apply human rights and democracy.

A3- Introducing the student to the most important duties that he must respect towards others and how to respect their freedoms and coexist with them in one homeland.

B -Skills objectives of the course.

B1 – The skill of applying human rights laws .

B2 – Acquire the skill of understanding the meaning of democracy and freedom.

B3 – Acquire the skill of peaceful coexistence with others

Teaching and learning methods

Theoretical lectures

Evaluation methods

Editorial + Discussion

C. Emotional and value goals

C1- Theoretical lectures.

C2- Discussion in the classroom.

D. General and transferable qualification skills (other skills related to employability and personal development).

D1- Discussion skills and convincing others of human rights laws.

D2- Educational workshops.

2 Course Structure					
Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1	2	Human Rights	Human rights - definition - objectives	Theoretical lectures	editorial
2	2	The roots and development of human rights in human history	The roots and development of human rights in human history - human rights in antiquity and medieval.	Theoretical lectures	editorial
3	2	Human Rights in Ancient Civilizations	Human rights in ancient civilizations, especially the civilization of Mesopotamia.	Theoretical lectures	editorial
4	2	Human rights in heavenly laws	Human rights in heavenly laws with a focus on human rights in Islam.	Theoretical lectures	editorial
5	2	Human rights in the Middle Ages	Human rights in the Middle Ages: Human rights in doctrines - schools and political theories - human rights in companies and their declarations - revolutions and constitutions (English documents - American Revolution - French Revolution - Russian Revolution)	Theoretical lectures	editorial
6	2	Human rights in contemporary and modern history	Human Rights in Contemporary and Modern History - International Recognition of Human Rights since the First World War and the United Nations)	Theoretical lectures	editorial
7	2	Regional recognition of human rights	Regional recognition of human rights - European Convention on Human Rights 1950 - American Convention on Human Rights 1969 - African Charter on Human Rights 1981 - Arab Charter for Human Rights 1994.	Theoretical lectures	editorial
8	2	NGOs and Human Rights	NGOs and human rights (ICRC-AI-Human Rights Watch)	Theoretical lectures	editorial
9	2	National Human Rights Organizations	National Human Rights Organizations	Theoretical lectures	editorial
10	3	Human rights in Iraqi constitutions	Human rights in Iraqi constitutions between theory and reality	Theoretical lectures	editorial
11-12	2	The relationship between human rights and public freedoms	The relationship between human rights and public freedoms: 1- In the Universal Declaration of Human Rights. 2- In regional charters and national constitutions.	Theoretical lectures	editorial
13	2	Essential human rights	Necessary human rights and collective human rights.	Theoretical lectures	editorial
14	2	Economic, social and cultural human rights and civil and political human rights	Economic, social and cultural human rights and civil and political human rights	Theoretical lectures	editorial

15	2	Modern human rights: facts in development - the right to a clean environment - the right to true solidarity.	Modern human rights: facts in development - the right to a clean environment - the right to true solidarity.	Theoretical lectures	editorial
16	2	Guarantees of respect and protection of human rights at the national level – guarantees in the Constitution and laws – guarantees in the principle of the rule of law.	Guarantees of respect and protection of human rights at the national level – guarantees in the Constitution and laws – guarantees in the principle of the rule of law.	Theoretical lectures	editorial
17	2	Guarantees in constitutional oversight - guarantees in freedom of the press Public opinion - the role of NGOs in respecting and protecting human rights.	Guarantees in constitutional oversight - guarantees in freedom of the press Public opinion - the role of NGOs in respecting and protecting human rights.	Theoretical lectures	editorial
18	2	Guarantees, respect and protection of human rights at the international level: The role of the United Nations and its specialized agencies in providing guarantees.	Guarantees, respect and protection of human rights at the international level: The role of the United Nations and its specialized agencies in providing guarantees.	Theoretical lectures	editorial
19	2	Role of regional organizations	The role of regional organizations - (Arab League - European Union - African Union - Organization of American States - ASEAN)	Theoretical lectures	editorial
20	2	General theories of freedoms - the origin of rights and freedoms - the legitimate position of the declared rights and freedoms - the use of the term public freedoms.	General theories of freedoms - the origin of rights and freedoms - the legitimate position of the declared rights and freedoms - the use of the term public freedoms.	Theoretical lectures	editorial
21	2	The functional nature of the concept of public freedoms: philosophical considerations of the functional right - structural considerations of the positive right - economic considerations and public freedoms.	The functional nature of the concept of public freedoms: philosophical considerations of the functional right - structural considerations of the positive right - economic considerations and public freedoms.	Theoretical lectures	editorial
22-23	2	The legal basis of the rule of law	The legal basis of the rule of law	Theoretical lectures	editorial
24	2	Regulation of public freedoms by public authorities	Regulation of public freedoms by public authorities	Theoretical lectures	editorial
25	2	Non-judicial litigation or grievance	Non-judicial litigation or grievance	Theoretical lectures	editorial
26	2	Judicial appeal - determining the responsibility of the state for its legitimate implementation	Judicial appeal - determining the responsibility of the state for its legitimate implementation	Theoretical lectures	editorial

27	2	The effect of dual elimination on public freedoms Public freedoms under administrative jurisprudence	The effect of dual elimination on public freedoms Public freedoms under administrative jurisprudence	Theoretical lectures	editorial
28	2	Equality: the historical evolution of the concept of equality	Equality: the historical evolution of the concept of equality	Theoretical lectures	editorial
29	2	The modern development of the idea of equality	The modern development of the idea of equality	Theoretical lectures	editorial
30	2	Gender equality Equality between individuals according to their beliefs and member.	Gender equality Equality between individuals according to their beliefs and member.	Theoretical lectures	editorial

3. Infrastructure

1 Required textbooks	There isn't any
2 Main references (sources)	Human rights, democracy and public freedoms D. Mahser Sabri Kazemi
Recommended books and references (scientific journals, reports,....)	Books in the Central Library
B Electronic references, websites	Different sources of the Internet

4. Course Development Plan

- 1- Participation in the various courses of the subject
- 2- Reviewing the latest laws, rights and duties related to the application of human rights.

Mechanical Workshop

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3- Course Name/Code	Mechanical Workshop/Laboratory
4. Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2023/2024
6- Number of study hours (total)	3Theoretical = 3 * 30 weeks = 90 annual hours
7- Date of preparation of this description	9/2/2021
8- Course Objectives	
<p>General Objective: The student will be able to:</p> <ol style="list-style-type: none"> 1- The student learns about the cold methods and working on the lathe. 2- Cutting metals with a cutting and punching machine. 3- Installs some simple structures. 	

2.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

A1- The student learns how to interlock computer programs with other mechanical devices.

A2- The student recognizes the causes of malfunctions that occur in mechanical devices

A3- The student learns how to manufacture mechanical devices.

A4- The student describes the progress and follow-up of technology in mechanical devices.

B - Skills objectives of the course.

B1 - The student acquires the skill of applying modern practical methods in the use of mechanical devices.

B2 - The student acquires skill in the maintenance of mechanical devices.

B3- The student acquires the skill of using the best methods in mechanical devices.

Teaching and learning methods

Practical experience , practical test , review

Evaluation methods

Daily Tests, Classroom Activity and Participation, Semester Exams

C. Emotional and value goals

A1- Works in a team spirit.

C2- Receives and accepts knowledge.

A3- The student is interested in practical skills.

D. General and qualifying-transfer skills (other skills related to employability and personal development).

D1- Develops the student's work in the workshops.

D2- Develops the student's skills on mechanical devices.

D3- The student acquires the ability to work on mechanical devices.

3 .Course Structure

Turning Workshop

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1	3	Learn how to use different measuring devices.	Turning Workshop	Workshop	Daily Exam
2	3	Learn how to use Micro Mater.			Daily Exam
3	3	Learn about the different parts of the lathe and how to operate them, install a circular section on the lathe and perform a straight turning.			Daily Exam
4	3	Perform an exercise that is included and has an internal tuberculosis hole.			Daily Exam
5	3	Doing an exercise in which there is an external and internal hole.			Daily Exam

Filing Workshop

6	3	Learn about the file process, types of files and measuring tools used.	Workshop	Workshops	Daily Exam
7	3	Perform a surface leveling exercise.			Daily Exam
8	3	Make a square exercise.			Daily Exam

Plumbing Workshop

9	3	Learn about the plumbing process, types of plates and plate tools.	Plumbing Workshop	Workshops	Daily Exam
10	3	Scoop work.			Daily Exam
11	3	The work of a flame diffuser.			Daily Exam

Welding workshop

12	3	Learn about gas welding and its devices.	Welding workshop	Workshops	Daily Exam
13	3	Perform a welding exercise for two adjacent pieces using gas welding.			Daily Exam
14	3	Learn about electric arc welding and its devices.			Daily Exam
15	3	Perform a welding exercise of two perpendicular pieces using an electric arc			Daily Exam

4.Infrastructure	
1 Required textbooks	None
2 Main references (sources)	
Recommended books and references (scientific journals, reports,....).	
B Electronic references, websites.	

5 .Course Development Plan	
1- Visit educational laboratories. 2- Visit educational workshops on mechanical devices.	

Electronic Computer Maintenance Workshop

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3. Course Name/Code	Electronic Computer Maintenance Workshop
4. Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2023/2024
6- Number of study hours (total)	3Practical = 3 * 30 weeks = 90 annual hours
7. Date of preparation of this description	9/2/2021
8. Course Objectives	
The student acquires skill in the field of electronic computer maintenance by teaching the student on the methods used in maintenance and the importance of components, then training the student with practical experiments on various electronic computers.	

1- .Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

A1- Identify the basic principles and purpose of the maintenance of the Computer and the most important number used in the maintenance of the Computer.

A2- Identify the types of computer malfunctions.

A3- Learn ways to replace idle parts with computers.

A4- Learn how to install programs.

B - Skills objectives of the course.

B1 – Identify the types of malfunctions in the computer and maintain them.

B2 – Learn how to replace idle parts with a computer.

Teaching and learning methods

Through the workshop, the student learns about computer parts and how to do maintenance for idle parts.

Evaluation methods

Daily tests, classroom activity and participation, semester exams

C. Emotional and value goals

C1- Aware of the importance of working in the workshop and relying on himself to maintain his computer.

C2- He is convinced of the importance of this in line with the level of his love for his country.

C3- In order to keep pace with the development in the world and its impact on the development of his country.

D. General and rehabilitative skills transferred (other skills related to employability and personal development).

D1- Develops the student's work in the workshops.

2- Course Structure

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1	3	Basic principles and basic purpose of Computer maintenance - the most important number used in Computer maintenance.	Electronic Computer Maintenance Workshop	Workshop	Daily Exam
2	3	The basic components of the electronic Computer (Hardware and Software).			Daily Exam
3	3	Fault analysis – types of maintenance (periodic, fault maintenance, causes of malfunctions, preventive maintenance)			Daily Exam
4	3	Power supply – types of power supply chips – fan malfunctions with solutions.			Daily Exam
5	3	The motherboard (system board) and its important settings , the most important malfunctions and solutions.			Daily Exam
6	3	The microprocessor of the Computer and its most important types - RAM - types and sizes of RAM memory and how to install it - the most important malfunctions and solutions.			Daily Exam
7	3	Computer cards (graphics card, sound card, input and output cards...) And the most important malfunctions of its own and ways to address them			Daily Exam
8	3	- Hard disks types and sizes - floppy disks - CDs and their types (DVD, CD) - flash memory. - How to repair a hard drive			Daily Exam
9	3	Terminals (screen and its types - keyboard - mouse - speakers - printer - camera etc).			Daily Exam
10	3	The most important malfunctions of terminals and methods of their maintenance			Daily Exam
11	3	Important software for the electronic Computer - initial settings ProgramsC Basic Operating System BIOS.			Daily Exam
12	3	Disk Formatting - The process of partitioning the hard disk.			Daily Exam

13	3	Installing the Window operating system and antiviruses and how to update them with other important software.			Daily Exam
14	3	-The most important malfunctions of the Windows operating system and how to address them - The most important software malfunctions accompanying the system.			Daily Exam
15	3	-Types of viruses and how to deal with them. - Sequential final steps for computer maintenance.			Daily Exam

3-.Infrastructure

1 Required textbooks	None
2 Main references (sources)	
Recommended books and references (scientific journals, reports,....)	Probe located in the central library of the institute
B Electronic references, websites	Different sources of the Internet

4- .Course Development Plan

1- Participation in the various courses of the subject

Computer Networks

Course Description

It is the student's acquaintance with this course in a summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he has made the most of the available learning opportunities. It must be linked to the program description

1. Educational institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2. Scientific Department / Center	Information and communication technology
3. Course Name/Code	Computer Networks / Phase II
4. Available Attendance Forms	Daily mandatory attendance
5. Semester / Year	Academic Year 2023/2024
6. Number of Credit Hours (Total)	2 theoretical + 2 practical = 4 * 30 weeks = 120 annual hours
7. The history of preparation of this description	9/2/2021
8. Course Objectives	
General Objective: Providing the student with a skill in network and communication sciences	

6. Course Outcomes and Methods of Teaching, Learning and Assessment

A-Cognitive goals

A1- To introduce the student to the tools and devices involved in building networks.

A2- The student should be introduced to the types of networks in terms of design.

A3- To introduce the student to the rules and laws that control the mechanism of communication between computers.

A4- To introduce the student to the open communication systems of computer networks.

B - Skills objectives of the course.

B1- Building computer networks.

B2- Learn to manage computer networks.

Teaching and learning methods

Theoretical + practical application

Evaluation methods

Discussion + exams (daily - quarterly - final)

C. Emotional and value goals

C1- The student should know the types of modern networks of different types, importance and tasks they perform.

C2- Instilling confidence in the same student in the field of building, maintaining and managing computer networks.

C3- Making the student communicate with the outside world.

C3- The student should pay attention to the correct rules in building computer networks.

C4- The student should learn the maintenance of computer networks.

C5- The student should realize the importance of computer networks in various fields.

D. General and rehabilitative skills transferred (other skills related to employability and personal development).

D1- The use of computers in design and the use of the Internet and modern software.

D2- Teaching the student some mathematical laws and theories that he needs in the application of laws within the specialization.

D3- Teaching the student the maintenance and principles of correct use of the computer.

7.Course Structure

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1	4	Data communication system :definition – basic components of data communication system – the data communication network application of communication Network	Data communication system	Theoretical + practical lectures	Editorial & practical
2	4	Basic communication concept and hard ware: mode of transmission – data flow. Physical connection – timing – standard digit code communication controls. Information separator.	Basic communication concept and hard ware	Theoretical + practical lectures	Editorial & practical
3	4	Modems – definition – type of modems – (optical –short haul- acoustic-smart- Digital –v.34 modem). Wires modem - features of modems . ISDN technology (integrated services digital network)	Modems	Theoretical + practical lectures	Editorial & practical
4	4	Network interfaces card OR network adapter cards – definition – explain how its Work to prepar data .talling & setting up network cards	Network interfaces card OR network adapter cards	Theoretical + practical lectures	Editorial & practical
5	4	Protocol fundamentals: definition – the protocol function in the- Sender and receiver devices. The connection oriented – the connectionless.	Fundamental protocols	Theoretical + practical lectures	Editorial & practical
6	4	Tcp / ip (transmission control protocol / internet protocol). Sntp – ftp –snmp – telnet. Hdlc (high-level data link control) protocol. Ppp (point to point)protocol	Tcp / ip (transmission control protocol / internet protocol). Sntp – ftp – snmp – telnet. Hdlc (high-level data link control) protocol. Ppp (point to point)protocol	Theoretical + practical lectures	Editorial & practical
7	4	Arp (address resolution protocol). Rarp (reverse address resolution protocol).	Arp , Rarp	Theoretical + practical lectures	Editorial & practical
8	4	OSI open system interconnect –definition –the benefits of OSI. The OSI 7 layers – explain each layers – compare between OSI and TCP / IP model.	OSI open system interconnect	Theoretical + practical lectures	Editorial & practical

9	4	Addressing IP – class full addressing –classless inter-domain routing (Cidr). Network address	Addressing IP – class full addressing –classless inter-domain routing (Cidr). Network address	Theoretical + practical lectures	Editorial & practical
10	4	Transport layer protocols : UDP (user datagram protocol) & TCP (transmission control protocol). Data link protocol: IP – ARP – ICMP (internet control message Protocol).	Transport layer protocols	Theoretical + practical lectures	Editorial & practical
11	4	Signal transmission fundamentals - definition. Analog and digital signals Electromagnetic waves.	Signal transmission fundamentals	Theoretical + practical lectures	Editorial & practical
12	4	Data packets (frames) – definition – explain how to make apackets. Transmission the packets among the networks. Cyclical redundancy check CRC.	Data packets (frames)	Theoretical + practical lectures	Editorial & practical
13	4	Communication media: circuit media – guided media – twisted Pair cable – coaxial cable – optical fiber.	Communication media	Theoretical + practical lectures	Editorial & practical
14	4	Un guided media – microwave – satellite transmission.	Un guided media – microwave – satellite transmission.	Theoretical + practical lectures	Editorial & practical
15	4	The concept of network – benefits of networking –Peer TO peer network – server/client network. The operating system of network.	The concept of network	Theoretical + practical lectures	Editorial & practical
16	4	Types of network: local area networks LAN – definition – benefits. Characteristics – LAN components (hard ware & software). LAN configurations : baseband & broad band networks	Types of network	Theoretical + practical lectures	Editorial & practical
17	4	Extended local area network – Wireless LAN bridge – Long range wireless bridge	Extended local area network – Wireless LAN bridge – Long range wireless bridge	Theoretical + practical lectures	Editorial & practical
18	4	Wide area network – Metropolitan area network .	Wide area network – Metropolitan area network	Theoretical + practical lectures	Editorial & practical
19	4	LAN (local area networks) protocols - LLC protocol - Wide area network protocol .	LAN (local area networks) protocols - LLC protocol- Wide area network protocol	Theoretical + practical lectures	Editorial & practical
20	4	Network topology – ring – bus – star – hybrid – Packet data network (PDNs).	Network topology – ring – bus – star – hybrid – Packet data network (PDNs).	Theoretical + practical lectures	Editorial & practical

21	4	Network interconnectivity – Connecting hybrid networks – bridges – routers – brouters Gateways – repeaters – HUB – switches.	Network interconnectivity – Connecting hybrid networks – bridges – routers – brouters Gateways – repeaters – HUB – switches.	Theoretical + practical lectures	Editorial & practical
22	4	Network access methods: access methods – explain CSMA / CA, CSMA / CD Explain the demand priority.	Network access methods:	Theoretical + practical lectures	Editorial & practical
23	4	Token passing : explain the token passing – Token ring network	Token passing	Theoretical + practical lectures	Editorial & practical
24	4	Routable and no routable protocol : Dynamic routing fundamentals, Autonomous system (AS) - Routing protocol type .	Routable and no routable protocol	Theoretical + practical lectures	Editorial & practical
25	4	IP Address class – private IP address- Dynamic NAT Static NAC Over loading NAT	IP Address class – private IP address- Dynamic NAT Static NAC Over loading NAT	Theoretical + practical lectures	Editorial & practical
26	4	Switching concept - Sending and receiving frames using switch.	Switching concept	Theoretical + practical lectures	Editorial & practical
27	4	Multiplexer- functions- techniques- frequency- division Multiplexing – Time division multiplexing (TDM) Statical time division multiplexer (STDM)	Multiplexer- functions- techniques- frequency- division Multiplexing – Time division multiplexing (TDM) Statical time division multiplexer (STDM)	Theoretical + practical lectures	Editorial & practical
28	4	Wireless network : definition – System interconnection – wireless LANs – Wireless WANs -	Wireless network	Theoretical + practical lectures	Editorial & practical
29	4	Ethernet network fundamentals : Ethernet types (10 base f- 10 base T- 10 base2 – 10 base5)	Ethernet network fundamentals	Theoretical + practical lectures	Editorial & practical
30	4	Dynamic host configuration protocol (DHCP) -	Dynamic host configuration protocol (DHCP) -		Editorial & practical

8. Infrastructure

1 Required textbooks

None

Main references (sources)	<ul style="list-style-type: none"> ❖ Introduction to Computer Networks / Dr. Mahmoud Iskandarani ❖ Intranets / Infrastructure ❖ Dr. Ammar Khair Bey / Eng. Hossam Al-Mulhim ❖ data communications and N.W fundamentals using novel NetWare <p>Emilio Ramos , al Schroeder ,Ann Bühler</p>
Recommended books and references (scientific journals, reports,....)	
B Electronic references, websites	

9. Course Development Plan

Keep up to date with every development in vocabulary by participating in courses.

Intelligent Systems

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3. Course Name/Code	Smart Systems / Phase II
4- Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2023/2024
6- Number of study hours (total)	2 theoretical = (2 * 30) = 60 annual hours
7- Date of preparation of this description	9/2/2021
8- Course Objectives	
	<ol style="list-style-type: none">1. The student should be able to know the applications of smart systems and their uses in scientific life2. Learn the basic rules of the smart systems subject and learn about the basic programming languages used in smart systems

1- Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

- A1-** Knowing the importance of smart systems through examples.
- A2-** A detailed explanation of the applications of smart systems with examples.
- A3-** Studying the types of programming languages used in smart systems.
- A4-** Understand how to represent and implement smart systems in a computer.

B - Skills objectives of the course.

B1 – Develops the student's skill in solving the problem and writing solution algorithms.

B2 – Trains to download the C++ program on the computer.

B3- Compare through code sentences between C and C++ .

Teaching and learning methods

Teach the student to write steps to make a system in a field with writing an algorithm.

Evaluation methods

Daily Tests / Classroom Activity and Participation / Semester Exams

C. Emotional and value goals

C1- He is aware of the importance of identifying the types of smart systems in order to keep pace with the development in the digital world and its impact on the development of his country.

C2- Convinced of the importance of this and urged him to seek to develop his scientific level.

D. General and transferable qualification skills (other skills related to employability and personal development).

D1- The use of programming languages in scientific and practical applications.

2- Course Structure

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1-2	2 per week	Introduction	Introduction	Theoretical lectures	editorial
3	2 per week	Artificial Network (introduction, historical view)	Artificial Network	Theoretical lectures	editorial
4-6	2 per week	The neuron - Biological neurons - Simulated neuron - Types of nonlinearities	The neuron	Theoretical lectures	editorial
7-8	2 per week	Types of ANNs (Artificial Neural Network) - Feed forward ANNs - Feedback NNs Supervised and unsupervised ANNs	Types of ANNs (Artificial Neural Network)	Theoretical lectures	editorial
9-11	2 per week	Learning Algorithms - Basic Delta Rule - Back propagation - Counter propagation Associative memory	Learning Algorithms	Theoretical lectures	editorial
12-13	2 per week	Architectures - Hopfield NN - Kohonen NN - Carpenter and Grossberg Neocognitron	Architectures	Theoretical lectures	editorial
14-15	2 per week	Applications Image processing and classification	Applications	Theoretical lectures	editorial
16	2 per week	Introduction to Fuzzy logic	Introduction to Fuzzy logic	Theoretical lectures	editorial
17	2 per week	Fuzzy algorithms	Fuzzy algorithms	Theoretical lectures	editorial
18-19	2 per week	Fuzzy sets: - Continuous fuzzy sets Discrete Fuzzy sets	Fuzzy sets	Theoretical lectures	editorial
20-21	2 per week	Logical operation - Fuzzy intersection - Fuzzy implication Fuzzy union	Logical operation	Theoretical lectures	editorial
22	2 per week	Compositional rule of inference (continuous and discrete)	Compositional rule of inference (continuous and discrete)	Theoretical lectures	editorial
23	2 per week	Defuzzification	Defuzzification	Theoretical lectures	editorial

24	2 per week	Introduction and historical view of Genetic Algorithms	Introduction and historical view of Genetic Algorithms	Theoretical lectures	editorial
25-26	2 per week	Component of Genetic algorithm - Selection method Operators	Component of Genetic algorithm	Theoretical lectures	editorial
27	2 per week	<ul style="list-style-type: none"> • Crossover • Mutation 	<ul style="list-style-type: none"> • Crossover • Mutation 	Theoretical lectures	editorial
28	2 per week	<ul style="list-style-type: none"> - Parameters of GA - GA and search method 	<ul style="list-style-type: none"> - Parameters of GA - GA and search method 	Theoretical lectures	editorial
29-30	2 per week	-Genetic programming -Applications	-Genetic programming -Applications	Theoretical lectures	editorial

3- Infrastructure

1 Required textbooks	None
2 Main references (sources)	1. Jaek M.Zurada, "Introduction to Artificial Neural Systems", 1996
Recommended books and references (scientific journals, reports,....)	
B Electronic references, websites	

4- Course Development Plan

<p>1- Participation in the various courses of the subject</p> <p>2- See the latest findings of modern technology in this article</p>
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Visual Basic programming and Access databases

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3- Course Name/Code	Visual Basic Programming and Access Databases / Phase II
4- Available Attendance Forms	Daily mandatory attendance
5- Semester/Year	Academic Year 2023/2024
6- Number of study hours (total)	1 theoretical + 3 practical = 4 * 30 weeks = 120 annual hours
7- Date of preparation of this description	9/2/2021
8- Course Scorer	
General Objective: The student acquires the skills of writing programs in Visual Basic, using Access databases, and how to link the two.	

1- Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

A1- The student can write program codes in Visual Basic and how to manage and modify them.

A2- The student creates different applications using the Visual Basic code.

A3- The student connects programs with various practical applications through the Visual Basic environment.

B. Skills objectives of the course.

B1 – The student can manage the windows of the programs running the Windows system and how to deal with them.

B2 – The student learns to control applications through the Visual Basic code.

B3 – The student links the programs created by Visual Basic with practical applications.

Teaching and learning methods

1– View lectures by Data Show.

2– Use smart blackboards.

3– Discussions and seminars that students are assigned to prepare.

4– Reports for various topics that students are assigned to prepare.

5– Preparation of applied projects by learners

Evaluation methods

1- Pre- and post-exams for each subject.

2- Evaluation of the student's activities for various topics periodically.

3- Evaluate students for the projects they are assigned to.

4- Final exams for a set of study modules and periodically.

C. Emotional and value goals

C1- Theoretical lectures.

C2- Applied skills within the laboratory.

C3- Discussion in the classroom.

D. General and qualifying-transfer skills (other skills related to employability and personal development).

D1- After completing the study of the subject of description, the student can develop himself to study broader and deeper topics.

D2- Qualifying the student to master a practical profession in public life related to the field of information technology.

2- Course Structure

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1	4	How to install the program etc.6 /Getting to know the program window vb.6 environment How to choose new project /Project naming and storage	How to install VB.6 / Familiarize yourself with the program window	Theoretical + practical lectures	Editorial & practical
2	4	شريط القوائم the menu bar (file,edit,view,help... etc.) /Few functions to programming (debug,run,project... etc.)	The menu bar	Theoretical + practical lectures	Editorial & practical
3	4	Learn about the contents of the toolbar and the tasks of each tool	Learn about the contents of the toolbar and the tasks of each tool	Theoretical + practical lectures	Editorial & practical
4	4	How to show the properties window/ how to set properties for each object and the importance of setting properties	How to show the properties window/ how to set properties for each object and the importance of setting properties	Theoretical + practical lectures	Editorial & practical
5	4	Learn about the tools in the tool box and the function of each tool / how to move each tool and put it on the form The project explorer	Learn about the tools in the toolbox	Theoretical + practical lectures	Editorial & practical
6	4	وضع الخصائص setting properties Setting properties of object at design time وضع خصائص ال objects عند التصميم	Setting characteristics	Theoretical + practical lectures	Editorial & practical
7	4	Related properties /command buttons /text boxes Checkbox /combo box	Related properties	Theoretical + practical lectures	Editorial & practical
8	4	Control events/ events procedure(code) Events procedure structure Setting properties at run time	Control events/ events procedure(code) Events procedure structure Setting properties at run time	Theoretical + practical lectures	Editorial & practical
9	4	Creating new visual basic project Learn about the basic steps in creating a new project through the application of creating a simple project Project "hello"	Learn about the basic steps in creating a new project	Theoretical + practical lectures	Editorial & practical
10	4	Variables and constants / constants and variables and their importance Rules used in naming variables Rules used in naming variablesData types Variables and their types	Constants and variables and their importance	Theoretical + practical lectures	Editorial & practical
11	4	Variables declaration by using dim statement Declare variables using the dim statement and how to clarify	declare variables using dim	Theoretical + practical lectures	Editorial & practical

		the data type and point the name of the variable /Constants /comment statements the			
12	4	Example: build the Computer program Build a Computer model with an indication of the importance of having the val function	Example	Theoretical + practical lectures	Editorial & practical
13	4	Building a speed measurement model example (speed program) With an indication of the importance of the presence of the str function in the application	Building a speed measurement model example (speed program) With an indication of the importance of the presence of the str function in the application	Theoretical + practical lectures	Editorial & practical
14	4	Visual basic statement –visual basic branching – if statements 1- The if/then statement 2-the if/then/else/end if blocks 3- the if/then/else if/then/else/end if blocks	Visual basic statement	Theoretical + practical lectures	Editorial & practical
15	4	Loops statements in visual basic For....next loop Rotary for its general formula and how it works	Loops statements in visual basic	Theoretical + practical lectures	Editorial & practical
16	4	Do while/loop---do until/loop--do/loop while---do/loop untile Build a template for each app	Do while/loop---do until/loop--do/loop while---do/loop untile	Theoretical + practical lectures	Editorial & practical
17	4	Input box functions/ Example (build the input box program to find average of 10 Degree	Input box functions	Theoretical + practical lectures	Editorial & practical
18	4	General formula for msgbox functions / Example (build the msgbox to end the program)	msgbox functions	Theoretical + practical lectures	Editorial & practical

19	4	Mid functions /instr functions /val functions /mod functions Str functions / like functions /len functions The general formula for each function with an application for each case	Mid functions /instr functions /val functions /mod functions Str functions / like functions /len functions	Theoretical + practical lectures	Editorial & practical
20	4	Arrays and how to define them in the program/ single arrays: Read a single matrix consisting of a certain number of one dimension elements and then find the sum of even elements.	Arrays	Theoretical + practical lectures	Editorial & practical
21	4	two dimension array It defines a two-dimensional matrix consisting of 5 columns and 5 rows, finds the largest number in the matrix and finds the sum of the diagonal axis of the two dimension array It defines a two-dimensional matrix consisting of 5 columns and 5 rows, finds the largest number in the matrix and finds the sum of the diagonal axis of the matrix	two dimension array	Theoretical + practical lectures	Editorial & practical
22	4	Understanding access basics /getting started with a data base Identifying parts of the access screen/working with objects/ Working with tables/working with multiple tables/editing records in tables	Understanding access basics /getting started with a data base Identifying parts of the access screen/working with objects/ Working with tables/working with multiple tables/editing records in tables	Theoretical + practical lectures	Editorial & practical
23	4	Adding and editing data(adding and deleting records in tables)/using editing command/adding records with a form/ Printing a form/editing data in a form	Adding and editing data	Theoretical + practical lectures	Editorial & practical
24	4	Finding and sorting records /using the find commands/Find records using match case and any part of field Find records using the asterisk(*) Find records using the question mark (?) /sorting records	Finding and sorting records	Theoretical + practical lectures	Editorial & practical
25	4	Adding tables to a database/creating table using wizard Creating tables in design view / Creating tables in datasheet view	Adding tables to a database/creating table using wizard Creating tables in design view / Creating tables in datasheet view	Theoretical + practical lectures	Editorial & practical

26	4	Adding forms to a database /creating auto forms Using the form wizard / creating form in design view Creating a form from tables window	Adding forms to a database /creating auto forms Using the form wizard / creating form in design view Creating a form from tables window	Theoretical + practical lectures	Editorial & practical
27	4	Getting information from a database /Designing queries /using joins and relationships	Getting information from a database /Designing queries /using joins and relationships	Theoretical + practical lectures	Editorial & practical
28	4	Creating a multiple table query Creating relationships :(one to one) (many to many) (one to many)	Creating a multiple table query Creating relationships	Theoretical + practical lectures	Editorial & practical
29-30	4	Create a program in the Visual Basic language and link it with a database built using rules Access data An example of this is an electronic library system.	Create a program in the Visual Basic language and link it with a database built using rules Access Data	Theoretical + practical lectures	Editorial & practical

3- Infrastructure

1 Required textbooks	There isn't any
2 Main references (sources)	<ul style="list-style-type: none"> ❖ Microsoft visual basic 6.0professional. , Michael Halverson ,1998 ❖ Visual Basic 6.0 - Dr. Yahya Sabri Al-Halabi Muhammad Bilal Al-Zoubi ❖ Visual basic 6 programming data base Ali Sulayman
Recommended books and references(scientific journals, reports,....)	
B Electronic references, websites	

4- Course Development Plan

Delve into the modern concepts of the Visual Basic language, such as the recent versions of Visual basic.net the application of the Visual Basic language to create actual databases on the Internet through the SQL server and deal with them through client-server applications .

English Language

Course Description

Enable the student to master the English language

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3. Course Name/Code	English Language / Second Stage
4. Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2023/2024
6- Number of study hours (total)	1 theoretical = 1 * 30 weeks = 30 hours per year
7. Date of preparation of this description	9/2/2021
8. Course Objectives	
The student's review of the simplified basic rules of the English language, which he has already studied in the previous stages, but at length, as well as gradually introducing the student to the atmosphere of technical terms related to technological specialization in its various branches.	

1.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

A1- Introducing the student to English grammar.

A2- Introducing the student to the most important vocabulary of the English language.

B - Skills objectives of the course.

B1 – English speaking skill.

Teaching and learning methods

Theoretical lectures + practical dialogue

Evaluation methods

editorial

C. Emotional and value goals

C1- Theoretical lectures.

C2- Discussion in the classroom.

D. General and transferable qualification skills (other skills related to employability and personal development).

D1 - English speaking skills.

D2- Remedial films in English.

2.Course Structure					
Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1-2	1	What is your name? What is this in English? Translation Every day English Plurals	What is your name? What is this in English? Translation Every day English Plurals	Theoretical lectures	editorial
3-4	1	Countries Pronunciation Cities and countries Where are you from? reading listening Tran station	Countries Pronunciation Cities and countries Where are you from? reading listening Tran station	Theoretical lectures	editorial
5-6	1	Jobs ,negatives Address , trans pronunciation , listening , reading	Jobs ,negatives Address , trans pronunciation , listening , reading	Theoretical lectures	editorial
7-8	1	The family possessive s listening vocabulary pronunciation translation	The family possessive s listening vocabulary pronunciation translation	Theoretical lectures	editorial
9-10	1	Sports present simple transition vocabulary and pronunciation	Sports present simple transition vocabulary and pronunciation	Theoretical lectures	editorial
11-12	1	The time present simple negative translation vocabulary listening writing	The time present simple negative translation vocabulary listening writing	Theoretical lectures	editorial
13-14	1	Object pronouns listening vocabulary translation reading	Object pronouns listening vocabulary translation reading	Theoretical lectures	editorial
15-16	1	Furniture pronunciation prepositions reading and writing translation directions	Furniture pronunciation prepositions reading and writing translation directions	Theoretical lectures	editorial
17-18	1	Saying yers writing past simple irregular verbs translation vocabulary word groups	Saying yers writing past simple irregular verbs translation vocabulary word groups	Theoretical lectures	editorial
19-20	1	Past simple regular verbs pronunciation irregular verbs listening translation vocabulary reading everyday English	Past simple regular verbs pronunciation irregular verbs listening translation vocabulary reading everyday English	Theoretical lectures	editorial
21-22	1	Activities listening pronunciation reguests and offers translation vocabulary everyday English	Activities listening pronunciation reguests and offers translation vocabulary everyday English	Theoretical lectures	editorial
23-24	1	Translation reading writing pronunciation every day English	Translation reading writing pronunciation every day English	Theoretical lectures	editorial
25-26	1	Colours present continuos present simple and present continuous	Colours present continuos present simple and present continuous translation	Theoretical lectures	editorial

		translation reading vocabulary everyday English	reading vocabulary everyday English		
27-30	1	Present continuous for future listing pronunciation translation vocabulary reading and listening everyday English	Present continuous for future listing pronunciation translation vocabulary reading and listening everyday English	Theoretical lectures	editorial

3 .Infrastructure

1 Required textbooks	There isn't any
2 Main references (sources)	Uniform binding
Recommended books and references (scientific journals, reports,....)	Books in the Central Library
B Electronic references, websites	Different sources of the Internet

4 Course Development Plan

- 1- Participation in the various courses of the subject
- 2- See the latest findings of modern technology in the study of this article

Communication Systems

Course Description

Teaching the student this course a summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he has made the most of the available learning opportunities. It must be linked to the description of the program .

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3- Course Name/Code	Communication Systems / Phase II
4. Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2023/2024
6- Number of study hours (total)	2 theoretical +2 practical = 4 * 30 weeks = 120 annual hours
7- Date of preparation of this description	9/2/2021
8- Course Objectives	
General Objective: Teaching students and giving them an overview of modern communication systems, including the basics of communications, the concepts of waves, satellites, transmission lines, modern telecommunications networks, and future developments of these systems and international bodies regulating them.	

1. Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

- A1-** Identify communication systems and their importance through examples.
- A2-** Sees how the transmitter and receiver system works in detail.
- A3.** Be able to extract important information from signals transmitted through outer space.
- A4-** Forming a picture of the methods of communication via mobile as well as via satellite .
- A5.** Examine obstacles to the transmission of information through outer space.

A6- Connects the communication system to the computer by representing and implementing the programming sentence inside the computer.

B - Skills objectives of the course.

B1- Comparison between different communication systems through their quantitative properties.

B2- Training on loading the radio signal with capacitive and frequency modulation systems.

B3- Provide them with the skills to solve practical problems related to various communication systems and computer programs for communication systems.

B4- Understanding the student the foundations of establishing communication networks and satellites.

Teaching and learning methods

1- The teacher gives detailed theoretical lectures and compares them with practical experiences.

2- The teacher requests periodic reports on the basic topics of the subject.

3- The teacher forms discussion panels from students to solve the required problems and exercises.

4- Using modern means of the Internet and YouTube in the presentation of lectures.

5- The teacher gives homework.

Evaluation methods

1- Daily pre- and post-tests?

2- Classroom activity and participation.

3- Semester exams.

4- Apply the group system in solving daily exercises.

5- Feedback method through self-correction of errors.

C. Emotional and value goals

C1- Increasing the student's ability to think about ways to deal with modern communication devices.

C2- Helping the student to think about the importance of the frequency, energy and power of the wave and time periods.

C3- Urging the student to think about the factors affecting the transmission of the wave in the media and its mixing with noise.

C4- Making the student able to think about choosing the methods of transmission and returning audio signals radio or television.

d. General and qualifying-transfer skills (other skills related to employability and personal development).

D1- Group management in solving the problem of capacitive inclusion in scientific and practical applications.

D2- Skills of using electronic circuits to control the transmitter and reception of all kinds.

D3- Diction skills using the latest modern means of communication.

D4- Learning skills on how to reduce noise from interfering signals.

D5- Held special seminars for students for the purpose of self-development of their personalities.

D6- Enabling students to self-development continuously after graduation.

2. Theoretical Course Structure

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1-3	2	<u>Introduction</u> Introduction to communication systems, classification of signals and systems, review of Fourier's series, Fourier transforms, frequency and impulse responses of linear systems, Fourier transform properties.	Introduction	Theoretical + practical lectures	Daily exam
4-5	2	<u>Noise</u> Types of noise, noise figure, S/N ratio, noise temperature.	Noise	Theoretical lectures	Daily exam
6-9	2	The concept of embedding - the concept of coding information and techniques used several signals on one channel - patterns of data transmission - explaining the concept of waves, their characteristics and methods of propagation, and reviewing antennas and their properties as a means of capturing or radiating waves.	The concept of inclusion	Theoretical lectures	Daily exam
10-13	2	Addressing transmission lines, including: types of wired and wireless transmission lines as one of the basic components of any communication and signal transmission system, with an explanation of the basics of transmission lines and their general characteristics - the concept of optical cable and how to include and transmit the signal in it and general characteristics - explaining the concept of networks and how modern networks and communications are classified.	Addressing transmission lines	Theoretical lectures	Daily exam
14-17	2	- Wireless communication systems: an overview of their development - Explain the most important systems of modern wireless communication networks, their components, functions, characteristics, practical and security applications provided by these systems. - Addressing the most important types of modern communications, including smart transport networks and networks of high platform stations. - Presenting the international bodies concerned with supervising the organization and development of modern communication technologies	Wireless Communication Systems	Theoretical lectures	Daily exam

		according to unified standards and standards, and giving a historical overview of the International Telecommunication Union with mentioning its objectives and tasks.			
18-20	2	<u>Pulse Modulation</u> Sampling theorem, Pulse Amplitude Modulation (PAM), Time Division Multiplexing (TDM), Pulse Position and Pulse Width Modulation (PPM and PWM).	Pulse Modulation	Theoretical lectures	Daily exam
21-26	2	<u>Digital Modulation</u> Pulse Code Modulation (PCM), noise consideration in PCM system, S/N performance of PCM, Limitation and Modifications of PCM, Amplitude Shift Keying (ASK), FSK, PSK, Coherent and Nontolerant Detection, Differential PSK (DPSK), QAM, QPSK, MSK, MFSK, Comparison between performance of Digital Modulation types, Band Width Efficiency, Power Spectra of Modulated Signals, and Carrier Recovery.	Digital Modulation	Theoretical lectures	Daily exam
27-30	2	<u>Antenna</u> Definition of antennas, types of antennas, main properties of antenna, radiation pattern (directivity, gain, efficiency, half- power, polarization), Array antennas.	Antenna	Theoretical lectures	Daily exam

2 Course Structure - Practical

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1	2	LPF & HPF Passive and Active Circuits Design.	LPF & HPF Passive and Active Circuits Design.	Experiment	Daily exam
2	2	BPF & BSF Passive and Active Circuits Design.	BPF & BSF Passive and Active Circuits Design.	Experiment	Duty to report
3	2	Amplitude Modulation (AM) Circuit.	Amplitude Modulation (AM) Circuit.	Experiment	Duty to report
4	2	AM Detection Circuit.	AM Detection Circuit.	Experiment	Duty to report
5	2	Generation of DSB-SC Amplitude Modulation (Cowan Modulator Circuit).	Generation of DSB-SC Amplitude Modulation (Cowan Modulator Circuit).	Experiment	Duty to report
6	2	Generation of DSB-SC Amplitude Modulation (Ring Modulator Circuit).	Generation of DSB-SC Amplitude Modulation (Ring Modulator Circuit).	Experiment	Duty to report
7	2	SSB- SC Amplitude Modulation & Demodulation.	SSB- SC Amplitude Modulation & Demodulation.	Experiment	Duty to report
8	2	DSB/ SSB AM Transmitter.	DSB/ SSB AM Transmitter.	Experiment	Duty to report
9	2	DSB/ SSB AM Receiver.	DSB/ SSB AM Receiver.	Experiment	Duty to report
10	2	Frequency Modulation (FM) Circuits.	Frequency Modulation (FM) Circuits.	Experiment	Duty to report
11	2	FM Demodulation Circuits.	FM Demodulation Circuits.	Experiment	Duty to report
12	2	Pulse Amplitude Modulation & Demodulation (PAM).	Pulse Amplitude Modulation & Demodulation (PAM).	Experiment	Duty to report
13	2	Pulse Position Modulation & Demodulation (PPM).	Pulse Position Modulation & Demodulation (PPM).	Experiment	Duty to report
14	2	Pulse Width Modulation & Demodulation (PWM).	Pulse Width Modulation & Demodulation (PWM).	Experiment	Duty to report
15	2	Delta Modulation & Demodulation (DM).	Delta Modulation & Demodulation (DM).	Experiment	Duty to report
16	2	Digital Time Division Multiplexing & DE multiplexing (TDM).	Digital Time Division Multiplexing & DE multiplexing (TDM).	Experiment	Duty to report
17	2	Pulse Code Modulation & Demodulation (PCM).	Pulse Code Modulation & Demodulation (PCM).	Experiment	Duty to report
18	2	Differential Pulse Code Modulation & Demodulation (DPCM).	Differential Pulse Code Modulation & Demodulation (DPCM).	Experiment	Duty to report
19	2	Amplitude Shift Keying Modulation & Demodulation (ASK).	Amplitude Shift Keying Modulation & Demodulation (ASK).	Experiment	Duty to report
20	2	Frequency Shift Keying Modulation & Demodulation (FSK).	Frequency Shift Keying Modulation & Demodulation (FSK).	Experiment	Duty to report
21	2	Phase Shift Keying Modulation & Demodulation (PSK).	Phase Shift Keying Modulation & Demodulation (PSK).	Experiment	Duty to report

22	2	Differential Phase Shift Keying Modulation & Demodulation (DPSK).	Differential Phase Shift Keying Modulation & Demodulation (DPSK).	Experiment	Duty to report
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1 Infrastructure	
1 Required textbooks	None
2 Main references (sources)	
Recommended books and references (scientific journals, reports,....)	Books in the Central Library
B Electronic references, websites	Different sources of the Internet

3 .Course Development Plan
Liaison with the corresponding institutes, especially in the Arab and European world, to develop curricula.

Computer Applications (2)

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3. Course Name/Code	Computer Applications / Second Stage
4. Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2023/2024
6- Number of study hours (total)	1 Theoretical +3 Practical = 4* 30 weeks = 120 annual hours
7. Date of preparation of this description	9/2/2021
8. Course Objectives	
General Objective: For the purpose of teaching some of the vocabulary of the digital culture curriculum for computers and the Internet ICDL, which is adopted in all developed countries, as it includes the basics of computers, applications of the program (Microsoft Office) and Internet applications (networks - Internet - e-mail)	

1- Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

A1- The student can write Excel, Access and PowerPoint applications and how to manage and modify them.

A2- The student creates different realistic practical applications with the help of Microsoft programs.

A3- The student links between different computer programs and Microsoft applications for various fields of knowledge.

B - Skills objectives of the course.

B1 – The student can manage the program windows for Excel, Access and PowerPoint applications and how to deal with them.

B2 – The student learns to control applications through regular interfaces and through the application development environment embedded in Microsoft Office applications.

B3 – The student links between the different applications of Microsoft Office and practical applications in various aspects that use database systems.

Teaching and learning methods

- 1- View lectures by Data Show.
- 2- Use smart blackboards.
- 3- Discussions and seminars that students are assigned to prepare.
- 4- Reports for various topics that students are assigned to prepare.
- 5- Preparation of applied projects by learners

Evaluation methods

- 1- Pre- and post-exams for each subject.
- 2- Evaluation of the student's activities for various topics periodically.
- 3- Evaluate students for the projects they are assigned to.
- 4- Final exams for a set of study modules and periodically.

C. Emotional and value goals

C1- Qualifies the student to be a mentor and teacher in the subject referred to in this description.

C2- Enabling the student to be a productive element in the field of information technology in the field of database applications and electronic spreadsheet systems.

D. General and qualifying-transfer skills (other skills related to employability and personal development).

D1- After completing the study of the subject of description, the student can develop himself to study broader and deeper topics.

D2- Qualifying the student to master a practical profession in public life related to the field of information technology.

2- Course Structure - Theoretical

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1-9	4	<p>-Microsoft Excel</p> <p>- Hierarchical Excel environment, running Excel program, bars and tool books and worksheets, tool box controls , opening a new document.</p> <p>- Forms and controls: Create forms, add the following controls: text box - combo box - list box - command button - radio button - select button - use controls to enter and manipulate information (data), save worksheet, add and delete cells.</p> <p>- Dealing with the application of Excel formulas: using and making formulas, mathematical effects, sequence of operations, comparison effects, reference effects, methods of writing the formula and beautifying and formatting the worksheet.</p> <p>-Charts: Dealing with Charts Object</p> <p>- How to import data from databases: Work with databases and Access application.</p> <p>- Create a project that covers all the vocabulary of the study plan for Excel</p> <p>- Typical test on the computer machine for Microsoft Excel and questions for review.</p>	<p>Microsoft Excel</p> <p>Forms and controls</p> <p>Forms and controls</p> <p>Dealing with the application of Excel formulas</p> <p>Charts</p> <p>How to import data from databases</p> <p>Create a project that covers all the vocabulary of the study plan for Excel</p> <p>Typical test on the computer machine for Microsoft Excel and questions for review.</p>	Theoretic al lectures + practical exercises	Practical evaluation s
10-15	4	Microsoft Power Point	Microsoft Power Point	Theoretic al lectures + practical exercises	Practical evaluation s
16-22	4	Microsoft Access	Microsoft Access	Theoretic al lectures + practical exercises	Practical evaluation s
23-26	4	Computer Networks	Computer Networks	Theoretic al lectures + practical exercises	Practical evaluation s
27-30	4	Internet & E-mail	Internet & E-mail	Theoretic al lectures + practical exercises	Practical evaluation

3-Infrastructure	
1 Required textbooks	There isn't any
2 Main references (sources)	
Recommended books and references (scientific journals, reports,....)	Books in the Central Library
B Electronic references, websites	Different sources of the Internet

4- Course Development Plan
<p>1 - Participation in the various courses of the subject.</p> <p>2- Reviewing the latest modern technology in the application of programs.</p> <p>3- The number of courses developed from the ability of trainers in the laboratory to be able to train students more efficiently.</p> <p>4- Providing laboratories with modern programs that keep pace with scientific development in developed countries</p>

Computer Architecture

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3. Course Name/Code	Architectural / Second Phase
4. Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2023/2024
6- Number of study hours (total)	2 Theoretical + 2 Practical = 4 * 30 weeks = 120 annual hours
7. Date of preparation of this description	9/2/2021
8. Course Objectives	
<u>General Objective:</u> Introducing the student to the components of the microcomputer and microprocessors and how to program and use them.	

1- Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

A1- Identify the components of the computer and their importance through structural charts.

A2- See a detailed explanation of the components of the computer with practical examples.

A3- The processor studies 8085 through complete detailed diagrams.

A4- Understands how the computer represents and executes the programming sentence inside the computer.

B - Skills objectives of the course.

B1 – Develops the skill of the concept of computer components.

B2 – Training on data transfer instructions and addressing instructions.

B3- Compare the set of instructions and the difference between data transfer directives, arithmetic and logical instructions and addressing instructions.

Teaching and learning methods

Teaching the student to write the steps of the instructions for transferring the contents of a record to the stack, for example, or moving the contents of the memory site that the stack points to the lower-ranking register, and then a practical example is taken of this.

The student is trained on the processes of adhaling, output and interruptions in the computer with practical examples of this.

Evaluation methods

Daily tests, classroom activity and participation, semester exams

C. Emotional and value goals

C1- He is aware of the importance of learning the technology of computer work in order to keep pace with the development in the digital world and its impact on the development of his country.

C2- He is convinced of the importance of this in line with the level of his love for his country.

D. General and transferable qualification skills (other skills related to employability and personal development).

D1- Using the acquired skills in theoretical and practical applications on the uses of the processor and choosing what is appropriate for each type.

D2- Using his skills gained from his studies in the methods of connecting the processor and its practical applications and using processors in control circles instead of resorting to building traditional control circuits.

2- Course Structure - Theoretical					
Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1	2	A quick review of numerical systems and their importance for microcomputers - transfers between systems.	A quick review of numerical systems and their importance for microcomputers - transfers between systems.	Theoretical lectures	editorial
2	2	Definition of microcomputers - definitions of micro Computer terms: bit - byte - instruction - program - software - high-level languages - low-level languages - assembly language - machine language.	Definition of microcomputers - definitions of micro Computer terms	Theoretical lectures	editorial
3	2	Micro Computer architecture – Micro Computer mass chart - Nawafel system (data carrier - address carrier - control carrier).	Micro Computer architecture – Micro Computer mass chart - Nawafel system (data carrier - address carrier - control carrier).	Theoretical lectures	editorial
4	2	Memory - Main memory - ROM-only memory - ROM-comparison - auxiliary memory and the difference between them and main memory.	Memory - Main memory - ROM-only memory - ROM-comparison - auxiliary memory and the difference between them and main memory.	Theoretical lectures	editorial
5	2	CPU - Microprocessor - Definition - Block diagram showing the microprocessor architecture - Microprocessor 8085. Terminal diagram and block diagram - data bus bumpers - address bus bumpers and a comparison between them.	CPU - Microprocessor - Definition - Block diagram showing the microprocessor architecture - Microprocessor 8085. Terminal diagram and block diagram - data bus bumpers - address bus bumpers and a comparison between them.	Theoretical lectures	editorial
6	2	Registers, their types and use- Calculation and logic unit - Flag register - Microprocessor notification 8085 - Utility of the flag register. Program counter IP Stack indicator SP - Instruction log- Command coder - Controller.	Registers, their types and use- Calculation and logic unit - Flag register - Microprocessor notification 8085 - Utility of the flag register. Program counter IP Stack indicator SP - Instruction log- Command coder - Controller.	Theoretical lectures	editorial
7	2	Microprocessor Instructions 8085 – Characteristics of Directives. What is meant by addressing and its types in the 8085 processor. And the types of Operand (triple - binary - mono - zero)	Microprocessor Instructions 8085 – Characteristics of Directives. What is meant by addressing and its types in the 8085 processor. And the types of Operand (triple - binary - mono - zero)	Theoretical lectures	editorial
8	2	Data Transfer Group Instructions (Part I) - Solving Examples - Writing an Application Program.	Data Transfer Group Instructions (Part I) - Solving Examples - Writing an Application Program.	Theoretical lectures	editorial

9	2	Data Transfer Group Instructions (Part II) - Solving Examples - Writing an Application Program.	Data Transfer Group Instructions (Part II) - Solving Examples - Writing an Application Program.	Theoretical lectures	editorial
10	2	Input and output directives and their relationship to data transfer group inputs - practical examples.	Input and output directives and their relationship to data transfer group inputs - practical examples.	Theoretical lectures	editorial
11	2	A group of arithmetic instructions (addition instructions) - practical examples.	A group of arithmetic instructions (addition instructions) - practical examples.	Theoretical lectures	editorial
12	2	A group of arithmetic instructions (subtraction instructions) - increase and decrease instructions - practical examples.	A group of arithmetic instructions (subtraction instructions) - increase and decrease instructions - practical examples.	Theoretical lectures	editorial
13	2	A set of logical instructions and their types - practical examples - and their use in the representation of logical equations.	A set of logical instructions and their types - practical examples - and their use in the representation of logical equations.	Theoretical lectures	editorial
14	2	Comparison guidelines - practical examples.	Comparison guidelines - practical examples.	Theoretical lectures	editorial
15	2	A set of branching instructions - conditional and unconditional - practical examples - the importance of this group in writing programs.	A set of branching instructions - conditional and unconditional - practical examples - the importance of this group in writing programs.	Theoretical lectures	editorial
16	2	Control Guidelines Group.	Control Guidelines Group.	Theoretical lectures	editorial
17	2	Programs to perform arithmetic operations (addition - subtraction) for more than one rank.	Programs to perform arithmetic operations (addition - subtraction) for more than one rank.	Theoretical lectures	editorial
18	2	Stages of execution of the instruction - the cycle of the instruction - the cycle of the machine - the timing scheme for the execution of one of the instructions (the instruction to store the contents of the accumulator in a memory location, for example) - how the microprocessor reads data in memory.	Stages of execution of the instruction - the cycle of the instruction - the cycle of the machine - the timing scheme for the execution of one of the instructions (the instruction to store the contents of the accumulator in a memory location, for example) - how the microprocessor reads data in memory.	Theoretical lectures	editorial
19	2	Formation of repetition loops - time delay loops - one episode - two episodes - three episodes - application programs for each of them.	Formation of repetition loops - time delay loops - one episode - two episodes - three episodes - application programs for each of them.	Theoretical lectures	editorial
20	2	Practical examples showing how to exploit time delay loops.	Practical examples showing how to exploit time delay loops.	Theoretical lectures	editorial

21	2	Writing a program for an ascending counter - with an example of an application.	Writing a program for an ascending counter - with an example of an application.	Theoretical lectures	editorial
22	2	Writing a program for a countdown counter - with an application example	Writing a program for a countdown counter - with an application example	Theoretical lectures	editorial
23	2	Applied examples on the microcomputer 8085.	Applied examples on the microcomputer 8085.	Theoretical lectures	editorial
24	2	An example of generating pulses with a required frequency and a known duty cycle compared to pulse generators using integrated circuits.	An example of generating pulses with a required frequency and a known duty cycle compared to pulse generators using integrated circuits.	Theoretical lectures	editorial
25	2	General idea over other types of processors.	General idea over other types of processors.	Theoretical lectures	editorial
26	2	Microprocessor 8086 - specifications - architecture.	Microprocessor 8086 - specifications - architecture.	Theoretical lectures	editorial
27	2	Microprocessor Structure Chart 8086.	Microprocessor Structure Chart 8086.	Theoretical lectures	editorial
28	2	Types of addressing for microprocessor 8086 - Data transfer instructions.	Types of addressing for microprocessor 8086 - Data transfer instructions.	Theoretical lectures	editorial
29	2	Microprocessors with 32 ranks and their most prominent specifications - microprocessors used in Pentium Computers.	Microprocessors with 32 ranks and their most prominent specifications - microprocessors used in Pentium Computers.	Theoretical lectures	editorial
30	2	General Review.	General Review.	Theoretical lectures	editorial

3- Course Structure - Practical

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1	2	General introduction to the subject of microcomputers - Familiarizing students with the laboratory micro Computer - its most important parts - and how to use it - Guiding students on how to write down the practical results and prepare the weekly report.	General introduction to the subject of microcomputers	Theoretical lectures	editorial
2	2	Start with the microcomputer - use the key (SUBMEM) to enter data into memory and modify it.	Start with the microcomputer - use the key (SUBMEM) to enter data into memory and modify it.	Theoretical lectures	editorial
3	2	Use the CHKREG key to scan records and change their value.	Use the CHKREG key to scan records and change their value.	Theoretical lectures	editorial
4	2	Teach the student how to write a simple program in assembly language, translate it and prepare it for implementation on the Computer.	Teach the student how to write a simple program in assembly language, translate it and prepare it for implementation on the Computer.	Theoretical lectures	editorial
5	2	Use the SINGL-STEP key to execute programs step by step.	Use the SINGL-STEP key to execute programs step by step.	Theoretical lectures	editorial
6	2	Use the GO key to fully execute the program.	Use the GO key to fully execute the program.	Theoretical lectures	editorial
7	2	Write a program in assembly language and convert it to machine language with execution.	Write a program in assembly language and convert it to machine language with execution.	Theoretical lectures	editorial
8	2	Transportation and loading instructions (Part I).	Transportation and loading instructions (Part I).	Theoretical lectures	editorial
9	2	Transportation and loading instructions (Part II).	Transportation and loading instructions (Part II).	Theoretical lectures	editorial
10	2	Input and output instructions.	Input and output instructions.	Theoretical lectures	editorial
11	2	Flag records.	Flag records.	Theoretical lectures	editorial
12	2	Addition and multiplication injunctions.	Addition and multiplication injunctions.	Theoretical lectures	editorial
13	2	Subtraction and subtraction instructions with metaphor.	Subtraction and subtraction instructions with metaphor.	Theoretical lectures	editorial
14	2	Increases and decreases indices.	Increases and decreases indices.	Theoretical lectures	editorial
15	2	Logical Instructions (Part I).	Logical Instructions (Part I).	Theoretical lectures	editorial
16	2	Logical Instructions (Part Two).	Logical Instructions (Part Two).	Theoretical lectures	editorial
17	2	Represent logical equations using programming.	Represent logical equations using programming.	Theoretical lectures	editorial

18	2	Comparison indices.	Comparison indices.	Theoretical lectures	editorial
19	2	Conditional and unconditional jumping instructions.	Conditional and unconditional jumping instructions.	Theoretical lectures	editorial
20	2	Control instructions.	Control instructions.	Theoretical lectures	editorial
21	2	Make time delay loops.	Make time delay loops.	Theoretical lectures	editorial
22	2	Program for binary ascending counter.	Program for binary ascending counter.	Theoretical lectures	editorial
23	2	Program for binary descending counter .	Program for binary descending counter .	Theoretical lectures	editorial
24	2	Program for binary ascending/descending counter.	Program for binary ascending/descending counter.	Theoretical lectures	editorial
25	2	Simple software for a photobulletin.	Simple software for a photobulletin.	Theoretical lectures	editorial
26	2	Simple program for a traffic signal for an intersection.	Simple program for a traffic signal for an intersection.	Theoretical lectures	editorial
27	2	Simple program to control the engine.	Simple program to control the engine.	Theoretical lectures	editorial
28	2	The 8086 microprocessor scans and changes the contents of memory locations, logs and log flags.	The 8086 microprocessor scans and changes the contents of memory locations, logs and log flags.	Theoretical lectures	editorial
29	2	Data transfer in the 8086 microprocessor.	Data transfer in the 8086 microprocessor.	Theoretical lectures	editorial
30	2	General Review.	General Review.	Theoretical lectures	editorial

4-Infrastructure

1 Required textbooks	None
2 Main references (sources)	
Recommended books and references (scientific journals, reports,....)	Books in the Central Library
B Electronic references, websites	Different sources of the Internet

5- Course Development Plan

- 1- Participation in the various courses of the subject.
- 2- Access to the latest modern technology in the production of machines.

Computer & Data Security & Data

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3- Course Name/Code	Computer and Data Security / Phase II
4. Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2023/2024
6- Number of study hours (total)	2 theoretical + 2 practical = 4 * 30 weeks = 120 annual hours
7- Date of preparation of this description	9/2/2021
8. Course Objectives	
<ol style="list-style-type: none">1- Introducing the student to modern security systems of different types, importance and tasks he performs.2- Introducing the student to the components of computer security systems and accessories.3- Teach the student the principles of using security application programs.4- Introduce the student to how to use programming languages to protect information.	

1- Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

A1- The student should know the modern security operating systems of different types, importance and tasks that he performs.

A2- The student should know the security components of the computer and its accessories.

A3- The student should know the security programs and applications.

A4 – The student should know the methods and programming steps necessary to write protection codes.

B - Skills objectives of the course.

B1 – Safe use of the computer.

B2- Learn traditional encryption methods.

Teaching and learning methods

Theoretical lectures + practical application

Evaluation methods

Editorial + Discussion

C. Emotional and value goals

C1- The student should know modern security operating systems of different types, importance and tasks that he performs.

C2- Instilling confidence in the student to use computer security programs and applications.

C3- Making the student communicate with the safe outside world.

C4- The student should realize the importance of information security and computers in various fields.

D. General and qualifying-transfer skills (other skills related to employability and personal development).

D1- Using computers in programming and writing modern programs.

D2- Teaching the student some mathematical laws and theories that he needs in the application of laws within the specialization.

D3- Teaching the student the basics of correct use of the computer.

2- Course Structure

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1,2,3	4	Introduction to computer security. - - How do we protect our most valuable assets? - Where security problems occurred in computer system? - Security goals. Kinds of security breaches.-	Introduction to computer security. - - How do we protect our most valuable assets? - Where security problems occurred in computer system? - Security goals. Kinds of security breaches.-	Theoretical + practical lectures	edit
4,5,6	4	The points of security vulnerabilities: a) Hardware vulnerabilities (Attacks on HW). b) Software vulnerabilities (Attacks on SW)- SW detection , theft, (Trojans horse, Virus, Information leak in a program). c) Data vulnerabilities (Attacks on Data). d) Other exposed assets (Network, Access, Key people). Computer criminals: (a) Amateurs b) Crackers or malicious hackers c) Career criminals	The points of security vulnerabilities Computer criminals	Theoretical + practical lectures	editorial
7,8,9,10	4	Methods of Defense: a) Data controls (cryptography). b) Software controls. c) hardware controls. d) The firewall. e) Physical controls. f) Policies. g) Overlapping controls.	Methods of Defense	Theoretical + practical lectures	editorial
11,12,13,14	4	Cryptography concept. Symmetric VS asymmetric cryptosystem. Cryptanalysis concepts. Cryptographic system	Cryptography concept. Symmetric VS asymmetric cryptosystem. Cryptanalysis concepts. Cryptographic system	Theoretical + practical lectures	editorial
15,16,17,18	4	Substitution Cipher Methods: a) Mono- alphabetic substitution cipher: - Caesar Cipher.	Substitution Cipher Methods	Theoretical + practical lectures	editorial

		<ul style="list-style-type: none"> - Rot13 Cipher. - Atbass Cipher. - Simple- Substitution Cipher. b) Polyalphabetic substitution Cipher : <li style="padding-left: 20px;">- Vigenere Cipher. c) Polygram substitution Cipher: <li style="padding-left: 20px;">- Play fair Cipher. d) The one – time pad. Transposition Cipher Methods a) Columnar Transposition Cipher. b) Multi- layer columnar transposition Cipher c) Double transposition Cipher. Super Encryption Cipher. 	<p>Transposition Cipher Methods</p> <p>Super Encryption Cipher</p>		
19,20,21,22	4	<p>Stream Cipher Methods.</p> <p>Block Cipher Methods.</p> <p>Comparing stream & block Cipher system.</p> <p>Secret key Cipher system– block Cipher method: DES/ data encryption standard</p>	<p>Stream Cipher Methods.</p> <p>Block Cipher Methods.</p> <p>Comparing stream & block Cipher system.</p> <p>Secret key Cipher system– block Cipher method: DES/ data encryption standard</p>	Theoretical + practical lectures	editorial
23,24,25,26	4	<p>Public key Cipher system:</p> <ul style="list-style-type: none"> a) Knapsack Technique. b) Rivest- Shamir- Adelman (RSA) technique. c) Digital signature technique. 	<p>Public key Cipher system</p>	Theoretical + practical lectures	editorial
27,28,29,30	4	<p>Computer Network Security.</p> <p>Types of network.</p> <p>Mode of communication.</p> <p>User Authentication:</p> <ul style="list-style-type: none"> a) password, PIN. b) Credit Card, key. c) Biometric Traits (physical and/or Behavioral) <p>Access control.</p> <p>Steganography (information Hiding) Techniques.</p>	<p>Computer Network Security.</p> <p>Types of network.</p> <p>Mode of communication.</p> <p>User Authentication</p> <p>Access control.</p> <p>Steganography (information Hiding) Techniques.</p>	Theoretical + practical lectures	editorial

3- Infrastructure

1 Required textbooks	None
2 Main references (sources)	<p>-Security for computer networks 2'nd edition, D.W.Davies and W.L.Price</p> <p>-Security Mechanisms for computer network, sead Muftic</p>

Recommended books and references (scientific journals, reports,....)	Probe located in the central library of the institute
B Electronic references, websites	Different sources of the Internet

4- Course Development Plan

- 1- Participation in the various courses of the subject
- 2- See the latest findings of modern technology in the study of this article

Project

Course Description

Teaching the student how to conduct research and practical and applied projects in various fields of work.

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3. Course Name/Code	Project/Phase II
4- Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2023/2024
6- Number of study hours (total)	2Practical = 2 * 30 weeks = 60 hours per year
7- Date of preparation of this description	9/2/2021
8- Course Objectives	<p><u>General Objective: Training</u> the student to rely on himself and benefit from his scientific information.</p> <p><u>Special Objective:</u> The student will be able to:</p> <ol style="list-style-type: none">1- He relies on himself to prove his practical skills.2- Identifies salient objectives in the project.3- He learns how to deal with his group of students in order to support teamwork .4- Maps and designs for the project.5- Follows up the progress of work on the project in terms of time.6- He sees and watches the model simplified his work.7- His book learns the final report of the project and in an organized manner on the research format.

1- Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

A1- Introducing the student to how to conduct the project and write the research.

A2- Introduce the student to how to discuss the results of a specific problem that was calculated in the project.

A3- Introducing the student to how to deal with state departments.

B - Skills objectives of the course.

B1 – Acquire the skill of searching for a specific topic.

B2 – Acquire the skill of producing integrated research.

B3 – Acquire the skill of dealing with the data and the required and then the result.

Teaching and learning methods

Theoretical lectures

Evaluation methods

Oral + Discussion

C. Emotional and value goals

C1- Theoretical lectures.

C2- Discussion in the classroom.

D. General and transferable qualification skills (other skills related to employability and personal development).

D1- Applied skills in the classroom.

D2- Scientific films.

D3- Computational skills and the ability to use scientific theories in electronic programs.

D4 – Skills to increase scientific expertise.

2- Course Structure

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
	2	Distributing projects to students, meeting with the supervising professor, and starting to review the library to obtain resources for the project scheduled for students.	Distributing projects to students, meeting with the supervising professor, and starting to review the library to obtain resources for the project scheduled for students.	Directives of the project supervisor	Oral
	2	Collect information about the project, start theoretical study and prepare the necessary designs for the implementation of the project.	Collect information about the project, start theoretical study and prepare the necessary designs for the implementation of the project.	Directives of the project supervisor	Oral
	2	Initiating the implementation of the planned designs and conducting experiments	Initiating the implementation of the planned designs and conducting experiments	Directives of the project supervisor	Oral
	2	And tests to obtain practical results - testing and evaluation of the previous stage.	And tests to obtain practical results - testing and evaluation of the previous stage.	Directives of the project supervisor	Oral
	2	Transfer the laboratory-executed experiments to the boards to obtain the practical designed model and conduct the test on the final model and obtain the final results of the discussion.	Transfer the laboratory-executed experiments to the boards to obtain the practical designed model and conduct the test on the final model and obtain the final results of the discussion.	Directives of the project supervisor	Oral
	2	Discuss the practical results and their suitability with the realistic results and find the necessary explanations for the apparent cases.	Discuss the practical results and their suitability with the realistic results and find the necessary explanations for the apparent cases.	Directives of the project supervisor	Oral
	2	Arrange the written parts of the report for each of the stages preceding the writing of the final report on the project as follows: Project Name: Project Supervisor: Students' Names: The bottom line:	Arrange the written parts of the report for each of the stages preceding the writing of the final report on the project as follows: Project Name: Project Supervisor: Students' Names: The bottom line:	Directives of the project supervisor	Oral

		Chapter One: Introduction Chapter Two: Theoretical Part Chapter Three: Practical Part and Results Chapter Four: Discussion of Results, Conclusions and Proposals. Sources	Chapter One: Introduction Chapter Two: Theoretical Part Chapter Three: Practical Part and Results Chapter Four: Discussion of Results, Conclusions and Proposals. Sources		
	2	Submit the demonstration of the project with the final report for the final test and evaluation procedure.	Submit the demonstration of the project with the final report for the final test and evaluation procedure.	Directives of the project supervisor	Oral

3-Infrastructure

1 Required textbooks	None
2 Main references (sources)	All books and resources related to the subject of the project within the ICT specialization
Recommended books and references (scientific journals, reports,....)	Books in the Central Library of the Institute
B Electronic references, websites	Different sources of the Internet

4- Course Development Plan

- 1 - Participation in the various courses of the subject.
- 2- See the latest modern technology in the application of programs.
- 3- Preparing courses that develop the ability of trainers in the laboratory so that they can train students more efficiently.
- 4- Providing laboratories with modern programs that keep pace with scientific development in developed countries

Internet & Information Technology

Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.

1-Educational Institution	Al-Furt Al-Awsat Technical University/ Technical Institute / Samawa
2- Scientific Department / Center	Information and communication technology
3. Course Name/Code	Internet and Information Technology / Phase II
4. Available Attendance Forms	Daily mandatory attendance
5-Semester/Year	Academic Year 2020/2021
6- Number of study hours (total)	1 Theoretical+2 Practical = 3 * 30 weeks = 90 hours per year
7. Date of preparation of this description	9/2/2021
8. Course Objectives	
General Objective: Identify the concepts of information technology, dealing with the Internet and creating websites.	

1- Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives

A1- The student can write web pages in various Internet languages and how to manage and modify those pages.

A2- The student creates different practical websites using several well-known techniques.

A3- The student learns the best way to obtain information from the Internet or download various information to the Internet

B - Skills objectives of the course.

B1 – The student can manage and maintain websites.

B2- The student learns to create different websites that serve many purposes.

B3- The student learns effective techniques in obtaining and sharing information in various fields through the World Wide Web.

Teaching and learning methods

1- View lectures by Data Show.

2- Use smart blackboards.

3- Discussions and seminars that students are assigned to prepare.

4- Reports for various topics that students are assigned to prepare.

5- Preparation of applied projects by learners

Evaluation methods

1- Pre- and post-exams for each subject.

2- Evaluation of the student's activities for various topics periodically.

3- Evaluate students for the projects they are assigned to.

4- Final exams for a set of study modules and periodically.

C. Emotional and value goals

C1- Qualifies the student to be a mentor and teacher in the subject referred to in this description.

C2- Enabling the student to be a productive element in the field of creating and designing websites.

C3- Enabling the student to be an effective element in the field of exchange and distribution of information.

D. General and transferable qualification skills (other skills related to employability and personal development).

D1- After completing the study of the subject of description, the student can develop himself to study broader and deeper topics.

D2- Qualifies the student to master a practical profession in public life related to the field of designing and creating websites that are used in various fields.

2- Course Structure

Week	Hours	Required Learning Outcomes	Unit / Subject Name	Method of education	Evaluation method
1-2	2	<p>Introduction:</p> <ul style="list-style-type: none"> - What is the Internet (International Network)?/ A brief history of the discovery and development of Internet networks. - Network types such as (ARPA net, National Science Foundation, World Wide Web www). - How to connect to the Internet: <ul style="list-style-type: none"> - Available methods with comparison between them in terms of cost and performance. - Modem: definition, types, installation, and connection. - Internet service receiving and broadcasting system. - Make an online connection (New Connection Wizard) and disconnect. - Benefits of the Internet. - التعرف على أهم المصطلحات لدراسة شبكات الويب: www , Internet or Net، http://، المتصفح (Browser)، HTML (Hyper Text Markup Language)، FTP (File Transfer Protocol)، IP Address، Upload، Download، Hyper Link، URL (Universal Resource Locater)، Router، TCP/IP, Server، Hub Switch، DSL . 	<p>What is the Internet</p> <p>Types of networks</p> <p>How to connect to the Internet</p> <p>Benefits of the Internet</p> <p>Learn about the most important terms for studying Internet networks</p>	Theoretical lectures	Practical evaluations
3&4	2	<ul style="list-style-type: none"> - Internet Explorer: - Run the browser. - Program screen contents: <ul style="list-style-type: none"> - Address bar. - Menu bar. - Basic button bar. - Address box. - Hide and show toolbars. - Internet Properties: <ul style="list-style-type: none"> - How to set a site page to be the start page. - Cancel temporary files of the Internet. - Clean the history list. - Cancel URLs from the address box. 	<p>Internet Explorer</p> <p>Internet Properties Options</p>	Theoretical lectures	Practical evaluations
5	2	<ul style="list-style-type: none"> - Study some basic browsing skills: <ul style="list-style-type: none"> - Add to the list of favorite sites and delete from them. - How to transfer files from the Internet to the computer. - How to copy from web pages to the word processor program (MS word). 	<p>Study some basic browsing skills</p> <p>How to copy from web pages to word processor software (MS word)</p>	Theoretical lectures	Practical evaluations
6 &	2	<ul style="list-style-type: none"> - Electronic Mail: <ul style="list-style-type: none"> - Defined. - Types of e-mail available. 	E-mail Address	Theoretical lectures	Practical evaluations

7 & 8		<ul style="list-style-type: none"> - Examples of sites that provide e-mail service such as: - www.yahoo.com. - www.hotmail.com. - www.maktoob.com. - Highlight the site (www.yahoo.com) and study the following: <ul style="list-style-type: none"> - The possibility of obtaining e-mail. - How to create a private email and access the mail page (sign in). - How to create (compose), send, and receive (see inbox inbox) messages. - How to send and receive images, sounds and other files. - Sign out. -How to get e-mail in other available locations. 	<p>Location Highlight (www.yahoo.com)</p> <p>How to get e-mail at other available sites</p>		
9 & 10 & 11	2	<ul style="list-style-type: none"> - Live and direct dialogue with others (Chatting): - Introduction. - Types of chat service. - Examples of chat service types such as MSN messenger, ADL Instant messenger, ICQ, Yahoo messenger, Skype, Just VoIP,). - Highlight (Yahoo messenger) and study the following: <ul style="list-style-type: none"> - Sign in. - Add a contact. - Start a written conversation with the contact. - Start voice chat with contact. - Camera display and video incident. - Send a file from this device to the other device. - Establishment of a conference. - Exit the program (sign out). - How to get live chat sites in other available sites. 	<p>Live and direct dialogue with others (Chatting)</p> <p>Highlight (Yahoo messenger)</p> <p>- How to get live chat sites in other available sites.</p>	Theoretical lectures	Practical evaluations
12 & 13	2	<ul style="list-style-type: none"> -Search through the Internet: - How to search through the browser. - Introduction to search engines and how to search through it. - Types of search engines. - How to use some parameters for ease and speed of search such as (coefficient " ", coefficient *, coefficient AND, coefficient OR, coefficient (-), and coefficient (+). - Applied examples on search engines such as: <ul style="list-style-type: none"> -www.google.com -www.yahoo.com. -www.ayna.com. - www.altavista.com 	<p>Search through the Internet</p>	Theoretical lectures	Practical evaluations
14	2	<ul style="list-style-type: none"> - An illustrative study and its application to the possibility of 	<ul style="list-style-type: none"> - An explanatory study and its application to 	Theoretical lectures	Practical evaluations

& 15		corresponding with service sites, universities, scientific journals, free entertainment, and others. - How to subscribe to free scientific sites and others. - General review of all curriculum vocabulary.	the possibility of correspondence with service sites, universities and scientific and entertainment magazines free of charge. - How to subscribe to free scientific sites. - General Review		
16	2	Introduction to information technology	Introduction to information technology	Theoretical lectures	Practical evaluations
17	2	Computer hardware (CPU and it's components)	Computer hardware (CPU and it's components)	Theoretical lectures	Practical evaluations
18	2	-Fixed memory programs - Computer software settings. (setup) -Self-motivation programs post-power on self test -Basic Input and Output Program (BIOS)	Fixed memory programs Self-motivation programs Basic Input and Output Program	Theoretical lectures	Practical evaluations
19	2	Operating system – definition. List the major PC operating system definition. The advance that made the Linx, Unix, windows operating system popular.	Operating system	Theoretical lectures	Practical evaluations
20	2	Programming language type. Representation of integers- real's- characters	Programming language type	Theoretical lectures	Practical evaluations
21	2	Data type – constant – variables. Logical and arithmetic operations. Managing organizational data and information.	Data type, Logical and arithmetic operations, Managing organizational data and information	Theoretical lectures	Practical evaluations
22	2	Data base –definition– data base management system (DBMS) enable user to do . Differentiate between flat-file database and relational database. Steps needed to great a database purpose of filters and forms examples of query languages.	Data base	Theoretical lectures	Practical evaluations
23	2	Telecommunications and networks introduction. Telecommunications system and process. Communication media and channels.	Telecommunications and networks introduction. Telecommunications system and process. Communication media and channels.	Theoretical lectures	Practical evaluations

24	2	Introduction to Networks. Local area networks, Wide area networks. Network communication software.	Introduction to Networks.	Theoretical lectures	Practical evaluations
25	2	Introduction to Internet. The protocol concept TCP/ IP. The operation of internet.	Introduction to Internet.	Theoretical lectures	Practical evaluations
26	2	The evolution of internet.	The evolution of internet.	Theoretical lectures	Practical evaluations
27	2	The definition of interants.	The definition of interants.	Theoretical lectures	Practical evaluations
28	2	The differences between internet and interants.	The differences between internet and interants.	Theoretical lectures	Practical evaluations
29	2	Data communication with standard telephone lines & modems.	Data communication with standard telephone lines & modems.	Theoretical lectures	Practical evaluations
30	2	Algorithms basic and programming language.	Algorithms basic and programming language.	Theoretical lectures	Practical evaluations

3- Infrastructure

1 Required textbooks	None
2 Main references (sources)	Uniform binding
Recommended books and references (scientific journals, reports,...)	Books in the Central Library of the Institute
B Electronic references, websites	Different sources of the Internet

4- Course Development Plan

- 1- Participation in the various courses of the subject
- 2- See the latest findings of modern technology in the study of this article